A1: Financial Statements

Question 1:
Dividends paid to company shareholders would be shown on the statement of cash flows as:

*Source: Retired ICMA CMA Exam Questions.

A. cash flows from investing activities.
B. operating cash inflows.
C. cash flows from financing activities.
D. operating cash outflows.

Dividends paid to company shareholders would be shown on the statement of cash flows as cash flows from financing activities. Financing activities include all long-term debt and shareholders’ equity transactions.

Question 2:
Which one of the following should be classified as an operating activity on the statement of cash flows?

*Source: Retired ICMA CMA Exam Questions.

A. The purchase of additional equipment needed for current production.
B. A decrease in accounts payable during the year.
C. The payment of a cash dividend from money arising from current operations.
D. An increase in cash resulting from the issuance of previously authorized common stock.

A decrease in accounts payable during the year should be classified as an operating activity on the statement of cash flows. The proceeds from the issuance of stock and the payment of a dividend are financing activities. Purchase of equipment is an investing activity.

Question 3:
All of the following are limitations to the information provided on the statement of financial position except the:

*Source: Retired ICMA CMA Exam Questions.

A. judgments and estimates used regarding the collectability, salability, and longevity of assets.
B. lack of current valuation for most assets and liabilities.
C. omission of items that are of financial value to the business such as the worth of the employees.
D. quality of the earnings reported for the enterprise.

Earnings for the enterprise are reported on the income, not the statement of financial position (i.e. the balance sheet).

Question 4:

Pierre Company had the following transactions during the fiscal year ending December 31, year 3:

- Sold a delivery van with a net book value of $5,000 for $6,000 cash, reporting a gain of $1,000.
- Paid interest to bondholders for the amount of $275,000.
- Declared dividends on December 31, year 3, of $.08 per share on the 1.3 million shares outstanding, payable to shareholders of record on January 31, year 4. No dividends were declared or paid in prior years.
- Accounts receivable decreased from $70,000 on December 31, year 2 to $60,000 on December 31, year 3.
- Accounts payable increased from $40,000 on December 31, year 2 to $45,000 on December 31, year 3.
- The cash balance was $150,000 on December 31, year 2, and $177,500 on December 31, year 3.

Which of the answers below describes the correct entry for Pierre Company's statement of cash flows on December 31, year 3 using the indirect method?

A. The decrease of $10,000 in accounts receivable is reported as a $10,000 decrease in the operating section of the statement of cash flows.

B. The $104,000 dividend payout is represented as an outflow of funds in the financing section.

C. Financing activities include the $1,000 gain from the sale of the delivery van.

D. The $1,000 gain from the sale of the delivery van is included in operating activities as a deduction.

Under the indirect method of cash flow statement preparation, net operating cash flow is determined by adjusting net income. Using the indirect method, the full $6,000 received for the asset sale is included in the
investing activities section. Since the $1,000 gain is already included in net income it must be deducted so as not to be double counted.

Question 5:

Pierre Company had the following transactions during the fiscal year ending December 31, year 3:

- Sold a delivery van with a net book value of $5,000 for $6,000 cash, reporting a gain of $1,000.
- Paid interest to bondholders for the amount of $275,000.
- Declared dividends on December 31, year 3, of $.08 per share on the 1.3 million shares outstanding, payable to shareholders of record on January 31, year 4. No dividends were declared or paid in prior years.
- Accounts receivable decreased from $70,000 on December 31, year 2 to $60,000 on December 31, year 3.
- Accounts payable increased from $40,000 on December 31, year 2 to $45,000 on December 31, year 3. The cash balance was $150,000 on December 31, year 2, and $177,500 on December 31, year 3.

What is the net effect of taking the total cash provided (used) by operating activities, adding it to the cash provided (used) by investing activities, and adding that to the cash provided (used) by financing activities?

A. Positive cash flow of $27,500.

B. Negative cash flow of $371,000.

C. Positive cash flow of $22,500.

D. Negative cash flow of $366,000.

The total cash provided (used) by the three activities (operating, investing, and financing) should equal the increase or decrease in cash for the year. The difference between the beginning balance of cash of $150,000, and the ending balance of cash of $177,500 is equal to $27,500.

Question 6:

An item of inventory purchased for $30 had been incorrectly written down at the end of last year to a current replacement cost of $22. The item is currently selling for $60, its normal selling price. The error will affect the financial statements in which of the following ways?

A. The income for this year will be overstated.
B. The income for this year will be unaffected.
C. The cost of sales for this year will be overstated.
D. The income for last year is overstated.

Since the inventory item had been incorrectly valued at $22 instead of $30 at the end of the previous year, the current-year cost would have been lower by $8, resulting in higher (overstated) net income for the year. Income for the prior year was correspondingly understated.

Question 7:
1A1-LS30
When using the statement of cash flows to evaluate a company's continuing solvency, the most important factor to consider is the cash:

*Source: Retired ICMA CMA Exam Questions.

A. flows from (used for) investing activities.
B. balance at the end of the period.
C. flows from (used for) operating activities.
D. flows from (used for) financing activities.

When using the statement of cash flows to evaluate a company's continuing solvency, the most important factor to consider is the cash flows from (used for) operating activities since over time, cash flow from operations has to cover everything.

Question 8:
1A1-CQ08
Pierre Company had the following transactions during the fiscal year ending December 31, year 3:

- Sold a delivery van with a net book value of $5,000 for $6,000 cash, reporting a gain of $1,000.
- Paid interest to bondholders for the amount of $275,000.
- Declared dividends on December 31, year 3, of $.08 per share on the 1.3 million shares outstanding, payable to shareholders of record on January 31, year 4. No dividends were declared or paid in prior years.
- Accounts receivable decreased from $70,000 on December 31, year 2 to $60,000 on December 31, year 3.
- Accounts payable increased from $40,000 on December 31, year 2 to $45,000 on December 31, year 3.
- The cash balance was $150,000 on December 31, year 2, and $177,500 on December 31, year 3.
Pierre Company prepared its statement of cash flows using the direct method on December 31, year 3. The interest paid to bondholders is reported:

A. As an outflow of cash in the investing activities section.

B. **As an outflow of cash in the operating activities section.**

C. As an outflow of cash in the financing activities section.

D. As an outflow of cash in the debt servicing activities section.

This is a payment of interest on a debt obligation, the payment of interest to bondholders is considered a cash outflow from an operating activity.

**Question 9:**

Suzanne Rogers, a financial analyst, is analyzing Capital One's stock. She is more interested in estimating the cash flows it can generate. From the financial analyst's perspective, which of the following balance sheet reporting is best suited to avoid adjustments?

A. Inventory reported at current market value; fixed assets reported at historical cost.

B. Inventory reported at replacement cost; fixed assets reported at market value.

C. Inventory reported at historical cost; fixed assets reported at market value.

D. Inventory reported at historical cost; fixed assets reported at fair value.

The current market value of inventory closely reflects the value at which it can be sold. Fixed assets reported at historical cost will help to estimate depreciation expense correctly to estimate the tax shield from depreciation.

**Question 10:**

At the end of the current fiscal year, XL Company reported net income of $40,000. In addition, the following information is available.

<table>
<thead>
<tr>
<th></th>
<th>Prior Fiscal Year</th>
<th>Current Fiscal Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes Payable</td>
<td>$13,000</td>
<td>$14,500</td>
</tr>
<tr>
<td>Additional Paid-in Capital</td>
<td>17,500</td>
<td>20,500</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>$105,000</td>
<td>$93,000</td>
</tr>
<tr>
<td>Common Stock</td>
<td>100,000</td>
<td>101,000</td>
</tr>
<tr>
<td>Cash dividends paid</td>
<td>$30,000</td>
<td>$33,000</td>
</tr>
</tbody>
</table>
Using the indirect method, what amount should be reported as cash flow from financing activities on XL’s Statement of Cash Flows for the current fiscal year?

A. ($6,500).
B. ($9,500).
C. ($39,500).
D. ($20,500).

The cash flow provided from financing activities is computed by taking the Increase in notes payable of $1,500, adding the increase in additional paid-in capital of $3,000, less the decrease in long-term debt of $12,000, plus the increase in common stock of $1,000, less the entire amount of the cash dividends paid (not the increase/decrease from prior year) of $33,000.

Question 11:
A statement of financial position provides a basis for all of the following except:

*Source: Retired ICMA CMA Exam Questions.*

A. evaluating capital structure.
B. assessing liquidity and financial flexibility.
C. determining profitability and assessing past performance.
D. computing rates of return.

A statement of financial position provides a basis for computing rates of return, evaluating capital structures, and assessing liquidity and financial flexibility. The income statement determines profitability and assesses past performance.

Question 12:
Juan Baker Inc. filed a suit against Foster Desserts in the second quarter of the current year and claimed damages worth $15,000. There was also a pending litigation against Juan Baker Inc. for $12,000 to its suppliers for supplying lower-quality goods. The company was expecting to win the suit against Foster Desserts. For presenting the financial statements for the year, Juan Baker’s accountant realized a net gain of $3,000 as other comprehensive income. As per U.S. GAAP, how should this information be presented?

A. The accountant should recognize contingent liability of $12,000 and disclose contingent gains of $15,000 as footnotes.
B. This information should not be presented as part of financial statements but should be disclosed in footnotes to financial statements.

C. The accountant should realize net gain of $3,000 as part of gains from extraordinary items.

D. This information should not be presented in financial statements but should be disclosed in the directors' responsibility statement.

Accounting recognition is not given to gain contingencies to avoid the premature recognition of income before its realization. However, loss contingencies must be recognized when it is both probable that a loss has been incurred and the amount of the loss is reasonably estimable.

Question 13:
Which of the following financial statement changes would best represent the impact of incurring and paying interest on a note payable for the period:

A. Effect on Equity Section of the Balance Sheet: No effect


B. Effect on Equity Section of the Balance Sheet: Decrease


C. Effect on Equity Section of the Balance Sheet: No effect


D. Effect on Equity Section of the Balance Sheet: Decrease


Interest incurred during the reporting period on a note payable is considered an “interest expense” on the income statement which reduces net income, and in turn, decreases the equity section of the balance sheet. Interest expense paid is considered an operating activity as it is used to pay for the day-to-day operating activities of the organization. Therefore, for statement of cash flow purposes, interest expense paid would be classified as an outflow from operating activities.

Question 14:
Perry Avon Corp. is engaged in the manufacture of cargo ships. The company wants to avail itself of a long-term loan from Wealth Bank and has provided the following information.

The current assets, as per last year's balance sheet, include inventory of cargo ships of $2,250,000 and $300,000 of accounts receivable. The
amount of inventory includes cargo ships lying in stock for 18 months, and the amount of accounts receivable includes accounts due for 90 days. The company grants a credit period of 60 days to its customers. The bank manager decided to grant the loan, as the current ratio of the company was 9.44. As per the bank’s credit policy, a company is eligible to avail itself of loans if its current ratio is more than 2.5. However, the bank’s credit analyst disapproved the manager’s decision, as he recalculated the current ratio to be 1.11 based on some adjustments. Which of the following, if true, will support the credit analyst’s decision?

A. The credit analyst did not consider the accounts receivable for the calculation of current ratio as they should be classified as bad debts.

B. The current liabilities were inflated due to the principal payment of loans in the previous year. The bank manager ignored this fact.

C. The credit analyst did not consider the impact of an increase in inventory and accounts receivable due to inventory worth $10,000 purchased on credit.

D. The credit analyst feels that the company’s liquidity is overstated because of the inclusion of cargo ships as current assets.

The inventory of cargo ships has been lying in stock for 18 months. Therefore, considering the value of inventory in the calculation of current ratio will not provide a true picture of the company’s liquidity.

Question 15:

Selected financial information for Kristina Company for the year just ended is shown below.

| Net income | $ 2,000,000 |
| Increase in accounts receivable | 300,000 |
| Decrease in inventory | 100,000 |
| Increase in accounts payable | 200,000 |
| Depreciation expense | 400,000 |
| Gain on the sale of available-for-sale securities | 700,000 |
| Cash receivable from the issue of common stock | 800,000 |
| Cash paid for dividends | 80,000 |
| Cash paid for the acquisition of land | 1,500,000 |
| Cash received from the sale of available-for-sale securities | 2,800,000 |

Kristina’s cash flow from investing activities for the year is:
A. $1,220,000.
B. $1,300,000.
C. $(1,500,000).
D. $2,800,000.

The cash flow from investing activities is calculated as cash received from the sale of available-for-sale Securities minus cash paid for the acquisition of land or $2,800,000 − 1,500,000= $1,300,000.

Question 16:

Selected financial information for Kristina Company for the year just ended is shown below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>$ 2,000,000</td>
</tr>
<tr>
<td>Increase in accounts receivable</td>
<td>300,000</td>
</tr>
<tr>
<td>Decrease in inventory</td>
<td>100,000</td>
</tr>
<tr>
<td>Increase in accounts payable</td>
<td>200,000</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>400,000</td>
</tr>
<tr>
<td>Gain on the sale of available-for-sale securities</td>
<td>700,000</td>
</tr>
<tr>
<td>Cash receivable from the issue of common stock</td>
<td>800,000</td>
</tr>
<tr>
<td>Cash paid for dividends</td>
<td>80,000</td>
</tr>
<tr>
<td>Cash paid for the acquisition of land</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Cash received from the sale of available-for-sale securities</td>
<td>2,800,000</td>
</tr>
</tbody>
</table>

Assuming the indirect method is used, Kristina's cash flow from operating activities for the year is:

A. $1,700,000.
B. $2,400,000.
C. $2,000,000.
D. $3,100,000.

Net income 2,000,000 + depreciation 400,000 − increase in accounts receivable 300,000 + decrease in inventory 100,000 + increase in accounts receivable 300,000 + decrease in inventory 100,000 + increase in accounts payable 200,000.
payable 200,000 – gain on sale of securities 700,000 = 1,700,000 cash flow from operating activities.

**Question 17:**

*Source: Retired ICMA CMA Exam Questions.*

All of the following are elements of an income statement except:

A. gains and losses.

B. shareholders' equity.

C. expenses.

D. revenue.

Shareholders' equity does not appear on an income statement. It appears on the balance sheet. Revenue, expenses, gains and losses all appear on an income statement.

**Question 18:**

While approving the financial statements for the current year, the management accountant of Rachael Groups discovered that sales were overstated. Which of the following is the most likely reason for the overstatement?

A. Sales returns recorded are more than actual returns.

B. Abnormal losses are not accounted for.

C. General sales tax collected from customers was not accounted for.

D. The last in, first out method is used for valuation of inventory.

Usually sales tax is included in the selling price of a product. The sales account should be adjusted for the amount of sales tax collected, and it should be recorded as a liability.

**Question 19:**

Carlson Company has the following payments recorded for the current period.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividends paid to Carlson shareholders</td>
<td>$150,000</td>
</tr>
<tr>
<td>Interest paid on bank loan</td>
<td>250,000</td>
</tr>
<tr>
<td>Purchase of equipment</td>
<td>350,000</td>
</tr>
</tbody>
</table>
The total amount of the above items to be shown in the Operating Activities Section of Carlson's Cash Flow Statement should be:

*Source: Retired ICMA CMA Exam Questions.

A. $150,000.

B. **$250,000.**

C. $750,000.

D. $350,000.

Interest paid on bank loans are considered an operating activity. Operating cash flows include interest and dividends received and interest and income taxes paid as well as normal operating inflows and outflows. Dividends paid are a financial activities. Purchase of equipment is an investing activity.

**Question 20:**
Which of the following is a reason why a company provides prior years' financial information along with the current year's information?

A. Doing this helps the users of financial statements in measuring the reliability of information provided in the financial statements.

B. Doing this allows management accountants to determine the trend in an increase in resource requirement for future periods.

C. **Doing this allows analysts to easily compare past performance to present performance and determine its future success.**

D. This form of presentation of financial statements helps in prioritizing one type of revenue or gain over another to avoid classification problems.

Most entities provide prior years’ financial statement information alongside the current year's information for comparison as this allows analysts to easily compare past performance to present performance and make a determination of future success.

**Question 21:**
The following information is extracted from the financial statements of BrentPage.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>$25,000</td>
</tr>
<tr>
<td>Depreciation on equipment</td>
<td>2,000</td>
</tr>
<tr>
<td>Dividend income</td>
<td>3,500</td>
</tr>
<tr>
<td>Interest income</td>
<td>3,000</td>
</tr>
<tr>
<td>Increase in current assets</td>
<td>5,400</td>
</tr>
</tbody>
</table>
Increase in current liabilities  500
Loans granted to subsidiaries  12,000

Assuming the company follows U.S. GAAP, calculate the cash flow from operating activities.

A.  $32,900
B.  $10,100
C.  $28,600
D.  $22,100

The correct answer is $22,100. CFO = Net income + Depreciation − Increase in current assets + Increase in current liabilities = $25,000 + $2,000 − $5,400 + $500 = $22,100

**Question 22:**
"Employing different accounting methods will yield different net incomes." How is this factor a limitation of financial statements?

A. Choice between cash-based accounting and accrual accounting for financial reporting allows companies to smooth earnings for a longer period.
B. The flexibility of employing different methods for presentation of financial statements can lead to inaccurate disclosure of information.
C. Change in net income due to change in accounting methods affects the determination of future performance of a company.
D. Difference in results due to change in accounting methods makes it difficult for users to compare the performance of different entities.

Employing different accounting methods will yield different net incomes. Each choice of two or more accounting methods will further change the results reported, making the task of comparing different entities very difficult, even when these methods are disclosed.

**Question 23:**
The statement of shareholders' equity shows a:

*Source: Retired ICMA CMA Exam Questions.*

A. reconciliation of the beginning and ending balances in the Retained Earnings account.
B. reconciliation of the beginning and ending balances in shareholders' equity accounts.
C. computation of the number of shares outstanding used for earnings per share calculations.

D. listing of all shareholders' equity accounts and their corresponding dollar amounts.

The purpose of the statement of shareholders' equity is to reconcile the beginning and ending balances in shareholders' equity accounts.

**Question 24:**

For the fiscal year just ended, Doran Electronics had the following results.

<table>
<thead>
<tr>
<th>Net income</th>
<th>$920,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation expense</td>
<td>$110,000</td>
</tr>
<tr>
<td>Increase in accounts payable</td>
<td>$45,000</td>
</tr>
<tr>
<td>Increase in accounts receivable</td>
<td>$73,000</td>
</tr>
<tr>
<td>Increase in deferred income tax liability</td>
<td>$16,000</td>
</tr>
</tbody>
</table>

Doran's net cash flow from operating activities is:

*Source: Retired ICMA CMA Exam Questions.*

A. $1,018,000.

B. $928,000.

C. $986,000.

D. $1,074,000.

The net cash flow from operating activities is calculated as Net income + Depreciation expense + Increase in accounts payable − Increase in accounts receivable + Increase in deferred income tax liability or ($920,000 + $110,000 + $45,000 − $73,000 + $16,000) = $1,018,000.

**Question 25:**

All of the following are classifications on the Statement of Cash Flows except:

*Source: Retired ICMA CMA Exam Questions.*

A. investing activities.

B. equity activities.
C. operating activities.
D. financing activities.

The classifications on the Statement of Cash Flows are operating activities, investing activities and financing activities.

**Question 26:**

When a fixed asset is sold for less than book value, which one of the following will decrease?

*Source: Retired ICMA CMA Exam Questions.*

A. Current ratio.
B. Total current assets.
C. Net working capital.
D. Net profit.

When a fixed asset is sold for less than book value, a loss occurs decreasing net profit.

**Question 27:**

Kelli Company acquired land by assuming a mortgage for the full acquisition cost. This transaction should be disclosed on Kelli’s Statement of Cash Flows as a(n):

*Source: Retired ICMA CMA Exam Questions.*

A. operating activity.
B. noncash financing and investing activity.
C. financing activity.
D. investing activity.

Acquiring a mortgage would require a noncash financing disclosure on the statement of cash flows. The land itself is an investment and would be accounted for as an investing activity.

**Question 28:**

The cash flow from operations for Charlene Energy Inc. is $25,000 for the current year. If the amortization expense increases by $5,000 and other factors remain same, under which of the following assumptions will the cash flow from operations remain unaffected?

A. A change in amortization method will not have a retrospective effect.
B. The company has an infinite life.

C. **The company is operating in a tax-free environment.**

D. The company can change the depreciation method during a financial year.

Cash inflow from amortization arises because of the tax shield. In a tax-free environment, a change in amortization will not affect the cash flows from operations.

**Question 29:**

Larry Mitchell, Bailey Company's controller, is gathering data for the Statement of Cash Flows for the most recent year end. Mitchell is planning to use the direct method to prepare this statement, and has made the following list of cash inflows for the period.

— Collections of $100,000 for goods sold to customers.
— Securities purchased for investment purposes with an original cost of $100,000 sold for $125,000.
— Proceeds from the issuance of additional company stock totaling $10,000.

The correct amount to be shown as cash inflows from operating activities is:

*Source: Retired ICMA CMA Exam Questions.*

A. $225,000.
B. $135,000.
C. **$100,000.**
D. $235,000.

**Question 30:**

The multi-step income statement, with additional income statement items, for Harrington Technologies Inc. is given below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Less: Cost of goods sold</td>
<td>890,000</td>
</tr>
<tr>
<td>Gross profit</td>
<td>1,110,000</td>
</tr>
</tbody>
</table>
Less: Transportation and travel 45,000
Depreciation 68,000
Pension contributions 21,000
Operating income 976,000
Less: Discontinued operations 76,000
Income before taxes 900,000
Less: Tax expense @ 30% 270,000
Net income $630,000

Glen Hamilton, a financial analyst, analyzed the company's financial statements and concluded that the real net income should be $683,200 instead of $630,000. Which of the following arguments is most likely to support his conclusion?

A. $53,200 due from a client was written off as irrecoverable after the finalization of accounts for the current period.

B. The company valued its inventory using the specific identification method, whereas the financial analyst used the last in, first out (LIFO) method for the current period.

C. The company might have liquidated its LIFO reserve.

D. The company has included expenses in relation to discontinued operations as part of income from continued operations. Revenue and expenses from discontinued operations do not form part of income from continued operations. In this case, the analyst has excluded discontinued operations since it is a nonrecurring item.

Question 31:
Why is it important for a financial analyst to scrutinize footnotes?

A. Footnotes provide vital information about a company's liquidity position, trend in revenue from different demographic regions, and changes in capital structure.

B. Footnotes provide significant information about noncash investing and financing activities, such as the issuing of stock for fixed assets.

C. Footnotes detail the executive compensation details and shareholders' voting procedures and information.

D. Footnotes provide significant information about mergers and acquisitions a company is targeting in the current year.

The statement of cash flows requires footnote disclosure of any significant noncash investing and financing activities, such as the issuing of stock for fixed assets or the conversion of debt to equity.
Question 32:
Rita Williams and Sasha Ortiz recently joined Flifund Financials, a fund management company. They are assigned to value the stock of Probe Systems. Rita's estimate of assets and liabilities is higher than Sasha's estimate. Which of the following will most likely undermine Rita's estimation?

A. The company has no operating lease.
B. The company has purchased a high amount inventory on credit.
C. The company has an off-balance sheet transaction.
D. The company has no debt.

Some transactions, like operating leases, can be recorded in a way that avoids reporting liabilities and assets on the balance sheet. Here, Rita might have discovered the use of the operating lease by Probe Systems and hence valued Probe's assets and liabilities higher.

Question 33:
Three years ago, James Company purchased stock in Zebra Inc. at a cost of $100,000. This stock was sold for $150,000 during the current fiscal year. The result of this transaction should be shown in the Investing Activities Section of James' Statement of Cash Flows as:

A. $50,000.
B. $100,000.
C. $150,000.
D. Zero.

The amount shown in the investing section would be the amount the stock was sold for during the current fiscal year.

Question 34:
Barber Company has recorded the following payments for the current period.
The amount to be shown in the Financing Activities Section of Barber's Cash Flow Statement should be:

*Source: Retired ICMA CMA Exam Questions.

A. $600,000.
B. $500,000.
C. $300,000.
D. $900,000.

Both dividends paid to Barber shareholders and the repurchase of Barber Company stock are financing activities. Financing activities include long-term debt and equity cash transactions. Interest paid is included in operating cash flows.

Question 35:
1A1-LS36
The sale of available-for-sale securities should be accounted for on the statement of cash flows as a(n):

*Source: Retired ICMA CMA Exam Questions.

A. investing activity.
B. financing activity.
C. noncash investing and financing activity.
D. operating activity.

Cash flows from the investment in or disposal of available-for-sale securities will be accounted for in the statement of cash flows as an investing activity.

Question 36:
1A1-W022
The management accountant of Kathryn Software decided to alter the financial statements due to an event. Which of the following is the most likely reason for her decision?

A. The event provides evidence about a loss of expected income due to inefficient collection efforts.
B. The company has decided to shift the company's headquarters to a country that follows IFRS in the next year.

C. The event provides additional evidence about conditions that existed as of the balance sheet date and alters the estimates used.

D. There is a sharp decline in the stock price.

If a subsequent event provides additional evidence about conditions that existed as of the balance sheet date and alters the estimates used in preparing the financial statements, then the financial statements should be adjusted.

**Question 37:**

The presentation of the major classes of operating cash receipts (such as receipts from customers) less the major classes of operating cash disbursements (such as cash paid for merchandise) is best described as the:

A. indirect method of calculating net cash provided or used by operating activities.

B. cash method of determining income in conformity with generally accepted accounting principles.

C. direct method of calculating net cash provided or used by operating activities.

D. format of the statement of cash flows.

*Source: Retired ICMA CMA Exam Questions.*

The direct method of calculating net cash provided or used by operating activities presents the major classes of operating cash receipts (such as receipts from customers) less the major classes of operating cash disbursements (such as cash paid for merchandise).

**Question 38:**

A statement of cash flows prepared using the indirect method would have cash activities listed in which one of the following orders?

A. Operating, investing, financing

B. Investing, financing, operating

C. Financing, investing, operating

D. Operating, financing, investing

*Source: Retired ICMA CMA Exam Questions.*
A statement of cash flows prepared using the indirect method would have cash activities listed first as operating, next as investing, and third as financing.

Question 39:
The management of Arthur Energy recognized a contingent liability of $50,000 in the current year. However, before the annual report was issued, the company resolved the issue, making a lump-sum payment of $42,000. The board of directors has decided to incorporate the transaction in the subsequent year’s financial statements. Which of the following provisions of U.S. GAAP, if applicable, is likely to prove the management decision wrong?

A. Loss contingencies must be recognized when it is probable that a loss has been incurred and the amount of the loss is reasonably estimable.

B. Whenever GAAP or industry-specific regulations allow a choice between two or more accounting methods, the method selected should be disclosed.

C. If an event alters the estimates used in preparing the financial statements, then the financial statements should be adjusted.

D. If an event provides additional evidence about conditions that existed as of the balance sheet date and alters the estimates used, then the financial statements should be adjusted.

In this case, the amount of contingent liability needs to be revised, as the estimate of the amount of liability has changed. The subsequent event provides evidence regarding conditions present on the balance sheet date. Therefore, the financial statements need to be adjusted.

Question 40:
The following information is extracted from the financial statements of Foster Machines.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>$15,000</td>
</tr>
<tr>
<td>Depreciation on equipment</td>
<td>2,500</td>
</tr>
<tr>
<td>Dividend income</td>
<td>2,500</td>
</tr>
<tr>
<td>Interest income</td>
<td>5,000</td>
</tr>
<tr>
<td>Increase in accounts receivable</td>
<td>8,000</td>
</tr>
<tr>
<td>Increase in current liabilities</td>
<td>6,500</td>
</tr>
<tr>
<td>Redemption of bonds</td>
<td>7,500</td>
</tr>
</tbody>
</table>

The cash flows from operations were calculated to be $23,500. Assuming that the company follows U.S. GAAP, which of the following is a potential error in the calculation of cash flow from operations?
A. Dividend income and interest income were added back to net income to calculate cash flows from operations.
B. Redemption of bonds was included in cash flow from operations.
C. Increase in accounts receivable was added to net income whereas it should have been deducted.
D. Depreciation on equipment was not added back to net income for calculating cash flows from operations.

As per U.S. GAAP, dividend income and interest income are included in the calculation of net income. Hence, dividend income and interest income, being operating activities, should not be added back to net income.

**Question 41:**

Which one of the following would result in a decrease to cash flow in the indirect method of preparing a statement of cash flows?

A. Decrease in income taxes payable.
B. Proceeds from the issuance of common stock.
C. Amortization expense.
D. Decrease in inventories.

When using the indirect method, a decrease to cash flow would occur when a business pays off its liabilities; therefore, a decrease in income taxes payable would result in a decrease to cash when using the indirect method.

**Question 42:**

As per U.S. GAAP, extraordinary items are:

A. Material items that are both unusual in nature and infrequent in occurrence.
B. Material items that are either unusual in nature and infrequent in occurrence.
C. Material items that are both unusual in nature and frequent in occurrence.
D. Material events with an uncertain outcome dependent on the occurrence or nonoccurrence of one or more future events.

Extraordinary items are material items that are both unusual in nature and infrequent in occurrence.

**Question 43:**
Following is an extract from the statement of shareholders' equity of Joyce Gregory Inc. prepared by the finance manager.

<table>
<thead>
<tr>
<th></th>
<th>Common stock shares</th>
<th>Common stock amount</th>
<th>Retained earnings</th>
<th>Other</th>
<th>Total equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance from previous year</td>
<td>500,000</td>
<td>$5,000,000</td>
<td>$15,000,000</td>
<td>–</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>Net income</td>
<td>–</td>
<td>–</td>
<td>100,000</td>
<td>–</td>
<td>100,000</td>
</tr>
<tr>
<td>Issuance of common stock</td>
<td>1,000</td>
<td>10,000</td>
<td>–</td>
<td>–</td>
<td>10,000</td>
</tr>
<tr>
<td>Other comprehensive income</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Balance at the end of current year</td>
<td>501,000</td>
<td>$5,010,000</td>
<td>$15,100,000</td>
<td>$10,000</td>
<td>$20,120,000</td>
</tr>
</tbody>
</table>

The company's CFO did not approve the financial statements. Which of the following, if true, will support the CEO's decision?

A. Net income should not be classified under retained earnings.
B. Issuance of common stock should be part of retained earnings.
C. Other comprehensive income will not be included as part of shareholders' equity.
D. Cash flow from operations is not included in the calculation of shareholders' equity.

Firms have the option of presenting the calculation of comprehensive income either as part of an income statement or as a separate statement of comprehensive income. Comprehensive income can no longer be presented as a part of the statement of shareholders' equity.

**Question 44:**

Stanford Company leased some special-purpose equipment from Vincent Inc. under a long-term lease that was treated as an operating lease by Stanford. After the financial statements for the year had been issued, it was discovered that the lease should have been treated as a capital lease by Stanford. All of the following measures relating to Stanford would be affected by this discovery except the:

A. accounts receivable turnover.
B. net income percentage.

*Source: Retired ICMA CMA Exam Questions.*
The accounts receivable turnover is sales divided by the average accounts receivable balance. The classification of a lease would not affect either sales or accounts receivable.

Question 45:
The cash flows and net income from four business segments for Taylor Laboratories Inc. have been provided.

<table>
<thead>
<tr>
<th>Segment 1</th>
<th>Segment 2</th>
<th>Segment 3</th>
<th>Segment 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flow from operations</td>
<td>$3,000</td>
<td>$(250)</td>
<td>$(3,000)</td>
</tr>
<tr>
<td>Cash flow from investing activities</td>
<td>(4,000)</td>
<td>6,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Cash flow from financing activities</td>
<td>1,080</td>
<td>(1,000)</td>
<td>(1,000)</td>
</tr>
<tr>
<td>Net income</td>
<td>1,500</td>
<td>1,750</td>
<td>2,375</td>
</tr>
</tbody>
</table>

Based on the information, which segment should be discontinued by the company?

A. Segment 3, because cash used in operations is high and cash inflow is predominantly from investing activities.
B. Segment 1, because net income is lowest and requires high investments.
C. Segment 4, because net income and cash inflow from operations are low.
D. Segment 2, because cash used in operations is low and cash flow from investing activities is not properly utilized.

Segment 3 should be discontinued because the major portion of the segment's income could be from the sale of its assets.

Question 46:
Which of the following is true of an income statement presented as per U.S. GAAP?

A. It reconciles beginning and ending balances of stockholders' equity.
B. Bank overdrafts are always included as a component of selling, general, and administrative expenses.
C. Financial measures of contractual agreements such as pension obligations, lease contracts, and stock option plans are required to be disclosed on income statement as a separate line item.
D. Disclosure of extraordinary items reported on an income statement is restricted to items that are both unusual and infrequent.
Material items that are both unusual in nature and infrequent in occurrence require a separate section in the income statement, shown net of tax.

**Question 47:**

The following information is extracted from the latest financial information of Hines Materials Inc.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax rate</td>
<td>30%</td>
</tr>
<tr>
<td>Net income</td>
<td>$15,000</td>
</tr>
<tr>
<td>Cash flow from operations</td>
<td>$45,000</td>
</tr>
</tbody>
</table>

**Additional information:**

1) The tax rate for the coming year is expected to increase by 2%.
2) The company is planning to purchase equipment worth $500,000 in the first quarter of next year.
3) A 15% increase in capacity is expected with the use of new equipment.

Considering the given factors, which of the following would be an ideal strategy to decrease the tax liability for the next year?

A. Defer the purchase of equipment to next year to take advantage of a tax-loss carryforward.

B. Depreciate the asset using the double-declining balance method to show higher cash flows from operations in initial years.

C. Prepare the cash flow statement using the direct method to show lower cash from operations and lower net income.

D. Defer the purchase of equipment to next year if a deferred tax liability can be reasonably estimated.

Depreciating the equipment using double-declining balance method will result in higher depreciation in the initial years and lower net income. Therefore, the net tax liability of the company will decrease.

**Question 48:**

The Smalltown Technology Corporation has prepared the following information.
Calculate the cash flow from operating activities in Current year.

A. $1,250.

B. $1,880.

C. $1,190.

D. $1,550.

Cash flow from operations can be determined by the indirect method (the reconciliation of net income to cash flow from operations). Cash flow from operations using the indirect method is calculated as:

\[
\text{Cash flow from operations (indirect method) = net income + non-cash debits in income statement − non-cash credits in income statement + increases in current liabilities (except dividends payable) + decreases in current assets (except cash and cash equivalents)}
\]
Therefore, Smalltown's cash flow from operations can be calculated as:

Cash flow from operations (indirect method) =

$730 net income  
+ $1,150 depreciation  
+ $100 increase in accounts payable  
− $30 decrease in accrued liabilities  
− $200 increase in accounts receivable  
− $200 increase in inventory = $1,550.

Question 49:
According to US GAAP, which of the following statements is true of comprehensive income?

A. Firms should report comprehensive income as a separate line item after net income in the income statement.

B. Any realized or unrealized gain on an asset should be included as part of comprehensive income, whereas realized or unrealized losses should be excluded from comprehensive income.

C. Firms have the option of presenting the calculation of comprehensive income either as part of an income statement or as a separate statement of comprehensive income.

D. Comprehensive income can be presented as a part of the statement of shareholders' equity.

Comprehensive income can no longer be presented as a part of the statement of shareholders' equity. Firms have the option of presenting the calculation of comprehensive income either as part of an income statement or as a separate statement of comprehensive income.

Question 50:
How does the balance sheet help users?

A. It depicts the true value of an entity.

B. It measures the nonfinancial performance of an entity.

C. It shows the financial performance of an entity for a specific period.

D. It assesses an entity's liquidity, solvency, financial flexibility, and operating capability.

The balance sheet assesses an entity's liquidity, solvency, financial flexibility, and operating capability.

Question 51:
Selected financial information for Kristina Company for the year just ended is shown below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>$ 2,000,000</td>
</tr>
<tr>
<td>Increase in accounts receivable</td>
<td>300,000</td>
</tr>
<tr>
<td>Decrease in inventory</td>
<td>100,000</td>
</tr>
<tr>
<td>Increase in accounts payable</td>
<td>200,000</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>400,000</td>
</tr>
<tr>
<td>Gain on the sale of available-for-sale securities</td>
<td>700,000</td>
</tr>
<tr>
<td>Cash receivable from the issue of common stock</td>
<td>800,000</td>
</tr>
<tr>
<td>Cash paid for dividends</td>
<td>80,000</td>
</tr>
<tr>
<td>Cash paid for the acquisition of land</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Cash received from the sale of available-for-sale securities</td>
<td>2,800,000</td>
</tr>
</tbody>
</table>

Kristina's cash flow from financing activities for the year is:

A. $(80,000).
B. $3,520,000.
C. $800,000.
D. $720,000.

The answer is calculated as the cash receivable from the issue of common stock + cash paid for dividends or $800,000 + 80,000 = $720,000. Financing activities include long-term debt and equity cash transactions. The cash acquisition of land and the cash sale of available-for-sale securities are investing transactions.

Question 52:
1A1-LS32
The financial statement that provides a summary of the firm's operations for a period of time is the:

A. statement of financial position.
B. statement of retained earnings.
C. statement of shareholders' equity.
D. income statement.
The financial statement that provides a summary of the firm's operations for a period of time is the income statement. It shows revenues, expenses, gains, losses, and taxes for the period.

Question 53:

The most commonly used method for calculating and reporting a company's net cash flow from operating activities on its statement of cash flows is the:

A. direct method.
B. single-step method.
C. multiple-step method.

D. indirect method.
The most commonly used method for calculating and reporting a company's net cash flow from operating activities on its statement of cash flows is the indirect method. The direct method is rarely used because when it is used, the indirect method must be disclosed. However, use of the indirect method does not require disclosure of the direct method.

Question 54:

McCarthy Corp. is issuing its first financial statements. The CFO of the company is of the view that all assets shall be recorded at historical cost throughout the life of the organization. Which of the following is the best critique of such a disclosure?

A. Historical value assumes that the value of an asset is the amount that would have to be paid to replace the asset on the balance sheet date.

B. Historical value takes into account the effects of inflation on the asset; therefore, the value fluctuates in each period.

C. Historical value does not take into account the effect of depreciation; therefore, the true value of the asset cannot be determined.

D. Historical value is less relevant for assessing a company's current financial position.

Most asset accounts of a nonfinancial nature are reported at historical cost. While historical cost measures are considered reliable because the amounts can be verified, they are also considered less relevant than fair value or current market value measures would be for assessing a firm's current financial position.
Question 55:
The current ratio for Garrett Inc. for the previous five years is as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Ratio</td>
<td>5</td>
<td>4.5</td>
<td>4.9</td>
<td>1.2</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Which of the following factors is the most likely reason for the low current ratio in Year 4?

A. Materials were purchased on credit in Year 4 for which payment is due.
B. Long-term debts were due for repayment in Year 4.
C. The company reduced its credit period in Year 4.
D. Working capital in Year 4 decreased due to an increase in accounts payable.

The current portion of long-term debt is included in current liabilities in the year of repayment. Hence, the principal amount for long-term debts might have been due in Year 4 and classified as current liabilities.

Question 56:
The financial statements included in the annual report to the shareholders are least useful to which one of the following?

*Source: Retired ICMA CMA Exam Questions.

A. Competing businesses.
B. Stockbrokers.
C. Managers in charge of operating activities.
D. Bankers preparing to lend money.

Generally, the financial statements included in the annual report to the shareholders are most useful to external stakeholders such as stockbrokers, bankers preparing to lend money, and competing businesses. Therefore, these reports are least useful to managers in charge of operating activities.

Question 57:
Atwater Company has recorded the following payments for the current period.
The amount to be shown in the Investing Activities Section of Atwater's Cash Flow Statement should be:

*Source: Retired ICMA CMA Exam Questions.

A. $500,000.

B. $900,000.

C. $300,000.

D. $700,000.

Purchasing another company's stock would be classified as an investing activity. The other two transactions are financing transactions.

Question 58:

During the year, Deltech Inc. acquired a long-term productive asset for $5,000 and also borrowed $10,000 from a local bank. These transactions should be reported on Deltech's Statement of Cash Flows as:

*Source: Retired ICMA CMA Exam Questions.

A. Outflows for Financing Activities, $5,000; Inflows from Investing Activities, $10,000.

B. Inflows from Investing Activities, $10,000; Outflows for Financing Activities, $5,000.

C. Outflows for Operating Activities, $5,000; Inflows from Financing Activities, $10,000.

D. Outflows for Investing Activities, $5,000; Inflows from Financial Activities, $10,000.

Purchasing a long-term assets would be classified as an outflows for Investing Activities. Borrowing money would be classified as a inflow from Financial Activities.

Question 59:

The financial accountant of Eva Wolfe Corp. has ascertained the cash flows from operations as follows.

<table>
<thead>
<tr>
<th>Transaction Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Trillium stock</td>
<td>$300,000</td>
</tr>
<tr>
<td>Dividends paid to Atwater shareholders</td>
<td>$200,000</td>
</tr>
<tr>
<td>Repurchase of Atwater Company stock</td>
<td>$400,000</td>
</tr>
</tbody>
</table>
Net income $15,000
Depreciation on equipment 2,500
Dividend income 2,500
Interest income 5,000
Increase in current assets 8,000
Increase in current liabilities 6,500
Cash flow from operations $16,000

The management accountant of the company argues that the cash flow from operations should be $8,500. Which of the following statements, if true, will undermine the management accountant's calculation?

A. The company operates in a tax-free environment.

B. Dividend income and interest income, already included in net income, are considered cash flow from operating activities.

C. Cash flow from operations is ascertained using the direct method.

D. Depreciation on equipment should not be added back to net income for calculating cash flow from operations.

Investing cash inflows result from sales of property, plant, and equipment; sales of investments in another entity's debt or equity securities; or collections of the principal on loans to another entity. However, dividend income and interest income are included in cash flow from operating activities. Hence, the management accountant might have incorrectly calculated the cash flow from operations as follows: $15,000 + $2,500 − ($8,000 − $6,500) − ($2,500 + $5,000) = $8,500.

Question 60:
The following information is available for Matthews Holdings Inc.:

Net sales $25,000
Depreciation 2,000
Cost of goods sold 3,500
Gain on sale of asset 3,000
Loss from discontinued operations 5,400
Gain from extraordinary items 500

Calculate the income from continuing operations.

A. $22,500

B. $17,100
C. $17,600  
D. $23,000

Income from continuing operations is calculated as:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>$25,000</td>
</tr>
<tr>
<td>Less: Cost of goods sold</td>
<td>3,500</td>
</tr>
<tr>
<td>Less: Depreciation</td>
<td>2,000</td>
</tr>
<tr>
<td>Add: Gain on sale of asset</td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$22,500</strong></td>
</tr>
</tbody>
</table>

**Question 61:**

Silver Streak Enterprises (SSE) began manufacturing latex-based paint in 1978. In 2008, the company developed a new high quality paint which maintains its luster for over 50 years. Due to the success of this new product, sales of the original latex-based paint have declined significantly such that the company has decided to phase out the product in early 2009.

Mikayla Andrews is the accounting manager and her primary responsibilities include the preparation and analysis of the annual financial statements. Mikayla has begun analyzing the annual financial transactions and wants to ensure that the operations are presented accurately for the fiscal year ending December 31, 2009. The following transactions have raised questions for Mikayla:

1. SSE invented its new high quality paint in 2008 and received a patent in the same year. In 2008, the company expected that the new patent would have a useful-life of ten years; however, due to innovations by its competitors, SSE has determined that the useful-life of the patent will be reduced to six years beginning in 2009.

2. The year-end physical count of inventory has found $24,000 of the obsolete latex-based paint product which must be written off as obsolete.

3. SSE is a defendant in a lawsuit concerning the durability of its old paint product line. Corporate lawyers believe that the lawsuit against Silver Streak will probably result in a settlement of $50,000 in mid-2010.

4. Silver Streak is also a plaintiff in a lawsuit against a competitor for stealing the manufacturing process of their new product line. Corporate lawyers believe that the lawsuit could likely result in a favorable judgment in the amount of $150,000 in 2010.
Explain how each of the four transactions above will affect Silver Streak's Income Statement:

A. Transaction 1 would decrease operating income. Transaction 2 would be classified as an “other expense” and would decrease Income Before Taxes. Transaction 3 is a loss contingency that can be reasonably estimated and would appear on the income statement. Transaction 4 is a gain contingency that can be reasonably estimated and would be recorded on the income statement.

B. Transaction 1 would decrease operating income. Transaction 2 would be classified as a “cost of goods sold” and would decrease operating income. Transaction 3 is a loss contingency that can be reasonably estimated and would appear on the income statement. Transaction 4 is a contingency that may result in a gain and would be recorded in the financial statements.

C. Transaction 1 would decrease operating income. Transaction 2 would be classified as an “other expense” and would decrease Income Before Taxes. Transaction 3 is a loss contingency that may result in a settlement and should appear in the notes but not in the financial statements. Transaction 4 is a contingency that may result in a gain but will not be recorded in the financial statements.

D. Transaction 1 would decrease operating income. Transaction 2 would classify as “other expense” and decrease Income Before Taxes. Transaction 3 is a loss contingency that can be reasonably estimated and would appear on the income statement. Transaction 4 is a contingency that may result in a gain but would not be recorded in the financial statements.

Transaction 1: The change in useful life is a change in estimates that affects present and future periods only. There will be an increase in amortization that would be reported in operating expenses thus causing a decline in operating income. Change in amortizations will be reflected on current and future financial statements.

Transaction 2: As there is obsolete inventory, the category “other expense” is affected on the income statement.

Transaction 3: This loss contingency is probable and can be reasonably estimated, and therefore should appear on the income statement as an “other gain or loss”. This loss contingency should also appear in the footnotes to the financial statements.

Transaction 4: According to SFAS 5 “Accounting for Contingencies”, contingencies that may result in gains are usually not reflected in the financial statements. Therefore, since the financial impact would not be realizable until received, not including the potential gain from the lawsuit in the financial statements is the proper handling for this year.
At the end of the current fiscal year, XL Company reported net income of $40,000. In addition, the following information is available:

<table>
<thead>
<tr>
<th></th>
<th>Prior Fiscal Year</th>
<th>Current Fiscal Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts receivable</td>
<td>$15,000.00</td>
<td>$18,000.00</td>
</tr>
<tr>
<td>Inventories</td>
<td>33,000</td>
<td>28,500</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>9,000</td>
<td>10,500</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>21,000</td>
<td>28,500</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>105,000</td>
<td>93,000</td>
</tr>
</tbody>
</table>

Using the indirect method, what amount should be reported as cash flow from operating activities on XL’s Statement of Cash Flows for the current fiscal year?

A. $47,500.
B. $49,500.
C. $32,500.
D. $34,500.

The cash flow provided from operating activities is computed by taking the net income of $40,000, less the increase in accounts receivable of $3,000 and less the prepaid expenses increase of $1,500, plus the decrease in inventories of $4,500, plus the increase in accounts payable of $7,500.

A2: Recognition, Measurement, Valuation, and Disclosure

Question 1:

Claire Enterprises has $150,000 in accounts receivable at the end of Year 1, and it estimates its bad debts to be 5% of the receivables. Hence, the accountant reports $7,500 as bad debts and the net realizable value as $142,500. Under which of the following circumstances will the amount of bad debts reported most likely reduce?

A. If the company shortens the credit period allowed.
B. If the company lengthens the credit period allowed.
C. If the allowance for doubtful accounts has a credit balance of $1,500.
D. If the allowance for doubtful accounts has a debit balance of $1,500.

If there is an existing credit balance in the allowance for doubtful accounts, then the bad debt expense should be adjusted downward, as it is necessary to adjust the balance only to the desired level. Therefore, the correct balance will be $7,500 − $1,500 = $6,000.

Question 2:
AICPA.910508FAR-TH-FA
Drew Co. produces expensive equipment for sale on installment contracts. When there is doubt about eventual collectibility, the income-recognition method least likely to overstate income is

A. At the time the equipment is completed.
B. The installment method.
C. The cost-recovery method.
D. At the time of delivery.

The cost recovery is the most conservative of the methods listed in the answer alternatives. It recognizes income slower than any other method listed. This method recognizes no income until the cash collections exceed the cost of the equipment and would tend to overstate income the least. The cost recovery method is more conservative than the installment method, which recognizes profit on each dollar of cash collected.

Question 3:
INVY-0044B
Under IFRS, the specific identification method of accounting for inventory is required for

A. All inventory items.
B. Inventory items which are interchangeable.
C. Inventory items that are not interchangeable and goods that are produced and segregated for specific projects.
D. Biological (agricultural) inventories.

The specific identification method is required for inventory items that are not interchangeable and goods that are produced and segregated for specific projects.

Question 4:
AICPA.090642FAR-II
When would a company use the installment sales method of revenue recognition?
A. When collectibility of installment accounts receivable is reasonably predictable.

B. When repossessions of merchandise sold on the installment plan may result in a future gain or loss.

C. When installment sales are material, and there is no reasonable basis for estimating collectibility.

D. When collection expenses and bad debts on installment accounts receivable are deemed to be immaterial.

The installment method of revenue recognition is used when the realizability criterion of revenue recognition is not met. In other words, there is significant uncertainty that the receivable will be collected. Until cash is collected (realizability is therefore assured for the amount collected), no gross profit is recognized. The cost-recovery method, which is even more conservative, may also be used in this situation.

**Question 5:**

AICPA.900517FAR-P1-FA

On April 1, 2004, Kew Co. purchased new machinery for $300,000. The machinery has an estimated useful life of five years, and depreciation is computed by the sum-of-the-years'-digits method. The accumulated depreciation on this machinery at March 31, 2006 should be:

A. $192,000
B. $180,000
C. $120,000
D. $100,000

$180,000, the correct answer, equals $300,000[(5 + 4)/(5 + 4 + 3 + 2 + 1)]. Two full years of depreciation have been recorded, and the SYD method uses the number of years left at the beginning of each year as the numerator of the fraction used in depreciation. At the beginning of the first and second years, five and four years of the asset's life remained, respectively. The denominator is the sum of the digits up to the asset's useful life (5).

**Question 6:**

AICPA.900517FAR-P1-FA

The latest financial statements of Darlene Properties show 140,000 outstanding shares, par value $10. The current market value per share is $25. At the beginning of current year, the company reacquired 10,000 shares at $4 per share. The company follows the cost method for the accounting of treasury stock. The current year's books of accounts show the value of outstanding shares as follows:
Common stock, $10 par $1,400,000
Less: Treasury stock 100,000
Net common stock, $10 par $1,300,000

The company's CFO did not approve the financial statements. The most likely reason for CFO's disapproval is that:

A. The treasury stock is incorrectly valued based on par value instead of being valued at the acquisition price.
B. The treasury stock is incorrectly valued based on par value instead of being valued at the current market rate.
C. The par value of the treasury stock should be presented as a deduction from par value of issued shares of the same class.
D. The treasury stock should be reported as an asset.

In the cost method, the treasury stock account is debited for the cost of the shares reacquired. Therefore, the value of treasury stocks should be $40,000 (10,000 shares × $4), valued at the acquisition price.

**Question 7:**

During January year 2, Metro Co., which maintains a perpetual inventory system, recorded the following information pertaining to its inventory:

<table>
<thead>
<tr>
<th>Units on hand</th>
<th>Units</th>
<th>Unit cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance on 1/1/Y2</td>
<td>1,000</td>
<td>$1</td>
<td>$1,000</td>
</tr>
<tr>
<td>Purchased on 1/7/Y2</td>
<td>600</td>
<td>3</td>
<td>1,800</td>
</tr>
<tr>
<td>Sold on 1/20/Y2</td>
<td>900</td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>Purchased on 1/25/Y2</td>
<td>400</td>
<td>5</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Under the LIFO method, what amount should Metro report as inventory at January 31, year 2?

A. $1,300
B. $2,700
C. $3,900
D. $4,100

LIFO stands for last-in, first-out; this means that it is assumed that any units sold are the units most recently purchased. In a perpetual system, LIFO is
applied at the time of each sale rather than once a year as in a periodic system. Using LIFO, the 900 units sold on 1/20/Y2 would consist of the 600 units purchased on 1/7/Y2 and 300 of the 1,000 units in the 1/1/Y2 balance. This would leave in inventory 700 units from the 1/1/Y2 balance. After the 1/25/Y2 purchase, inventory included those 700 units plus the 400 units purchased on 1/25/Y2. Therefore, ending inventory is $2,700 \([(700 \times $1) + (400 \times $5)]\).

**Question 8:**

A company has outstanding accounts payable of $30,000 and a short-term construction loan in the amount of $100,000 at year end. The loan was refinanced through issuance of long-term bonds after year end but before issuance of financial statements. How should these liabilities be recorded in the balance sheet?

A. Long-term liabilities of $130,000.
B. Current liabilities of $130,000
C. Current liabilities of $30,000, long-term liabilities of $100,000
D. Current liabilities of $130,000, with required footnote disclosure of the refinancing of the loan

The accounts payable is a current liability. The refinancing resulted in reclassifying the construction loan (which would otherwise also be current) as a noncurrent liability. The replacement of the loan with a noncurrent liability (bonds) took place before the financial statements were issued, thus meeting the requirements for refinancing on a long-term basis.

**Question 9:**

Rogers Electronics is planning to make a market in the company's stock. The company's CFO suggests the reacquisition of shares. Which of the following is most likely to happen if the CFO's suggestion is implemented?

A. The risk of takeovers by competitors will increase.
B. This will hinder exercise of employee stock options.
C. The stock price will increase.
D. This could serve as an indication of the company's negative outlook about its future performance.

Reacquisition reduces the number of shares a company has outstanding without altering the value of the company. Therefore, the stock price of the company will increase.

**Question 10:**
Shelton Devin Corp. has two subsidiaries, of which 30% of ownership in each subsidiary lies with Shelton Devin. The CEO of the company is not in favor of presenting consolidated financial statements. Based on the information, which of the following is most likely true?

A. The decision of the CEO is correct as companies are required to issue consolidated statements only when the ownership exceeds 50%.

B. The decision of the CEO is wrong as companies are required to issue consolidated statements when the ownership exceeds 20%.

C. The decision of the CEO is wrong as companies are required to issue consolidated statements only if they hold more than ten subsidiaries.

D. The decision of the CEO is correct as companies are required to issue consolidated statements when they have three or more subsidiaries.

As required by ASC 810 Consolidation (formerly SFAS No. 94, Consolidation of All Majority-Owned Subsidiaries), all companies with subsidiaries are required to issue consolidated statements including each subsidiary they control, usually meaning 50% or more ownership.

**Question 11:**

The following information was derived from the 2005 accounting records of Clem Co.:

<table>
<thead>
<tr>
<th></th>
<th>Clem's central warehouse</th>
<th>Clem's goods held by consignees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory</td>
<td>$110,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>Purchases</td>
<td>480,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Freight-in</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>Transportation to consignees</td>
<td></td>
<td>5,000</td>
</tr>
<tr>
<td>Freight-out</td>
<td>30,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Ending inventory</td>
<td>145,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

Clem's 2005 cost of sales was

A. $455,000

B. $485,000

C. $507,000

D. $512,000

The goods on consignment are included in Clem's inventory and therefore are included in the computation of Clem's cost of goods sold. The only costs not included in the computation are the two freight-out...
costs. Freight-out is a distribution expense. This cost does not contribute to the process of placing the goods into salable condition. Only costs that assist in placing goods into salable condition are inventoried. Because this cost is required to place those items on consignment, freight-in is an inventoriable cost, as is transportation to consignees.

Beginning inventory $110,000 + $12,000 = $122,000
Plus purchases $480,000 + $60,000 = 540,000
Plus freight-in $10,000 = 10,000
Plus trans. in to consignees $5,000 = 5,000
Less ending inventory $145,000 + $20,000 = (165,000)
Equals cost of goods sold $512,000

Question 12:
Sandra Bellucci, a financial analyst, is analyzing inventory of companies from four different industries: consumer goods, sports goods manufacturers, electronics, and aircraft manufacturers. Assuming that the inventory valuation methods reflect the actual flow of inventory and the inventory includes finished goods only, which of the following industries will most likely have zero last in, first out (LIFO) reserve?

A. Consumer goods.
B. Sports goods manufacturers.
C. Electronics.
D. Aircraft manufacturers.

Since this industry deals with high-value and customized orders, the production usually starts after the order is received. Since there will not be any equipment lying in inventory, the inventory balance will be zero, irrespective of the method of valuation used. Therefore, the balance in LIFO reserve will most likely be zero.

Question 13:
Brass Co. reported income before income tax expense of $60,000 for 2000. Brass had no permanent or temporary timing differences for tax purposes. Brass has an effective tax rate of 30% and a $40,000 net operating loss carry-forward from 1999. What is the maximum income tax benefit that Brass can realize from the loss carry-forward for 2000?

A. $12,000
B. $18,000
C. $20,000
The net operating loss (NOL) carry-forward of $40,000 is negative taxable income from the past that can be used to absorb future taxable income. With no temporary or permanent differences, we can assume taxable income and pre-tax accounting income are the same. The full amount of the NOL can be used to absorb $40,000 of 2000 income, saving $12,000 of tax ($40,000 x .30). The firm will pay only $6,000 in tax for the 2000 tax year ($60,000 - $40,000) x .30. The savings of $12,000 are the realization of the tax benefit recognized in previous years, when the firm recorded a deferred tax asset for the future tax benefit of the NOL.

**Question 14:**
Gow Constructors, Inc. has consistently used the percentage-of-completion method of recognizing income. In 2004, Gow starts work on an $18mn construction contract that is completed in 2005. The following information is taken from Gow's 2004 accounting records:

- Progress billings: $6.6mn
- Costs incurred: $5.4mn
- Collections: $4.2mn
- Estimated costs to complete: $10.8mn

What amount of gross profit should Gow have recognized in 2004 on this contract?

A. $1.4mn
B. $1.2mn
C. $900,000
D. $600,000

Percentage of completion for 2004 = $5.4mn/($5.4mn + $10.8mn) = 33%. Gross profit recognized in 2004 = .33[$18mn - ($5.4mn + $10.8mn)] = $600,000. The denominator of the proportion of completion, which is estimated total project cost, includes cost to date and costs remaining. The proportion is multiplied by total estimated project profit, the difference between contract price and total estimated project cost.

**Question 15:**
The management accountant of Clifford Products has decided to value inventory using last in, first out (LIFO) to reduce its tax expense. Under which of the following situations can the decision of management accountant go wrong?
A. When the LIFO reserve has zero balance during rising prices.

B. When the prices are rising and LIFO liquidation has occurred.

C. When LIFO includes inventory holding gains in the net income.

D. When the company uses LIFO only for external financial reporting and average cost method for internal reporting.

During rising prices, LIFO liquidation results in higher levels of income, thereby increasing the tax expense. Hence, LIFO liquidations can reduce the benefits of valuation of inventory using LIFO.

**Question 16:**

AICPA.910512FAR-P2-FA

The following stock dividends were declared and distributed by Sol Corp:

<table>
<thead>
<tr>
<th>Percentage of common shares outstanding at declaration date</th>
<th>Fair value</th>
<th>Par value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>$15,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>28</td>
<td>40,000</td>
<td>30,800</td>
</tr>
</tbody>
</table>

What aggregate amount should be debited to retained earnings for these stock dividends?

A. $40,800

B. **$45,800**

C. $50,000

D. $55,000

Small stock dividends (less than 25%) are capitalized at the fair value of stock issued and large stock dividends (greater than 25%) are capitalized at the par value of stock issued.

The total amount capitalized (debited) to retained earnings, therefore, is $15,000 for the 10% stock dividend (fair value), plus $30,800 for the 28% stock dividend (par value) for a total of $45,800.

**Question 17:**

AICPA.110600FAR

Which of the following is included in other comprehensive income?

A. Unrealized holding gains and losses on trading securities.

B. Unrealized holding gains and losses that result from a transfer of a security from available-for-sale category to the trading category.
C. Foreign currency translation adjustments.

D. The difference between the accumulated benefit obligation and the fair value of pension plan assets.

Foreign currency translation adjustments are reported in other comprehensive income.

Question 18:

Mobe Co. reported the following operating income (loss) for its first three years of operations:

Year 1 $300,000
Year 2 (700,000)
Year 3 1,200,000

For each year, there were no deferred income taxes, and Mobe's effective income tax rate was 30%. In its year 2 income tax return, Mobe elected to carry back the maximum amount of loss possible. Additionally, there was more negative evidence than positive evidence concerning profitability for Mobe in year 3. In its year 3 income statement, what amount should Mobe report as total income tax expense?

A. $120,000
B. $150,000
C. $240,000
D. $360,000

A deferred tax liability or asset is recognized for all temporary differences and operating loss carryforwards. In year 2, Mobe would prepare the following entries:

Tax refund receivable ($300,000 × 30%) 90,000
Deferred tax asset ($400,000 × 30%) 120,000
Tax loss benefit (income tax expense) 210,000
Tax loss benefit (income tax expense) 120,000
Allowance to reduce deferred tax asset to realizable value 120,000

The tax refund receivable results from carrying $300,000 of the year 2 loss back to offset year 1 taxable income. The deferred tax asset results from the potential carryforward of the remaining $400,000 loss ($700,000 - $300,000). However, the inconsistent performance of the company (profitable operations in the first year, loss in the second year) coupled with the lack of positive evidence concerning future operations indicate that at
the end of year 2 it is more likely than not that none of the deferred tax asset will be realized. Therefore, Mobe must establish a valuation allowance to reduce this asset to its expected realizable value. In year 3, the entries are

Income tax expense ($1,200,000 × 30\%) 360,000
Deferred tax asset 120,000
Income taxes payable [($1,200,000 − $400,000) × 30\%] 240,000
Allowance to reduce deferred tax asset to realizable value 120,000
Benefit due to loss carryforward (income tax expense) 120,000

**Income taxes payable** is year 3 income of $1,200,000 less the $400,000 loss carryforward, times 30\%. Total income tax expense for year 3 is $240,000 ($360,000 − $120,000). Note that if the facts had indicated positive evidence following year 2 for year 3 operations, the allowance account would not have been recognized and year 3 expense would have been $360,000.

**Question 19:**

The suppliers of a company provide cash discounts at 1/10, n/40. Other suppliers offer cash discounts of 3/10, n/40. Assuming the current market borrowing rate is 15\%, which of the following decisions should the company take?

A. The company should not avail itself of the cash discount as the scheme represents an opportunity cost of 12.29\%, which is lower than the market borrowing rate.

B. The company should avail itself of the cash discount as the scheme represents an opportunity cost of 37.63\%, which is higher than the market borrowing rate.

C. The company should make payments in 35 days to break even with the market rate of borrowing.

D. The company should not avail itself of the cash discount as the scheme represents an opportunity cost of 37.63\%, which is higher than the market borrowing rate.

The opportunity cost is calculated as follows:

\[
\text{Effective Cost of Discount} = \frac{\text{Discount \%}}{(100 - \text{Discount \%})} \times \frac{365}{(\text{Net Period} - \text{Discount Period})}
\]

\[
= \frac{1 \%}{(100 - 1)\%} \times \frac{365}{(40 - 10)} = 12.29\%
\]
Since, the opportunity cost of the discount is lower than the market rate of borrowing, the company will not benefit by availing itself the cash discount.

Question 20:
Calvin Software has invested in the equity stock of BioTech Corp. Its holdings consisted of 35% of the voting stock. The CFO suggests acquiring more stock of BioTech Corp. Based on the information, which of the following will be true?

A. Additional acquisitions beyond 15% will require Calvin Software to issue consolidated financial statements.
B. Calvin's total value will decrease as incidental costs of acquisition must be subtracted when holdings exceed 35%.
C. The circumstances leading to the decision to acquire additional shares shall be disclosed in the notes to the financial statements.
D. Any additional acquisition of assets up to 20% should be classified as held to maturity.

When an investor acquires an interest in the investee, the acquired percentage of voting stock determines the method of accounting. If the holdings are greater than 50%, the investor company needs to issue consolidated financial statements.

Question 21:
Marsh Company had 150 units of product A on hand at January 1, year 2, costing $21 each. Purchases of product A during the month of January were as follows:

<table>
<thead>
<tr>
<th>Units</th>
<th>Unit cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 10 200</td>
<td>$22</td>
</tr>
<tr>
<td>18 250</td>
<td>23</td>
</tr>
<tr>
<td>28 100</td>
<td>24</td>
</tr>
</tbody>
</table>

A physical count on January 31, year 2, shows 250 units of product A on hand. The cost of the inventory at January 31, year 2, under the LIFO method is

A. $5,850
B. $5,550
C. $5,350
D. $5,250
LIFO stands for last-in, first-out; this means that the cost of the units purchased most recently are included in cost of goods sold. Therefore, the 1/31/Y2 inventory consists of the 250 units that were purchased at the earliest date(s). Thus, the 1/31/Y2 inventory would consist of the 150 units on hand at 1/1/Y2 (150 × $21 = $3,150) plus an additional 100 units purchased at the earliest purchase date in January (January 10; 100 × $22 = $2,200). The total value of the inventory at 1/31/Y2 would be $5,350 ($3,150 + $2,200).

Question 22:

South Co. purchased a machine that was installed and placed in service on January 1, 2004 at a cost of $240,000. Salvage value was estimated at $40,000. The machine is being depreciated over 10 years by the double declining balance method. For the year ended December 31, 2005, what amount should South report as depreciation expense?

A. $48,000
B. $38,400
C. $32,000
D. $21,600

Depreciation in 2004 = $240,000(2/10) = $48,000
Depreciation in 2005 = ($240,000-$48,000)(2/10) = $38,400

The DDB method's rate is always twice the straight-line rate, or 2/useful life. The method does not subtract salvage value when computing depreciation, but it also does not reduce book value below salvage value. The depreciation in any year is the rate times the beginning net book value of the asset.

Question 23:

In which one of the following cases is an investor most likely to use the equity method to carry and report an investment in an investee?

A. Investor owns 15% of the voting stock of the investee and has no other affiliation with the investee.
B. Investor owns 40% of the voting stock of the investee, and the investee is in bankruptcy.
C. Investor is a manufacturing firm that owns 25% of the voting stock of a consulting firm.
D. Investor owns 30% of the voting stock of the investee but is unable to obtain representation on the investee's Board of Directors or obtain significant information from the investee.

An investor that owns 25% of the voting stock of an investee, in the absence of evidence to the contrary, is presumed to be able to exercise significant influence over the investee. The fact that the investor and the investee are in different lines of business generally does not mitigate the influence the investor is able to exercise.

**Question 24:**
AICPA.910522FAR-TH-FA

For a marketable-equity securities portfolio classified as available-for-sale, which of the following amounts should be included in the period's net income?

I. Unrealized temporary losses during the period.

II. Realized gains during the period.

III. Changes in the valuation allowance during the period.

A. III only.

B. II only.

C. I and II.

D. I, II, and III.

On available-for-sale securities, only realized gains (from sale or reclassification) are recognized in the period. These securities are not sold for the purpose of relatively quick sale. Rather, they are held for different purposes and may be held long-term. The unrealized changes in market value are recorded in owners' equity.

**Question 25:**
AICPA.920524FAR-TH-FA

When the FIFO inventory method is used during periods of rising prices, a perpetual inventory system results in an ending inventory cost that is

A. The same as in a periodic inventory system.

B. Higher than in a periodic inventory system.

C. Lower than in a periodic inventory system.

D. Higher or lower than in a periodic inventory system, depending on whether physical quantities have increased or decreased.
FIFO produces the same results for periodic and perpetual systems. FIFO always assumes the sale of the earliest goods acquired. Therefore, unlike LIFO periodic, goods can never be assumed sold before they are acquired.

Cost of goods sold and ending inventory are the same under FIFO for both a periodic and a perpetual system.

**Question 26:**

Gar Co. factored its receivables. Control was surrendered in the transaction which was on a without recourse basis with Ross Bank. Gar received cash as a result of this transaction, which is best described as a

A. Loan from Ross collateralized by Gar's accounts receivable.

B. Loan from Ross to be repaid by the proceeds from Gar's accounts receivable.

C. Sale of Gar's accounts receivable to Ross, with the risk of uncollectible accounts retained by Gar.

D. Sale of Gar's accounts receivable to Ross, with the risk of uncollectible accounts transferred to Ross.

When receivables are factored and control is surrendered the transaction is treated as a sale. A transfer in which control is surrendered will not be treated as a borrowing. The risk of uncollectible accounts is not retained by the seller in a sale without recourse.

**Question 27:**

The weighted-average for the year inventory cost flow method is applicable to which of the following inventory systems?

<table>
<thead>
<tr>
<th>Periodic</th>
<th>Perpetual</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B. Yes</td>
<td>No</td>
</tr>
<tr>
<td>C. No</td>
<td>Yes</td>
</tr>
<tr>
<td>D. No</td>
<td>No</td>
</tr>
</tbody>
</table>

The weighted-average method computes a weighted-average unit cost of inventory for the entire period and is used with periodic records. The moving-average method requires that a new unit of cost be computed each time new goods are purchased and is used with perpetual records.

**Question 28:**

Under which of the following situations will a company appropriate, or restrict, its retained earnings?
A. When the company has potentially dilutive shares outstanding.

B. When the company has disclosed contingent liabilities in footnotes.

C. When the dividends paid by the company are more than the industry average.

D. When the fair value of one or more securities cannot be determined.

Reasons that a firm might appropriate, or restrict, retained earnings include:

- Loss contingencies (such as pending lawsuits).
- Legal restrictions related to treasury stock.
- Contractual restrictions related to bond indentures.
- Plant expansion or debt retirement.

Question 29:
Verona Co. had $500,000 in short-term liabilities at the end of the current year. Verona issued $400,000 of common stock subsequent to the end of the year, but before the financial statements were issued. The proceeds from the stock issue were intended to be used to pay the short-term debt. What amount should Verona report as a short-term liability on its balance sheet at the end of the current year?

A. $0

B. $100,000

C. $400,000

D. $500,000

There is no net use of current assets to liquidate the $400,000 amount of the liabilities because the stock issuance provided the necessary cash. Only the remaining $100,000 is classified as current.

Question 30:
A company decided to change its inventory valuation method from FIFO to LIFO in a period of rising prices. What was the result of the change on ending inventory and net income in the year of the change?

<table>
<thead>
<tr>
<th>Ending inventory</th>
<th>Net income</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Increase</td>
<td>Increase</td>
</tr>
<tr>
<td>B. Increase</td>
<td>Decrease</td>
</tr>
</tbody>
</table>
Ending inventory  Net income

C. Decrease  Decrease
D. Decrease  Increase

Ending inventory would decrease because under LIFO, the latest items purchased (and therefore the most costly) are considered sold, leaving the earliest items purchased (and therefore the least costly) in inventory. This is opposite to the effect under FIFO. The same is true for net income because now, under LIFO, cost of goods sold is increased relative to FIFO because the cost of the latest and most costly items are considered sold first.

Question 31:
AICPA.930506FAR-P1-FA

On April 1, 2004, Hyde Corp., a newly formed company, had the following stock issued and outstanding:

- Common stock, no par, $1 stated value, 20,000 shares originally issued for $30 per share.
- Preferred stock, $10 par value, 6,000 shares originally issued for $50 per share.

Hyde's April 1, 2004 statement of stockholders' equity should report

<table>
<thead>
<tr>
<th>Common stock</th>
<th>Preferred stock</th>
<th>Additional paid-in capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. $20,000</td>
<td>$60,000</td>
<td>$820,000</td>
</tr>
<tr>
<td>B. $20,000</td>
<td>$300,000</td>
<td>$580,000</td>
</tr>
<tr>
<td>C. $600,000</td>
<td>$300,000</td>
<td>$0</td>
</tr>
<tr>
<td>D. $600,000</td>
<td>$60,000</td>
<td>$240,000</td>
</tr>
</tbody>
</table>

Common stock: 20,000($1) = $20,000. Only par value is credited to common stock.

Preferred stock: 6,000($10) = $60,000. Only par value is credited to preferred stock.

Additional paid-in capital (the amount received on issuance in excess of par):
Common: 20,000($30 - $1) = $580,000
Preferred: 6,000($50 - $10) = 240,000
Total $820,000

Question 32:
DETX-00043
Which of the following differences would result in future taxable amounts?

A. Expenses or losses that are deductible after they are recognized in financial income.

B. Revenues or gains that are taxable before they are recognized in financial income.

C. Expenses or losses that are deductible before they are recognized in financial income.

D. Revenues or gains that are recognized in financial income but are never included in taxable income.

Expenses or losses that are deductible before they are recognized in financial income would result in future taxable amounts. For example, the cost of an asset may have been deducted for tax purposes faster than it was depreciated for financial reporting. In future years, tax depreciation will be less than financial accounting depreciation, meaning future taxable income will exceed future financial accounting income.

Question 33:
AICPA.083718FAR-SIM
If ending inventory for 20x5 is understated because certain items were missed in the count, then:

A. Net income for 20x5 will be overstated.

B. CGS for 20x5 will be understated.

C. Net income for 20x5 will be understated, but net income for 20x6 will be unaffected.

D. Net income for 20x5 will be understated and CGS for 20x6 will be understated.

Use the equation BI + PUR = EI CGS. When EI is understated, CGS must be overstated to maintain the equation. Net income, therefore, is understated (20x5). Then next year, BI is also understated because BI for 20x6 is EI for 20x5. Using the equation, if BI is understated, CGS is also understated to maintain the equation.

Question 34:
AICPA.110547FAR
Larkin Co. has owned 25% of the common stock of Devon Co. for a number of years, and has the ability to exercise significant influence over Devon. The following information relates to Larkin's investment in Devon during the most recent year:

Carrying amount of Larkin's investment in Devon at the beginning of the year $200,000

Net income of Devon for the year 600,000
What is the carrying amount of Larkin’s investment in Devon at year end?

A. $100,000
B. $200,000
C. $250,000
D. $350,000

Larkin’s investment in Devon at year end would be computed as the carrying amount of the investment at the beginning of the year ($200,000) + Larkin’s share of Devon’s reported net income for the year ($600,000 x .25 = $150,000) - Larkin’s share of Devon’s dividends paid during the year ($400,000 x .25 = $100,000), or $200,000 + $150,000 - $100,000 = $250,000, the correct answer.

Question 35:
Elsa Fashions wants to eliminate its credit department. It also wants to get cash immediately and continue all operational activities directly with the customers. Which of the following approaches would be the best to fulfill the company’s objectives?

A. Factoring.
B. Securitization.
C. Sale with recourse.
D. Special investment vehicle.

Companies that use factoring get immediate cash and can eliminate their credit department, because factors usually take over these tasks. The company continues all operational activities directly with the customers, such as order placement and fulfillment.

Question 36:
Caleb Corporation has three financial statement elements for which the December 31, year 1 book value is different than the December 31, year 1 tax basis.

<table>
<thead>
<tr>
<th></th>
<th>Book value</th>
<th>Tax basis</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>$200,000</td>
<td>$120,000</td>
<td>$80,000</td>
</tr>
<tr>
<td>Prepaid officer’s insurance policy</td>
<td>75,000</td>
<td>0</td>
<td>75,000</td>
</tr>
<tr>
<td>Warranty liability</td>
<td>50,000</td>
<td>0</td>
<td>50,000</td>
</tr>
</tbody>
</table>
As a result of these differences, future taxable amounts are

A. $ 50,000
B. $ 80,000
C. $155,000
D. $205,000

The officer insurance policy difference ($75,000) is a permanent difference which does not result in future taxable or deductible amounts. The warranty difference ($50,000) is a temporary difference, but it results in future **deductible** amounts in future years when tax warranty expense exceeds book warranty expense. However, the equipment difference ($80,000) is a temporary difference that results in future taxable amounts in future years when tax depreciation is less than book depreciation.

**Question 37:**
Which of the following conditions must exist in order for an impairment loss to be recognized?

I. The carrying amount of the long-lived asset is less than its fair value.
II. The carrying amount of the long-lived asset is not recoverable.

A. I only.
B. II only.
C. Both I and II.
D. Neither I nor II.

The test for impairment for an asset in use is whether the carrying value (book value) is less than its recoverable cost. An asset's recoverable cost is the sum of its estimated net cash inflows projected for its remaining life.

When book value > recoverable cost, the carrying value is not recoverable. In other words, the asset is booked at more than the sum of its future net cash inflows.

For example, if an asset's carrying value is $100 and its recoverable cost is $80, then its carrying value is not recoverable (only $80 is recoverable). The **AMOUNT** of the loss recognized is the difference between carrying value and fair value, but that difference is not used for TESTING whether an asset is impaired.
That difference is not the condition leading to the impairment loss.

Question 38:

The management accountant of Tillboard Inc. has recognized a sale of receivables or factoring in the books for the current year. In doing so, he considered these three factors:

1) Ability of the buyer to sell the asset.
2) Surrender of control.
3) Asset outside the reach of the seller.

Under which of the following situations can the decision of the management accountant go wrong?

A. The seller should be able to use the asset as collateral.
B. The asset is outside the reach of the creditors of the company.
C. The company has an agreement to repurchase the asset before its maturity.
D. The seller is liable for any loss realized or gain earned on the asset.

To be a sale, the transferor must surrender control over the transferred assets. An agreement to repurchase the assets is prohibited for the surrender of control condition to be met.

Question 39:

The calculation of the income recognized in the third year of a five-year construction contract accounted for using the percentage of completion method includes the ratio of

A. Costs incurred in year three to total billings.
B. Costs incurred in year three to total estimated costs.
C. Total costs incurred to date to total billings.
D. Total costs incurred to date to total estimated costs.

The proportion of completion at the end of any year for a construction contract is the amount of work done, divided by the total amount of work required for the contract. Typically, cost is the measure of "work done." At the end of year three, the numerator is the cost incurred for all three years. The denominator is the total estimated cost of the project, which is the sum of

1) the cost incurred for all three years so far, plus
2) estimated costs to complete as of the end of year three.
The percentage of completion changes each year, because both the numerator and denominator change. The gross profit to be reported for year three is the profit for all three years (using the proportion of completion just computed), less the profit already reported in the first two years.

**Question 40:**

<table>
<thead>
<tr>
<th>Units on hand</th>
<th>Units</th>
<th>Unit cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance on 1/1</td>
<td>2,000</td>
<td>$1</td>
<td>$2,000</td>
</tr>
<tr>
<td>Purchased on 1/8</td>
<td>1,200</td>
<td>3</td>
<td>3,600</td>
</tr>
<tr>
<td>Sold on 1/23</td>
<td>1,800</td>
<td></td>
<td>1,400</td>
</tr>
<tr>
<td>Purchased on 1/28</td>
<td>800</td>
<td>5</td>
<td>4,000</td>
</tr>
</tbody>
</table>

Nest uses the LIFO method to cost inventory. What amount should Nest report as inventory on January 31 under each of the following methods of recording inventory?

**Perpetual**

A. $2,600
B. $5,400
C. $2,600
D. $5,400

**Periodic**

A. $2,600
B. $5,400
C. $2,600
D. $5,400

Under the LIFO (last-in, first-out) inventory method, goods sold are assumed to be the most recently acquired goods (at their related costs). Therefore, goods remaining (ending inventory) are assumed to be the earliest acquired goods (at their related costs). If the perpetual LIFO inventory method is used, when goods are sold, they are assumed to be the goods acquired just prior to the sale. Thus, Nest's sale of 1,800 units on 1/23 would have consisted of the 1,200 units acquired 1/8 and 600 units (of the 2,000) in beginning inventory. Ending inventory on January 31 would be:

1,400 units of beginning inventory @ $1 each = $1,400
800 units purchased 1/28 @ $5 each = 4,000
2,200 units in ending inventory reported @ = $5,400

If the periodic LIFO inventory method is used, ending inventory (and cost of goods sold) are determined only at the end of the period. Therefore, Nest’s sale of 1,800 units on 1/23 would have consisted of (by assumption at the
end of the period) 800 units acquired on 1/28 and 1,000 units (of the 1,200) acquired on 1/8. Ending inventory on January 31 would be:

200 units of the 1,200 purchased 1/8 @ $3 = $600
2,000 units (all) of beginning inventory @ $1 = 2,000
2,200 units in ending inventory reported @ = $2,600

Question 41:
Which of the following methods of accounting for inventory is not allowed under IFRS?

A. LIFO.
B. Specific identification.
C. FIFO.
D. Weighted-average.

The LIFO method is not allowed under IFRS. All of the other methods are allowed.

Question 42:
Peel Co. received a cash dividend from a common stock investment. Should Peel report an increase in the investment account if it accounts for the investment as held-for-trading or uses the equity method of accounting?

**Held-for-trading Equity method**

<table>
<thead>
<tr>
<th></th>
<th>Held-for-trading</th>
<th>Equity method</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>C</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>D</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

A dividend never increases the investment account under any accounting method. Under the cost method, the dividend is recorded as revenue. Under the equity method, the dividend is recorded as a decrease in the investment account.

Question 43:
Lee, Inc. acquired 30% of Polk Corp.'s voting stock on January 1, 2004 for $100,000. During 2004, Polk earned $40,000 and paid dividends of $25,000. Lee's 30% interest in Polk gives Lee the ability to exercise significant influence over Polk's operating and financial policies. During 2005, Polk
earned $50,000 and paid dividends of $15,000 on April 1 and $15,000 on October 1.
On July 1, 2005, Lee sold half of its stock in Polk for $66,000 cash.

Before income taxes, what amount should Lee include in its 2004 Income Statement as a result of the investment?

A. $40,000
B. $25,000
C. $12,000
D. $7,500

$12,000 = .30($40,000). Under the equity method, the investor recognizes its share of investee earnings in its own income. The equity method is used because Lee has significant influence over Polk.

Question 44:
A shoe retailer allows customers to return shoes within 90 days of purchase. The company estimates that 5% of sales will be returned within the 90-day period. During the month, the company has sales of $200,000 and returns of sales made in prior months of $5,000. What amount should the company record as net sales revenue for new sales made during the month?

A. $185,000
B. $190,000
C. $195,000
D. $200,000

The effect of estimated returns is recognized in the month of sale. Net sales to be reported for the current month equal $200,000 less the returns expected on those sales (5% or $10,000), or $190,000. The actual returns granted in the current month on previous months' sales were recognized as reductions in net sales in those previous months.

Question 45:
When accounting for income taxes, a temporary difference occurs in which of the following scenarios?

A. An item is included in the calculation of net income, but is neither taxable nor deductible.
B. An item is included in the calculation of net income in one year and in taxable income in a different year.

C. An item is no longer taxable, owing to a change in the tax law.

D. The accrual method of accounting is used.

This answer describes one category of temporary difference. In general, a temporary difference is one for which the item’s recognition takes place at a different rate or time for financial reporting and the tax return. However, the total impact of the item is the same over its life, for both systems of reporting.

**Question 46:**

dtx-0003b

Temporary differences arise when revenues are taxable

<table>
<thead>
<tr>
<th>After they are recognized in financial income</th>
<th>Before they are recognized in financial income</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B. Yes</td>
<td>No</td>
</tr>
<tr>
<td>C. No</td>
<td>No</td>
</tr>
<tr>
<td>D. No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Examples of temporary differences are revenues which are taxable both before and after they are recognized in financial income. Note that emphasis is placed on the difference between book and tax, not the chronological order of the reporting.

**Question 47:**

ives-0033b

On January 2, year 1, Saxe Company purchased 20% of Lex Corporation's common stock for $150,000. Saxe Corporation intends to hold the stock indefinitely. This investment did not give Saxe the ability to exercise significant influence over Lex. During year 1 Lex reported net income of $175,000 and paid cash dividends of $100,000 on its common stock. There was no change in the fair value of the common stock during the year. The balance in Saxe’s investment in Lex Corporation account at December 31, year 1 should be

A. $130,000

B. $150,000

C. $165,000

D. $185,000
The equity method is to be used when the investor owns 20% or more of the investee's voting stock, unless there is evidence that the investor does not have the ability to exercise significant influence over the investee. Since this is the case, Saxe must carry the stock at fair value in the available-for-sale category. Under this method, dividends received are to be recognized as income to the investor, and the investment account is unaffected. Also, under this method, the investor's share of the investee's net income is not recognized. Any changes in the fair value of the stock would be reflected in the book value of the stock with a corresponding amount in a separate account in stockholders' equity. As there has been no change in the fair value, the investment account would still have a balance of $150,000 at 12/31/Y1. Note that the dividends received by Saxe were distributed from Lex's net accumulated earnings since the date of acquisition by Saxe. However, if dividends received had been in excess of earnings subsequent to the investment date, they are considered a return of capital and would be recorded as a reduction in the investment account.

Question 48:
AICPA.090646FAR-11-G

Willem Co. reported the following liabilities at December 31, 2001:

<table>
<thead>
<tr>
<th>Liability</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts payable-trade</td>
<td>$750,000</td>
</tr>
<tr>
<td>Short-term borrowings</td>
<td>400,000</td>
</tr>
<tr>
<td>Mortgage payable, current portion</td>
<td>3,500,000</td>
</tr>
<tr>
<td>Other bank loan, matures June 30, 2002</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

The $1,000,000 bank loan was refinanced with a 20-year loan on January 15, 2002, with the first principal payment due January 15, 2003. Willem's audited financial statements were issued February 28, 2002. What amount should Willem report as current liabilities at December 31, 2001?

A. $850,000  
B. $1,150,000  
C. $1,250,000  
D. $2,250,000

The $1,000,000 loan was successfully refinanced on a long-term basis and therefore was moved to the noncurrent liability category. The refinancing took place before the financial statements were issued, thus meeting the requirements for reclassification on a long-term basis. The remaining items are all current: $750,000 accounts payable + $400,000 short term borrowings + $100,000 current portion of mortgage payable = $1,250,000 total current liabilities.
Question 49:
Bowman Devices values its inventory using last in, first out (LIFO) method. For the current year, the inventory usage exceeded the purchases. Assuming the prices are falling, how will this situation affect net income for the year?

A. Net income will be lower due to higher LIFO liquidation.
B. Net income will be lower due to lower LIFO liquidation.
C. Net income will be higher due to lower LIFO liquidation.
D. Net income will be higher due to higher LIFO liquidation.

If usage of goods exceeds purchases during a period, a situation called LIFO liquidation can occur. If prices are falling, LIFO liquidation results in lower income levels being reported and likely lower taxes as well.

Question 50:
During the year, Hauser Co. wrote off a customer's account receivable. Hauser used the allowance method for uncollectable accounts. What impact would the write-off have on net income and total assets?

<table>
<thead>
<tr>
<th>Net income</th>
<th>Total assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Decrease</td>
<td>Decrease</td>
</tr>
<tr>
<td>B. Decrease</td>
<td>No effect</td>
</tr>
<tr>
<td>C. No effect</td>
<td>Decrease</td>
</tr>
<tr>
<td>D. No effect</td>
<td>No effect</td>
</tr>
</tbody>
</table>

Under the allowance method for uncollectible accounts there is no impact on the balance sheet or net income when the receivable is written off. The estimated uncollectible is recognized at the time of the sale; therefore, when the account is written, off the allowance and the accounts receivable are both reduced resulting in no effect on the income statement or balance sheet.

Question 51:
Goodwill should be tested for value impairment at which of the following levels?

A. Each identifiable long-term asset.
B. Each reporting unit
C. Each acquisition unit
D. The entire business as a whole

Goodwill is included in an asset group when the group is a reporting unit. A reporting unit is an operating segment or one level below.

**Question 52:**

The following information pertained to Azur Co. for the year:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchases</td>
<td>$102,800</td>
</tr>
<tr>
<td>Purchase discounts</td>
<td>10,280</td>
</tr>
<tr>
<td>Freight-in</td>
<td>15,420</td>
</tr>
<tr>
<td>Freight-out</td>
<td>5,140</td>
</tr>
<tr>
<td>Beginning inventory</td>
<td>30,840</td>
</tr>
<tr>
<td>Ending inventory</td>
<td>20,560</td>
</tr>
</tbody>
</table>

What amount should Azur report as cost of goods sold for the year?

A. $102,800  
B. **$118,220**  
C. $123,360  
D. $128,500

Cost of goods sold is determined (in a periodic inventory system) as:

\[
\text{Beginning Inventory} + \text{Net Purchases} = \text{Goods Available for Sale} - \text{Ending Inventory} = \text{Cost of Goods Sold}
\]

Net Purchases includes any purchase discounts (or allowances) and other cost of getting the goods in place and condition for resale, including freight-in. Freight-out (to customers) is a selling cost. Therefore, Azur Co.'s cost of goods sold would be:

\[
\begin{align*}
\text{Beginning Inventory} & \quad 30,840 \\
+ \text{Purchases} & \quad 102,800 \\
- \text{Purchases Discounts} & \quad (10,280) \\
+ \text{Freight-in} & \quad 15,420 \\
+ \text{Net Purchases} & \quad 107,940 \\
= \text{Goods Available for Sale} & \quad 138,780
\end{align*}
\]
Question 53:
When the equity method is used to account for investments in common stock, which one of the following affect(s) the investor's reported investment income?

<table>
<thead>
<tr>
<th>A change in market value of investee's common stock</th>
<th>Cash dividends from investee</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B. Yes</td>
<td>No</td>
</tr>
<tr>
<td>C. No</td>
<td>Yes</td>
</tr>
<tr>
<td>D. No</td>
<td>No</td>
</tr>
</tbody>
</table>

Under the equity method of accounting, changes in the market value of the investee's common stock are ignored. Further, cash dividends received by the investor from the investee are not recognized as investment income; rather they are recognized as a debit to cash and a reduction in (credit to) the investor's investment in investee account.

Question 54:
Which inventory costing method would a company that wishes to maximize profits in a period of rising prices use?

A. FIFO
B. Dollar-value LIFO.
C. Weighted average.
D. Moving average.

FIFO assumes the sale of the earliest goods first. With rising prices, the earliest goods reflect the lowest prices. Therefore, cost of goods sold under FIFO is the lowest of the cost flow assumptions. With the lowest cost of goods sold, gross margin and income are the highest among the available cost flow assumptions (LIFO and average being the others).

Question 55:
Posy Corp. acquired treasury shares at an amount greater than their par value, but less than their original issue price. Compared to the cost method of accounting for treasury stock, does the par value method report a greater amount for additional paid-in capital and a greater amount for retained earnings?
**Additional paid-in capital Retained earnings**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>D</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Under the cost method, when treasury stock is purchased for an amount less than original price, the treasury stock account is debited. This is a contra OE account.

Additional paid-in capital and retained earnings are unaffected. Under the par method, the treasury stock account is debited for par value, and additional paid-in capital is debited for the amount in proportion to the original issue price. Because less was paid for the treasury stock than was received on original issuance, retained earnings is unaffected. Rather, additional paid-in capital from treasury stock is credited for the difference, but not by as much as the debit to the original issuance additional paid-in capital account.

On balance, additional paid-in capital decreases under the par method relative to the cost method, but there is no difference in the effect on retained earnings (neither method affects retained earnings under the conditions in the problem).

**Question 56:**

Under FASB U.S. GAAP, which of the following items would cause earnings to differ from comprehensive income for an enterprise in an industry not having specialized accounting principles?

A. Unrealized loss on investments in noncurrent marketable equity securities.

B. Unrealized loss on investments in current marketable equity securities.

C. Loss on exchange of similar assets.

D. Loss on exchange of dissimilar assets.

Unrealized gains and losses on securities available for sale are among the few items that appear in comprehensive income but not in earnings. Only SAS can be noncurrent. Assuming the current securities are classified as trading securities, then that unrealized loss is included in earnings. This is a change in owners' equity that is not included in earnings and is not the result of a transaction with owners. It is an "other" comprehensive income item. "Other" refers to other than net income, which is the largest
component of comprehensive income. The remaining items are recognized in income.

Question 57:
Vore Corp. bought equipment on January 2, 2004 for $200,000. This equipment had an estimated useful life of five years and a salvage value of $20,000. Depreciation was computed by the 150% declining balance method. The accumulated depreciation balance at December 31, 2005 should be:

A. $102,000
B. $98,000
C. $91,800
D. $72,000

Depreciation in 2004 = $200,000(1.50/5) = $60,000
Depreciation in 2005 = ($200,000-$60,000)(1.50/5) = 42,000
Accumulated depreciation balance at the end of 2005 $102,000

The declining balance class of depreciation method does not deduct salvage value when computing depreciation although care must be taken not to depreciate the asset below salvage value. Also, the rate of depreciation applied to book value is the percentage of the method (150% in this case) divided by the useful life of the asset. Double declining balance, for example, is 200%/n or 2/n where n = useful life.

Question 58:
Comprehensive income for a period is the:

A. Sum of other comprehensive income items for the period.
B. Change in total owners’ equity from all sources, other than from transactions with owners acting as owners.
C. Sum of net income and other comprehensive income for the period.
D. Change in total owners’ equity for the period.

Comprehensive income is considered an overall measure of income and includes other comprehensive income. The latter is the net sum across four items: foreign currency adjustments, derivative gains and losses, unrealized gains and losses on securities available for sale, and certain pension adjustments. The latter four items are similar to income items but are not currently included in net income. Thus, comprehensive income is
considered a broader and more inclusive measure of income than net income reported in the Income Statement.

**Question 59:**
AICPA.083748FAR-SIM
When preferred stock is called and retired, which account or aggregate category of accounts can be increased?

<table>
<thead>
<tr>
<th>Total Owners' Equity Retained Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
</tr>
<tr>
<td>B. No</td>
</tr>
<tr>
<td>C. Yes</td>
</tr>
<tr>
<td>D. No</td>
</tr>
</tbody>
</table>

When a firm retires preferred stock, cash is paid to the shareholders reducing total owners' equity. Retained earnings can never be increased when shares are retired, redeemed, or converted into another class of stock.

**Question 60:**
AICPA.101075FAR
When should a long-lived asset be tested for recoverability?

A. When external financial statements are being prepared.

B. When events or changes in circumstances indicate that its carrying amount may not be recoverable.

C. When the asset's carrying amount is less than its fair value.

D. When the asset's fair value has decreased, and the decrease is judged to be permanent.

Long-lived assets need to be tested for impairment when facts or circumstances indicate that the carrying amount may not be recoverable. An indication that the carrying value is no longer recoverable includes innovations in technology which may make the product or process obsolete.

**Question 61:**
AICPA.930510FAR-TH-FA
In 2003, Fogg, Inc. issued $10 par value common stock for $25 per share. No other common stock transactions occurred until March 31, 2005, when Fogg acquired some of the issued shares for $20 per share and retired them. Which of the following statements correctly states an effect of this acquisition and retirement?

A. 2005 net income is decreased.
B. 2005 net income is increased.

C. Additional paid-in capital is decreased

D. Retained earnings is increased

Additional paid-in capital is reduced when stock is retired because the additional paid-in capital from treasury stock transactions is closed. The other three alternative answers cause income to change or retained earnings to increase. Retained earnings can never be increased through transactions with owners, nor can income be affected by such transactions.

Question 62:

On April 1, Aloe, Inc. factored $80,000 of its accounts receivable without recourse. The factor retained 10% of the accounts receivable as an allowance for sales returns and charged a 5% commission on the gross amount of the factored receivables. What amount of cash did Aloe receive from the factored receivables?

A. $68,000
B. $68,400
C. $72,000
D. $76,000

The net cash received when the receivables were factored was $80,000 x .85 (100% - 10% - 5%) = $68,000.

Question 63:

When an inventory overstatement in year one counterbalances in year two, this means:

A. There are no reporting errors, even if the overstatement is never discovered.

B. A prior period adjustment is recorded if the error is discovered in year three.

C. The year one Balance Sheet does not need to be restated if the error is discovered in year three.

D. A prior period adjustment is recorded if the error is discovered in year two.

Counterbalancing simply means that the effect of the inventory error in the second year is opposite that of the first year. Discovery in year two provides an opportunity for the firm to correct year two beginning retained earnings, which is overstated by the error in year one. The overstatement
of inventory in year one caused cost of goods sold to be understated and income overstated in year one. The prior period adjustment, dated as of the beginning of year two, is a debit to retained earnings for the after-tax effect of the income overstatement in year one. Inventory is credited for the amount of the overstatement. This allows year two to begin with corrected balances.

**Question 64:**
AICPA.101092FAR

A contractor recognizes $42,000 of gross profit on a contract at the end of year one of the contract under the percentage-of-completion method. At the end of year two, the gross profit to be recognized for both years together is $34,000. The total anticipated gross profit on the project estimated at the end of year two is $78,000. What amount of gross profit is to be recognized for year two alone?

A. $78,000  
B. $34,000  
C. $8,000  
D. $0

This is an example of a single-period loss on a profitable contract. The loss for year two is computed as: $34,000 gross profit through year two - $42,000 gross profit year one = - $8,000 single-period loss. The loss "reverses" $8,000 of the $42,000 gross profit recognized in year one.

**Question 65:**
AICPA.020507FAR-FA

During periods of inflation, a perpetual inventory system would result in the same dollar amount of ending inventory as a periodic inventory system under which of the following inventory valuation methods?

<table>
<thead>
<tr>
<th></th>
<th>FIFO</th>
<th>LIFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>B.</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>C.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>D.</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Under a perpetual inventory system, the cost of goods sold (COGS) is determined at the time of each sale. In a perpetual FIFO inventory system, the cost of each sale (COGS) would be based on the cost of the earliest acquired goods on hand at the time of the sales. The cost of the most recently acquired goods would remain in ending inventory. In a perpetual LIFO inventory system, the cost of each sale (COGS) would be based on
the cost of goods acquired just prior to the sale. The cost of the earlier acquired goods would remain in inventory.

Under a periodic inventory system, the costs of goods sold (COGS) and ending inventory are determined only at the end of the period. In a periodic FIFO inventory system, the cost of sales for the period (COGS) would be based on the cost of the earliest acquired goods available during the period. The cost of the most recently acquired goods would remain in ending inventory. In a periodic LIFO inventory system, the cost of sales for the period (COGS) would be based on the last goods acquired during the period. The cost of the earliest acquired goods would remain in ending inventory. The above descriptions can be summarized as follows for determination of COGS:

<table>
<thead>
<tr>
<th>Inventory System/Method</th>
<th>Cost of goods sold determined using FIFO</th>
<th>Cost of goods sold determined using LIFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perpetual</td>
<td>Earliest goods acquired</td>
<td>Latest goods acquired prior to each sale</td>
</tr>
<tr>
<td>Periodic</td>
<td>Earliest goods acquired</td>
<td>Latest goods acquired during the period</td>
</tr>
</tbody>
</table>

Since cost of goods sold for the period would be the same under both perpetual FIFO and periodic FIFO, ending inventory would be the same under both perpetual FIFO and periodic FIFO. Cost of goods sold (and ending inventory) would not be the same under perpetual LIFO as under periodic LIFO because the perpetual system recognizes cost of goods sold based on the cost of goods acquired just prior to each sale, whereas the periodic system recognizes cost of goods sold based on cost of goods acquired prior to the end of each period.

**Question 66:**

A retailer failed to record a purchase of inventory on credit near the end of the current year. The goods did arrive and were included in the inventory count. The purchase will be recorded next year, when the goods are paid for. As a result,

A. Cost of goods sold is understated for the current year.

B. Net income for next year is overstated.

C. Income tax expense for the next year is overstated.

D. By the end of next year, all of the effects of the error will be automatically eliminated.

The error affects purchases but not ending inventory. Therefore, cost of goods sold for the current period is understated because goods available is
understated. When ending inventory (which is not in error) is subtracted from goods available, cost of goods sold is understated by the amount of the understatement in purchases.

**Question 67:**

How would the declaration of a 15% stock dividend by a corporation affect each of the following?

<table>
<thead>
<tr>
<th>Retained earnings</th>
<th>Total stockholders' equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. No effect</td>
<td>No effect</td>
</tr>
<tr>
<td>B. No effect</td>
<td>Decrease</td>
</tr>
<tr>
<td><strong>C. Decrease</strong></td>
<td><strong>No effect</strong></td>
</tr>
<tr>
<td>D. Decrease</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Retained earnings are debited in a stock dividend, and common stock and possibly additional paid-in capital are credited. Therefore, retained earnings are reduced, but total owners' equity is unchanged, because all accounts affected by the stock dividend are owners' equity accounts.

**Question 68:**

Taylored Corp. factored $400,000 of accounts receivable to Rich Corp. on July 1, year 2. Control was surrendered by Taylored. Rich accepted the receivables subject to recourse for nonpayment. Rich assessed a fee of 2% and retains a holdback equal to 5% of the accounts receivable. In addition, Rich charged 15% interest computed on a weighted-average time to maturity of the receivables of forty-one days. The fair value of the recourse obligation is $12,000. Which of the following statements is correct?

A. Rich should record an asset of $8,000 for the recourse obligation.

B. Taylored should record a liability and corresponding loss of $12,000 related to the recourse obligation.

C. Taylored should record a liability of $12,000, but no loss, related to the recourse obligation.

D. No entry for the recourse obligation should be made by Taylored or Rich until the debtor fails to pay.

A sale of receivables with recourse is recorded using a financial components approach because the seller has a continuing involvement. Under this approach the seller would reduce receivables, recognize assets obtained and liabilities incurred, and record gain or loss. The entry would be

```
Cash           $365,260
```
Factor's holdback 20,000
Loss 26,740 *
   Accounts receivable $400,000
   Recourse liability 12,000
* ($6,740 + $8,000 + $12,000)

Question 69:
A customer of Irving Gemstones owed $20,000 on account. Due to nonreceipt of payments after 5 months of the due date, the amount was written off as doubtful using the direct write-off method. After 2 years, the customer paid the full amount due. How should this transaction be journalized?

A. The amount received should be debited to Cash and credited to the Accounts Receivable account.
B. The amount received should be debited to Accounts Receivable and credited to the Allowance for Doubtful accounts.
C. The amount received should be debited to Cash and credited to a revenue account, such as Uncollectible Accounts Recovered.
D. The amount received should be debited to the Allowance for Doubtful accounts and credited to Accounts Receivable.

If an account written off using the direct write-off method is subsequently collected, the amount is debited to Cash and credited to a revenue account, such as Uncollectible Accounts Recovered.

Question 70:
Brendan Bishop Scientific is considering acquisition of a plant in exchange of the par value of its stock. However, the CFO is not in favor of the acquisition. Which of the following is the most likely reason for the CFO's disagreement?

A. The company has fewer amounts of long-term assets.
B. The company's stock is most likely overpriced.
C. It is difficult to estimate the net realizable value of the asset and, hence, difficult to estimate the annual depreciation expenses.
D. The true cost of the asset cannot be determined as the stock's trading activity should also be considered.

When property, plant, and equipment assets are acquired through the issuance of stock or other securities, the par value of the stock will be inadequate to measure the true cost of the property. Instead, if the stock is being actively traded, its current market value is used. If the stock value
cannot be determined because the stock is not actively traded, an estimate of the market value of the property should be made and used as the basis for recording the value of both the asset and the issuance of the stock.

Question 71:

What amount should Mill recognize as gross profit for 2005?

A. $250,000  
B. $375,000  
C. $500,000  
D. $600,000

The project is 12.5% complete at the end of 2005 ($2mn/$16mn). Total gross profit through the end of 2005 is therefore $500,000 [= .125($20mn - $16mn)]. The $500,000 amount is the proportion of completion applied to the total contract profit of $4mn. 2005 is the first year of construction; therefore, no gross profit from previous years is subtracted. The entire $500,000 gross profit is recognized in 2005.

Question 72:
When the allowance method of recognizing uncollectible accounts is used, the entry to record the write-off of a specific account

A. Decreases both accounts receivable and the allowance for uncollectible accounts.  
B. Decreases accounts receivable and increases the allowance for uncollectible accounts.  
C. Increases the allowance for uncollectible accounts and decreases net income.  
D. Decreases both accounts receivable and net income.

The entry is:

Allowance for uncollectible accounts XXXX  
Accounts receivable XXXX
Both accounts are decreased.

The entry identifies the specific accounts receivable written off. That reduction takes the place of the earlier estimate, which created the allowance account in the first place.

Question 73:

In its December 31 balance sheet, Butler Co. reported trade accounts receivable of $250,000 and related allowance for uncollectible accounts of $20,000. What is the total amount of risk of accounting loss related to Butler's trade accounts receivable, and what amount of that risk is off-balance sheet risk?

<table>
<thead>
<tr>
<th>Risk of accounting loss</th>
<th>Off-balance sheet risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. $0</td>
<td>$0</td>
</tr>
<tr>
<td>B. $230,000</td>
<td>$0</td>
</tr>
<tr>
<td>C. $230,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>D. $250,000</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

This question requires an understanding of two accounting concepts:

1. Risk of accounting loss on accounts receivable (credit risk). This is the risk of loss resulting from not collecting amounts due from sales made on credit, and is the total amount of loss that Butler would suffer if those who owe it failed to make any payments and the receivables proved to be of no value. Since Butler's net carrying value of accounts receivable is $230,000 ($250,000 - $20,000), that is the amount of risk of accounting loss.

2. Off-balance sheet risk: This is the amount of risk of loss that does not show on the balance sheet. Since all of Butler's net accounts receivable show on the balance sheet, there is no off-balance sheet risk associated with the accounts receivable.

Question 74:

A company whose stock is trading at $10 per share has 1,000 shares of $1 par common stock outstanding when the board of directors declares a 30% common stock dividend. Which of the following adjustments should be made when recording the stock dividend?

A. Treasury stock is debited for $300.

B. Additional paid-in capital is credited for $2,700.
C. Retained earnings is debited for $300.

This is a large stock dividend (> 25%); therefore, retained earnings is debited for par value. The amount is the par value of the shares distributed in the dividend, or $1,000(0.30) ($1) = $300. The credit is to common stock for the shares issued.

Question 75:

Carr, Inc. purchased equipment for $100,000 on January 1, 2002. The equipment had an estimated 10-year useful life and a $15,000 salvage value. Carr uses the 200% declining-balance depreciation method. In its 2003 Income Statement, what amount should Carr report as depreciation expense for the equipment?

A. $13,600
B. $16,000
C. $17,000
D. $20,000

The 200% declining balance depreciation method is also called the double declining balance method or DDB. Because this is a declining balance method, the book value at the beginning of 2003 must be computed, and that is affected by depreciation in 2002. For 2002, depreciation under DDB is 2/10 x $100,000 or $20,000. Note that salvage value is not subtracted when computing depreciation because the "declining balance" is book value. For 2003, depreciation is 2/10 x ($100,000-$20,000) = $16,000 because the book value at the beginning of 2003 is reduced by 2002 depreciation.

Question 76:

On December 31, year 1, Taylor, Inc. signed a binding agreement with a bank for the refinancing of an existing note payable scheduled to mature in February, year 2. The terms of the refinancing included extending the maturity date of the note by three years. On January 15, year 2, the note was refinanced. How should Taylor report the note payable in its December 31, year 1 balance sheet?

A. A current liability.
B. A long-term liability.
C. A long-term note receivable
A current note receivable

This is a short-term note that is scheduled to mature within one year. This type of note is excluded from current liabilities and shown as a long-term liability if both the following conditions are met:
1) The company intends to refinance and,
2) The company demonstrates an ability to refinance.
One way a company can demonstrate the ability to refinance is by entering into a financing agreement that permits the company to refinance on a long term basis. Taylor has entered into such an agreement.

Question 77:
AICPA.101061FAR
What is the appropriate treatment for goods held on consignment?

A. The goods should be included in the ending inventory of the consignor.
B. The goods should be included in ending inventory of the consignee.
C. The goods should be included in cost of goods sold of the consignee only when sold.
D. The goods should be included in cost of goods sold of the consignor when transferred to the consignee.

Consigned goods belong to the consignor and are included in the consignor’s ending inventory.

Question 78:
AICPA.910518FAR-TH-FA
On incorporation, Dee Inc. issued common stock at a price in excess of its par value. No other stock transactions occurred except treasury stock was acquired for an amount exceeding this issue price. If Dee uses the par value method of accounting for treasury stock appropriate for retired stock, what is the effect of the acquisition on the following?

<table>
<thead>
<tr>
<th>Net common stock</th>
<th>Additional paid-in capital</th>
<th>Retained earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. No effect</td>
<td>Decrease</td>
<td>No effect</td>
</tr>
<tr>
<td>B. Decrease</td>
<td>Decrease</td>
<td>Decrease</td>
</tr>
<tr>
<td>C. Decrease</td>
<td>No effect</td>
<td>Decrease</td>
</tr>
<tr>
<td>D. No effect</td>
<td>Decrease</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Under the par value method, when treasury stock is purchased and retired at a price exceeding the original issue price, the following entry is made. No additional paid-in capital from treasury stock transactions exists. Therefore, retained earnings is debited. Common stock par Additional paid-in capital original issue price - par Retained earnings acquisition price - original
issuance price Cash acquisition price. Thus, all three accounts listed in the question are decreased.

**Question 79:**

AICPA.070768FAR

At the end of year one, Lane Co. held trading securities that cost $86,000 that had a year-end market value of $92,000. During year two, all of these securities were sold for $104,500. At the end of year two, Lane had acquired additional trading securities that cost $73,000 that had a year-end market value of $71,000. What is the impact of these stock activities on Lane's year two Income Statement?

A. Loss of $2,000.  
B. Gain of $10,500.  
C. Gain of $16,500.  
D. Gain of $18,500

At the end of year one, Lane wrote the trading securities up to their fair value of $92,000. At sale, the gain recognized is, therefore, $104,500-$92,000=$12,500. In addition, Lane had an unrealized holding loss of $73,000-$71,000=$2,000. Together, the net impact on Lane's Income Statement is $12,500-$2,000=$10,500 gain.

**Question 80:**

AICPA.901115FAR-TH-FA

How should the following costs affect a retailer's inventory?

<table>
<thead>
<tr>
<th>Freight-in</th>
<th>Interest on inventory loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Increase</td>
<td>No effect</td>
</tr>
<tr>
<td>B. Increase</td>
<td>Increase</td>
</tr>
<tr>
<td>C. No effect</td>
<td>Increase</td>
</tr>
<tr>
<td>D. No effect</td>
<td>No effect</td>
</tr>
</tbody>
</table>

All costs necessary to prepare inventory for sale are capitalized to inventory. Freight-in is such a cost. The goods must be shipped to the seller's location before they can be sold. Interest on inventory loans is a financing cost. It does not contribute to the process of making the inventory ready for sale.

**Question 81:**

1A2-W007

Warner Machines missed recording purchases worth $10,000 in the current year's income statement. While finalizing the financial statements, the company's accountant detected the error and partially corrected it.
which of the following situations will the company report lower than actual net income?

A. If the accountant has reduced cash by $10,000.

B. If the accountant has only added missing purchases worth $10,000 to the cost of goods sold.

C. If the accountant has only increased accounts payable by $10,000.

D. If the accountant has reduced inventory by $10,000.

When the company misses recording a purchase, but includes the purchase as part of cost of goods sold (COGS) in the income statement, COGS will be understated and the net income will be overstated. The missing $10,000 should have been included both in purchases and in ending inventory, which will result in the COGS being unaffected.

Question 82:
AICPA.130714FAR
A company should recognize goodwill in its balance sheet at which of the following points?

A. Costs have been incurred in the development of goodwill.

B. Goodwill has been created in the acquisition of a business.

C. The company expects a future benefit from the creation of goodwill.

D. The fair market value of the company's assets exceeds the book value of the company's assets.

Goodwill is recognized and measured at the date of a business acquisition. Goodwill is measured as the difference between the consideration transferred in a business acquisition and the fair market value of the identifiable net assets acquired.

Question 83:
AICPA.101134FAR
Falton Co. has the following first-year amounts related to its $9mn construction contract:

Actual costs incurred and paid $2mn
Estimated costs to complete $6mn
Progress billings $1.8mn
Cash collected $1.5mn

What amount should Falton recognize as a current liability at year end, using the percentage-of-completion method?

A. $0
The percentage of completion is \( \frac{\$2\text{mn}}{\$2\text{mn} + \$6\text{mn}} = 25\% \). This is the ratio of cost incurred to date, divided by the total project cost, which is the sum of cost to date and estimated remaining costs. Gross profit recognized is therefore \( 0.25(\$9\text{mn} - \$2\text{mn} - \$6\text{mn}) = \$250,000 \). The contract price is \$1\text{mn} more than the total estimated project cost. At 25% complete, the firm recognizes \$250,000 of gross profit. The construction-in-progress balance is therefore \$2\text{mn} + \$250,000 = \$2.25\text{mn} \), the sum of cost to date, plus gross profit to date. With billings only \$1.8\text{mn} so far, the firm reports a net asset equal to the difference between \$2.25\text{mn} \), the balance in construction in progress, and \$1.8\text{mn} of billings. Billings are contra to construction in progress for reporting. This \$450,000 difference is labeled "cost and profit in excess of billings on long-term contracts" in the balance sheet. No current liability is reported, because the asset balance (construction in progress) exceeds billings.

**Question 84:**

Herc Co.’s inventory on December 31, 2005 was \$1,500,000, based on a physical count priced at cost, and before any necessary adjustment for the following:

- Merchandise costing \$90,000, shipped FOB shipping point from a vendor on December 30, 2005, was received and recorded on January 5, 2006.
- Goods in the shipping area were excluded from inventory although shipment was not made until January 4, 2006. The goods, billed to the customer FOB shipping point on December 30, 2005, had a cost of \$120,000.

What amount should Herc report as inventory in its December 31, 2005, balance sheet?

A. \$1,500,000  
B. \$1,590,000  
C. \$1,620,000  
D. \$1,710,000

The correct ending inventory balance is \$1,710,000 (\$1,500,000 + \$90,000 + \$120,000). The \$90,000 of merchandise is included because it was shipped before year-end and the title was transferred to Herc at the shipping point (before year-end). The \$120,000 also is included because
the goods have not been shipped. The FOB designation is irrelevant because the goods have not yet reached a common carrier.

Question 85:

Amanda Williams, a financial analyst, is converting a last in, first out (LIFO) income statement to a first in, first out (FIFO) income statement to value a stock. She finds it difficult to calculate make the adjustments and develops a mathematical expression to calculate FIFO cost of goods sold (COGS). Which is the most likely expression that she can derive to calculate FIFO COGS for all companies?

A. \[ \text{FIFO COGS} = \text{LIFO COGS} + \text{Change in LIFO reserve} - \text{Tax expenses} \]

B. \[ \text{FIFO COGS} = \text{LIFO COGS} - \text{Change in LIFO reserve} \]

C. \[ \text{LIFO COGS} = \text{FIFO COGS} - \text{Change in LIFO reserve} \]

D. \[ \text{FIFO COGS} = \text{LIFO COGS} - \text{Change in LIFO reserve} + \text{Tax expenses} \]

In simple terms, LIFO reserve is the difference between FIFO inventory and LIFO inventory. Hence the difference is LIFO COGS and FIFO COGS will be the change in LIFO reserve. FIFO COGS = LIFO COGS − Change in LIFO reserve.

Question 86:

Long Co. had 100,000 shares of common stock issued and outstanding at January 1, 2006. During 2006, Long took the following actions:

March 15 - Declared a 2-for-1 stock split, when the fair value of the stock was $80 per share.

December 15 - Declared a $.50 per share cash dividend.

In Long's statement of stockholders' equity for 2006, what amount should Long report as dividends?

A. $50,000

B. $100,000

C. $850,000

D. $950,000

Total shares receiving a dividend equal 200,000, which is twice the number of shares at the beginning of the year. The stock split doubled the number of shares outstanding. Therefore, the total cash dividend is $.50(200,000) = $100,000. This amount will appear in the statement of stockholders' equity as dividends declared.
Question 87:
Which method of recording uncollectible accounts expense is consistent with accrual accounting?

<table>
<thead>
<tr>
<th>Allowance</th>
<th>Direct write-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B. Yes</td>
<td>No</td>
</tr>
<tr>
<td>C. No</td>
<td>Yes</td>
</tr>
<tr>
<td>D. No</td>
<td>No</td>
</tr>
</tbody>
</table>

The allowance method recognizes the estimate of bad debt expense (uncollectible accounts expense) in the year of sale. This is an example of accrual accounting, which measures expenses when incurred and revenues when earned. The direct write-off method recognizes bad debt expense in the year of write-off, which may be after the year of sale. The direct write-off method is not consistent with accrual accounting.

B1: Strategic Planning

Question 1:
Umbra Inc., a business unit of ANB Inc., manufactures widgets. On its BCG Growth-Share Matrix, ANB has identified Umbra as a cash cow. The market for Umbra recently has started growing rapidly, converting it into a high-growth market. Given the changed market conditions, in which of the following situations will Umbra eventually turn into a question mark on the BCG Growth-Share Matrix?

A. If Umbra operates in a market with high entry barriers
B. If Umbra is not able to expand its production capacity
C. If Umbra invests its excess cash in meeting additional demand
D. If ANB decides to sell off all business units identified as dogs

If Umbra is not able to expand its production capacity, it will be unable to capitalize on the opportunity offered by an expanding market. Its market share in the high-growth market will eventually dwindle, and it will turn into a question mark on ANB's growth-share matrix.

Question 2:
If Umbra is not able to expand its production capacity, it will be unable to capitalize on the opportunity offered by an expanding market. Its market share in the high-growth market will eventually dwindle, and it will turn into a question mark on ANB's growth-share matrix.
Which of the following situations will most likely enhance a buyer's bargaining leverage?

A. Purchase of an upstream supplier
B. Larger supplier compared to the buyer
C. Buyer's inability to stockpile inventory
D. Analysis of cost alternatives of smaller identical items

Ability of buyers to backward-integrate will enhance their bargaining leverage. Current prices and/or other terms can make an alternative more attractive than continuing to buy externally.

Question 3:

The management of Mateo Inc., a manufacturer of printer cartridges, has set the following tactical goal for its marketing department: "To increase product sales by 15% this year." In order to help achieve this goal, Ravi, a team lead in the marketing department, has formulated the following supporting objective for his team: "Every member in the team must sell more units in the next four quarters than he or she did in the last four quarters." As Ravi's manager, what advice would you give Ravi to make the objective more effective?

A. Clearly state the consequences of not achieving the target.
B. Provide a clear timeline for performing the required action.
C. Make the target more realistic and attainable.
D. Specify a clear, quantitative target.

Objectives should be specific, measurable, attainable, realistic, and timely. The objective given here is measurable, attainable, realistic, and timely, but it is not specific about the level of performance.

Question 4:

The CEO of Chroma Inc., a large multinational company, believes that the company should prepare strategic plans at least once a year. However, the company's president believes that strategic plans should not be changed frequently and should be prepared only every three years. Which of the following, if true, would support the CEO's position on the time frame of strategic plans for Chroma?

A. Chroma is in the business of publishing a trade magazine for the woodworking machinery industry in Colorado.
B. Chroma is a leading provider of cutting-edge communication technology and functions in a highly competitive market.

C. Chroma is the only seller of antique Asian musical instruments on the West Coast.

D. Chroma's business comes primarily from the long-term contracts it has with the U.S. government to carry out construction projects.

Organizations prepare strategic plans at different intervals depending on the industry, the level of competition (e.g., new entrants), and how fast products or services change. If Chroma is a provider of cutting-edge communication technology in a competitive market, it will need to revise and prepare strategic plans at relatively short intervals.

Question 5:
Steve Electronics is a leading manufacturer of cell phones. Its close competitor, Sidney Tim Inc., has introduced a new model with a modified version of the latest operating system. Which of the following is the most likely effect of the step taken by the competitor?

A. The bargaining leverage of buyers will increase.
B. The cost of the company will decrease due to economies of scale.
C. The profit margin of Steve Electronics will decline.
D. The company will be able to retain its existing customers.

Due to the introduction of latest technology, customers might be attracted to the cell phones produced by Sidney Tim Inc. There will be increased price competition in an attempt to retain market share.

Question 6:
Which of the following components is assessed in an internal capability analysis of an organization?

A. Resources
B. Export
C. Stakeholder demands
D. Accounting practices

Internal capability analysis helps to ensure that the organization has the resources, skills, and processes to reach its strategic and tactical goals.

Question 7:
Enscribe Inc. is a small firm that provides specialized, industry-oriented articles and features to medical publications. Founded and run by a team of physicians, Enscribe is a highly respected vendor in the market and has a dominant market share. However, the firm's market currently is undergoing a rapid expansion owing to a proliferation of online medical Web sites. The chief executive officer of Enscribe—Dr. Elliot—sees this as a massive opportunity for the firm. However, the chief editor—Dr. Cruz—believes that this development is a threat. Which of the following, if true, would strengthen Dr. Cruz's conclusion?

A. The firm has always struggled to find good-quality new hires.

B. The medical publishing industry has high entry barriers that discourage new entrants.

C. The firm has been identified as a cash cow in a BCG Growth Matrix developed by its parent firm.

D. The firm lists organizational learning as one of its strengths.

If the firm has struggled to find good new hires, it probably will find it difficult to scale up its team to meet burgeoning market demand. This will convert the opportunity into a threat as Enscribe is likely to lose market share to new entrants.

Question 8:

Bespoke Designs is a small store that sells custom-tailored formal clothes for men in a town in upstate New York. The company has been doing good business since its inception five years ago and is the first choice of discerning clients in the area. The owners of the company have approached an investor to help fund Bespoke's growth. The investor is impressed with the company's products but is worried that since Bespoke's market is an attractive one, new entrants would soon flood the market and reduce the profitability of the business. Which of the following facts can Bespoke's management use to convince the investor that the threat of new competitors is low?

A. The company's offerings are premium products that earn high margins.

B. Many potential competitors in the area employ tailors who were once employed at Bespoke.

C. The company's products are on par with those offered by premium clothing brands stocked in malls in the town.

D. The company is owned and operated by designers who are famous for their deep understanding of customer preferences and their distinctive style.
When incumbents have high levels of experience and product/service differentiation, the entry barriers to the market are raised.

**Question 9:**

Metis Corp., a large software services company, has benefited in the past from having a strong, centralized leadership. The top management makes decisions and set goals for the entire organization and tasked mid- and low-level managers with implementing these in its teams. Which of the following, if true, indicates that a centralized leadership is now more likely to be a weakness than a strength for Metis?

A. Metis's top management now consists almost entirely of engineers who have worked for Metis for a long time and have a high degree of expertise in the services the company offers.

B. Metis recently won its first contract to provide software services to the U.S. government.

C. Metis recently changed its business to focus more on product development, and its teams of product developers cherish creative freedom and autonomy.

D. Metis's offices are located primarily in countries where organizational hierarchies are respected.

When the management of a company has a high level of expertise in its business, there is a greater chance that a centralized leadership will be effective.

**Question 10:**

Which of the following is true of a functional strategy?

A. It defines an organization's values, expressed in financial and nonfinancial terms.

B. It reinforces an organization's competitive strategy.

C. It determines how organizational resources will be allocated among the firm's businesses.

D. It centers on identifying and building key resources.

Functional strategy reinforces an organization's competitive strategy.

**Question 11:**

Which of the following best describes the function of SWOT analysis?

A. It defines how a firm competes and sets forth the general direction an organization plans to follow to achieve its goals.
B. It is a guiding image of future success and achievement articulated in terms of an organization's contribution to society.

C. It provides a framework to identify a variety of elements that will help or hinder an organization's progress in the environment in which it operates.

D. It identifies all technologies that impact an organization.

SWOT (or S.W.O.T.) is the acronym for strengths, weaknesses, opportunities, and threats. SWOT analysis provides a framework to identify a variety of elements that will help or hinder an organization's progress in the environment in which it operates.

Question 12:
Identify the threat imposed on an incumbent by the entry of new competitors in the market.

A. Heavy start-up losses and near-cost pricing.
B. Increased cost in order to compete against new entrant.
C. Economies of scale.
D. Product differentiation.

A new player in a marketplace generally brings with it new capacity and resources. The profitability for an incumbent in the marketplace may be reduced if its sales prices are bid down or its product costs are increased in order to compete against this new entrant.

Question 13:
Tamara Inc. is the market leader in desktop manufacturing. The company's success is driven by its highly skilled product development team, which has been creating pathbreaking designs that are sold at a premium price. However, the demand for desktops is declining as mobile technology is becoming increasingly popular. In order to address this threat, Tamara's managers have conducted a T.O.W.S. (threats, opportunities, weaknesses, and strengths) analysis and have decided to use an S.O. (strengths and opportunities) strategy. Which of the following is a possible course of action under this strategy?

A. Increase the cost of Tamara's products to further differentiate its products from those of the competition.
B. Reduce the cost of Tamara's products to levels lower than those of laptops and tablets.
C. Enhance the company's brand image through promotions to lure customers back to desktops.
D. Use the company's product development team to create innovative new mobile technology.

This strategy uses one of Tamara's strengths—its product development team—to take advantage of the opportunity presented by the growing popularity of mobile technologies.

**Question 14:**

Elliott Enterprises is engaged in the construction of roads. The company falls under the OSHA regulations that require it to extend accident prevention policies to its employees. How does this regulatory requirement affect the organization's strategy?

A. It will force the organization to be environmentally accountable.
B. It will restrict the marketing campaigns of the organization.
C. It will affect the technological innovations planned by the organization.
D. It will affect the human resource practices followed by the organization.

Providing accident prevention policies to employees falls under the human resource practices followed by an organization. Therefore, in this case, the strategy of Elliott Enterprises regarding human resources will be affected.

**Question 15:**

Which of the following industries faces the least threat of competition and profitability from the entry of a new competitor?

A. Automobile industry
B. Apparel industry
C. Restaurant chain industry
D. Online shopping industry

Among the listed industries, it is difficult for a new entrant to establish business in the automobile industry.

**Question 16:**

The top management of Juno Inc., a manufacturer of cell phones and laptops, is in the process of conducting a SWOT (strengths, weaknesses, opportunities, and threats) analysis of its business. Andrew Hudson, a vice president of the company, lists the company's cutting-edge research and development division as a strength as it helps the company design premium products of high quality. However, Melanie Harris, the marketing manager, believes that its research and development division is now a
weakness rather than a strength. Which of the following, if true, best supports Melanie's argument?

A. Juno operates in a legal environment where strict regulations are in place to protect intellectual property rights.

B. Juno's cell phones and laptops continue to be high-profit-margin products.

C. Due to an economic slump, Juno's target consumers are becoming increasingly price sensitive.

D. The bulk of Juno's business comes from consumers who are identified as early adopters of technology.

If consumers' focus is on price and not on quality, Juno's investment in research and development is probably wasted. In fact, the premium price will likely drive customers away.

Question 17:

Alturo Technologies is a manufacturer of machines used in the automotive industry. Most of its business comes from three automotive manufacturers that are located in neighboring counties. During a board meeting to revise and prepare a new strategy, one board member expressed concern that the buyers' bargaining power is very high as the company has only a handful of buyers. What would you, as a board member of the company, say to your colleague to reassure him/her that buyers' bargaining power is not a threat to the business?

A. The owners of two of the three companies that buy Alturo's products used to be top executives at Alturo.

B. The buyers are aware of how critical their business is to Alturo's survival.

C. Alturo's products are very expensive to install, and only spare parts manufactured by the company can be used in its machines.

D. Several other manufacturers offer products similar to Alturo's products.

Bargaining power of buyers is reduced when the switching costs are high, as is the case here.

Question 18:

In which of the following cases is the threat of decreased profits owing to rivalry among existing competitors most likely to be the highest?

A. In the case of rivalry between the top fast-food restaurant chains in a market
B. In the case of rivalry between the established market leader in discount superstores and small convenience stores

C. In the case of rivalry between a company known for its innovative, cutting-edge technology and a company that sells cheap, basic technology

D. In the case of rivalry between leading satellite television companies where customers who sign up get hardware that is compatible only with that service provider

Fast-food restaurant chains usually have little product or service differentiation, and customers often focus on price in such markets. Plus, antagonism may run deep between top competitors, and instability often results as firms may be prone to fight and retaliate.

**Question 19:**

Wishing-Well Inc., a chain of small convenience stores in Atlanta, Georgia, has just opened a store in a rapidly developing suburb to the north of the city. The marketing manager of Wishing-Well believes that the suburb is a lucrative market as the area has several expensive homes and offices but does not have any other convenience stores or supermarkets. Which of the following is likely to neutralize the opportunity offered by the new market?

A. Wishing-Well is well known for its unique offerings of local produce and organic food.

B. The suburb has well-regarded public and private schools.

C. Abundant retail space is available for low rates in the suburb.

D. Wishing-Well has a popular rewards program for its regular customers.

Inexpensive and abundant retail space will lower entry barriers for new entrants, posing a threat to Wishing-Well's business.

**Question 20:**

Infinity Enterprises, a large organization with seven business units, recently prepared a BCG Growth-Share Matrix to evaluate whether it has a balanced portfolio of businesses. Upon analysis, its three large business units were identified as stars, two medium-size business units were identified as question marks, and one small business unit each was identified as a cash cow and a dog. Which of the following is a conclusion you can draw upon evaluating the data?

A. The company needs to set up more business units that operate in high-growth markets.

B. The company is probably facing a shortage of funds to fuel its growth.
C. The company should sell off the business unit identified as a dog as it offers low-growth prospects.

D. The company is probably generating excess cash that can be used to start new business units.

Most of Infinity's business units are either stars or question marks. These operate in high-growth markets and require cash inputs to grow, which usually are provided by cash cows or dogs. Since Infinity has only two business units in these two quadrants, the company is likely to be facing a cash crunch.

Question 21:
How is strategic planning different from strategy formulation?

A. Strategic planning addresses how to implement business strategies, whereas strategy formulation results in new strategies.

B. Strategy formulation develops designs to implement strategies and achieve the goals, whereas strategic planning creates strategies and defines goals.

C. Strategy formulation identifies the opportunities and threats in the short term, whereas strategic planning continually reevaluates strategies based on perceived long-term opportunities and threats.

D. Strategy formulation typically identifies external opportunities, limitations, and threats, whereas strategic planning identifies internal factors, such as organizational strengths, weaknesses, and competitive advantages.

In practice, strategy formulation and strategic planning overlap quite a bit. But the two processes have important conceptual differences. On a fundamental level, strategy formulation results in new strategies, and strategic planning addresses how to implement the strategies.

Question 22:
From its facility in Raleigh, North Carolina, TMC Corp. manufactures and sells a small electric car under the brand name of Quinoa. Quinoa is the first and only electric car in the market and is a bestseller owing to its low price. Which of the following is a threat that is most likely to reduce the competitive advantage Quinoa has due to its low price?

A. The price of gasoline increases sharply.

B. The government places import restrictions on electric cars and other vehicles.

C. New environmental regulations are imposed on fossil fuel–based vehicles.
D. The government withdraws the subsidies it had extended to the electric car segment.

The withdrawal of government subsidies extended to the electric car segment is likely to increase costs and reduce Quinoa's competitive advantage.

Question 23:

Romero Roman Inc., a leading manufacturer of cars, has two product lines: small family cars and luxury cars. According to the BCG Growth-Share Matrix, which quadrant should small family cars be allocated?

A. Cash cows
B. Dogs
C. Stars
D. Question marks

The cash cows quadrant includes those business units or product lines that have high market share in a slow-growing industry. Small family cars have a higher demand than executive cars, and the automobile industry is a slow-growth industry; therefore, family cars should be classified in the cash cows quadrant.

Question 24:

Rainer Enterprises has conducted a SWOT (strengths, weaknesses, opportunities, and threats) analysis to determine its business strategy. After studying the weighted average of the results of the analysis, one of the partners, Miranda Swift, believes that the firm should invest in exploiting market attractiveness instead of focusing on building business strength. Which of the following data, if true, suggests that Swift's conclusion is flawed?

A. The calculated weighted average for market attractiveness is 4.8, and the calculated weighted average for business strength is 1.9.
B. This answer is incorrect. The calculated weighted average for market attractiveness is 4.2, and the calculated weighted average for business strength is 4.5.
C. Market profitability was assigned the highest weight and was rated 1 on a scale of 1 to 5.
D. Market size was assigned the highest weight and was rated 1 on a scale of 1 to 5.

Because the highly attractive market presumably will entice others to enter, planning strategies to build on the lower business strength (rather than
attempting to exploit higher market attractiveness) would be the most beneficial plan.

Question 25:

How can stakeholder analysis be linked to strategic planning?

A. Stakeholder analysis helps an organization identify the capabilities to be gained.
B. Stakeholder analysis describes an organization's migration to international operations.
C. Insights gained from stakeholder analysis evolve into an organizational technology strategy.
D. Stakeholder analysis helps an organization frame its corporate social responsibility.

Stakeholder analysis helps an organization frame its corporate social responsibility. It identifies the role good citizenship plays in a business.

B2: Budgeting Concepts

Question 1: Which one of the following best describes the role of top management in the budgeting process? Top management:

A. should only be involved in the approval process.
B. should only be involved in the approval process.
C. needs to separate the budgeting process and the business planning process into two separate processes.
D. lacks the detailed knowledge of the daily operations and should limit their involvement.

Top management is ultimately responsible for the organization's budget. To exercise this responsibility, top managements ensures that all level of management understand and support the budgeting process and its relationship to control and performance measurement.
Question 2: Which of the following best describes the function of strategic analysis?

A. Successful strategic analysis is possible with the help of effective budgets as the actual capacity of an organization can be determined by the variances from budgets.

B. Strategic analysis is the basis for short-term planning, whereas for long-term planning, the expertise of management personnel is required for development of budgets.

C. **Strategy addresses the objectives of an organization and evaluates the risks of alternative strategies.**

D. Strategic analysis calculates the impact of events that led to failure a budget.

**Strategy addresses the objectives of the organization and evaluates the risks of alternative strategies.**

Question 3: Jura Corporation is developing standards for the next year. Currently XZ-26, one of the material components, is being purchased for $36.45 per unit. It is expected that the component's cost will increase by approximately 10% next year and the price could range from $38.75 to $44.18 per unit depending on the quantity purchased. The appropriate standard for XZ-26 for next year should be set at the:

A. current actual cost plus the forecasted 10% price increase.

B. highest price in the anticipated range to insure that there are only favorable purchase price variances.

C. **price agreed upon by the purchasing manager and the appropriate level of company management.**

D. lowest purchase price in the anticipated range to keep pressure on purchasing to always buy in the lowest price range.

**When setting price standards, an agreement must take place by the purchasing manager and the appropriate level of company management. During this process, it needs to be assured that the price meeting corporate strategic and operating objectives.**
Question 4: A management representative of Drake Edwards Inc. discusses with the supervisor of its Tool A manufacturing unit to determine a reasonable per unit production time for the preparation of production budget for the next year. The supervisor brings forward the following points:

1) The rate of production during the first 2 hours of work is low due to the time taken to adjust with the furnace temperature.
2) The average time taken to produce 1 unit of Tool A is 30 minutes.
3) The company has a policy of granting a lunch break of 1 hour.

The management representative fixes a target of 15 units of Tool A per day per worker. Assuming the company operates 8 hours per day, evaluate the effect of the target set by the representative.

A. The number of defective units will increase.
B. The average training cost will decrease.
C. The budget will have higher negative variance from actual.
D. The employee turnover will decrease.

The target set by the management representative is unrealistic. The actual daily production will be lower than the targets. Therefore, the negative variance will be higher implying that the workers are not meeting their targets.

Question 5: Which of the following refers to a quantitative expression of proposed management actions for a set period of time?

A. Budgets.
B. Cost of goods manufactured statements.
C. Cost of goods sold statements.
D. Financial statements.

A budget is a plan, expressed in financial terms, and is for a set period of time.
Question 6: Under which of the following circumstances can a budget be considered a pressure or blame device rather than a planning, communication, and coordinating tool?

A. When it includes technically incorrect and unrealistic targets.
B. When it is seen as an internal control device.
C. When the budget is prepared by higher authorities.
D. When management fully endorses the budget.

A budget must contain technically correct and reasonably accurate numbers and facts. If the targets set in the budget are unrealistic, employees may not strive to achieve them. In those situations, the budget will be considered as a pressure or blame device.

Question 7: Identify the contribution of process experts in the preparation of participative budgets.

A. They are responsible for budget preparation and review of results.
B. They are responsible for communication of organizational goals to the operational level.
C. They help in identification and elimination of discrepancies between various budgets.
D. They aid in having a detailed understanding of the costs of a particular area.

When participative budgeting is used, often certain key nonmanagerial employees are added to the team. Team participants tend to be those who have a detailed understanding of the costs for a particular area, especially those areas that are extremely complex or variable. Such participants will not only bring more focus to a budget but will also take ownership of the budget and increase its likelihood of being followed at the operational level.
**Question 8:** How is strategic analysis related to budget development?

A. Strategic analysis establishes targets for all departments and lists the methods to achieve them.

B. Strategic analysis provides a detailed and precise estimate about the future which helps an organization to accurately determine the resource requirements.

C. Strategic analysis matches the capabilities of an organization with available marketplace opportunities to determine the goals of objectives for a particular period.

D. Strategic analysis determines the overall financial requirements of an organization and also helps to procurement of funds at lower cost.

A prerequisite for budget development is a strategic analysis that matches an entity's capabilities with available marketplace opportunities. Strategy addresses the objectives of the organization; locates potential markets; considers the impact of events, competitors, and the economy; addresses the structure of the organization; and evaluates the risks of alternative strategies.

**Question 9:** How does a budget slack affect the master budget?

A. Budget slack hinders ease of communication of organizational goals.

B. Presence of budget slack can lead to decreased commitment from the employees.

C. **Cumulative budget slack at each sublevel can result in an inaccurate master budget.**

D. Strategic goals do not receive priority in the budgetary process due to existence of budget slack.

Budget slack occurs when budgeted performance differs from actual performance because managers tend to build in some extra money for their budget to deal with the unexpected. Budget slack is built-in freedom to fail, and cumulative budget slack at each sublevel can result in a very inaccurate master budget.

**Question 10:** The board of directors of Tim Craig Group wishes to increase the production for the current year. During the preparation of
current year's budget, the company's production manager set the employee targets higher than the previous year. He was of the view that higher targets will motivate the employees to increase their productivity. Evaluate the validity of the production manager's decision.

A. His decision is incorrect as the labor efficiency variance will be lower than the previous year.

B. His decision is incorrect as employees may not strive to achieve targets they view as unrealistic.

C. His decision is correct as the employee turnover will decrease.

D. His decision is correct as the employees' current year's performance will improve as compared to the previous year.

If the benchmark for employees is set too high, they may not strive to achieve targets they view as unrealistic. As a result, the variances from budgets will be high.

**Question 11**: One approach for developing standard costs incorporates communication, bargaining, and interaction among product line managers; the immediate supervisors for whom the standards are being developed; and the accountants and engineers before the standards are accepted by top management. This approach would best be characterized as a(n):

A. authoritative approach.

B. engineering approach.

C. imposed approach.

D. participative approach.

A participative approach incorporates communication, bargaining, and interaction among all parties involved in a division, including product line managers, immediate supervisors, accountants and engineers.

**Question 12**: The process of creating a formal plan and translating goals into a quantitative format is:

A. process costing.

B. budgeting.
C. activity-based costing  
D. job order costing.

A budget is a plan expressed in dollar terms.

**Question 13:** Which of the following would effectively commit responsibility center managers to the company strategy in a top-down environment?

A. The CEO sends a memo to each manager with specific instructions on forming their budgets.

B. The CEO sends a completed budget to each manager for review.

C. The CEO interviews managers and key employees to determine what they feel the responsibility center’s priorities should be.

D. The CEO waits for budgets to be submitted and then reviews each for fit with strategy.

In a top-down environment, a budget proposal is the initial step in a budgeting process, and before managers make a preliminary budget, the CEO sends a directive or memo to each manager explaining what the corporate strategy is so they can create their budgets with this in mind.

**Question 14:** Upper management has a morale problem with middle management. Many middle managers are getting poor performance appraisals, but these managers don't feel that they are to blame. Which of the following could best help this company out of their situation?

A. Base the performance appraisals only on variable costs.

B. Separate uncontrollable costs from controllable costs and judge managers only on the latter.

C. Separate product costs from period costs and judge managers only on the former.

D. Replace managers who get poor performance appraisals.

Holding managers accountable for uncontrollable costs can be unmotivating. However, controllable costs, are useful for performance evaluations and budgeting because managers perceive these as fair. Some fixed costs are controllable costs.
Question 15: A management representative of Ana Huff Inc. proposed a budget for the current year considering there will be no work delays, interruptions, waste, or machine breakdown. Which type of standard is being prepared?

A. Participative standard.
B. Reasonably attainable standards.
C. Participative ideal standard.
D. Authoritative ideal standard.

Authoritative standards are determined solely by management and ideal standards allow for no work delays, interruptions, waste, or machine breakdown. Since the management representative is the sole person proposing the budget and he is considering there will be no work delays, interruptions, waste, or machine breakdown, this is an authoritative ideal standard.

Question 16: Which one of the following will allow a better use of standard costs and variance analysis to help improve managerial decision-making?

A. Company B uses the prior year's average actual cost as the current year's standard.
B. Company D constantly revises standards to reflect learning curves.
C. Company A does not differentiate between variable and fixed overhead in calculating its overhead variances.
D. Company C investigates only negative variances.

To allow for a better use of standard costs and variance analysis assisting in the improvement of the managerial decision-making process, constantly revising standards to reflect learning curves will allow for the organization to more effectively understand their costing structures and better reflect the true variances of comparing standard costs to actual.

Question 17: "A higher authority, other than the team that developed a
A. Higher authorities will be able to identify flaws and discrepancies in a budget.

B. Higher authorities are able to enforce a budget more effectively.
C. A budget authorized by higher authorities is considered more realistic by employees.
D. A budget authorized by higher authorities contains technically correct and reasonably accurate estimates.

Higher authorities are in a better position to identify flaws and discrepancies in a budget. They are also capable of identifying unrealistic goals and targets set in budget. Moreover, they also vouch for the adequacy of the targets. Managers sometimes set low targets which are easily attainable in order to meet performance standards. However, this affects organizational goals in the long run.

**Question 18:** When budgets are used for performance evaluation and to set limits on spending, the process will often result in departments adding something "extra" to ensure the budgets will be met. This "extra" is called:

A. tactical planning.
B. budgetary slack.
C. management by objectives.
D. continuous budgeting.

An extra cushion built into the budget to protect against the unexpected is called budget slack. It involves over-budgeting (or padding) expenses and under-budgeting revenues to make the budget targets easier to meet.

**Question 19:** Which of the following factors affect the standard costs for direct labor?

A. Supply chain costs.
B. Product quality.
C. Nature of manufacturing process.
D. Product's targeted market niche.
Product complexity, personnel skill levels, the type and condition of equipment, and the nature of the manufacturing process will affect the direct labor costs.

**Question 20:** A company allows its managers to regularly revise the budget whenever they feel that circumstances merit a change. Which of the following is not a risk for such a policy?

A. Employees may not be motivated to work as hard toward their goals.
B. Employees may be confused due to less clear operating guidelines.
C. Managers may set the threshold for revisions too low, and changes could occur too frequently.
D. Managers may set the threshold for revisions too low, and changes could occur too frequently.

Regular revisions usually provide clearer operating guidelines. The other options are all risks of regular revisions.

**Question 21:** During a planning process, which of the following activities would be completed last?

A. Tactical goals.
B. Operational plans.
C. Strategic objectives.
D. Vision and mission.

The logical order for the activities listed is 1) vision and mission, 2) strategic objectives, 3) tactical goals, and 4) operational plans. An operational plan formulates specific goals for each SBU, with detailed revenue and expense budgets.

**Question 22:** Which one of the following is an attribute of an authoritative approach to budgeting:

A. Communication of product perspective to management
B. Budget slack built into the budget
C. Incorporation of strategic goals into budgets

D. Expertise leads to informed budget decisions

In an authoritative budget (top-down budget), top management sets everything from strategic goals down to the individual items of the budget for each department and expects lower managers and employees to adhere to the budget and meet the goals.

**Question 23:** The production manager of Brian Matthews Group has received an urgent order of additional 10,000 units from a regular customer. To fulfill the order, the employees need to serve overtime. The overtime wages will be 150% of the usual hourly wage rate. However, the personnel manager is not in favor of allowing overtime because this will use up too much of the budgeted wages for the quarter. Which of the following alternatives will most likely undermine the personnel manager's argument?

A. The personal manager should not allow overtime as the actual wages will increase the budgeted wages.

**B. The personnel manager should allow overtime to avoid losing its regular customer.**

C. The production manager should provide the extra units to the customer by postponing other less urgent orders.

D. The production manager should not accept the order for extra units as this will affect the current production budget.

Rigid enforcement of budgets will, in some situations, cost an organization more in the long run than if some flexibility is allowed. Therefore, in this situation, the personnel manager should allow the overtime and exceed its budgeted expenditure rather than losing its customer.

**Question 24:** If 0.6 manufacturing labor hours of input are allowed for producing one output unit and labor hours cost $15, then the standard cost of labor would be:

A. $9 per output unit.

B. $10.50 per output unit.

C. $14.10 per output unit.
D. $6 per output unit.

Direct cost items such as direct materials and direct labor are measured by determining the number of units of each type of input required to get one unit of output. This amount (0.6) is multiplied by the standard cost per input unit ($15), thus 0.6 labor hours per unit × $15 labor cost per hour = $9 labor cost per unit.

**Question 25:** The production manager of Eileen Corp. is responsible for determining the standard cost for direct materials during budget preparation. For ascertaining the supply chain costs he always selects the lowest-cost vendor. Which of the following, if true, will affect the general cost behavior?

A. The costs will vary each year.
B. The costs will remain more stable each year.
C. The costs will remain fixed each year.
D. The costs behavior cannot be determined.

Selecting the lowest cost vendor each time will result in varying costs each year as the vendor quoting the lowest cost is likely to change every year.

**Question 26:** The budgeting technique that is most likely to motivate managers is:

A. top-down budgeting.
B. incremental budgeting.
C. **bottom-up budgeting.**
D. zero-base budgeting.

Motivation is enhanced by having lower-level managers involved in the budgeting process. Bottom-up, participative budgeting promotes such involvement.

**Question 27:** All of the following are advantages of the use of budgets in a management control system except that budgets:
A. provide performance criteria.
B. force management planning.
C. limit unauthorized expenditures.
D. promote communication and coordination within the organization.

Advantages of management control systems include the forcing of management to plan, providing performance criteria, and the promotion of communications and coordination within the organization.

Question 28: All types of organizations can benefit from budgeting. A major difference between governmental budgeting and business budgeting is that:
A. business budgeting is required by the SEC.
B. governmental budgeting usually represents a legal limit on proposed expenditures.
C. business budgeting can be used to measure progress in achieving company objectives whereas governmental budgeting cannot be used to measure progress in achieving objectives.
D. governmental budgeting is usually done on a zero-base.

In governmental bodies, expenditures are based upon legislative appropriations. These appropriations create legal limits on expenditures.

Question 29: Which one of the following items would most likely cause the planning and budgeting system to fail? The lack of:
A. input from several levels of management.
B. top management support.
C. historical financial data.
D. adherence to rigid budgets during the year

Receiving support from top management in an organization is an integral, if not most important part of the planning and budgeting process. As top management has responsibility of the overall strategic
planning and budgeting of the organization, attaining the support and approval of top management is of utmost importance.

**Question 30:** Which one of the following is **most** important to a successful budgeting effort?

A. Reliable forecasts and trend analysis.
B. Top management support.
C. Experienced analysts.
D. Integrated budget software.

Top managers determine and significantly influence how budgets are perceived in their companies. Top management initiates the planning and budgeting process and approves policies and procedures regulating it, which makes its support a crucial success factor for the budgeting process.

**Question 31:** National Telephone has been forced by competition to drastically cut operating costs, which has resulted in a change from static budgeting to flexible budgeting. Which one of the following steps will **not** help National Telephone gain maximum acceptance of the proposed budgeting system?

A. Implementing the change quickly.
B. Increasing communication with employees about the reasons for the change and the potential benefits that will result from it.
C. Focusing departmental reports only on items that are under managers’ control.
D. Demonstrating top management support for the change.

Quick implementation will not allow management and employees the time needed to "get on board" and accept (or "buy into") the new system.

**Question 32:** Murphy Harvey Inc. has completed one year of operations.
For the current year, the board of directors has prepared a budget planning its course of actions throughout the year. However, the company's CFO is of the opinion that the implementation of budgets involves a lot of cost, hence it is not feasible. Which of the following will most likely justify the CFO's view?

A. If resources are not available at the cost estimated in the budget.
B. If there is an increase in working capital.
C. If the company plans to make an investment in a new equipment.
D. If there is a negative change in sales.

If resources are available at a price higher than the price estimated in the budget, the company will incur more costs than estimated.

Question 33: Under which of the following circumstances, relying on historical costs will provide faulty results?

A. When it does not take into account the impact of new technologies.
B. When it does not perpetuate past inefficiencies.
C. When the data was approved by the budget committee.
D. When it does not account for inflation.

Historical data can perpetuate past inefficiencies or fail to take into account the impact of new technologies. Therefore, relying on historical data for determining costs is not always feasible.

Question 34: Which of the following is not a component of the master budget?

A. Cash budget.
B. Sales budget.
C. Direct material budget.
D. Selling and administrative budget.

An operating budget is broken down into the different operational budgets of the organization, including a sales budget, production budget, direct materials budget, direct labor budget, overhead budget, cost of
goods sold budget, and selling and administrative expense budget. A cash budget is one of the subsets of the financial budget.

**Question 35:** The personnel manager of Martin Power Inc. does not consider the equipment downtime and worker breaks during the determination of standard costs for direct labor. Evaluate the effect of the manager’s action.

A. The labor efficiency variance will be higher.
B. The labor rate variance will be higher.
C. The number of defective units will increase.
D. The quality of products will improve.

Labor usage standards should consider normally expected equipment downtime and worker breaks that slow the production process. If these factors are not considered, the actual level of performance will be lower than the expected level leading to higher labor efficiency variance.

**Question 36:** After performing a thorough study of Michigan Company's operations, an independent consultant determined that the firm's labor standards were probably too tight. Which one of the following facts would be inconsistent with the consultant's conclusion?

A. Michigan's budgeting process was well-defined and based on a bottom-up philosophy.
B. Management noted that minimal incentive bonuses have been paid in recent periods.
C. Production supervisors found several significant fluctuations in manufacturing volume, with short-term increases on output being followed by rapid, sustained declines.
D. A review of performance reports revealed the presence of many unfavorable efficiency variances.

When any study is performed in analyzing the operations of an organization, it is important to analyze all factors that affect the
organization's operations. In the case of Michigan Company, having a budgeting process that is well-defined and based on a bottom-up philosophy, and the fact that a review of performance reports revealed the presence of many unfavorable efficiency variances, is not consistent with the consultant's conclusion that the labor standards were probably too tight. Rather, having a top-down philosophy to budgeting should be consistent with the consultant's decision.

Question 37: Which one of the following is an attribute of a participative approach to budgeting:

A. Expertise leads to informed budget decisions.
B. Budgets are dictated with little to no opportunity for response.
C. Better control over decisions.
D. Incorporation of strategic goals in budgets.

In a participative budget (bottom-up or self-imposed budget), managers at all levels and certain key employees cooperate to set budgets for their areas, and top management usually retains final approval.

Question 38: Kallert Manufacturing currently uses the company's budget only as a planning tool. Management has decided that it would be beneficial to also use budgets for control purposes. In order to implement this change, the management accountant must:

A. synchronize the budgeting and accounting system with the organizational structure.
B. organize a budget committee.
C. develop forecasting procedures.
D. appoint a budget director.

Control is the process of monitoring the actions of those responsible for executing the plan, measuring the actions against the plan, and making the necessary corrections to the actions and/or the plan. Synchronizing the budgeting and accounting system with the organizational structure would allow management to use budgets for control purposes.
Question 39: Francisco Corp. is in the business of manufacturing plastic bottles. In the current quarter, $100,000 was provided for materials procurement and 10,000 bottles were produced against a budgeted production of 8,500 bottles. However, the extra production of 1,500 bottles had to be sold immediately at a price lower than the market price. Identify the most likely flaw in the budget prepared by Francisco Corp. which led to a sale at lower prices.

A. The sale price was overestimated.

**B. The storage capacity was underestimated.**

C. The funds allocated were not adequate.

D. The production capacity was underestimated.

Due to a lack of storage space, the extra production of bottles is most likely sold immediately at a lower price.

Question 40: A company is having trouble with its budgeting process. Top management sets budgets, but line managers often fail to meet their budgets or continue to make decisions that run counter to the budgets. Which of the following would not explain these circumstances?

A. Incentives are not provided to line managers.

B. Feedback is seldom given to line managers.

**C. Budgetary slack is built into the line budget.**

D. Line managers are accountable for both controllable and noncontrollable costs.

Good budgetary systems would provide incentives to managers who manage their controllable costs well. In addition, good budgetary systems provide feedback regularly. If the firm's budget had slack built in, managers should be able to meet the budget.

Question 41:

When developing a budget, an external factor to consider in the planning process would be:

A. the implementation of a new bonus program.
All external factors that may affect the organization should be considered in the organization's planning process. The merger of two competitors is such an external factor. The other responses listed are all internal factors.

Question 42:
This year, a company reports poor sales because of a new and inexperienced sales force. If this year's sales data is used to set next year's sales budget, which of the following would be the most likely result:

A. The budget would be set too low, and the sales force would be less motivated to achieve those goals
B. The budget would be set too high, and the sales force would be less motivated to achieve those goals
C. The budget would be set too high, and the sales force would be motivated to achieve those goals
D. The budget would be set too low, and the sales force would be less motivated to surpass those goals

Employing prior year results as the following year's budget provides no expectation for improvement. Another reason for not using historical results as a budget is that past performance is not always indicative of future results. A budget process attempts to predict and account for future changes, both positive and negative. Relying only on raw historical data leads to a sense that the past year must always be the benchmark.

Question 43:
The major disadvantage of a top-down budgeting process is:

A. lack of involvement by upper-level management.
B. inconsistencies of goals with strategic plans.
C. lack of buy-in by middle and lower-level management.
D. the introduction of budgetary slack.

In a top-down approach, upper-level management creates the budget and communicates goals to managers at lower levels. Two advantages of this method are lack of budgetary slack and consistency of goals with strategic plans. One disadvantage is lack of buy-in from lower-level managers.
Which of the following groups is **most likely** to introduce budget slack into a budget?

A. Budget committee.
B. Top management.
C. Board of directors.
D. Middle and lower management.

Middle and lower managers introduce budget slack by building in some extra money for their budget to deal with the unexpected.

**Question 45:**

What is the most effective approach to a budgeting process:

A. Participative approach.
B. Authoritative approach.
C. Non-qualitative approach.
D. Combination approach.

In an authoritative budget (top-down budget), top management sets everything from strategic goals down to the individual items of the budget for each department and expects lower managers and employees to adhere to the budget and meet the goals. In a participative budget (bottom-up or self-imposed budget), managers at all levels and certain key employees cooperate to set budgets for their areas, and top management usually retains final approval. The ideal process combines the features of each and falls somewhere between these methods.

**Question 46:**

Each organization plans and budgets its operations for slightly different reasons. Which one of the following is **not** a significant reason for planning?

A. promoting coordination among operating units.
B. providing a basis for controlling operations.
C. forcing managers to consider expected future trends and conditions.
D. ensuring profitable operations.

Planning does not ensure profitable operations. It is merely a tool to move in the direction of improved profitability. As Wharton Professor Emeritus Russell Ackoff once said, "If you fail to plan, plan to fail."
Question 47: Evaluate the effect of elimination of budget negotiation step on a successful budget process.

A. The budget will not be directed towards the achievement of organization's overall strategic goals.
B. The budget will be rigid and will be perceived as a pressure device by the employees.
C. The budget will contain more of ideal standards than reasonably attainable standards.
D. The budget will not be fully endorsed by the management.

When the initial budget proposal is submitted to a superior or to the budget committee, the budget is reviewed to see if it meets the organization's strategic goals, falls within an acceptable range, and is consistent with similar budgets. Negotiations take up the bulk of time in budget preparations because pushback from a superior will result in renegotiation of priorities for both the superior and the responsibility center.

Question 48: If four input units of direct material are allowed for producing one output unit and an input unit costs $20, then the standard direct material cost would be:

A. $80 per output unit.
B. $20 per output unit.
C. $40 per output unit.
D. $5 per output unit.

Direct cost items such as direct materials and direct labor are measured by determining the number of units of each type of input required to get one unit of output. This amount (4) is multiplied by the standard cost per input ($20) unit, thus 4 input units × $20 per input unit = $80 standard cost per unit.

Question 49: Which one of the following is generally not cited as being an advantage of a formal budgetary process?

A. It provides management with a means of dealing with uncertainty.
B. It serves as a coordination and communication device between management and subordinates.
C. It forces management to evaluate the reasonableness of assumptions used and goals identified in the budgetary process.

D. It ensures improved cost control within the organization and prevents inefficiencies.

A formal budgetary process does not ensure improved cost control within the organization nor does it necessarily prevent inefficiencies. The formal process is merely a tool that moves the organization in the directions of improved cost control and efficiency.

**Question 50:**

When compared with ideal standards, practical standards:

*Source: Retired ICMA CMA Exam Questions.*

A. serve as a better motivating target for manufacturing personnel.

B. produce lower per-unit product costs.

C. result in a less desirable basis for the development of budgets.

D. incorporate very generous allowances for spoilage and worker inefficiencies.

Practical standards allow for normal downtime, employee rest periods, and the like, and serve as a better motivating target for manufacturing personnel. Ideal standards are those that allow for no down-time, and require peak effort 100% of the time.

**Question 51:**

The production manager of Gibson Systems has considered the following for the determination of standard costs for direct materials:

1) The standard is developed on the basis of production facilities, quality of the product, costs of manufacturing, and the equipment to be used.

2) The standard does not allow for losses, spoilage, scrap, and waste normally expected in the production process.

3) The price is set after considering historical costs and also includes supply chain costs.

Evaluate the validity of the given standard.

A. The given standard is not valid as it considers the supply chain costs for the determination of price.

B. The given standard is not valid because it does not allow for losses, spoilage, scrap, and waste normally expected in the production process.
C. The given standard is valid as it considers production facilities, quality of the product, costs of manufacturing, and the equipment to be used.

D. The given standard is valid as the prices are set after considering supply chain costs.

The standard costs for direct materials are developed on the basis of the production facilities, the quality of the product, the costs of manufacturing, and the equipment to be used. Direct material usage standards should allow for losses, spoilage, scrap, and waste normally expected in the production process. A price is set as a combination of all prior work done, including quality, quantity, and supply chain costs.

**Question 52:**

All of the following statements concerning standard costs are correct except that:

A. time and motion studies are often used to determine standard costs.

B. standard costs are usually set for one year.

C. standard costs are usually stated in total, while budgeted costs are usually stated on a per-unit basis.

D. standard costs can be used in costing inventory accounts.

In a standard costing system, time and motion studies are often used to determine standard costs, are usually set for one year, and can be used in costing inventory accounts. Standard costs are never stated in total, but rather on a per unit basis, where the budgeted costs are stated in total.

**Question 53:**

Which of the following is not a main reason for budgeting:

A. Improving communications within the organization.

B. Micromanaging an organization.

C. Effective evaluation of its employees.

D. Monitoring progress of an organization.

There are four main reasons a company creates a budget: planning (examining the future), improving communications and coordination of efforts in the organization, monitoring the progress of the organization in meeting its goals, and evaluation of key players and their performance in relation to the budget.

**Question 54:**
A company's management representative consults the production manager to set the standards for the upcoming quarter. The manager gives him the following information:

1) The defective unit rate per worker per day is 2 out of 10 units.
2) The actual daily production is 10 units per worker.
3) The production department operates for 40 hours in a week.

The management representative includes the following in the quarterly budget:

1) Monthly production target per worker is 200 units with nil defective units.
2) The defective unit rate per worker per day is nil.

The board of directors disapproved the budget stating it to be unattainable.

Under which of the following situations can the given budget be achieved?

A. The budget can be achieved if the production manager only allows for deviation caused by abnormal and uncontrollable reasons.
B. The budget can be achieved if the production department operates 45 hours in a week.
C. The budget can be achieved if the production manager allows for normal work delays, spoilage, waste, employee rest periods, and machine downtime.
D. The budget can be achieved by the most efficient and skilled workers at their best efficiency all of the time.

Ideal standards allow for no work delays, interruptions, waste, or machine breakdown. It requires a level of effort that can be attained only by the most skilled and efficient employees working at their best efficiency all of the time.

Question 55:

The board of directors of Edith Research Group has prepared the budget for the next quarter and decided to review the company's performance after each quarter. At the end of the first quarter, the variances of actual performance from the budgets were examined and the reasons for the same were recorded. The company also collected feedback from the employees on the improvements of budget. Identify the flaw, if any, in the budget cycle of Edith Research Group.

A. The company is not revising the plans according to the feedback of employees.
B. The company is not taking corrective actions to reduce the variance.
C. The budget is not used by the company to test current results against expectations.

D. There are no flaws in the given budget.

In a budget cycle, when variance from a budget is discovered, it should be examined and corrective actions should be taken when possible.

**Question 56:**

All of the following are disadvantages of authoritative budgeting as opposed to participatory budgeting, except that it:

A. may result in a budget that is not possible to achieve.

B. reduces the communication between employees and management.

C. may limit the acceptance of proposed goals and objectives.

D. reduces the time required for budgeting.

*Source: Retired ICMA CMA Exam Questions.*

In an authoritative budgeting process, there is a top-down approach to budgeting. Therefore, the divisional managers who are being affected by an authoritative budgeting process do not necessarily have the ability to provide input and qualifications to the budget process. With this, an authoritative approach to budgeting would have a much more reduced time to develop the budget as the input of those divisional and operational employees are not included in the decision process.

**Question 57:**

Which of the following is not a step in the budgeting process?

A. Budget Negotiation.

B. Budget Standard.

C. Budgeting Review and Approval.

D. Budget Proposal.

The steps that responsibility centers take in preparing their budgets include: the initial budget proposal, budget negotiation, review and approval, and revision.

**Question 58:**

In developing the budget for the next year, which one of the following approaches would most likely result in a successful budget with the greatest amount of positive motivation and goal congruence?
A. Have senior management develop the overall goals and permit the divisional manager to determine how these goals will be met.

B. Have the divisional and senior management jointly develop goals and the divisional manager develop the implementation plan.

C. Have the divisional and senior management jointly develop goals and objectives while constructing the corporation's overall plan of operation.

D. Permit the divisional manager to develop the goal for the division that in the manager's view will generate the greatest amount of profits.

Feedback: In any organization, it is important for the divisional and senior management to jointly develop goals, as it should be assured that these goals meet the strategic goals of the organization. The implementation plan should be developed by the divisional manager, as the divisional manager understands the roles of the members of the division and their impact on working towards the goals of the department.

Question 59:

Cerawell Products Company is a ceramics manufacturer that is facing several challenges in its operations due to economic and industry conditions. The company is currently preparing its annual plan and budget. Which one of the following is subject to the least control by the management of Cerawell in the current fiscal year?

A. Experienced employees have decided to terminate their employment with Cerawell and go to work for the competition.

B. A competitor has achieved an unexpected technological breakthrough that has given them a significant quality advantage, and has caused Cerawell to lose market share.

C. Vendors have asked that the contract price for the goods they supply to Cerawell be renegotiated and adjusted for inflation.

D. A new machine that was purchased this year has not helped reduce Cerawell's unfavorable labor efficiency variances.

When an analysis takes place in the preparation of the annual plan and budget, the organization needs to analyze those factors that they can control to plan and budget for future events. In this case, a competitor achieving an unexpected technological breakthrough that has given them a significant quality advantage, and has caused Cerawell to lose market share is something beyond Cerawell's control. However, they can prioritize
certain areas of their business operations to overcome those obstacles presented by this technological breakthrough by the competition.

**Question 60:**
1B2-LS42
Which one of the following statements concerning approaches for the budget development process is correct?

*Source: Retired ICMA CMA Exam Questions.*

A. To prevent ambiguity, once departmental budgeted goals have been developed, they should remain fixed even if the sales forecast upon which they are based proves to be wrong in the middle of the fiscal year.

B. With the information technology available, the role of budgets as an organizational communication device has declined.

C. Since department managers have the most detailed knowledge about organizational operations, they should use this information as the building blocks of the operating budget.

D. The authoritative approach to budgeting discourages strict adherence to strategic organizational goals.

In the development of the operating budget, it is important that the department managers have a primary impact on the operating budgets as they have the most knowledge necessary to make an informed decision of the resources necessary to operate the department effectively.

**Question 61:**
1B2-CQ11
If 0.7 manufacturing labor hours of input are allowed for producing one output unit and labor hours cost $27, then the standard cost of labor would be:

A. $18.90 per output unit.

B. $8.10 per output unit.

C. $18.10 per output unit.

D. $38.57 per output unit.

Direct cost items such as direct materials and direct labor are measured by determining the number of units of each type of input required to get one unit of output. This amount (0.7) is multiplied by the standard cost per input unit ($27), thus 0.7 labor hours per unit × $27 labor cost per hour = $18.90 labor cost per unit.

**Question 62:**
1B2-W008
During the analysis of the previous year’s performance, the board of directors of Emanuel Corp. realized that the actual rate of production was
10 units per day per labor. However, for the current year's budget, the production manager set the daily target as 15 units per labor to increase the production. How will the decision of the production manager affect the current year's actual performance of the laborers?

A. The employee turnover will decrease.
B. The labor efficiency variance will be lower than the previous year.
C. The current year's performance will improve compared to the previous year.
D. Variances from budgets will be high.

If the benchmark for employees is set too high, they may not strive to achieve targets they view as unrealistic. As a result, the variances from budgets will be high.

Question 63:
"Good benchmarks can lead a company toward continuous improvement." Under which of the following circumstances can benchmarking most likely lead to negative results?

A. Adhering to benchmarks demotivates employees, thereby affecting their productivity.
B. Basing data from a new and high-growth industry to benchmark goals in a manufacturing industry.
C. Benchmarking involves lot of costs which makes the budgeting process less cost effective.
D. Using benchmarks which allow for flexibility in results provide managers with room for adjusting their output.

Good benchmarks can lead a company toward continuous improvement. Benchmarking a new and high-growth industry will overestimate targets and goals. Such an industry will have a highly volatile data compared to a manufacturing company.

Question 64:
"The planning process generates new ideas for an organization's direction." Which of the following statements reflects the given function of planning process?

A. It provides insight into better ways to achieve goals that have already been established.
B. It promotes communication and coordination of efforts within an organization.
C. It compares the actual results for a period to the budgeted results for the period.

D. It allows the organization to communicate its goals to everyone in an organization.

The planning process may generate new ideas for an organization's direction, or it may provide insight into better ways to achieve goals that have already been established.

Question 65:
Which of the following is the correct order of the budgeting process?

A. Proposal, negotiation, review and approval, revision.
B. Negotiation, revision, review and approval, proposal.
C. Proposal, review and approval, negotiation, revision.
D. Negotiation, proposal, review and approval, revision.

The steps that responsibility centers typically take in preparing their budgets include: the initial budget proposal aligned with the company's strategic plan, budget negotiation with a supervisor or the budget committee, review and approval up the chain of command, and revision where company practice dictates.

Question 66:
Which of the following best describes the long-term goals and objectives of an entity?

A. Sales forecast.
B. Master budget.
C. Strategic plans.
D. Capital expenditure plan.

The strategic planning process is part of the long-term planning of the firm that focuses on the long-term goals and objectives of a firm. During this process, the strengths and weaknesses of the firm are addressed and utilized to develop a strategy to improve the firm.

Question 67:
The CFO of Maureen Systems prepares targets for future years using historical data. However, for the last two years, the company was failing to achieve the targeted results. In the current year, the board of directors has employed a team of analysts solely for the preparation of budgets. The new
A forecasting technique that is a combination of the last forecast and the last observed value is called:

A. regression.
B. Delphi.
C. least squares.
D. exponential smoothing.

Exponential smoothing combines the last forecast and the last observed value:

\[ F_{t+1} = aY_t + (1-a)F_t \]

Where:

\( t \) = current time period
\( F_{t+1} \) = forecast of the time series for period \( t + 1 \)
\( Y_t \) = actual value of the time series in period \( t \)
\( F_t \) = forecast of the time series for period \( t \)
\( a \) = smoothing constant.

Question 68:

A team uses a forecasted budget over historical data for setting targets for the future years. Evaluate the validity of the new team's approach.

A. The new team's approach is correct as the forecasted budget takes into account future conditions which were not present in past years.
B. The new team's approach is correct as the forecasted budget quantifies the effect of the adverse circumstances which may hinder achievement of targets.
C. The new team's approach is incorrect as the forecasted budget sets targets higher than previous years.
D. The new team's approach is incorrect as the historical targets should be the ideal target as they define the capacity of an entity.

Employing a forecasted budget as a plan allows for the use of the expected results as the benchmark. Another benefit of using a budget instead of historical results is that past performance is not always indicative of future results. A budget may be able to predict and account for such shifts, but relying only on historical data leads to a sense that the past year must always be improved on, irrespective of the circumstances.

A forecasting technique that is a combination of the last forecast and the last observed value is called:

A. regression.
B. Delphi.
C. least squares.
D. exponential smoothing.

Exponential smoothing combines the last forecast and the last observed value:

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Where:

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\( F_{t+1} \) = forecast of the time series for period \( t + 1 \)
\( Y_t \) = actual value of the time series in period \( t \)
\( F_t \) = forecast of the time series for period \( t \)
\( a \) = smoothing constant.

Question 69:
The top management of Travis Corp. is preparing the budget for the following year. For setting daily production target for laborers, it used the production target of another company engaged in similar business as the benchmark. However, after reviewing the labor efficiency at the end of the first quarter, the management discovered that the variance from the budget regarding the daily production targets is very high. Which of the following actions, if taken during the budget preparation process, would have eliminated the possibility of high budget variance?

A. The market expectation about the product should have been estimated.
B. The relevance of the benchmark should have been tested.
C. The company should not have relied on the historical data.
D. The resource allocation should have been appropriate.

Good benchmarks can lead a company toward continuous improvement. However, a poor benchmark can yield significant negative results. Here, the top management did not verify the presence of the conditions which led to the production level in the company used as benchmark.

B3: Forecasting Techniques

Question 1:
Regression analysis:

A. encompasses factors outside the relevant range.
B. estimates the dependent cost variable.
C. uses probability assumptions to determine total project costs.
D. estimates the independent cost variable.

Linear regression determines the best linear, unbiased estimate between a dependent variable and one or more independent variables.

Question 2:
Larry Clement is considering adding a new product line, which would involve constructing a new plant. The options are to construct a large plant, to construct a small plant, or to not add the new product line. Clement has determined there is a 60% chance that the market will be favorable, resulting in high demand, and a 40% chance that the market will be unfavorable, resulting in low demand. Clement has constructed the
following decision tree and the payoffs under the different states of nature.

<table>
<thead>
<tr>
<th>Construct Large Plant</th>
<th>States of Nature &amp; Probabilities</th>
<th>Payoffs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Favorable (Probability = 0.6)</td>
<td>$100,000</td>
</tr>
<tr>
<td></td>
<td>Unfavorable (Probability = 0.4)</td>
<td>($80,000)</td>
</tr>
<tr>
<td>Construct Small Plant</td>
<td>Favorable (Probability = 0.6)</td>
<td>$60,000</td>
</tr>
<tr>
<td></td>
<td>Unfavorable (Probability = 0.4)</td>
<td>($10,000)</td>
</tr>
<tr>
<td>Do Not Expand</td>
<td>Do Nothing</td>
<td>$0</td>
</tr>
</tbody>
</table>

Which one of the following alternatives should be recommended to Clement?

A. Construct a small plant, as the payoff is $32,000.
B. Do not expand, as the payoff is $0.
C. Construct a large plant, as the payoff is $28,000.
D. Construct a small plant, as the payoff is $40,000.

The expected payoff for constructing either plant can be calculated by taking the sum of the expected payoffs related to both the plant being successful and not being successful.

Expected payoff for each alternative = (expected payoff if the plant is successful) + (expected payoff if the plant is not successful)

Expected payoff, large plant = (0.6)($100,000) + (0.4)(−$80,000)
Expected payoff, large plant = ($60,000) + (−$32,000) = $28,000

Expected payoff, small plant = (0.6)($60,000) + (0.4)(−$10,000)
Expected payoff, small plant = ($36,000) + (−$4,000) = $32,000

The alternative to construct a small plant provides the highest expected payoff and should therefore be recommended.

Question 3:
Automite company is an automobile replacement parts dealer in a large metropolitan community. Automite is preparing its sales forecast for the coming year. Data regarding both Automite’s and industry sales of replacement parts as well as both the used and new automobile sales in the community for the last 10 years have been accumulated.

If Automite wants to determine if its sales of replacement parts are patterned after the industry sales of replacement parts or to the sales of used and new automobiles, the company would employ:

A. correlation and regression analysis.

B. time series analysis.

C. simulation techniques.

D. statistical sampling.

The purpose of correlation and regression analysis is to determine the relationship between a dependent variable, and one or more independent variables. Regression analysis determines the best linear, unbiased estimate between a dependent variable and one or more independent variables.

Question 4:
In decision making under conditions of uncertainty, expected value refers to the:

A. present value of alternative actions.

B. weighted average of probable outcomes of an action.

C. potential effect of an alternative action.

D. probability of a given outcome from a proposed action.

Expected value (the mathematical expectation of mean) of a discrete random variable is the sum of the probability of each possible outcome of the trial multiplied by the outcome.

Mathematically, \( E(x) = P(x_1) \times x_1 + P(x_2) \times x_2 + \ldots + P(x_n) \times x_n \), where:
- \( E(x) \) = Total expected value
- \( x \) = variable representing a possible outcome
- \( p \) = probability factor of each possible outcome
- \( n \) = the number of possible outcomes.

Question 5:
A beverage stand can sell either soft drinks or coffee on any given day. If the stand sells soft drinks and the weather is hot, it will make $2,500; if the weather is cold, the profit will be $1,000. If the stand sells coffee and the weather is hot, it will make $1,900; if the weather is cold, the profit will be $2,000. The probability of cold weather on a given day at this time is 60%.

The expected payoff if the vendor has perfect information is:

A. $2,200.
B. $1,360.
C. $3,900.
D. $1,960.

The expected payoff is the sum of the probability of each possible payoff multiplied by the payoff. The expected payoff if the vendor has perfect information is calculated by taking the highest expected payoff if the weather is hot and adding it to the highest expected payoff if the weather is cold.

The expected payoff with perfect information = (highest expected payoff for hot weather) + (highest expected payoff if weather is cold)

Expected payoff with perfect information = $2,500(0.4) + $2,000(0.6) = $1,000 + $1,200 = $2,200.

Question 6:
For cost estimation simple regression differs from multiple regression in that simple regression uses only:

A. dependent variables, while multiple regression can use both dependent and independent variables.
B. one independent variable, while multiple regression uses more than one independent variable.
C. one dependent variable, while multiple regression uses more than one dependent variable.
D. one dependent variable, while multiple regression uses all available data to estimate the cost function.

From a definition standpoint, the statistical methodology of simple regression uses only one independent variable, and multiple regression uses more than one independent variable.

Question 7:
The probabilities shown in the table below represent the estimate of sales for a new product.

<table>
<thead>
<tr>
<th>Sales (Units)</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–100</td>
<td>15%</td>
</tr>
<tr>
<td>101–200</td>
<td>45%</td>
</tr>
<tr>
<td>201–300</td>
<td>25%</td>
</tr>
<tr>
<td>301–400</td>
<td>15%</td>
</tr>
</tbody>
</table>

The sales outcome presented in the table is defined as which one of the following kinds of events?

A. independent.
B. mutually exclusive.
C. conditional.
D. dependent.

Mutually exclusive events are those that cannot occur simultaneously. They are mutually interdependent. The occurrence of one event precludes the occurrence of the others.

Question 8:

High Concept Fashion is planning its next advertising campaign to coincide with its store expansion in the following months. Using information from the past few years, the company was able to perform a regression analysis with the following results:

Sales revenue = $200,000 + 15(Advertising budget)
R² = 0.85

The company's advertising budget over the last few years usually fell between the range of $10,000 and $15,000 a year. It plans on spending $50,000 this year as a result of its expansion. Given its new advertising budget, High Concept Fashion should expect:

A. Unable to make any prediction because the new budget lies outside the range of the sample used to estimate the regression equation.
B. $900,000 in sales revenue.
C. $200,000 in sales revenue.
D. $200,750 in sales revenue.

Since the regression equation is estimated using advertising budgets that fell between the range of $10,000 and $15,000 a year, the equation is best
used to predict sales revenue using advertising budgets that fall within that range. When the firm uses an advertising budget that falls outside $10,000 to $15,000 a year to predict sales revenue, the result can no longer be reliable.

Question 9:

A company has accumulated data for the last 24 months in order to determine if there is an independent variable that could be used to estimate shipping costs. Three possible independent variables being considered are packages shipped, miles shipped, and pounds shipped. The quantitative technique that should be used to determine whether any of these independent variables might provide a good estimate for shipping costs is:

A. flexible budgeting.
B. linear programming.
C. variable costing.
D. linear regression.

Linear regression is a statistical approach to modeling the relationship between an independent variable and a number of dependent variables, to create a linear model to determine which independent variable can be used to further the analysis of the situation at hand.

Question 10:

In competing as a subcontractor on a military contract, Aerosub, Inc. has developed a new product for spacecraft that includes the manufacturing of a complex part. Management believes there is a good opportunity for its technical force to learn and improve as they become accustomed to the production process. Accordingly, management estimates an 80% learning curve would apply to this unit. The overall contract will call for supplying eight units. Production of the first unit requires 10,000 direct labor hours. The estimated total direct labor hours required to produce the seven additional units would be:

A. 56,000 hours.
B. 30,960 hours.
C. 70,000 hours.
D. 40,960 hours.

Using a cumulative average time learning curve, as the cumulative output doubles, the cumulative average direct labor hours per unit becomes the learning curve percentage times the previous cumulative average direct labor hours per unit. So, if the direct labor hours for the first unit are 10,000
and an 80% learning curve is assumed, then the cumulative average direct labor hours for 2 units would be calculated as follows:

Cumulative average direct labor hours for 2 units = 0.8(10,000 direct labor hours) = 8,000 direct labor hours

When output doubles to 4 units, the cumulative average direct labor hours would be calculated as follows:

Cumulative average direct labor hours for 4 units = 0.8(8,000 direct labor hours) = 6,400 direct labor hours

When output doubles again, this time to 8 units, the cumulative average direct labor hours would be calculated as follows:

Cumulative average direct labor hours for 8 units = 0.8(6,400 direct labor hours) = 5,120 direct labor hours

Cumulative direct labor hours for 8 units = (5,120 direct labor hours)(8 units) = 40,960 direct labor hours

The hours for the last 7 units would be calculated by taking the total number of hours to produce the eight units, and subtracting the 10,000 hours that were used to produce the first unit.

40,960 direct labor hours − 10,000 direct labor hours = 30,960 direct labor hours to produce the additional seven units

Question 11:

According to recent focus sessions, Norton Corporation has a “can't miss” consumer product on its hands. Sales forecasts indicate either excellent or good results, with Norton's sales manager assigning a probability of 0.6 to a good results outcome. The company is now studying various sales compensation plans for the product and has determined the following contribution margin data.
On the basis of this information, which of the following statements is correct?

A. Plan 2 should be adopted because it is $10,000 more attractive than Plan 1.

B. Plan 1 should be adopted because of the sales manager's higher confidence in good results.

C. Either plan should be adopted, the decision being dependent on the probability of excellent sales results.

D. Plan 1 should be adopted because it has an expected contribution margin that is $8,000 higher than Plan 2's contribution margin.

Norton would pick the option that maximizes the expected contribution margin (CM).

Expected CM for each plan is calculated by taking the expected CM for “sales are excellent” for that plan, multiplied by the probability that sales are excellent, which is then added to the expected CM for “sales are good” for that plan, multiplied by the probability that sales are good.

Expected CM for Plan 1 = (probability of excellent sales for Plan 1)(CM for excellent sales for Plan 1)
Expected CM for Plan 1 = 0.4($300,000) + 0.6($240,000) = $120,000 + $144,000 = $264,000

Expected CM for Plan 2 = (probability of excellent sales for Plan 2)(CM for excellent sales for Plan 2)
Expected CM for Plan 2 = 0.4($370,000) + 0.6($180,000) = $148,000 + $108,000 = $256,000

Plan 1 should be adopted because it has an expected contribution margin that is $8,000 higher than Plan 2's contribution margin.

Question 12:

Meow Meow Cat Food plans on spending $120,000 to launch its newest product. Its research indicates that there is a 20% chance for revenue of
$100,000, a 50% chance for revenue of $150,000, and a 30% chance for revenue of $200,000. However, the company has to revise its probabilities after receiving the latest economic forecast. Now it is estimated that there is a 40% chance for revenue of $100,000, a 40% chance for revenue of $150,000, and a 20% chance for revenue of $200,000. What would be the company's decision regarding the new product before and after the revision of its estimate?

A. Before revision: introduce product; after revision: do not introduce product.
B. Before revision: do not introduce product; after revision: do not introduce product.
C. Before revision: introduce product; after revision: introduce product.
D. Before revision: do not introduce product; after revision: introduce product.

Before the revision, the expected revenue of Meow Meow Cat Food's newest product is $155,000 ($100,000 × 0.2 + $150,000 × 0.5 + $200,000 × 0.3).
Since the cost of launching the product is $120,000, the expected profit of newest product is $35,000 ($155,000 − $120,000).

After revising its probabilities, the expected revenue of the newest product is now $140,000 ($100,000 × 0.4 + $150,000 × 0.4 + $200,000 × 0.2).
Since the cost of launching this product remains at $120,000, the expected profit is now $20,000 ($140,000 − $120,000).

Based on the calculation, the company could introduce the newest product before the revision or after the revision (because both have a positive expected profit).

Question 13:

The table below shows the estimated probabilities of the percentage of defective units resulting from a production run.

<table>
<thead>
<tr>
<th>Percent Defective</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>15%</td>
</tr>
<tr>
<td>2%</td>
<td>20%</td>
</tr>
<tr>
<td>3%</td>
<td>30%</td>
</tr>
<tr>
<td>4%</td>
<td>25%</td>
</tr>
<tr>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

The expected percent defective is:

A. 1.9%.
B. 3.65%.
Expected value (the mathematical expectation of mean) of a discrete random variable is calculated by taking the sum of the probability of each possible outcome and multiplying it by the outcome.

Mathematically, \( E(x) = P(x_1) \times x_1 + P(x_2) \times x_2 + \ldots + P(x_n) \times x_n \),

where:

- \( E(x) \) = Total expected value
- \( x \) = variable representing a possible outcome
- \( p \) = probability factor of each possible outcome
- \( n \) = the number of possible outcomes

In this case, the expected percent defective is \( 0.15(0.01) + 0.2(0.02) + 0.3(0.03) + 0.25(0.04) + 0.1(0.05) = 0.0015 + 0.004 + 0.009 + 0.01 + 0.005 = 0.0295 \), or 2.95 percent.

**Question 14:**

Propeller Inc. plans to manufacture a newly designed high-technology propeller for airplanes. Propeller forecasts that as workers gain experience, they will need less time to complete the job. Based on prior experience, Propeller estimates a 70% cumulative learning curve and has projected the following costs.

<table>
<thead>
<tr>
<th>Cumulative Number of Units Produced</th>
<th>Manufacturing Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Cost Per Unit</td>
</tr>
<tr>
<td>1</td>
<td>$20,000</td>
</tr>
<tr>
<td>2</td>
<td>$14,000</td>
</tr>
</tbody>
</table>

If Propeller produces eight units, the average manufacturing cost per unit will be:

A. $9,800.

B. $1,647.

C. $14,000.

D. **$6,860**
Consider the following:

<table>
<thead>
<tr>
<th>Cumulative Number of Units Produced</th>
<th>Manufacturing Projections</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Cost Per Unit</td>
<td>Total Costs</td>
</tr>
<tr>
<td>1</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>2</td>
<td>$14,000</td>
<td>$28,000</td>
</tr>
<tr>
<td>x</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>$9,800</td>
<td>$35,200</td>
</tr>
<tr>
<td>8</td>
<td>$6,860</td>
<td>$54,880</td>
</tr>
</tbody>
</table>

**Question 15:**

Propeller Inc. plans to manufacture a newly designed high-technology propeller for airplanes. Propeller forecasts that as workers gain experience, they will need less time to complete the job. Based on prior experience, Propeller estimates a 70% cumulative learning curve and has projected the following costs:

If Propeller manufactures eight propellers, the total manufacturing cost would be:

- A. $50,660.
- B. $112,000.
- C. $62,643.
- D. $54,880.
Consider the following:

<table>
<thead>
<tr>
<th>Cumulative Number of Units Produced</th>
<th>Manufacturing Projections</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Average Cost Per Unit</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>$14,000</td>
<td>$28,000</td>
</tr>
<tr>
<td>4</td>
<td>70%</td>
<td>$9,800</td>
<td>$35,200</td>
</tr>
<tr>
<td>8</td>
<td>70%</td>
<td>$6,860</td>
<td>$54,880</td>
</tr>
</tbody>
</table>

**Question 16:**

A beverage stand can sell either soft drinks or coffee on any given day. If the stand sells soft drinks and the weather is hot, it will make $2,500; if the weather is cold, the profit will be $1,000. If the stand sells coffee and the weather is hot, it will make $1,900; if the weather is cold, the profit will be $2,000. The probability of cold weather on a given day at this time is 60%.

The expected payoff for selling coffee is:

A. $2,200.
B. $3,900.
C. $1,960.
D. $1,360.

The expected payoff for selling coffee is calculated by taking the payoff given hot weather, multiplied by the probability of hot weather, then adding the payoff given cold weather multiplied by the probability of cold weather.

Expected payoff for selling coffee = (hot weather payoff $1,900) × probability of hot weather (0.4) + (cold weather payoff $2,000) × probability of cold weather (0.6) = $760 + $1,200 = $1,960.

**Question 17:**

In order to analyze sales as a function of advertising expenses, the sales manager of Smith Company developed a simple regression model. The model included the following equation, which was based on 32 monthly observations of sales and advertising expenses with a related coefficient of
determination of 0.90.

\[ S = 10,000 + 2.50A \]

S = sales
A = advertising expenses

If Smith Company's advertising expenses in one month amounted to $1,000, the related point estimate of sales would be:

A. $12,500.
B. $12,250.
C. $2,500.
D. $11,250.

If advertising expense is $1,000, then $1,000 can be plugged into the regression equation for variable “A” as follows:

\[ S = 10,000 + 2.50A \]
\[ S = 10,000 + 2.50(1,000) \]
\[ S = 12,500 \]

**Question 18:**

Which one of the following techniques would most likely be used to analyze reductions in the time required to perform a task as experience with that task increases?

A. Normal probability analysis
B. Regression analysis
C. Learning curve analysis
D. Sensitivity analysis

With learning curve analysis, the more that a process is performed, the less time it takes to complete that process.

**Question 19:**

Dawson Manufacturing developed the following multiple regression equation, utilizing many years of data, and uses it to model, or estimate, the cost of its product.

\[ \text{Cost} = FC + a \times L + b \times M \]

Where:
FC = fixed costs
L = labor rate per hour
M = material cost per pound

Which one of the following changes would have the greatest impact on invalidating the results of this model?

A. A significant reduction in factory overheads, which are a component of fixed costs

B. A large drop in material costs, as a result of purchasing the material from a foreign source

C. A significant change in labor productivity

D. Renegotiation of the union contract calling for much higher wage rates

In a costing model, all fixed costs, labor costs, and material costs associated with the product are considered. In this case, a significant change in labor productivity will have the greatest impact on invalidating the results of the model as it would affect the 'a' coefficient in the equation and cause the model to fluctuate at a higher rate than the other variables.

Question 20:

Reshenie Inc. is analyzing the following decision: whether to start an R&D project or purchase a license to produce new types of sensors, the company’s major product. If the decision to conduct R&D in-house is made, the company will have two alternatives: conduct a complex R&D project to create a new product or proceed with a low-cost project to improve the characteristics of existing products. Three levels of demand for sensors are considered: high, medium and low. Expected values of project results (EV) are shown in $ millions.

Applying the decision tree analysis, select the best alternative.
A. Conduct R&D research, as its expected value is $0.65 million higher than the license purchase alternative.

B. Conduct R&D research, as its expected value is $1.4 million higher than the license purchase alternative.

C. Purchase a license, as its expected value is $0.25 million higher than the R&D alternative.

D. Purchase a license, as its expected value is $1.9 million higher than the R&D alternative.

There are two alternatives available: do R&D research or buy the license.

The expected value of the decision to buy the license = ($18 m × 0.7) + ($17 m × 0.1) + ($14 m × 0.2) = $17.1 m.

If R&D research is selected, there are two alternatives available: conduct complex R&D or conduct low-cost R&D.

A complex R&D expected value = ($20 m × 0.8) + ($16 m × 0.1) + ($9 m × 0.1) = $18.5 m.

A low-cost R&D research expected value = ($15 m × 0.6) + ($19 m × 0.2) + ($12 m × 0.2) = $15.2 m.

Since the expected value of complex R&D is higher than the expected value of low-cost R&D, Reshenie's management will choose to conduct complex R&D. Finally, choosing between conducting R&D and buying a license, the expected value of conducting R&D is $1.4 m higher than the expected value of buying a license.

**Question 21:**

Allbee Company has three possible investment opportunities. The controller calculated the payoffs and probabilities as follows.

<table>
<thead>
<tr>
<th>Payoffs</th>
<th>Investment A</th>
<th>Investment B</th>
<th>Investment C</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20,000</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>10,000</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>30,000</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>70,000</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>100,000</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

The cost of investments A, B, and C are the same. Using the expected-
value criterion, which one of the following rankings of these investments, from highest payoff to lowest payoff, is correct?

A. B, C, A
B. A, B, C
C. C, A, B
D. B, A, C

The expected payoff for each investment can be calculated using the following formula:

\[ \text{Expected payoff} = \sum (\text{payoff amount})(\text{probability of payoff}) \]

Expected payoff for A = 
\[ 0.3(-6,000) + 0.1(-10,000) + 0.3(30,000) + 0.2(70,000) + 0.1(100,000) \]
\[ = -6,000 - 1,000 + 9,000 + 14,000 + 10,000 = 26,000 \]

Expected payoff for B = 
\[ 0.2(-20,000) + 0.2(-10,000) + 0.2(30,000) + 0.2(70,000) + 0.2(100,000) \]
\[ = -4,000 - 2,000 + 6,000 + 14,000 + 20,000 = 34,000 \]

Expected payoff for C = 
\[ 0.3(-20,000) + 0.1(-10,000) + 0.2(30,000) + 0.3(70,000) + 0.1(100,000) \]
\[ = -6,000 - 1,000 + 6,000 + 21,000 + 10,000 = 30,000 \]

**Question 22:****

In order to determine how its in-house training program is affecting its employees' performance rating, Maxis Tech performed a regression analysis with the following results:

Performance rating = 0.2 + 0.05 hours of training

\[ R^2 = 0.1 \]

Given the above information, Maxis Tech can conclude that:

A. An employee's performance rating will be 0.35 if the employee receives only one hour of training.
B. The number of training hours received has a significant impact on an employee's performance rating.
C. There are factors other than number of training hours received that can better explain an employee’s performance rating.

D. For every hour of training received, an employee’s performance rating will decrease by 0.05.

The $R^2$ of 0.1 means that the number of training hours received can explain only 10% of the variation in an employee’s performance rating (according to the regression analysis). Other factors can explain the remaining 90% of the variation in an employee's performance rating. As a result, the firm should have performed a multiple regression analysis (with multiple independent variables) rather than a simple regression analysis (with just one independent variable).

**Question 23:**

Denton Inc. manufactures industrial machinery and requires 100,000 switches per year in its assembly process. When switches are received from a vendor they are installed in the specific machine and tested. If the switches fail, they are scrapped and the associated labor cost of $25 is considered lost productivity. Denton purchases “off-the-shelf” switches as opposed to custom-made switches and experiences quality problems with some vendors’ products. A decision must be made as to which vendor to buy from during the next year based on the following information.

Which vendor should Denton's controller recommend to management?

A. Vendor Q  
B. Vendor P  
C. Vendor S  
D. Vendor R  

Denton should pick the vendor with the minimum expected cost.

Expected cost can be calculated as follows:

Expected cost = \([\text{purchase cost of switches} / \text{(percentage expected to pass test)}] + \text{scrap cost}\)
Purchase cost of switches = (number of switches)(purchase price per switch)
Scrap cost = (number of switches)(labor cost related to scrap)(expected percentage defective)
Expected % defective = (1 − percentage expected to pass the test)

Using these formulas, the expected cost associated with each vendor can be computed.

Expected cost for Vendor P = [(100,000 switches)($35) / (0.9)] + (100,000)($25)(1 − 0.9)
Expected cost for Vendor P = $3,888,889 + $250,000 = $4,138,889

Expected cost for Vendor Q = [(100,000 switches)($37) / (0.94)] + (100,000)($25)(1 − 0.94)
Expected cost for Vendor Q = $3,936,170 + $150,000 = $4,086,170

Expected cost for Vendor R = [(100,000 switches)($39) / (0.97)] + (100,000)($25)(1 − 0.97)
Expected cost for Vendor R = $4,020,619 + $75,000 = $4,095,619

Expected cost for Vendor S = [(100,000 switches)($40) / (0.99)] + (100,000)($25)(1 − 0.99)
Expected cost for Vendor S = $4,040,404 + $25,000 = $4,065,404

The expected cost for Vendor S is the lowest and should therefore be recommended to management.

Question 24:

Automite company is an automobile replacement parts dealer in a large metropolitan community. Automite is preparing its sales forecast for the coming year. Data regarding both Automite’s and industry sales of replacement parts as well as both the used and new automobile sales in the community for the last 10 years have been accumulated.

If Automite wants to determine if there is an historical trend in the growth of its sales as well as the growth of industry sales of replacement parts, the company would employ:

A. simulation techniques.
B. statistical sampling.
C. time series analysis.
D. queuing theory.
Time series analysis is a series of measurements of a variable over time. Its purpose is to find patterns (trend, cyclical, seasonal, or random) in the data and to use these patterns to forecast future values of the variable.

**Question 25:**
ABC Company has run a regression analysis and determined that sales are related to marketing costs. The regression formula the analysts have calculated is $Y = 5,000,000 + 125(x)$, where $Y = \text{sales}$ and $x = \text{marketing costs}$. Use the regression formula to determine what the annual sales will be if marketing expenditures are $1,000,000$.

A. $1,625,000$
B. $5,000,000,000$
C. $130,000,000$
D. $125,005,000$

The regression formula states that:

$Y = 5,000,000 + 125X$
where $Y = \text{sales}$ and $X = \text{marketing costs}$

$Y = 5,000,000 + 125(1,000,000)$
$Y = 5,000,000 + 125,000,000$
$Y = 130,000,000$

**Question 26:**

Maxis Tech is trying to determine how an employee's performance rating could be explained by his/her level of education (EDU), the length of employment (EMP) with the company, and the number of training (TRN) hours received.

Using data from 100 of its employees, Maxis Tech performs a regression analysis with the following results:

Performance rating = $0.2 + 0.32 \text{EDU} + 0.15 \text{EMP} + 0.07 \text{TRN}$

$R^2 = 0.72$

$t$ for EDU = 0.013

$t$ for EMP = 3.276

$t$ for TRN = 4.121
The value of these terms in the parentheses (EDU, EMP, and TRN) represent the t-statistics of the regression coefficient. Which of the following statements best describes the statistical significance of the impact of the three factors on employee performance ratings?

A. The impact of all three is statistically significant because the $R^2$ is relatively high.

B. None of the factors has a statistically significant impact.

C. Only the impact of number of training hours received is statistically significant because it has the highest t-statistics.

D. Both length of employment with the company and number of training hours received have statistically significant impact because the absolute values of their t-statistics are higher than the most extreme cutoff point.

Both length of employment with the company and number of training hours received have statistically significant impact because the absolute values of their t-statistics are higher than the most extreme cutoff point.

To determine if an independent variable is statistically significant, we need to look at its t-statistics. If its t-statistics are greater than a certain cutoff point (which is determined by the level of significance), it is considered to be statistically significant.

Although no level of significance is provided in this scenario, the absolute values of the t-statistics of EMP and TRN are so high that they will be considered statistically significant even with the smallest level of significance.

On the other hand, the absolute value of the t-statistic of EDU is so low that it will not be considered statistically significant even with the (acceptable) largest level of significance.

Question 27:

Johnson Software has developed a new software package. Johnson's sales manager has prepared the following probability distribution describing the relative likelihood of monthly sales levels and relative income (loss) for the company's new software package.
If Johnson decides to market its new software package, the expected value of additional monthly income will be:

A. $24,800.
B. $23,200.
C. $24,000.
D. $25,000.

The expected additional monthly income can be calculated using the following formula:

\[
\text{Expected value} = \sum p(i) I(i) \text{ from } i=1 \text{ to } 4
\]

Where:
\( p = \) the probability of an income
\( I = \) the income

Expected value of additional income = \( (0.2)(-4,000) + (0.3)(10,000) + (0.3)(30,000) + (0.2)(60,000) \)

Expected value of additional income = \(-800\) + \(3,000\) + \(9,000\) + \(12,000\) = $23,200

Question 28:
Which one of the following four probability distributions provides the highest expected monetary value?

<table>
<thead>
<tr>
<th>Alternative #1</th>
<th>Alternative #2</th>
<th>Alternative #3</th>
<th>Alternative #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Cash</td>
<td>Cash</td>
<td>Cash</td>
</tr>
<tr>
<td>10% 50,000</td>
<td>10% 50,000</td>
<td>10% 50,000</td>
<td>10% 150,000</td>
</tr>
<tr>
<td>20% 75,000</td>
<td>20% 75,000</td>
<td>20% 75,000</td>
<td>20% 100,000</td>
</tr>
<tr>
<td>40% 100,000</td>
<td>45% 100,000</td>
<td>40% 100,000</td>
<td>40% 75,000</td>
</tr>
<tr>
<td>30% 150,000</td>
<td>25% 150,000</td>
<td>30% 125,000</td>
<td>30% 50,000</td>
</tr>
</tbody>
</table>

A. Alternative #1
B. Alternative #4
The expected monetary value for each alternative can be calculated by taking the sum of each of the expected cash inflows and multiplying them by their associated probabilities.

Expected monetary value = \( \Sigma \) (each expected cash inflow)(associated probability)

Expected monetary value, Alternative #1 = $50,000(0.1) + $75,000(0.2) + $100,000(0.4) + $150,000(0.3)
Expected monetary value, Alternative #1 = $5,000 + $15,000 + $40,000 + $45,000 = $105,000.

Expected monetary value, Alternative #2 = $50,000(0.1) + $75,000(0.2) + $100,000(0.45) + $150,000(0.25)
Expected monetary value, Alternative #2 = $5,000 + $15,000 + $45,000 + $37,500 = $102,500

Expected monetary value, Alternative #3 = $50,000(0.1) + $75,000(0.2) + $100,000(0.4) + $125,000(0.3)
Expected monetary value, Alternative #3 = $5,000 + $15,000 + $40,000 + $37,500 = $97,500

Expected monetary value, Alternative #4 = $150,000(0.1) + $100,000(0.2) + $75,000(0.4) + $50,000(0.3)
Expected monetary value, Alternative #4 = $15,000 + $20,000 + $30,000 + $15,000 = $80,000

**Question 29:**

The modeling technique to be employed in a situation involving a sequence of events with several possible outcomes associated with each event is:

A. network analysis.
B. Monte Carlo simulation.
C. queuing theory.
D. decision tree analysis.

A decision tree is a sequenced layout, or diagram, of future decisions and events, their relationships, outcomes, and probabilities. A decision tree is useful for analyzing the long-term significance of near-term decisions given future conditions.
Question 30:

Lake Corporation manufactures specialty components for the electronics industry in a highly labor intensive environment. Arc Electronics has asked Lake to bid on a component that Lake made for Arc last month. The previous order was for 80 units and required 120 hours of direct labor to manufacture. Arc would now like 240 additional components. Lake experiences an 80 percent learning curve on all of its jobs. The number of direct labor hours needed for Lake to complete the 240 additional components is:

A. 307.2.
B. 256.
C. 288.
D. 187.2.

As illustrated in the above table, an 80% cumulative average-time learning model states that as cumulative output doubles, the cumulative average time per batch becomes 80% of the previous cumulative average time.

The average time for the first batch of 80 units was 120 direct labor hours. The cumulative average time per batch for two batches (160 units) would be 96 direct labor hours ($0.80 \times 120$).

For four batches (320 units), the cumulative average time per batch would be 76.8 direct labor hours ($0.80 \times 96$).

Therefore, the total time for four batches (320 units) would be 307.2 direct labor hours ($4 \times 76.8$).

The time for the 240 additional units would be 187.2 direct labor hours (the 307.2 for the 320 units less the 120 for the first 80 units).

Question 31:
Novelty Inc. plans on spending $65,000 to launch its newest product. Its research indicates that there is a 10% chance for revenue of $40,000, a 60% chance for revenue of $80,000, and a 30% chance for revenue of $120,000.

However, the company has to revise its estimate after receiving the latest economic forecast. Now it is estimated that there is 50% chance for revenue of $40,000, a 40% chance for revenue of $80,000, and a 10% chance for revenue of $120,000. What would the company decide about introducing (or not introducing) the new product before and after the revision of its estimate?

A. Before revision: introduce product; after revision: do not introduce product.
B. Before revision: do not introduce product; after revision: introduce product.
C. Before revision: do not introduce product; after revision: do not introduce product.
D. Before revision: introduce product; after revision: introduce product.

Before the revision, the expected revenue of Novelty's newest product is $88,000 ($40,000 \times 0.1 + $80,000 \times 0.6 + $120,000 \times 0.3). Since the cost of launching the product is $65,000, the expected profit from sales of the newest product is $23,000 ($88,000 − $65,000).

After revising its estimate, the expected revenue from sales of the newest product is $64,000 ($40,000 \times 0.5 + $80,000 \times 0.4 + $120,000 \times 0.1). Since the cost of introducing this product remains at $65,000, the expected profit is now ($1,000), ($64,000 − $65,000).

Based on the calculation, the company should introduce the newest product before the revision (because it has a positive expected profit) and should not introduce the product after the revision (because it has a negative expected profit).

Question 32:
The sales manager of Serito Doll Company has suggested that an expanded advertising campaign costing $40,000 would increase the sales and profits of the company. He has developed the following probability distribution for the effect of the advertising campaign on company sales.
The company sells the dolls at $5.20 each. The cost of each doll is $3.20. Serito’s expected incremental profit, if the advertising campaign is adopted, would be:

A. $46,500.
B. $6,500.
C. $53,000.
D. $93,000.

The expected incremental profit is calculated by taking the expected incremental sales in units, multiplied by the contribution margin per unit, then subtracting the incremental advertising costs.

The expected incremental sales in units is calculated by taking the sum of each expected sales increase in units and multiplying it by its associated probability.

\[
\text{Expected incremental sales in units} = \sum (\text{each sales increase})(\text{probability associated with sales increase})
\]

\[
\text{Expected incremental sales in units} = (15,000)(0.1) + (30,000)(0.35) + (45,000)(0.1) + (60,000)(0.25) + (75,000)(0.2)
\]

\[
\text{Expected incremental sales in units} = 1,500 + 10,500 + 4,500 + 15,000 + 15,000 = 46,500
\]

Contribution margin per unit is calculated by taking the selling price per unit less the unit variable costs.

\[
\text{Contribution margin per unit} = \text{unit selling price} - \text{unit variable costs}
\]

\[
\text{Contribution margin per unit} = $5.20 - $3.20 = $2.00
\]

Therefore, the expected contribution margin is calculated by taking the unit contribution margin and multiplying it by the expected incremental sales in units.

\[
\text{Expected contribution margin} = (\text{unit contribution margin})(\text{expected incremental sales in units})
\]

The expected contribution margin is $53,000.
incremental sales in units)
Expected contribution margin = ($2.00)(46,500) = $93,000

The difference between the expected contribution margin of $93,000 and the $40,000 cost of advertising is $53,000.

**Question 33:**
1B3-LS37
Learning curve analysis is a method for:

A. estimating declining costs based on increased learning.
B. calculating the learning rate of individuals based on previous work and educational experiences.
C. estimating increasing costs based on the limit in the amount of learning an individual can accomplish.
D. determining how many workers to hire based on education levels.

Learning curve analysis is a systematic method for estimating declining costs based on increased learning by the business, group, or individual. As experience is gained, the worker or business becomes more efficient at production, which decreases costs.

**Question 34:**
1B3-CQ11
Aerosub, Inc. has developed a new product for spacecraft that includes the manufacture of a complex part. The manufacturing of this part requires a high degree of technical skill. Management believes there is a good opportunity for its technical force to learn and improve as they become accustomed to the production process. The production of the first unit requires 10,000 direct labor hours. If an 80% learning curve is used, the cumulative direct labor hours required for producing a total of eight units would be:

A. 29,520 hours.
B. **40,960 hours.**
C. 64,000 hours.
D. 80,000 hours.

Using a cumulative average time learning curve, as the cumulative output doubles, the cumulative average direct labor hours per unit becomes the learning curve percentage times the previous cumulative average direct labor hours per unit. So, if the direct labor hours for the first unit are 10,000 and an 80% learning curve is used, then the cumulative average direct labor hours for 2 units would be calculated as follows:
Cumulative average direct labor hours for 2 units = 0.8(10,000 direct labor hours) = 8,000 direct labor hours

When output doubles to 4 units, the cumulative average direct labor hours would be calculated as follows:

Cumulative average direct labor hours for 4 units = 0.8(8,000 direct labor hours) = 6,400 direct labor hours

When output doubles again, this time to 8 units, the cumulative average direct labor hours would be calculated as follows:

Cumulative average direct labor hours for 8 units = 0.8(6,400 direct labor hours) = 5,120 direct labor hours

Therefore, the cumulative direct labor hours for 8 units = (5,120 direct labor hours)(8 units) = 40,960 direct labor hours.

Question 35:
Scarf Corporation's controller has decided to use a decision model to cope with uncertainty. With a particular proposal currently under consideration, Scarf has two possible actions, invest or not invest in a joint venture with an international firm. The controller has determined the following.

Action 1: Invest in the Joint Venture
Events and Probabilities:
- Probability of success = 60%
- Cost of investment = $9.5 million
- Cash flow if investment is successful = $15.0 million
- Cash flow if investment is unsuccessful = $2.0 million
- Additional costs to be paid = $0
- Costs incurred up to this point = $650,000

Action 2: Do Not Invest in the Joint Venture
Events:
- Costs incurred up to this point = $650,000
- Additional costs to be paid = $100,000

Which one of the following alternatives correctly reflects the respective expected values of investing versus not investing?

A. ($350,000) and ($750,000).
B. $300,000 and ($100,000).
C. ($350,000) and ($100,000).
The expected value of not investing is ($100,000), since this is the additional cost that would be incurred if no investment is made.

The expected value of investing can be calculated by adding together the expected value of when the investment is successful and the expected value of when the investment is unsuccessful and then subtracting the initial investment cost.

Expected value of investing = (expected value when successful) + (expected value when unsuccessful) − (initial investment cost)

Expected value of investing = (0.6)($15,000,000) + (0.4)($2,000,000) − $9,500,000
Expected value of investing = $9,000,000 + $800,000 − $9,500,000
Expected value of investing = $300,000

Note that the $650,000 in cost incurred up to this point are sunk costs and are irrelevant to the analysis.

Question 36:

Stock X has the following probability distribution of expected future returns.

<table>
<thead>
<tr>
<th>Probability</th>
<th>Expected Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10</td>
<td>-20%</td>
</tr>
<tr>
<td>0.20</td>
<td>5%</td>
</tr>
<tr>
<td>0.40</td>
<td>15%</td>
</tr>
<tr>
<td>0.20</td>
<td>20%</td>
</tr>
<tr>
<td>0.10</td>
<td>30%</td>
</tr>
</tbody>
</table>

The expected rate of return on stock X would be:

A. 19%.
B. 10%.
C. 12%.
D. 16%.

The expected rate of return on stock X can be calculated by taking the sum of the each of the expected returns and multiplying it by the associated probability.

Expected rate of return = Σ (each expected return)(probability of each
Expected rate of return = \((-20\%)(0.1) + (5\%)(0.2) + (15\%)(0.4) + (20\%)(0.2) + (30\%)(0.1)\)

Expected rate of return = \(-2\% + 1\% + 6\% + 4\% + 3\% = 12\%\).

**Question 37:**
Which of the following are the shortcomings of learning curve analysis?

I. Most new employees will improve at their tasks.
II. The learning curve approach is not as effective when robotics perform repetitive tasks.
III. The learning rate is assumed to be constant, but actual learning rate and declines in production times are not constant.
IV. Data that show improvements in productivity may be mistakenly assumed to be due to learning when they are in fact due to other factors.

A. I, II, III, and IV.
B. I and III only.
C. II, III, and IV only.
D. II and IV only.

**Question 38:**
The Lions Club is planning to sell pretzels at a local football game and has estimated sales demand as follows:

<table>
<thead>
<tr>
<th>Sales demand</th>
<th>8,000</th>
<th>10,000</th>
<th>12,000</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability</td>
<td>10%</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
</tr>
</tbody>
</table>

The cost of the pretzels varies with the quantity purchased as follows.

<table>
<thead>
<tr>
<th>Purchase quantity</th>
<th>8,000</th>
<th>10,000</th>
<th>12,000</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost per unit</td>
<td>$1.25</td>
<td>$1.20</td>
<td>$1.15</td>
<td>$1.10</td>
</tr>
</tbody>
</table>

Any unsold pretzels would be donated to the local food bank. The calculated profits at the various sales demand levels and purchase quantities are as follows:
Which one of the following purchase quantities would you recommend to the Lions Club?

A. 8,000  
B. 15,000  
C. 12,000  
D. 10,000

The Lions Club would pick the purchase quantity that would maximize its expected profits.

The expected profits for each purchase option can be calculated by taking the sum of each of the expected profit levels multiplied its associated probability.

Expected profit for each purchase option = Σ (expected profit at each sales demand level)(associated probability)

Expected profit for a purchase of 8,000 units = ($6,000)(0.1) + ($6,000)(0.4) + ($6,000)(0.3) + ($6,000)(0.2)
Expected profit for a purchase of 8,000 units = $600 + $2,400 + $1,800 + $1,200
Expected profit for a purchase of 8,000 units = $6,000

Expected profit for a purchase of 10,000 units = ($4,000)(0.1) + ($8,000)(0.4) + ($8,000)(0.3) + ($8,000)(0.2)
Expected profit for a purchase of 10,000 units = $400 + $3,200 + $2,400 + $1,600
Expected profit for a purchase of 10,000 units = $7,600

Expected profit for a purchase of 12,000 units = ($2,200)(0.1) + ($6,200)(0.4) + ($10,200)(0.3) + ($10,200)(0.2)
Expected profit for a purchase of 12,000 units = $220 + $2,480 + $3,060 + $2,040.
Expected profit for a purchase of 12,000 units = $7,800

Expected profit for a purchase of 15,000 units = (-$500)(0.1) + ($3,500)(0.4) + ($7,500)(0.3) + ($13,500)(0.2)

Expected profit for a purchase of 15,000 units = (-$500) + $1,400 + $2,250 + $2,700

Expected profit for a purchase of 15,000 units = $5,850

The option with the highest expected profit is 12,000 units.

**Question 39:**

The probabilities shown in the table below represent the estimate of sales for a new product.

<table>
<thead>
<tr>
<th>Sales (Units)</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–100</td>
<td>15%</td>
</tr>
<tr>
<td>101–200</td>
<td>45%</td>
</tr>
<tr>
<td>201–300</td>
<td>25%</td>
</tr>
<tr>
<td>301–400</td>
<td>15%</td>
</tr>
</tbody>
</table>

What is the probability of the company selling between 101 and 300 units of the new product?

A. 11%
B. 20%
C. 70%
D. 25%

The probability of selling between 101 and 300 units is calculated by taking the probability of selling 101 to 200 units (0.45) plus the probability of selling 201 to 300 units (0.25) = (0.45 + 0.25) = 0.70, or 70%.

**Question 40:**

Martin Fabricating uses a cumulative average-time learning curve model to monitor labor costs. Data regarding two recently completed batches of a part that is used in tractor-trailer rigs is as follows:

<table>
<thead>
<tr>
<th>Batch Number</th>
<th>Number of Units</th>
<th>Cumulative Average Hours Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>16</td>
</tr>
</tbody>
</table>

If the same rate of learning continues for the next several batches
produced, which of the following best describes (1) the type (i.e., degree) of learning curve that the firm is experiencing and (2) the average hours per unit for units included in the 201-400 range of units produced (i.e., the last 200 units)?

A. 80% learning curve, 7.68 average hours per unit.
B. 80% learning curve, 10.24 average hours per unit.
C. 20% learning curve, 3.84 average hours per unit.
D. 20% learning curve, 10.24 average hours per unit.

Using a cumulative average time learning curve, as the cumulative output doubles, the cumulative average direct labor hours per unit becomes the learning curve percentage times the previous cumulative average direct labor hours per unit.

The learning curve percentage can be calculated as 16 cumulative average hours per unit, divided by 20 cumulative average hours per unit, or $16 / 20 = 0.8$, or 80%.

When output doubles to 4 batches, the cumulative average hours for 4 batches (or 200 units) would be calculated as follows:

Cumulative average direct labor hours for 4 batches (or 200 units) = 0.8(16 hours) = 12.8 hours

The total hours for the first 200 units would be 2,560 hours, which is calculated by multiplying 12.8 hours by 200 units to arrive at 2,560 total hours.

When output doubles again, to 8 batches, the cumulative average hours for 8 batches (or 400) units would be calculated as follows:

Cumulative average direct labor hours for 8 batches (or 400 units) = 0.8(12.8) = 10.24 hours

The total hours for 400 units would be 4,096, which is calculated by multiplying 10.24 hours by 400 units to arrive at 4,096 total hours.

Therefore, the total hours for the second batch of 200 units (units 201 through 400) would be calculated by taking the total hours for 400 units and subtracting the total hours for the first 200 units, as follows:

Total hours for second batch of 200 units = 4,096 hours − 2,560 hours = 1,536 hours
The average hours for the second batch of 200 units would be calculated by taking the total hours for the second batch of 200 units and dividing it by 200 units, as follows: 1,536 hours / 200 units = 7.68 hours.

**Question 41:**

Huron Company plans to bid on a special project that calls for a total of 24,000 units. The units will be produced in lots with the first lot consisting of 750 units. Based on prior experience, the direct labor time needed per unit of product will be progressively smaller by a constant percentage rate as experience is gained in the manufacturing process. The quantitative method that would best estimate Huron's total cost for the project is:

A. learning curve techniques.
B. differential calculus.
C. linear programming.
D. cost-volume-profit analysis.

Learning curve analysis is a systematic method for estimating costs when a learning process is involved. Calculations for the analysis are based upon a learning rate. The learning rate is the rate at which the cumulative average time per lot produced decreases as cumulative output doubles.

**Question 42:**

Reeves Inc. has developed a new production process to manufacture its product. The new process is complex and requires a high degree of technical skill. However, management believes there is a good opportunity for the employees to improve as they become more familiar with the production process. The production of the first unit requires 100 direct labor hours. If a 70% learning curve is used, using the cumulative average time model, the cumulative direct labor hours required to produce a total of eight units would be:

A. 560 hours.
B. 274 hours.
C. 196 hours.
D. 392 hours.

The cumulative direct labor hours required to produce a total of eight units is approximately 274 hours. The following table shows how this number is
Question 43:
Refer to the table below. One new worker can produce a computer chip in 15 hours. Due to increased learning, the second chip can be produced in 12 hours. The same worker can produce his or her fourth chip in 9.6 hours. Using the incremental unit-time learning model, what is the average time per unit for producing the four computer chips?

<table>
<thead>
<tr>
<th>X</th>
<th>Cumulative Average Time per Unit</th>
<th>Cumulative Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100</td>
<td>100 (100*1)</td>
</tr>
<tr>
<td>2</td>
<td>70 (100*0.7)</td>
<td>140 (70*2)</td>
</tr>
<tr>
<td>4</td>
<td>49 (70*0.7)</td>
<td>196 (4*49)</td>
</tr>
<tr>
<td>8</td>
<td>34.3 (49*0.7)</td>
<td>274.4 (34.3*8)</td>
</tr>
</tbody>
</table>

The average time per unit, using the incremental unit-time learning model, is the total hours divided by the number of units produced. 47.13 ÷ 4 units = 11.7825 average hours per unit.

A. 11.78 hours per unit
B. 12.2 hours per unit
C. 9.6 hours per unit
D. 12.5 hours per unit

Question 44:
Aerosub, Inc. has developed a new product for spacecraft that includes the manufacturing of a complex part. The manufacturing of this part requires a high degree of technical skill. Management believes there is a good opportunity for its technical force to learn and improve as they become accustomed to the production process. The production of the first unit requires 10,000 direct labor hours. If an 80% learning curve is used and eight units are produced, the cumulative average direct labor hours required per unit of the product will be:

A. 8,000 hours.
B. 10,000 hours.
C. 6,400 hours.
D. 5,120 hours.

Using a cumulative average time learning curve, as the cumulative output doubles, the cumulative average direct labor hours per unit becomes the learning curve percentage times the previous cumulative average direct labor hours per unit. So, if the direct labor hours for the first unit are 10,000 and an 80% learning curve is used, then the cumulative average direct labor hours for 2 units would be calculated as follows:

Cumulative average direct labor hours for 2 units = 0.8(10,000 direct labor hours) = 8,000 direct labor hours

When output doubles to 4 units, the cumulative average direct labor hours would be calculated as follows:

Cumulative average direct labor hours for 4 units = 0.8(8,000 direct labor hours) = 6,400 direct labor hours

When output doubles again, this time to 8 units, the cumulative average direct labor hours would be calculated as follows:

Cumulative average direct labor hours for 8 units = 0.8(6,400 direct labor hours) = 5,120 direct labor hours

Question 45:
Carson Products sells sweatshirts and is preparing for a World Cup soccer match. The cost per sweatshirt varies with the quantity purchased as follows:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,000</td>
<td>$14.00</td>
</tr>
<tr>
<td>5,000</td>
<td>$13.50</td>
</tr>
<tr>
<td>6,000</td>
<td>$13.00</td>
</tr>
<tr>
<td>7,000</td>
<td>$12.50</td>
</tr>
</tbody>
</table>

Carson must purchase the shirts one month before the game and has analyzed the market and estimated sales levels as follows.

<table>
<thead>
<tr>
<th>Unit sales</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,000</td>
<td>15%</td>
</tr>
<tr>
<td>5,000</td>
<td>20%</td>
</tr>
<tr>
<td>6,000</td>
<td>35%</td>
</tr>
<tr>
<td>7,000</td>
<td>30%</td>
</tr>
</tbody>
</table>

The estimated selling price is $25 for sales made before and at the game day. Any shirts remaining after game day can be sold at wholesale to a
local discount store for $10.

The expected profit if Carson purchased 6,000 shirts is:

A. $72,000.
B. $66,000.
C. $69,000.
D. $64,500.

* Sales limited to 6000, since only 6000 shirts were purchased.
The total expected profit of $64,500 is the sum of the expected profits at each of the four demand levels.

**Question 46:**
1B3-LS39

Refer to the table below. One new worker can produce a garment in 20 hours. Due to increased learning, the second garment can be produced in 16 hours. The same worker can produce his or her fourth garment in 12.8 hours. Using the cumulative average-time learning model, what is the individual time per unit for producing the fourth garment?

<table>
<thead>
<tr>
<th>Garment (x)</th>
<th>Cumulative Average Time per Unit (y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>16 (20 × .8)</td>
</tr>
<tr>
<td>3</td>
<td>14.04</td>
</tr>
<tr>
<td>4</td>
<td>12.8 (16 × .8)</td>
</tr>
</tbody>
</table>

A. 12.8 hours per unit
B. 9.08 hours per unit
C. 12.2 hours per unit
D. 12.12 hours per unit
Using the cumulative average-time learning model, the individual unit time for the Xth unit is calculated based on cumulative total time, which is in turn derived by multiplying the cumulative average hours for the latest unit times the number of units. The chart below shows the cumulative total hours in the third column. The individual unit time for the Xth unit is the increase in cumulative total hours above the previous. The individual unit times are shown in the fourth column.

<table>
<thead>
<tr>
<th>Garment (x)</th>
<th>Cumulative Average Time per Unit (y)</th>
<th>Cumulative Total Hours (x \times y)</th>
<th>Individual Unit Time for Xth Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>16 \times 8</td>
<td>32</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>14.04</td>
<td>42.12</td>
<td>10.12</td>
</tr>
<tr>
<td>4</td>
<td>12.8 \times 8</td>
<td>51.2</td>
<td>9.03</td>
</tr>
</tbody>
</table>

Question 47: 1B3-LS40
Which of the following are the shortcomings of regression analysis?

I. Regression analysis requires the collection of numerous data points to be accurate.
II. The user must evaluate whether the relationship between the dependent and independent variables is reasonable.
III. Regression analysis is limited to the use of one independent variable.
IV. Regression analysis can be strongly influenced by outlying data points.

A. II and IV only.
B. I, II, III, and IV.
C. I only.
D. I, II, and IV only.

Regression analysis requires the collection of multiple, representative data points. Multiple regression will incorporate more than one independent variable.

Question 48: 1B3-CQ25
Susan Hines has developed an estimate of the earnings per share for her firm for the next year using the following parameters.
She is now interested in the sensitivity of earnings per share to sales forecast changes. A 10% sales increase would increase earnings per share by:

A. 20 cents per share.
B. 13 cents per share.
C. 10.4 cents per share.
D. 7 cents per share.

Earnings per share (EPS) is calculated by taking net income less preferred stock dividends, and dividing that total by the weighted average number of common stock shares.

\[
EPS = \frac{\text{Net Income} - \text{Preferred Stock Dividends}}{\text{Weighted Average Number of Common Stock Shares}}
\]

In this scenario, there are no preferred stock dividends and the weighted average number of common stock shares is given at 2,000,000.
As can be seen from the analysis above, the change in EPS from $1.04 to $1.17 is 13 cents per share.

**Question 49:**
A company is trying to determine which of two new products it should introduce this season. Based on market research conducted for product A, there is a 20% chance for sales of $800,000, a 50% chance for sales of $1.2 million, and a 30% chance for sales of $1.5 million. The same market research indicates that for product B, there is a 40% chance for sales of $900,000 and a 60% chance for sales of $2 million. Suppose it costs the company $500,000 to launch product A and $650,000 to launch product B; which of the two products should the company introduce?

A. It should introduce product B because it has an expected profit of $1.56 million.

B. It should introduce product B because it has an expected profit of $910,000.

C. It should introduce product A because it has an expected profit of $710,000.

D. It should introduce product A because it has an expected profit of $1.21 million.

The expected revenue from sales of product A is $1,210,000 (800,000 × 0.2 + 1,200,000 × 0.5 + 1,500,000 × 0.3). Since the cost of introducing this product is $500,000, the expected profit
from sales of product A is $710,000 (1,210,000 − 500,000).

On the other hand, the expected revenue from sales of product B is $1,560,000 (900,000 × 0.4 + 2,000,000 × 0.6).
Since the cost of introducing this product is $650,000, the expected profit from sales of product B is $910,000 (1,560,000 − 650,000). The company should introduce product B because it has a higher expected profit.

**Question 50:**

A manufacturing company required 800 direct labor hours to produce the first lot of four units of a new motor. Management believes that a 90% learning curve will be experienced over the next four lots of production. How many direct labor hours will be required to manufacture the next 12 units?

A. 1,944
B. 1,792
C. 2,160
D. 2,016

Using a cumulative average time learning curve, as the cumulative output doubles, the cumulative average direct labor hours per unit becomes the learning curve percentage times the previous cumulative average direct labor hours per unit. The cumulative average direct labor hours after two lots of four units are produced would be calculated as follows:

Direct labor hours to produce first lot = 800 hours
Direct labor hours to produce one unit in the first lot = 800 hours / 4 units = 200 hours per unit

When output doubles to 2 lots of 4 (or 8 units), the cumulative average direct labor hours to produce 2 lots = (0.9)(200) = 180 hours per unit

When output doubles again, to 4 lots (or 16 units), the cumulative average direct labor hours to produce 4 lots = (0.9)(180) = 162 hours per unit

So, the total hours for the 16 units would be calculated by taking the cumulative average direct labor hours to produce 4 lots (or 16 units), and dividing that amount by 16 units.

Total direct labor hours required to produce 4 lots (or 16 units) = (162 hours per unit)(16 units) = 2,592 hours

Therefore, the total hours for the 12 additional units would be calculated by
taking the total number of hours required to produce all 4 lots (or 16 units) and subtracting the 800 hours that were required to produce the first lot (or 4 units).

Total direct labor hours required to produce the next 12 units = 2,592 hours - 800 hours = 1,792 hours

**Question 51:**
A manufacturing firm plans to bid on a special order of 80 units that will be manufactured in lots of 10 units each. The production manager estimates that the direct labor hours per unit will decline by a constant percentage each time the cumulative quantity of units produced doubles. The quantitative technique used to capture this phenomenon and estimate the direct labor hours required for the special order is:

A. the Markov process.

**B. learning curve analysis.**

C. linear programming analysis.

D. cost-profit-volume analysis.

With learning curve analysis, the more that a process is performed, the less time it takes to complete that process.

**Question 52:**
The results of regressing Y against X are as follows.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>5.23</td>
</tr>
<tr>
<td>Slope</td>
<td>1.54</td>
</tr>
</tbody>
</table>

When the value of X is 10, the estimated value of Y is:

A. 53.84.

**B. 20.63.**

C. 8.05.

D. 6.78.

Given this information, the regression equation would be \( Y = 5.23 + 1.54X \). Therefore, if \( X = 10 \), it can be plugged into the equation as follows:

\[ Y = 5.23 + 1.54(10) \]
\[ Y = 5.23 + 15.4 = 20.63 \]
Dawson Manufacturing developed the following multiple regression equation, utilizing many years of data, and uses it to model, or estimate, the cost of its product.

\[ \text{Cost} = FC + a \times L + b \times M \]

Where:
- FC = fixed costs
- L = labor rate per hour
- M = material cost per pound

Which one of the following changes would have the greatest impact on invalidating the results of this model?

A. Renegotiation of the union contract calling for much higher wage rates.
B. Large drop in material costs, as a result of purchasing the material from a foreign source.
C. A significant change in labor productivity.
D. A significant reduction in factory overheads, which are a component of fixed costs.

In a costing model, all fixed costs, labor costs, and material costs associated with the product are considered. In this case, a significant change in labor productivity will have the greatest impact on invalidating the results of the model as it would cause the model to fluctuate at a higher rate than the other variables.

Question 54:

A manufacturing company has the opportunity to submit a bid for 20 units of a product on which it has already produced two 10-unit lots. The production manager believes that the learning experience observed on the first two lots will continue for at least the next two lots. The direct labor required on the first two lots was as follows:

- 5,000 direct labor hours for the first lot of 10 units
- 3,000 additional direct labor hours for the second lot of 10 units

The learning rate experienced by the company on the first two lots of this product is:

A. 62.5%.
B. 80%.
Using a cumulative average time learning curve, as the cumulative output doubles, the cumulative average direct labor hours per unit becomes the learning curve percentage times the previous cumulative average direct labor hours per unit.

So, if the first lot used 5,000 direct labor hours and the second lot required 3,000 direct labor hours, then the total for the 2 lots would be 8,000 direct labor hours and the cumulative average hours for the two lots would be 4,000 direct labor hours (8,000 direct labor hours / 2).

Therefore, the learning curve percentage would be calculated by taking the cumulative average hours for the two lots (4,000 direct labor hours) and dividing it by the number of direct labor hours used for the first lot (5,000), or 4,000 / 5,000 = 0.8, or 80%.

B4: Budgeting Methodologies

Question 1:
A manager for a firm has been given a goal of maintaining production levels while reducing costs by 10%. The manager decides to move the main plant overseas to a cheaper labor market, even though the manager understands that product quality may suffer. Which of the following budget types is most likely to have encouraged this behavior?

A. Continuous budgeting.
B. Kaizen budgeting.
C. Flexible budgeting.
D. Activity-based budgeting.

A potential drawback of a kaizen budget is that managers may lower quality levels or move practices to cheaper labor markets in order to meet the goals set by a system that stresses continuous improvement.

Question 2:
Which of the following budgets focuses on constant cost justification?
A. Project budgeting.
B. Zero-based budgeting.
C. Activity-based budgeting.
D. Continuous budgeting.

A zero-based budget starts with zero dollars allocated anywhere. While the traditional budget focuses on changes to the past budget, the zero-based budget focuses on constant cost justification.

**Question 3:**

All of the following are criticisms of the traditional budgeting process except that it:

* Source: Retired ICMA CMA Exam Questions.

A. incorporates non-financial measures as well as financial measures into its output.
B. makes across-the-board cuts when early budget iterations show that planned expenses are too high.
C. overemphasizes a fixed time horizon such as one year.
D. is not used until the end of the budget period to evaluate performance.

Many of the criticisms of the traditional budgeting process include: making across-the-board cuts when early budget iterations show that planned expenses are too high; overemphasizing a fixed time horizon such as one year; and is not used until the end of the budget period to evaluate performance. Traditional budgeting does not use non-financial measures.

**Question 4:**

When compared to static budgets, flexible budgets:

* Source: Retired ICMA CMA Exam Questions.

A. encourage managers to use less fixed costs items and more variable cost items that are under their control.
B. offer managers a more realistic comparison of budget and actual revenue and cost items under their control.
C. offer managers a more realistic comparison of budget and actual fixed cost items under their control.
D. provide a better understanding of the capacity variances during the period being evaluated.
Flexible budgeting offers managers a more realistic comparison of budget and actual revenue and cost items under their control as it adjusts the budgets to accommodate fluctuations in activity levels.

Question 5:
A company feels that its budget process lacks relevance by the middle of the year, even though the process took a great deal of time and expense to complete. Which of the following budget types would help solve both of these issues?

A. Kaizen budgeting.
B. Continuous budgeting.
C. Zero-based budgeting.
D. Activity-based budgeting.

A continuous budget adds a new period on the end of the budget at the end of each period such as a month so that the budgets remain up to date with the operating environment. A monthly continuous budget also breaks down a large budgeting process into 12 easily manageable steps.

Question 6:
One difference between incremental budgeting and zero-based budgeting (ZBB) is that incremental budgeting:

A. eliminates functions and duties that have outlived their usefulness.
B. accepts the existing base as being satisfactory.
C. eliminates the need to periodically review all functions to obtain optimum utilization of resources.
D. makes it easy to discontinue outdated functions.

Incremental budgeting accepts the current budget as satisfactory and uses it as the base. ZBB requires that the cost of each item in the budget be re-justified with each new budget. The starting point, or base, for each budgeting line item is zero.

Question 7:
A firm wants to place its budgeting emphasis on teamwork, synchronized activity, and customer satisfaction. Which of the following budget types would best fit these needs?

A. Zero-based budgeting.
B. Project budgeting.

C. Continuous budgeting.

D. Activity-based budgeting.

An activity-based budget places emphasis on teamwork, synchronized activity, and customer satisfaction. Traditional budgeting places emphasis on increasing management performance.

Question 8:
Which of the following budgets is based more on planned future operating practices than on current practices?

A. Continuous budgeting.

B. Zero-based budgeting.

C. Kaizen budgeting.

D. Activity-based budgeting.

A kaizen budget is a budgeting method that incorporates continuous improvement ("kaizen" in Japanese) into each budget. While traditional budgeting continues current practices, a kaizen budgeting process is based on planned future operating practices.

Question 9:
Many companies use comprehensive budgeting in planning for the next year’s activities. When both an operating budget and a financial budget are prepared, which one of the following is correct included in the financial budget?

* Source: Retired ICMA CMA Exam Questions.

A. Capital Budget: Yes  Pro-forma Balance Sheet: No  Cash Budget: Yes.

B. Capital Budget: No  Pro-forma Balance Sheet: No  Cash Budget: No.

C. Capital Budget: Yes  Pro-forma Balance Sheet: Yes  Cash Budget: Yes.

D. Capital Budget: No  Pro-forma Balance Sheet: Yes  Cash Budget: No.

In a financial budget, all budgets and pro-forma information that represent the true financial well-being of the organization is included. These items include the capital budget, pro-forma balance sheet, and cash budget.

Question 10:
Which one of the following is not an advantage of activity-based budgeting?
A. Better identification of resource needs.
B. Linking of costs to outputs.
C. Reduction of planning uncertainty.
D. Identification of budgetary slack.

Activity-based budgeting concentrates on the budgeted cost of activities necessary to produce and sell products and services (outputs). This, in turn, will increase the identification of resource needs and budgetary slack. However, activity-based budgeting does not necessarily reduce planning uncertainty.

**Question 11:**
Country Ovens is a family restaurant chain. Due to an unexpected road construction project, traffic passing by the Country Ovens restaurant in Newtown has significantly increased. As a result, restaurant volume has similarly increased well beyond the level expected. Which type of budget would be most appropriate in helping the restaurant manager plan for restaurant labor costs?

*Source: Retired ICMA CMA Exam Questions.*

A. Zero-based budget.
B. Flexible budget.
C. Rolling budget.
D. Activity-based budget.

Flexible budgeting offers managers a more realistic comparison of budget and actual revenue and cost items under their control as it adjusts the budgets to accommodate fluctuations in activity levels.

**Question 12:**
A method of budgeting where the cost of each program must be justified, starting with the one most vital to the company is:

A. zero-based budgeting (ZBB).
B. continuous budgeting.
C. flexible budgeting.
D. incremental budgeting.

ZBB requires that the cost of each item or program in the budget be re-
justified with each new budget. ZBB ranks items and programs by how vital they are to the company. The base for each budget line item or program is zero.

**Question 13:**
Which of the following methods do managers use when determining what to fund in a zero-based budget?

A. Benchmarks from best-practice firms.
B. Determining specific cost drivers and cost pools.
C. Analysis of the prior year’s zero-based budget.
D. In-depth interviews of each area the manager controls.

In order to justify what items to continue funding, managers must conduct in-depth reviews of each area under their control.

**Question 14:**
Which of the following is a potential drawback to using a project budget?

A. Using a project budget can be expensive and time-consuming due to large data requirements.
B. The link to the master budget may be poorly maintained by the budget coordinator.
C. Managers may lower quality levels to control costs.
D. Staff committed to the project and to other company requirements may have conflicting lines of authority.

When project budgets use resources and a staff that is committed to the entire organization and not just the project, the budget will contain links to these resource centers. When this occurs, affected individuals may have two bosses.

**Question 15:**
Rainbow Inc. recently appointed Margaret Joyce as vice president of finance and asked her to design a new budgeting system. Joyce has changed to a monthly budgeting system by dividing the company's annual budget by twelve. Joyce then prepared monthly budgets for each department and asked the managers to submit monthly reports comparing actual to budget. A sample monthly report for Department A is shown below.
This monthly budget has been imposed from the top and will create behavior problems. All of the following are causes of such problems except

* Source: Retired ICMA CMA Exam Questions.

A. the inclusion of non-controllable costs such as depreciation.

B. top management authoritarian attitude toward the budget process.

C. **the use of a flexible budget rather than a fixed budget**.

D. the lack of consideration for factors such as seasonality.

In an authoritative budgeting process, problems will occur. Some of those causes include top management's authoritarian attitude toward the budget process will cause budgets to vary greatly from actual numbers; the inclusion of non-controllable costs such as depreciation; and the lack of consideration for factors such as seasonality. Also included as causes may be any other factor to which the one making the budgeting decisions does not have the knowledge to make an effective budget.

**Question 16:**

Stumphouse Cheese is in the process of implementing a cost improvement system with kaizen costing as the basis for budgeting all manufacturing activities. This will be utilized over the next four years in an attempt to become more profitable. The target reduction rate has been set at 5% of fixed overhead costs. Total fixed overhead costs for this year were
$900,000. What is the budgeted amount for the next two years using kaizen costing?

A. Current Year +1 = $900,000, Current Year +2 = $855,000.
B. Current Year +1 = $855,000, Current Year +2 = Unable to determine.
C. Current Year +1 = $855,000, Current Year +2 = $810,000.
D. Current Year +1 = $855,000, Current Year +2 = $812,250.

Using Kaizen costing, the targeted overhead for each new year will be 95% (100% - 5%) of the previous year. Therefore, the budget for next year (called the current year + 1) would be calculated as:

Current year + 1 = 0.95($900,000) = $855,000

The budget for the year after that (current year + 2) would be calculated as:

Current year + 2 = 0.95($855,000) = $812,250.

Question 17:

A firm wants to make a clear connection between resource consumption and output, and feels that one process is best measured in machine hours while another is best measured in number of setups. Which of the following systems would allow such options?

A. Activity-based budgeting.
B. Continuous budgeting.
C. Kaizen budgeting.
D. Flexible budgeting.

Machine hours are a volume-based cost driver, and number of setups is an activity-based cost driver. The only possible budgeting system allowing such inputs is an activity-based budget.

Question 18:

A budgeting approach that requires a manager to justify the entire budget for each budget period is known as:

A. program budgeting.
B. incremental budgeting.

* Source: Retired ICMA CMA Exam Questions.
C. zero-base budgeting.
D. performance budgeting.

Per the definition of zero-based budgeting, it is a budgeting approach that requires a manager to justify the entire budget for each budget period.

Question 19:

Near the end of the year, a manager for a government agency has significant funds left in the budget. The manager decides to hire a new employee and purchase a new projector in order to use up the entire budget even though these expenditures aren't necessary. What sort of budget is this manager most likely working under?

A. Activity-based budgeting.
B. Zero-based budgeting.
C. Continuous budgeting.
D. Kaizen budgeting.

Zero-based budgets have a potential drawback in that they can encourage managers to exhaust all of their resources during a budget period for fear that they will be allocated less funds during the next budget cycle.

Question 20:

What would be the correct chronological order of preparation for the following budgets?

I. Cost of goods sold budget.
II. Production budget.
III. Purchases budget.
IV. Administrative budget.

A. I, II, III, IV.
B. IV, II, III, I.
C. II, III, I, IV.
D. III, II, IV, I.

The correct chronological order in budget preparation always starts with the sales budget (not inclusive in this problem), production budget, purchases budget, cost of goods sold budget, and administrative budget.

Question 21:
Which of the following is true of activity-based budgeting (ABB)?

A. ABB uses only activity-based cost drivers; fixed and variable costs are kept in separate cost pools.

B. ABB uses both volume-based and activity-based cost drivers; fixed and variable costs are grouped together in cost pools.

C. ABB uses both volume-based and activity-based cost drivers; fixed and variable costs are kept in separate cost pools.

D. ABB uses only activity-based cost drivers; fixed and variable costs are grouped together in cost pools.

ABB adds activity-based cost drivers to the traditional volume-based cost drivers but doesn’t remove any options. ABB also separates similar acting costs such as fixed and variable costs into their own cost pools.

Question 22:
1B4-LS10
Which of the following is not a potential drawback of using zero-based budgeting?

A. Such budgets can have an expensive and time-consuming review process.

B. Review is often cursory and inadequate.

C. Major changes may be ignored in place of incremental improvements.

D. Budget slack can exaggerate waste in a zero-based budget.

Zero-based budgeting is primarily focused on major changes, not incremental improvements.

Question 23:
1B4-LS17
Which one of the following best describes the order in which budgets should be prepared when developing the annual master operating budget?

A. Revenue budget, production budget, direct material budget.

B. Revenue budget, direct material budget, production budget.

C. Production budget, direct material budget, revenue budget.

D. Production budget, revenue budget, direct material budget.

The correct chronological order in budget preparation always starts with the sales budget, production budget, purchases budget (including direct materials), cost of goods sold budget, and administrative budget.

Question 24:
1B4-LS02
Which of the following budgeting methods establishes a base cost budget for a particular level of output plus a marginal cost-volume amount that shows the behavior of costs at various volumes?

A. Activity-based budgeting.
B. **Flexible budgeting.**
C. Kaizen budgeting.
D. Continuous budgeting.

Flexible budgeting separates the costs that are fixed from the costs that are variable so that various output levels can be entered in the flexible budget to see their overall effect on costs.

**Question 25:**
1B4-AT03
The starting point for creating a master budget for a proprietary secretarial school would be:

A. estimating salaries of the instructors.
B. preparing the student recruiting budget.
C. preparing a capital expenditure budget.
D. forecasting enrollment.

The master budget always begins with the forecast of sales. Tuition from students is the revenue source in a proprietary school.

**Question 26:**
1B4-AT04
A continuous (rolling) budget:

A. presents the plan for only one level of activity and does not adjust to changes in the level of activity.

B. **is a plan that is revised monthly or quarterly, dropping one period and adding another.**

C. is one of the budgets that is part of a long-range strategic plan, unchanged unless the strategy of the company changes.

D. presents the plan for a range of activity so the plan can be adjusted for changes in activity.

A continuous or rolling budget is one that is revised regularly by dropping the current period and adding another. The budget period could be a week, month, quarter, or year.
**Question 27:**
Which of the following statements is true regarding budget systems?

A. The kaizen budgeting process begins by identifying areas of improvement and ways to reduce costs.

B. Activity-based budgeting identifies a single cost driver (generally the number of units produced) as the prime indicator for budgeting.

C. Zero-based budgets create a plan where the firm breaks even (i.e., zero net income).

D. Flexible budgeting allows all costs to vary directly with projected sales.

Kaizen budgeting focuses on finding ways to reduce costs. Zero-based budgets begin with an assumption of zero costs and costs are added as they are justified; however, positive net income is often a goal of the firm. ABB uses multiple cost drivers generally, and flexible budgets only allow variable costs to vary directly with projected sales.

**Question 28:**
After the goals of the company have been established and communicated, the next step in the planning process would be the development of the:

A. sales forecast.

B. production budget.

C. selling and administrative budget.

D. direct materials budget.

After the goals of the company have been established and communicated, the budgeting process begins. The first step in the budgeting process is the completion of a sales forecast.

**Question 29:**
The type of budget that is available on a continuous basis for a specified future period by adding a month, a quarter, or a year in the future as the month, quarter, or year just ended is deleted, is called a:

A. flexible budget.

B. kaizen budget.

C. rolling budget.

D. activity-based budget.
A rolling budget (or continuous budget) is a plan that always covers a specified future period by adding a period in the future and dropping the period just ended. It forces management to continuously focus on the future specified time period. The time period is always the same length, but the actual time period covered by the budget moves forward with the passage of time.

B5: Annual Profit Plan and Supporting Schedules

Question 1:

Petersons Planters Inc. budgeted the following amounts for the coming year.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory, finished goods</td>
<td>$10,000</td>
</tr>
<tr>
<td>Cost of goods sold</td>
<td>400,000</td>
</tr>
<tr>
<td>Direct material used in production</td>
<td>100,000</td>
</tr>
<tr>
<td>Ending inventory, finished goods</td>
<td>25,000</td>
</tr>
<tr>
<td>Beginning and ending work-in-process inventory</td>
<td>Zero</td>
</tr>
</tbody>
</table>

Overhead is estimated to be two times the amount of direct labor dollars. The amount that should be budgeted for direct labor for the coming year is:

A. $315,000.
B. $105,000.
C. $157,500.
D. $210,000.

Since there was no change in work-in-process inventory, cost of goods manufactured equals total manufacturing costs.

Cost of goods manufactured is calculated as follows:

Cost of goods manufactured = (ending finished goods) + (cost of goods sold) – (beginning finished goods)

Cost of goods manufactured = $25,000 + $400,000 – $10,000 = $415,000

Since, cost of goods manufactured is equal to total manufacturing costs, use the following formula to solve for direct labor costs:
Total manufacturing costs = (direct material) + (direct labor) + 
(manufacturing overhead) 
$415,000 = $100,000 + direct labor + 2(direct labor) 
$415,000 = $100,000 + 3(direct labor) 
$315,000 = 3(direct labor) 
Direct labor = $105,000

Question 2:
Data regarding Johnsen Inc.'s forecasted dollar sales for the last seven 
months of the year and Johnsen's projected collection patterns are as 
follows.

<table>
<thead>
<tr>
<th>Month</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>$700,000</td>
</tr>
<tr>
<td>July</td>
<td>$600,000</td>
</tr>
<tr>
<td>August</td>
<td>$650,000</td>
</tr>
<tr>
<td>September</td>
<td>$800,000</td>
</tr>
<tr>
<td>October</td>
<td>$850,000</td>
</tr>
<tr>
<td>November</td>
<td>$900,000</td>
</tr>
<tr>
<td>December</td>
<td>$840,000</td>
</tr>
</tbody>
</table>

Types of sales
- Cash sales: 30%
- Credit sales: 70%

Collection pattern on credit sales (5% determined to be uncollectible)
- During the month of sale: 20%
- During the first month following the sale: 50%
- During the second month following the sale: 25%

Johnsen's budgeted cash receipts from sales and collections on account 
for September are:

A. $827,000.  
B. $635,000.  
C. $684,500.  
D. $807,000.
The budgeted cash receipts from sales and collections on account for September are calculated as follows:

Budgeted cash receipts from sales and collections on account, September = (September cash sales) + (collections from September credit sales) + (collections from August sales) + (collections from July sales)

September cash sales = (30%)(September sales) = (0.3)($800,000) = $240,000

Collections from September credit sales = (20%)(70%)(September sales)
Collections from September credit sales = (0.2)(0.7)($800,000) = $112,000

Collections from August sales = (50%)(70%)(August sales)
Collections from August sales = (0.5)(0.7)($650,000) = $227,500

Collections from July sales = (25%)(70%)(July sales)
Collections from July sales = (0.25)(0.7)($600,000) = $105,000

Budgeted cash receipts from sales and collections on account, September = $240,000 + $112,000 + $227,500 + $105,000 = $684,500

**Question 3:**

It's January 1 and an accountant is preparing her firm's cash budget, obtaining the following information.

Sales for the previous November and December were $50,000 and $52,000, respectively. Sales projected for January and February are $55,000 and $57,000, respectively.

Direct materials (DM) purchases are approximately 40% of sales. Firm policy dictates that all DM are purchased the month prior to their use in production. Historical payment patterns indicate that 30% of DM purchases are paid in the same month as the purchase; 50% are paid the month following the purchase and 20% are paid two months following the purchase.

What are expected cash disbursements for direct materials in January?

A. $22,000
B. $26,160.
C. $22,800.
DM purchases must first be computed. They are $20,800 in November, $22,000 in December, and $22,800 in January.

Next, apply the payment patterns. In January, $6,840 of January DM purchases are paid ($22,800 × 30%); $11,000 of December DM purchases are paid ($22,000 × 50%); $4,160 of November purchases are paid ($20,800 × 20%).

Expected cash disbursements for direct materials in January are $6,840 + $11,000 + $4,160 = $22,000.

**Question 4:**

What is the standard cost for a unit if the process should consume 8 pounds of direct material at $1.50/pound (actual cost was 7.50 pounds at $2/pound), should use 0.5 direct labor hours at $10/hour (actual cost was 0.6 hours at $10/hour), and uses a factory overhead rate of $20/direct labor hour in factory overhead (actual cost was $9.50/unit)?

A. $17/unit.
B. $25/unit.
C. $9/unit.
D. $27/unit.

The standard cost is determined using the "should cost" amounts: (8 pounds × $1.50) + (0.5 × $10) + (0.5 × $20) = $27/unit.

**Question 5:**

Which one of the following items is the last schedule to be prepared in the normal budget preparation process?

A. selling expense budget.
B. cost of goods sold budget.
C. manufacturing overhead budget.
D. cash budget.

The cash budget is the last schedule to be prepared in the normal budget preparation process. All of the other budgets listed are needed in order to determine the receipts and disbursements required to prepare the cash budget.
Question 6:

The following information relates to Clyde Corporation which produced and sold 50,000 units during a recent accounting period.

Sales $850,000
Manufacturing costs
  Fixed 210,000
  Variable 140,000
Selling and administrative costs
  Fixed 300,000
  Variable 45,000
Income tax rate 40%

In the next accounting period, if production and sales are expected to be 40,000 units, the company should anticipate a per-unit contribution margin of:

A. $3.10.
B. $0.55.
C. $7.98.
D. $13.30.

Contribution margin per unit is calculated by taking the unit sales price and subtracting all variable costs.

Since the company sold 50,000 units to generate revenue of $850,000, the per-unit selling price is $17 ($850,000 / 50,000 = $17).

Per unit variable manufacturing costs are $2.80 ($140,000 / 50,000).
Per unit selling and administrative costs are $0.90 ($45,000 / 50,000).

Per unit contribution margin is therefore $13.30 ($17 − $2.80 − $0.90).

Question 7:

Myers Company uses a calendar-year and prepares a cash budget for each month of the year. Which one of the following items should be considered when developing July’s cash budget?

A. Recognition that 0.5% of the July sales on account will be uncollectible.
B. Quarterly cash dividends scheduled to be declared on July 15 and paid on August 6 to shareholders of record as of July 25.

* Source: Retired ICMA CMA Exam Questions.
C. Property taxes levied in the last calendar year scheduled to be paid quarterly in the coming year during the last month of each calendar quarter.

D. Federal income tax and social security tax withheld from employee’s June paychecks to be remitted to the Internal Revenue Service in July.

When preparing a cash budget for the following month, those cash items that are to be received or made payable in the following month should be only those items included in the cash budget. In this problems, the only item that will affect cash in the month of July are those Federal income and social security taxes withheld from employee’s paychecks in June that will be required to be paid in July.

Question 8:

If a firm’s desired ending direct materials (DM) inventory is 20% of the upcoming month’s DM usage, then which of the following is likely to be false, assuming no change in DM cost?

A. When sales are increasing and decreasing in alternating months, the volatility in the DM purchases budget will be greater than the volatility in the DM usage budget.

B. When sales are rising each month, the DM purchases budget will be increasing each month.

C. When sales are rising each month, the DM purchases budget will be greater than the DM usage budget.

D. The DM purchases budget will be less than the DM usage budget if sales are declining each month.

Recall that budgeted DM purchases = budgeted DM usage + desired ending DM inventory − beginning DM inventory. If sales rise (and then proceed to fall), DM usage rises but desired ending DM inventory falls (so we’re adding a smaller number) and then we subtract a larger beginning inventory (because of the higher current month’s sales). This pattern will result in less variability in DM purchases compared to DM usage.

Question 9:

Maximilian Computer Company uses a comprehensive budgeting system in planning its annual operations. Which of the following best describes the information needed in order to determine the budgeted cost of circuit boards to be purchased for use in building its laptop computer? Assume one circuit board is used in each laptop.

A. Begin with budgeted laptop production in units, add the desired ending inventory of circuit boards, deduct the expected beginning inventory of
circuit boards, and multiply the resulting amount by the purchase cost per circuit board.

B. Begin with budgeted laptop sales in units, deduct the desired ending inventory of circuit boards, add the expected beginning inventory of circuit boards, and multiply the resulting amount by the purchase cost per circuit board.

C. Begin with budgeted laptop production in units, add the desired ending inventory of circuit boards, add the expected beginning inventory of circuit boards, and multiply the resulting amount by the budgeted purchase cost per circuit board.

D. Begin with budgeted laptop sales in units, add the desired ending inventory of circuit boards, deduct the expected beginning inventory of circuit boards, and multiply the resulting amount by the budgeted purchase cost per circuit board.

To determine the budgeted cost of purchases, the number of units to be produced should be adjusted by the change in inventory and then multiplied by the budgeted purchase cost.

**Question 10:**

Ace Manufacturing plans to produce two products, Product C and Product F, during the next year, with the following characteristics.

<table>
<thead>
<tr>
<th></th>
<th>Product C</th>
<th>Product F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price per unit</td>
<td>$10</td>
<td>$15</td>
</tr>
<tr>
<td>Variable cost per unit</td>
<td>$8</td>
<td>$10</td>
</tr>
<tr>
<td>Expected sales (units)</td>
<td>20,000</td>
<td>5,000</td>
</tr>
</tbody>
</table>

Total projected fixed costs for the company are $30,000. Assume that the product mix would be the same at the breakeven point as at the expected level of sales of both products. What is the projected number of units (rounded) of Product C to be sold at the breakeven point?

A. 2,308 units.

B. 9,231 units.

C. 15,000 units.

D. 11,538 units.

The breakeven point occurs when the contribution margins of the two products is equal to the fixed costs, which are given as $30,000.
The contribution margin of each product is calculated as follows:

Contribution margin = (selling price per unit − variable cost per unit)(product volume)

Contribution margin, Product C = ($10 − $8)(C) = 2C
Where C = the volume of Product C

Since the expected sales mix of Product C to Product F is 20,000:5,000, or 4:1, the contribution margin for Product F can be calculated as follows:

Contribution margin, Product F = ($15 − $10)(1/4)(C) = 1.25C

The breakeven point in units for Product C can then be calculated as follows:

Breakeven point in units, Product C = 2C + 1.25C = $30,000
Breakeven point in units, Product C = 3.25C = $30,000
Breakeven point in units, Product C = 9,231 units

**Question 11:**

Daffy Tunes manufactures an animated rabbit with moving parts and a built-in voice box. Projected sales in units are:

<table>
<thead>
<tr>
<th>Month</th>
<th>Projected Sales in Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>30,000</td>
</tr>
<tr>
<td>February</td>
<td>36,000</td>
</tr>
<tr>
<td>March</td>
<td>33,000</td>
</tr>
<tr>
<td>April</td>
<td>40,000</td>
</tr>
<tr>
<td>May</td>
<td>29,000</td>
</tr>
</tbody>
</table>

Each rabbit requires basic materials that Daffy purchases from a single supplier at $3.50 per rabbit. Voice boxes are purchased from another supplier at $1.00 each. Assembly labor cost is $2.00 per rabbit and variable overhead cost is $0.50 per rabbit. Fixed manufacturing overhead applicable to rabbit production is $12,000 per month.

Daffy's policy is to manufacture 1.5 times the coming month's projected sales every other month starting with January (i.e., odd-numbered months) for February sales, and to manufacture 0.5 times the coming month's projected sales in alternate months (i.e., even-numbered months). This allows Daffy to allocate limited manufacturing resources to other products as needed during the even-numbered months.
The dollar production budget for animated rabbits for February is:

A. $327,000.
B. $113,500.
C. $127,500.
D. $390,000.

The budgeted costs for February production are calculated by taking the unit variable costs of production (basic materials, voice box, assembly labor, and variable overhead per rabbit) multiplied by the number of rabbits to be produced, and adding that to the monthly fixed manufacturing overhead costs of $12,000.

The variable costs per rabbit are $3.50 (basic material) + $1.00 (voice box) + $2.00 (direct labor) + $0.50 (variable overhead), which totals $7 per unit.

The number of units budgeted for February (an even-numbered month) are: 0.5(33,000 units) = 16,500 units.

The budgeted costs for February = $7(16,500 units) + $12,000 = $115,500 + $12,000 = $127,500.

Question 12:

Over the past several years, McFadden Industries has experienced the following regarding the company's shipping expenses:

| Fixed costs | $16,000 |
| Average shipment | 15 pounds |
| Cost per pound | $0.50 |

Shown below are McFadden's budget data for the coming year.

| Number of units shipped | 8,000 |
| Number of sales orders | 800 |
| Number of shipments | 800 |
| Total sales | $1,200,000 |
| Total pounds shipped | 9,600 |

McFadden's expected shipping costs for the coming year are:

A. $20,000.
Total shipping costs include both fixed and variable shipping costs.

Total shipping costs = fixed shipping cost + variable shipping cost
Total shipping costs = $16,000 + ($0.50)(number of pounds shipped)
Total shipping costs = $16,000 + ($0.50)(9,600 lbs.)
Total shipping costs = $16,000 + $4,800 = $20,800

Question 13:
Swan Company is a maker of men’s slacks. The company would like to maintain 20,000 yards of fabric in ending inventory. The beginning fabric inventory is expected to contain 25,000 yards. The expected yards of fabric needed for sales is 90,000. How many yards of fabric does Swan need to purchase?

A. 85,000 yards.
B. 95,000 yards.
C. 90,000 yards.
D. 135,000 yards.

Purchases in yards are calculated as follows:

Purchases in yards = (sales in yards) + (ending inventory in yards) − (beginning inventory in yards)

Purchases in yards = 90,000 yards + 20,000 yards − 25,000 yards = 85,000 yards

Question 14:
When presenting a production budget aggregated to the quarterly level, which of the following is true?

A. Sales are totaled for the three months, but ending inventory counts only the last month and beginning inventory counts only the first month.
B. Sales, beginning, and ending inventories are not totaled, but the last month’s data is used for the quarterly totals.
C. Sales are totaled, and beginning and ending inventories are averaged across the quarter.
D. Sales, beginning, and ending inventories are totaled for each of the three months.

The sales totals are summed for the quarter, but beginning inventory for the quarter is the same as the beginning inventory for the first month while ending inventory for the quarter is the ending inventory for the last month of the quarter.

Question 15:

The Mountain Mule Glove Company is in its first year of business. Mountain Mule had a beginning cash balance of $85,000 for the quarter. The company has a $50,000 short-term line of credit. The budgeted information for the first quarter is shown below.

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$80,000</td>
<td>$40,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Purchases</td>
<td>35,000</td>
<td>40,000</td>
<td>75,000</td>
</tr>
<tr>
<td>Operating costs</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
</tr>
</tbody>
</table>

All sales are made on credit and are collected in the second month following the sale. Purchases are paid in the month following the purchase, while operating costs are paid in the month that they are incurred. How much will Mountain Mule need to borrow at the end of the quarter if the company needs to maintain a minimum cash balance of $5,000 as required by a loan covenant agreement?

A. $0.
B. $5,000.
C. $45,000.
D. $10,000.

The projected cash balance, without borrowing, at the end of the quarter is calculated as follows:

Projected cash balance, without borrowing, end of quarter = (beginning cash balance) + (projected cash receipts) − (projected cash disbursements)

Beginning cash balance for the quarter = $85,000

Projected cash receipts for the quarter are equal to the January sales amount, because all sales are made on credit and are collected in the second month following business.
Projected cash receipts for the quarter = $60,000

Projected cash disbursements for the quarter will include the purchases from January and February (March purchases are not included, because they will be paid for in April), plus the operating costs for the months of January, February and March.

Projected cash disbursements = $35,000 + $40,000 + $25,000 + $25,000 + $25,000 = $150,000

The projected cash balance, without borrowing, for the end of the quarter can be calculated as follows:

Projected cash balance, without borrowing, end of quarter = $85,000 + $60,000 − $150,000 = −$5,000

Therefore, $10,000 will have to be borrowed to maintain a minimum cash balance of $5,000.

Question 16:

Assume it is January 1. A firm had sales of $30,000 and $32,000 in the previous November and December, respectively. Projected sales for January are $38,000.

Past collection patterns indicate that 50% of sales are cash sales. 10% of credit sales are typically collected in the same month as the sale; 80% are collected the month following the sale and 10% are collected two months after the month of the sale. How much money is expected to be collected in January?

A. $35,200.

B. $20,900.

C. $51,400.

D. $49,500.

In January, cash sales are $19,000 ($38,000 × 50%).

Credit sales collected from January would be $1,900 ($38,000 × 50% × 10%).

Credit sales collected from December would be $12,800 ($32,000 × 50% × 80%).

Credit sales collected from November would be $1,500 ($30,000 × 50% × 10%).
The sum of cash collected is $19,000 + $1,900 + $12,800 + $1,500 = $35,200.

**Question 17:**

Tidwell Corporation sells a single product for $20 per unit. All sales are on account, with 60% collected in the month of sale and 40% collected in the following month. A partial schedule of cash collections for January through March of the coming year reveals the following receipts for the period.

<table>
<thead>
<tr>
<th>Cash Receipts</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>December receivables</td>
<td>$32,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From January sales</td>
<td>54,000</td>
<td>$36,000</td>
<td></td>
</tr>
<tr>
<td>From February sales</td>
<td></td>
<td>66,000</td>
<td>$44,000</td>
</tr>
</tbody>
</table>

Other information includes the following:

- Inventories are maintained at 30% of the following month's sales in units.
- Assume that March sales total $150,000.

The number of units to be purchased in February is:

A. 7,750 units.
B. 4,900 units.
C. 6,100 units.
D. 3,850 units.

The expected unit purchases for any month is calculated as follows:

\[
\text{Expected purchases} = (\text{expected sales in units}) + (\text{expected ending inventory}) - (\text{expected beginning inventory})
\]

The expected ending inventory for a month is 30% of the next month's expected sales.

Expected sales is calculated as follows:

\[
\text{Expected sales} = (\text{sales in $}) / (\$20 \text{ selling price per unit})
\]
Number of units to be purchased in February = ($110,000 / $20 per unit) + [0.3($150,000 / $20 per unit)] − [0.3($110,000 / $20 per unit)]
Number of units to be purchased in February = 5,500 units + [0.3(7,500 units)] − [0.3(5,500 units)]
Number of units to be purchased in February = 5,500 units + 2,250 units − 1,650 units = 6,100 units

**Question 18:**

All of the following are part of a capital investment budget **except**:

A. factory machine purchase price.

B. cost of disposing of the old machine being replaced.

C. installation of the factory machine.

D. research and development costs.

Research and development costs are period costs that must be expensed in the period incurred and are therefore not part of a capital budget.

**Question 19:**

Jordan Auto has developed the following production plan.

<table>
<thead>
<tr>
<th>Month</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>10,000</td>
</tr>
<tr>
<td>February</td>
<td>8,000</td>
</tr>
<tr>
<td>March</td>
<td>9,000</td>
</tr>
<tr>
<td>April</td>
<td>12,000</td>
</tr>
</tbody>
</table>

Each unit contains three pounds of raw material; the desired raw material ending inventory each month is 120 percent of the next month's production, plus 500 pounds. (The beginning inventory meets this requirement.) Jordan has developed the following direct labor standards for production of these units.

<table>
<thead>
<tr>
<th>Hours per unit</th>
<th>Department 1</th>
<th>Department 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours per unit</td>
<td>2.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Hourly rate</td>
<td>$8.75</td>
<td>$12.00</td>
</tr>
</tbody>
</table>

How much raw material should Jordan Auto purchase in March?

A. 43,700 pounds.

B. 32,900 pounds.

C. 37,800 pounds.
D. 27,000 pounds.

The monthly raw material purchase requirement must be sufficient to cover the necessary monthly production requirement, plus the required monthly ending inventory, less the month's beginning inventory.

Monthly raw material purchase amount = current month production requirement + current month's ending inventory − current month's beginning inventory

Monthly raw material purchase amount = [(current month production requirement in units)(amount of raw material required per unit)] + [(next month's production)(1.2) + 500 pounds] + (current month raw materials beginning inventory) (Note: The current month's raw materials beginning inventory is calculated by taking the current month's production and multiplying it by 1.2)

- The production requirement is 3 pounds of raw material per unit of output.
- The desired ending inventory for each month is 120% of, or 1.2 times the next month's production requirement, which works out to 3.6 pounds (1.2 times 3 pounds) per unit multiplied by the next month's production in units, plus 500 pounds. Keep in mind that the ending inventory for one month will become the beginning inventory for the next month.

March raw materials requirement = March production units × pounds used per unit = 9,000 units × 3 pounds per unit = 27,000 pounds

March raw materials ending inventory = (1.2)(3 pounds)(12,000 April units) + 500 pounds = 43,200 + 500 = 43,700 pounds

March raw materials beginning inventory (which is the same as the February raw materials ending inventory) = (1.2)(3 pounds)(9,000 March units) + 500 pounds = 32,400 + 500 = 32,900 pounds

Therefore, the March raw material purchase requirement = 27,000 pounds + 43,700 pounds − 32,900 pounds = 37,800 pounds.

Question 20:

ANNCO sells products on account, and experiences the following collection schedule.
At December 31, ANNCO reports accounts receivable of $211,500. Of that amount, $162,000 is due from December sales, and $49,500 from November sales. ANNCO is budgeting $170,000 of sales for January. If so, what amount of cash should be collected in January?

A. $129,050.

B. $174,500.

C. $211,500.

D. $228,500.

The amount of cash that should be collected in January is calculated as follows:

Cash collections, January = (accounts receivable collected from November sales) + (accounts receivable collected from December sales) + (accounts receivable collected from January sales)

Accounts receivable collected during January from December sales = (60%)(December sales)

Accounts receivable collected during January from December sales = (60%)($180,000) = $108,000

Where December sales is calculated as follows:

At the end of December, $162,000 is due from December sales. Since 10% was collected during December, $162,000 must be 90% of December sales.

(90%) (December Sales) = $162,000
(0.9) (December Sales) = $162,000
December sales = $162,000 / 0.9 = $180,000

Accounts receivable collected during January from January sales = (10%)(January sales)

Accounts receivable collected during January from January sales = (10%)($170,000) = $17,000

Cash collections, January = ($49,500) + ($162,000) + ($17,000)
Cash collections, January = $49,500 + $108,000 + $17,000 = $174,500
Brown Company estimates that monthly sales will be as follows.

<table>
<thead>
<tr>
<th>Month</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>$100,000</td>
</tr>
<tr>
<td>February</td>
<td>150,000</td>
</tr>
<tr>
<td>March</td>
<td>180,000</td>
</tr>
</tbody>
</table>

Historical trends indicate that 40% of sales are collected during the month of sale, 50% are collected in the month following the sale, and 10% are collected two months after the sale. Brown's accounts receivable balance as of December 31 totals $80,000 ($72,000 from December's sales and $8,000 from November's sales). The amount of cash Brown can expect to collect during the month of January is:

A. $76,800.
B. $84,000.
C. $133,000.
D. $108,000.

The expected cash receipts for January can be calculated as follows:

Expected cash receipts for January = (40% of January sales) + (50% of December sales) + (10% of November sales)

Calculate December sales as follows:

Since 40% of December sales were collected in December, the remaining amount for December in accounts receivable must equal 60% of December sales. Use the following formula to determine December sales.

\[(60\%)(\text{December sales}) = 72,000\]

\[(0.6)(\text{December sales}) = 72,000\]

\[\text{December sales} = (72,000)/(0.6) = 120,000\]

The entire $8,000 remaining in accounts receivable for November will be collected in January. No calculations are necessary.

Expected cash receipts for January = (40\%)(100,000) + (50\%)(120,000) + (8,000)

Expected cash receipts for January = (0.4)(100,000) + (0.5)(120,000) + (8,000)

Expected cash receipts for January = 40,000 + 60,000 + 8,000 = 108,000

The direct materials budget is often broken down into:

A. a direct materials mix budget and a direct materials yield budget.
B. a direct materials usage budget and a direct materials purchase budget.
C. a direct materials mix budget and a direct materials purchase budget.

D. a direct materials yield budget and a direct materials usage budget.

The direct usage budget plus the direct materials purchase budget equals the direct materials budget.

**Question 23:**

Projected monthly sales of Wallstead Corporation for January, February, March, and April are as follows.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>Sales</td>
<td>Month</td>
<td>Sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>$300,000</td>
<td>February</td>
<td>340,000</td>
</tr>
<tr>
<td>March</td>
<td>370,000</td>
<td>April</td>
<td>390,000</td>
</tr>
</tbody>
</table>

- The company bills each month's sales on the last day of the month.
- Receivables are booked gross and credit terms of sale are: 2/10, n/30.
- 50% of the billings are collected within the discount period, 30% are collected by the end of the month, 15% are collected by the end of the second month, and 5% become uncollectible.

Budgeted cash collections for Wallstead Company during April would be:

A. $347,000.

B. $343,300.

C. $353,000.

D. $349,300.

In this problem, the budgeted cash collections in any month can be calculated as follows:

Budgeted cash collections = (50%)(98% of the sales from the previous month, collected within the discount period) + (30% of the sales from the previous month, no discount taken) + (15% of the sales from the month before that)

For April, the budgeted cash collections = (50%)(0.98)($370,000) + (0.3)($370,000) + (0.15)($340,000)

Budgeted cash collections, April = $181,300 + $111,000 + $51,000 = $343,300

**Question 24:**
A cost of goods sold (COGS) budget for a manufacturing firm contains which of the following primary components?

A. Cost of goods manufactured (COGM) and finished goods inventory balances.

B. Cost of goods manufactured (COGM) and direct materials inventory balances.

C. Budgeted direct materials purchases, budgeted direct labor, and budgeted factory overhead.

D. Budgeted direct materials used and budgeted direct labor.

COGS for a manufacturing firm is defined as beginning finished goods inventory plus COGM less ending finished goods inventory. The COGM may be expanded in this report, where COGM is defined as budgeted direct materials used (not purchased), budgeted direct labor, and budgeted factory overhead.

Question 25:

Given the following data for Scurry Company, what is the cost of goods sold?

- Beginning inventory of finished goods: $100,000
- Cost of goods manufactured: $700,000
- Ending inventory of finished goods: $200,000
- Beginning work-in-process inventory: $300,000
- Ending work-in-process inventory: $50,000

A. $950,000.
B. $800,000.
C. $500,000.
D. $600,000.

Cost of goods sold is calculated as follows:

\[
\text{Cost of goods sold} = (\text{cost of goods manufactured}) + (\text{beginning finished goods inventory}) - (\text{ending finished goods inventory})
\]

\[
\text{Cost of goods sold} = 700,000 + 100,000 - 200,000 = 600,000
\]

Question 26:

Streeter Company produces plastic microwave turntables. Sales for the next year are expected to be 65,000 units in the first quarter, 72,000 units
in the second quarter, 84,000 units in the third quarter, and 66,000 units in the fourth quarter.

Streeter usually maintains a finished goods inventory at the end of each quarter equal to one half of the units expected to be sold in the next quarter. However, due to a work stoppage, the finished goods inventory at the end of the first quarter is 8,000 units less than it should be.

How many units should Streeter produce in the second quarter?

A. 86,000 units.
B. 78,000 units.
C. 75,000 units.
D. 80,000 units.

Budgeted production is calculated as follows:

Budgeted production = (expected sales) + (expected ending inventory) − (expected beginning inventory)

The expected ending inventory for each quarter equals 50% of the next quarter's expected sales. Since the finished goods inventory at the end of the first quarter is 8,000 less than it should be, the budgeted production for the second quarter is calculated as follows:

Budgeted production, second quarter = 72,000 units + 0.5(84,000 units) − [0.5(72,000 units) − 8,000 units]
Budgeted production, second quarter = 72,000 units + 42,000 units − [36,000 units − 8,000 units]
Budgeted production, second quarter = 114,000 units − 28,000 units = 86,000 units

Question 27:

Streeter Company produces plastic microwave turntables. Sales for the next year are expected to be 65,000 units in the first quarter, 72,000 units in the second quarter, 84,000 units in the third quarter and 66,000 units in the fourth quarter. Streeter maintains a finished goods inventory at the end of each quarter equal to one half of the units expected to be sold in the next quarter. How many units should Streeter produce in the second quarter?

A. 75,000 units.
B. 84,000 units.
The expected production in each quarter is calculated as follows:

\[ \text{Expected production} = (\text{expected sales}) + (\text{expected ending inventory}) - (\text{expected beginning inventory}) \]

The expected ending inventory for each quarter is 50% of the following quarter's sales. Therefore, the expected production for the second quarter is calculated as follows:

\[ \text{Expected production, second quarter} = 72,000 + 0.5(84,000) - 0.5(72,000) \]
\[ \text{Expected production, second quarter} = 72,000 + 42,000 - 36,000 = 78,000 \text{ units} \]

**Question 28:**

Cooper Company's management team is preparing a cash budget for the coming quarter. The following budgeted information is under review.

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$700,000</td>
<td>$800,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>Inventory purchases</td>
<td>350,000</td>
<td>425,000</td>
<td>225,000</td>
</tr>
<tr>
<td>Other expenses</td>
<td>150,000</td>
<td>175,000</td>
<td>175,000</td>
</tr>
</tbody>
</table>

The company expects to collect 40% of its monthly sales in the month of sale and 60% in the following month. 50% of inventory purchases are paid in the month of purchase, and the other 50% in the following month. All payments for other expenses are made in the month incurred. Cooper forecasts the following account balances at the beginning of the quarter.

- **Cash:** $100,000
- **Accounts receivable:** 300,000
- **Accounts payable (Inventory):** 500,000

Given the above information, the projected change in cash during the coming quarter will be:

A. $-0-.
B. $300,000.
The projected change in cash for the upcoming quarter is equal to the projected cash receipts for the quarter, less the projected cash disbursements for the quarter.

Projected change in cash = (projected cash receipts) − (projected cash disbursements)

The projected cash receipts for the quarter is calculated as follows:

Projected cash receipts for the quarter = (accounts receivable, beginning of quarter) + (January and February sales) + (40% of March sales)

Projected cash receipts for the quarter = ($300,000) + ($700,000) + ($800,000) + (0.4)($500,000)

Projected cash receipts for the quarter = $1,800,000 + $200,000 = $2,000,000

The projected cash disbursements is equal to the accounts payable at the beginning of the quarter, plus the other cash expenses for January, February, and March, plus January and February purchases, plus 50% of March purchases

Projected cash disbursements = $500,000 + $150,000 + $175,000 + $175,000 + $350,000 + $425,000 + (0.5)($225,000)

Projected change in cash = $2,000,000 - $1,887,500 = $112,500

Question 29:

Stevens Company manufactures electronic components used in automobile manufacturing. Each component uses two raw materials, Geo and Clio. Standard usage of the two materials required to produce one finished electronic component, as well as the current inventory, are shown below.

<table>
<thead>
<tr>
<th>Material</th>
<th>Per Unit</th>
<th>Price</th>
<th>Current Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geo</td>
<td>2.0 pounds</td>
<td>$15/lb.</td>
<td>5,000 pounds</td>
</tr>
<tr>
<td>Clio</td>
<td>1.5 pounds</td>
<td>$10/lb.</td>
<td>7,500 pounds</td>
</tr>
</tbody>
</table>

Stevens forecasts sales of 20,000 components for the next two production periods. Company policy dictates that 25% of the raw materials needed to produce the next period's projected sales be maintained in ending direct materials inventory.

Based on this information, what would the budgeted direct material purchases for the coming period be?
A. Geo = $675,000, Clio = $400,000.  
B. Geo = $450,000, Clio = $450,000. 
C. Geo = $825,000, Clio = $450,000.  
D. Geo = $675,000, Clio = $300,000.

The expected material purchases in units for any month can be calculated as follows:

Expected material purchases = (production needs for the month) + (expected ending inventory) − (expected beginning inventory)

The expected ending inventory for any month is 25% of the next month’s expected sales.

Since 2 pounds of Geo are used per unit, the expected purchase of Geo can be calculated as follows:

Expected purchases of Geo = (2 pounds)(20,000) + (0.25)(2 pounds)(20,000) − 5,000 pounds 
Expected purchases of Geo = 40,000 pounds + 10,000 pounds − 5,000 pounds 
Total cost of Geo = (45,000 pounds)($15/pounds) = $675,000

Since 1.5 pounds of Clio are used per unit, the expected purchase of Clio can be calculated as follows:

Expected purchase of Clio = (1.5 pounds)(20,000) + (0.25)(1.5 pounds)(20,000) − 7,500 pounds 
Expected purchase of Clio = 30,000 pounds + 7,500 pounds − 7,500 pounds 
Total cost of Clio = (30,000 pounds)($10/pound) = $300,000.

Question 30:

Tidwell Corporation sells a single product for $20 per unit. All sales are on account, with 60% collected in the month of sale and 40% collected in the following month. A schedule of cash collections for January through March of the coming year reveals the following receipts for the period:
Other information includes:

- Inventories are maintained at 30% of the following month's sales.
- Tidwell desires to keep a minimum cash balance of $15,000. Total payments in January are expected to be $106,500, which excludes $12,000 of depreciation expense. Any required borrowings are in multiples of $1,000.
- The December 31 balance sheet for the preceding year revealed a cash balance of $24,900.

Ignoring income taxes, the financing needed in January to maintain the firm's minimum cash balance is:

A. $8,000.
B. $10,600.
C. $23,000.
D. $11,000.

The expected cash balance at the end of January, without financing, is calculated as follows:

Expected cash balance, end of January, without financing = (beginning cash balance) + (expected cash receipts) - (expected cash disbursements)

Note that the cash balance on January 1st is the same as the ending cash balance on December 31st of the previous year, which is given as $24,900 in this problem.

Expected cash receipts during January are calculated by adding together the receivables amounts from December and January, that are expected to be collected during January.

Expected cash receipts during January = $32,000 + $54,000 = $86,000
Expected cash disbursements during January is given at $106,500.

Expected cash balance, end of January, without financing = $24,900 + $86,000 − $106,500 
Expected cash balance, end of January, without financing = $4,400

Therefore, in order to maintain a minimum balance of $15,000, Tidwell Corporation would have to borrow $11,000.

**Question 31:**
Which of the following correctly describes the materials purchase budget calculation?

A. \( \text{(Sales forecast (in units) \times direct materials per unit \times direct materials cost)} + \text{desired ending direct materials inventory} - \text{beginning direct materials inventory.} \)

B. \( \text{(Sales forecast (in units) \times direct materials per unit \times direct materials cost)} + \text{beginning direct materials inventory} - \text{desired ending direct materials inventory.} \)

C. \( \text{(Number of units to be produced \times direct materials per unit \times direct materials cost)} + \text{beginning direct materials inventory} - \text{desired ending direct materials inventory.} \)

D. \( \text{(Number of units to be produced \times direct materials per unit \times direct materials cost)} + \text{desired ending direct materials inventory} - \text{beginning direct materials inventory.} \)

The direct materials usage budget specifies the direct materials needed to meet production demands. Therefore, one must begin with the number of units to be produced (not the number of units forecast in sales). Since beginning inventory is already on hand, it is subtracted while desired ending inventory must be met with production needs.

**Question 32:**
Which of the following is **not** a reason for creating a cash budget?

A. To identify periods of excessive cash and begin investigating possible investments for those funds.

B. To ensure that liquidity is maintained.

C. To sum up all of the other budgets.

D. To identify periods of cash shortages and begin finding sources of funds.

A cash budget is a plan to ensure that liquidity is maintained. While creating the cash budget, the firm will identify periods of excess and
Consider the following information for Timbucktoo Kalamazoo Industries:

<table>
<thead>
<tr>
<th>Expected sales (units)</th>
<th>Beginning finished goods inventory</th>
<th>October 1 (units)</th>
<th>October 1 (units)</th>
<th>336</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>1,050</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>1,274</td>
<td>Direct materials needed per unit</td>
<td>18 lbs.</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>1,820</td>
<td>Desired direct materials inventory</td>
<td>December 31</td>
<td>5,800 lbs.</td>
</tr>
</tbody>
</table>

| Selling price per unit | $23 | Beginning direct materials inventory October 1 | 5,500 lbs. |     |
| Accounts receivable balance, October 1 | $7,250 | Total direct labor time per finished unit | 2 hours |     |
| Accounts payable balance, October 1 | $3,175 | Direct materials cost per pound | $0.50 |     |
| Desired finished goods inventory, December 31 (units) | 290 | Direct labor cost per hour | $11.00 |     |

Additional information:

- 60% of a month's sales are collected by the month's end; the remaining 40% is collected in the following month.
- 40% of a month's purchases are paid by the month's end; the remaining 60% is paid in the following month.
- The desired ending finished goods inventory every month is 30% of the next month's sales.
- The desired ending direct materials inventory every month is 25% of the next month's production needs.

What is the total budgeted production in units for the month of November?

A. 1,096.
B. 1,564.
C. 1,438.
D. 1,596.

To solve this problem, a production budget must be created, which is as follows:
Question 34:
Which of the following is not an important step in forming a sales budget?

A. Creating a projected income statement.
B. Analyzing long- and short-term company objectives.
C. Studying economic forecasts.
D. Analyzing production capacity.

The direct labor, direct materials, and overhead budgets required to create a projected or pro forma income statement are made after the sales budget is formed.

Question 35:
Maker Distributors has a policy of maintaining inventory at 15% of the next month's forecasted sales. The cost of Maker's merchandise averages 60% of the selling price. The inventory balance as of May 31 is $63,000, and the forecasted dollar sales for the last seven months of the year are as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Dollar Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>$700,000</td>
</tr>
<tr>
<td>July</td>
<td>$600,000</td>
</tr>
<tr>
<td>August</td>
<td>$650,000</td>
</tr>
<tr>
<td>September</td>
<td>$800,000</td>
</tr>
<tr>
<td>October</td>
<td>$850,000</td>
</tr>
<tr>
<td>November</td>
<td>$900,000</td>
</tr>
<tr>
<td>December</td>
<td>$840,000</td>
</tr>
</tbody>
</table>

What is the budgeted dollar amount of Maker's purchases during July?

A. $360,000.
B. $355,500.
C. $399,000.
D. $364,500.
Purchases in dollars is calculated as follows:

Purchases in dollars = (cost of sales) + (expected ending inventory) − (expected beginning inventory)

Cost of sales = (100% − the gross profit percentage)(sales)
Cost of sales = (100% − 40%)(sales in dollars)

The expected ending inventory for each month = 15% of the next month’s expected sales. Therefore, the purchases in dollars for July can be calculated as follows:

Purchases for July = (0.6)($600,000) + (0.15)(0.6)($650,000) − (0.15)(0.6)($600,000)
Purchases for July = $360,000 + $58,500 − $54,000 = $364,500

Question 36:

Using the information from Exhibit A, what is budgeted direct labor cost for February?

A. $384,000
The number of units to be produced in February (budgeted production = budgeted sales + ending inventory - beginning inventory) = 5,100 units + 530 units (10% of 5,300) - 510 units (10% of 5,100) = 5,120 units. Each unit requires $75 of direct labor. 5,120 units × $75/unit = $384,000.

Question 37:

Consider the following information for Timbucktoo Kalamazoo Industries:

<table>
<thead>
<tr>
<th>Sales Units—October</th>
<th>1,050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Units—November</td>
<td>1,274</td>
</tr>
<tr>
<td>Sales Units—December</td>
<td>1,820</td>
</tr>
<tr>
<td>Selling price per unit</td>
<td>$23</td>
</tr>
</tbody>
</table>

60% of a month's sales are collected by the month's end and 40% of a month's sales are collected in the following month.

What is the total amount of revenue collected from customers in the month of November?

A. $29,302.
B. $38,962.
C. $17,581.
D. $27,241.

The correct answer is $27,241 and is calculated as:

<table>
<thead>
<tr>
<th>Sales:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
</tr>
<tr>
<td>Price per unit</td>
</tr>
<tr>
<td>Sales (Dollars)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenues Collected:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Months (40%)</td>
</tr>
<tr>
<td>Current Months (60%)</td>
</tr>
</tbody>
</table>
Total revenues collected: $27,241

Question 38:
Which one of the following best describes tactical profit plans?

A. Broad, long-term, broad responsibilities, qualitative.
B. Detailed, short-term, broad responsibilities, qualitative.
C. Broad, short-term, responsibilities at all levels, quantitative.
D. Detailed, short-term, responsibilities at all levels, quantitative.

Tactical profit plans or budgets should have the following characteristics: Detailed, short-term, assigned responsibilities at all levels, and quantified.

Question 39:
A firm has projected sales of 20,000 and 22,000 units for the next two periods (periods 1 and 2, respectively). The firm maintains an ending finished goods inventory equal to 15% of the next period's projected sales. Each unit requires 2 hours of direct labor at a cost of $15 per hour. Assuming that all inventory standards are currently met, what is the direct labor budget for period 1?

A. $690,000.
B. $600,000.
C. $609,000.
D. $699,000.

Compute the number of units that must be produced in period 1 (budgeted production = budgeted sales + ending inventory − beginning inventory):
20,000 + desired ending inventory of 3,300 (22,000 × 15%) − beginning inventory of 3,000 (20,000 × 15%) = 20,300.

Each unit takes 2 hours at a cost of $15 per hour; 20,300 × 2 hours × $15 = $609,000.

Question 40:
Using the following budget data for Valley Corporation, which produces only one product, calculate the company’s predetermined factory overhead
The variable overhead rate per unit is calculated by taking the expected variable overhead and dividing it by the expected production in units. The expected variable overhead consists of indirect materials, indirect labor, and utilities, and is calculated as follows:

\[
\text{Variable overhead} = (\$1,000 + \$10,000 + \$12,000)
\]
\[
\text{Variable overhead} = \$23,000
\]

Since expected production is 11,000 units, the variable overhead rate = $23,000 / 11,000 units = $2.09 per unit.

Question 41:
Karmee Company has been accumulating operating data in order to prepare an annual profit plan. Details regarding Karmee's sales for the first six months of the coming year are:

<table>
<thead>
<tr>
<th>Estimated Monthly Sales</th>
<th>Type of Monthly Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>Cash sales 20%</td>
</tr>
<tr>
<td>$800,000</td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>Credit sales 80%</td>
</tr>
<tr>
<td>$650,000</td>
<td></td>
</tr>
<tr>
<td>March</td>
<td></td>
</tr>
<tr>
<td>$700,000</td>
<td></td>
</tr>
<tr>
<td>April</td>
<td></td>
</tr>
<tr>
<td>$625,000</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td></td>
</tr>
<tr>
<td>$720,000</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td></td>
</tr>
<tr>
<td>$800,000</td>
<td></td>
</tr>
</tbody>
</table>
Karmee's cost of goods sold averages 40% of the sales value. Karmee's objective is to maintain a target inventory equal to 30% of the next month's sales. Purchases of merchandise for resale are paid for in the month following the sale.

The variable operating expenses (other than cost of goods sold) for Karmee are ten percent of sales and are paid for in the month following the sale. The annual fixed operating expenses are presented below. All of these are incurred uniformly throughout the year and paid monthly except for insurance and property taxes. Insurance is paid quarterly in January, April, July, and October. Property taxes are paid twice a year in April and October.

<table>
<thead>
<tr>
<th>Annual Fixed Operating Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>$720,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>420,000</td>
</tr>
<tr>
<td>Insurance</td>
<td>180,000</td>
</tr>
<tr>
<td>Property taxes</td>
<td>240,000</td>
</tr>
<tr>
<td>Salaries</td>
<td>1,080,000</td>
</tr>
</tbody>
</table>

The purchases of merchandise that Karmee Company will need to make during February will be:

A. $275,000.

**B. $266,000.**

C. $254,000.

D. $344,000.

The monthly purchase requirement must be sufficient to cover the cost of goods sold requirement for the month, plus the required ending inventory for the month, less the beginning inventory for the month.

The cost of goods sold requirement is 40% of the month's sales. The ending inventory is supposed to be set at 30% of the following month's sales.

The budgeted purchases for February = cost of goods sold for February + February ending inventory - February beginning inventory
Cost of goods sold for February = 0.4(Feb sales)
Feb projected ending inventory = (0.3)(0.4)(Mar sales)
Feb beginning inventory (same as Jan's projected ending inventory) = (0.3)(0.4)(Feb sales)

The budgeted purchases for Feb = 0.4($650,000) + (0.3)(0.4)($700,000) − (0.3)(0.4)($650,000) = $260,000 + $84,000 − $78,000 = $266,000.

Question 42:
Manoli Gift Shop maintains a 35% gross profit percentage on sales, and carries an ending inventory balance each month sufficient to support 30% of the next month's expected sales. Anticipated sales for the fourth quarter are as follows.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>$42,000</td>
</tr>
<tr>
<td>November</td>
<td>58,000</td>
</tr>
<tr>
<td>December</td>
<td>74,000</td>
</tr>
</tbody>
</table>

What is the cost of the goods that Manoli Gift Shop should plan to purchase for the month of November?

A. $62,800.
B. $40,820.
C. $52,130.
D. $51,220.

Purchases in dollars is calculated as follows:

Purchases in dollars = (cost of sales) + (expected ending inventory) − (expected beginning inventory)

Cost of sales = (100% − the gross profit percentage)(sales)
Cost of sales, Nov = (100% − 35%)($58,000) = (0.65)($58,000) = $37,700

The ending inventory for each month = 30% of the next month's expected cost of sales.

Ending inventory, Nov = (30%)(Cost of sales, Dec) = (0.3)(0.65)($74,000) = $14,430
Beginning inventory, November = (30%)(Cost of sales, November) = 
(0.3)($37,700) = $11,310

Therefore, the purchases in dollars for November can be calculated as
follows:

Purchases for November = $37,700 + $14,430 − $11,310 = $40,820

Question 43:

EXHIBIT A:

Young Times Products projected sales for the first six months of the year are as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>5,000 units</td>
</tr>
<tr>
<td>February</td>
<td>5,100 units</td>
</tr>
<tr>
<td>March</td>
<td>5,300 units</td>
</tr>
<tr>
<td>April</td>
<td>6,000 units</td>
</tr>
<tr>
<td>May</td>
<td>5,800 units</td>
</tr>
<tr>
<td>June</td>
<td>5,500 units</td>
</tr>
</tbody>
</table>

Young's policy is that it maintains an ending finished goods inventory of 10% of the
following month's sales. Furthermore, assume that Young's policy is to maintain an ending
direct materials inventory of 20% of the following month's direct materials usage budget.
Sales the previous December were 4,800 units. The firm generally ends each month by
completing all units; therefore, there is no work-in-process inventory at the beginning or
end of any period.

Standard (budgeted) production costs associated with one unit are:
• Direct materials: 3 pounds per unit @ $20/lb. = $60/unit
• Direct labor: 5 hours per unit @ $15/hour = $75
• Factory overhead: 10% of direct labor costs = $7.50
• Total production cost per unit = $142.50

Using the information from Exhibit A, what is budgeted cost of goods
manufactured for the three-month period of January, February, and March?

A. $2,183,100.
B. **$2,208,750.**
C. $2,194,500.
D. $2,184,525.

The number of units to be sold in this three-month period is 15,400 units, calculated as the sum of the sales for the period (5,000 units + 5,100 units + 5,300 units).
To determine the number of units to be produced, adjust the number of units to be sold (15,400) by adding desired ending finished goods inventory for March of 600 (6,000 units × 10%) and subtracting beginning finished goods inventory for January of 500 (5,000 units × 10%), leaving 15,500 units to be produced in the three-month period.

Budgeted cost of goods manufactured is 15,500 × $142.50 = $2,208,750.

Question 44:
Brooke Company's management team is preparing a cash budget for the coming quarter. The following budgeted information is under review.

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$700,000</td>
<td>$800,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>Inventory purchases</td>
<td>350,000</td>
<td>425,000</td>
<td>225,000</td>
</tr>
<tr>
<td>Other expenses</td>
<td>150,000</td>
<td>175,000</td>
<td>175,000</td>
</tr>
</tbody>
</table>

The company expects to collect 40% of its monthly sales in the month of sale and 60% in the following month. 50% of inventory purchases are paid in the month of purchase, and 50% in the following month. Payments for all other expenses are made in the month incurred.

Brooke forecasts the following account balances at the beginning of the quarter.

- Cash: $200,000
- Accounts receivable: 300,000
- Accounts payable (Inventory): 400,000

Given the above information, the projected ending cash balance for February will be:

A. $712,500.
B. $500,000.
C. $120,000.
D. $232,500.

The projected ending cash balance for February is calculated as follows:

Projected ending cash balance, February = (beginning cash balance for the quarter) + (beginning accounts receivable balance for the quarter) + (January sales) + (40%)(February sales) − (January “other” expenses) − (February “other” expenses) − (accounts payable balance, beginning of quarter) − (January purchases) − (50%)(February purchases)

Projected ending cash balance, February = ($200,000) + ($300,000) + ($700,000) + (0.4)($800,000) − ($150,000) − ($175,000) − ($400,000) −
($350,000) − (0.5)(425,000)
Projected ending cash balance, February = $232,500

Question 45:

The pro forma statement of employee benefit costs, a budget schedule that is prepared as part of an organization's annual profit plan, would include costs related to:

* Source: Retired ICMA CMA Exam Questions.

A. company-paid benefits and company-paid payroll taxes.
B. employees' gross wages and salaries and the related company-paid benefits.
C. all payroll related deductions withheld from employees and company-paid benefits.
D. employees' net wages and salaries and the related company-paid benefits.

Using a pro forma statement of employee benefit costs allows a company to view the cost associated with company-paid benefits and company-paid payroll taxes.

Question 46:

A firm has projected sales of 50,000, 51,000, and 52,000 units for the next three periods (periods 1, 2 and 3, respectively). The firm maintains an ending finished goods inventory equal to 10% of the next period's projected sales. Each unit requires 5 pounds of direct material (DM). The firm maintains an ending DMs inventory equal to 15% of the next period's DMs needs. Assume that all inventory standards are currently met. How many pounds of material must be purchased in period 1?

A. 251,250 pounds.
B. 250,500 pounds.
C. 250,750 pounds.
D. 250,000 pounds.

Compute the number of units that must be produced in periods 1 and 2 (budgeted production = budgeted sales + ending inventory − beginning inventory): Period 1 = 50,000 + (51,000 × 0.1) − (50,000 × 0.1) = 50,100 units; period 2 = 51,000 + (52,000 × 0.1) − (51,000 × 0.1) = 51,100 units. Then find DMs needed for both periods (multiply number of units to be produced by 5 lbs.), getting period 1 DM needs of 250,500 lbs. and period 2 DM needs of 255,500 lbs. To find DM purchases for period 1, take period
1 DM needed + desired ending DM inventory of 38,325 pounds (255,500 lbs. × 15%) less beginning DM inventory of 37,575 (250,500 × 15%) and get 251,250 pounds.

Question 47:
Karmee Company has been accumulating operating data in order to prepare an annual profit plan. Details regarding Karmee’s sales for the first six months of the coming year are:

<table>
<thead>
<tr>
<th>Estimated Monthly Sales</th>
<th>Type of Monthly Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>$800,000</td>
</tr>
<tr>
<td>February</td>
<td>650,000</td>
</tr>
<tr>
<td>March</td>
<td>700,000</td>
</tr>
<tr>
<td>April</td>
<td>625,000</td>
</tr>
<tr>
<td>May</td>
<td>720,000</td>
</tr>
<tr>
<td>June</td>
<td>800,000</td>
</tr>
</tbody>
</table>

Collection Pattern for Credit Sales
Month of sale 30%
One month following sale 40%
Second month following sale 25%

Karmee’s cost of goods sold averages 40% of the sales value. Karmee’s objective is to maintain a target inventory equal to 30% of the next month’s sales. Purchases of merchandise for resale are paid for in the month following the sale.

The variable operating expenses (other than cost of goods sold) for Karmee are 10% of sales and are paid for in the month following the sale. The annual fixed operating expenses are presented below. All of these are incurred uniformly throughout the year and paid monthly except for insurance and property taxes. Insurance is paid quarterly in January, April, July, and October. Property taxes are paid twice a year in April and October.

<table>
<thead>
<tr>
<th>Annual Fixed Operating Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising $720,000</td>
</tr>
<tr>
<td>Depreciation 420,000</td>
</tr>
<tr>
<td>Insurance 180,000</td>
</tr>
<tr>
<td>Property taxes 240,000</td>
</tr>
<tr>
<td>Salaries 1,000,000</td>
</tr>
</tbody>
</table>

The amount for cost of goods sold that will appear on Karmee Company’s pro forma income statement for the month of February will be:

A. $240,000.
Cost of goods sold are 40% of sales. Therefore, cost of goods sold for February would be projected to be $0.4($650,000) = $260,000.

Question 48:
A firm has budgeted sales for the next two periods of 50,000 units and 55,000 units, respectively. The firm maintains a policy that the beginning-of-period inventory is 20% of the following period's forecasted sales. The policy is currently met. What is the budgeted production for period 1?

A. 49,000 units.
B. 50,000 units.
C. 61,000 units.
D. 51,000 units.

The budgeted production is calculated by adding budgeted sales (50,000) to desired ending inventory (55,000 × 0.2) minus the beginning inventory (50,000 × 0.2) = 51,000 units.

Question 49:
Data regarding Rombus Company's budget are shown below.

<table>
<thead>
<tr>
<th>Period</th>
<th>Production</th>
<th>Inventory Adjustment</th>
<th>Inventory Adjustment</th>
<th>Net Inventory Adjustment</th>
<th>Total Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in Units</td>
<td>Percentage</td>
<td>in Units</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period 1</td>
<td>50,000</td>
<td>20%</td>
<td>10,000</td>
<td>1,000</td>
<td>51,000</td>
</tr>
<tr>
<td>Period 2</td>
<td>55,000</td>
<td>20%</td>
<td>11,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Budgeted production is calculated as follows:

\[
\text{Budgeted production} = (\text{expected sales}) + (\text{expected ending inventory}) - (\text{expected beginning inventory})
\]

\[
\text{Budgeted production} = 4,000 \text{ units} + 600 \text{ units} - 900 \text{ units} = 3,700 \text{ units}
\]

Question 50:
Tut Company's selling and administrative costs for the month of August, when it sold 20,000 units, were as follows:

<table>
<thead>
<tr>
<th>Costs</th>
<th>Per Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable costs</td>
<td>$18.60</td>
<td>$372,000</td>
</tr>
<tr>
<td>Step costs</td>
<td>4.25</td>
<td>85,000</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>8.80</td>
<td>176,000</td>
</tr>
<tr>
<td>Total selling and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>administrative costs</td>
<td>$31.65</td>
<td>$633,000</td>
</tr>
</tbody>
</table>

The variable costs represent sales commissions paid at the rate of 6.2% of sales.
The step costs depend on the number of salespersons employed by the company. In August there were 17 persons on the sales force. However,
two members have taken early retirement effective August 31. It is anticipated that these positions will remain vacant for several months. Total fixed costs are unchanged within a relevant range of 15,000 to 30,000 units per month. Tut is planning a sales price cut of 10%, which it expects will increase sales volume to 24,000 units per month. If Tut implements the sales price reduction, the total budgeted selling and administrative costs for the month of September would be:

A. $759,600.
B. $714,960.
C. $679,760.
D. $652,760.

Total budgeted selling and administrative costs in this problem can be calculated as follows:
Total budgeted selling and administrative costs = (variable costs) + (step costs) + (fixed costs)
Total budgeted selling and administrative costs = $401,760 + $75,000 + $176,000
Total budgeted selling and administrative costs = $652,760

Rearrange the following formula to determine sales for August, then sales price per unit.

Variable costs = (6.2%)(Sales)
Sales = (Variable costs) / (0.062) = $372,000 / 0.062 = $6,000,000
Sales price per unit = (Sales) / (# units sold) = $6,000,000 / 20,000 = $300

Expected sales in September = (90%)(August sales price per unit)(September sales volume) = (0.9)(($300)(24,000) = $6,480,000

Budgeted variable costs = (0.062)($6,480,000) = $401,760

Step costs per salesperson = $85,000 / 17 salespeople = $5,000

Due to the retirement of two salespeople, the budgeted step costs are reduced, and are calculated as follows:

Budgeted step costs = (15 salespeople)($5,000 cost per salesperson) = $75,000

Total budgeted selling and administrative costs = $401,760 + $75,000 +
$176,000
Total budgeted selling and administrative costs = $652,760.

**Question 51:**
A company that manufactures furniture is establishing its budget for the upcoming year. All of the following items would appear in its overhead budget except for the:

* Source: Retired ICMA CMA Exam Questions.

A. overtime paid to the workers who perform production scheduling.
B. fringe benefits paid to the production supervisor.
C. freight charges paid for the delivery of raw materials to the company.
D. cost of glue used to secure the attachment of the legs to the tables.

The overhead budget includes those items that can not be directly traced back to the product itself, therefore, items such as overtime paid to the workers who perform production scheduling, cost of glue used to secure the attachment of the legs to the tables, and fringe benefits paid to the production supervisor are all inclusive overhead costs.

**Question 52:**
Savior Corporation assembles backup tape drive systems for home microcomputers. For the first quarter, the budget for sales is 67,500 units. Savior will finish the fourth quarter of last year with an inventory of 3,500 units, of which 200 are obsolete. The target ending inventory is 10 days of sales (based upon 90 days in a quarter). What is the budgeted production for the first quarter?

A. 71,500 units.
B. 71,700 units.
C. 64,350 units.
D. 75,000 units.

The expected beginning inventory is calculated as follows:

Expected beginning inventory = (3,500 units − 200 obsolete units) = 3,300 units

The expected ending inventory is 10 days' sales, which is calculated as follows:
Expected ending inventory = \[(67,500 \text{ units}) / 90\](10) = 7,500 units

Therefore, budgeted production = 67,500 units + 7,500 units − 3,300 units = 71,700 units.

**Question 53:**
Granite Company sells products exclusively on account, and has experienced the following collection pattern: 60% in the month of sale, 25% in the month after sale, and 15% in the second month after sale. Uncollectible accounts are negligible. Customers who pay in the month of sale are given a 2% discount. If sales are $220,000 in January, $200,000 in February, $280,000 in March, and $260,000 in April, Granite's accounts receivable balance on May 1 will be:

A. $146,000.
B. $143,920.
C. $107,120.
D. $204,000.

Given the expected sales collection pattern, the expected accounts receivable at the end of a month would be calculated as follows:

Accounts receivable at month end = (40% of current month's sales)(uncollected portion) + (15% of prior month's sales)

Please note that the beginning balance for May (May 1st) is the same as the ending balance for April (April 30th).

The May 1st or April 30th accounts receivable balance is then calculated as follows:

May 1st accounts receivable balance = (0.4)($260,000) + (0.15)($280,000)
May 1st accounts receivable balance = $104,000 + $42,000 = $146,000

**Question 54:**
Daffy Tunes manufactures an animated rabbit with moving parts and a built-in voice box. Projected sales in units are:

<table>
<thead>
<tr>
<th>Month</th>
<th>Projected Sales in Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>30,000</td>
</tr>
<tr>
<td>February</td>
<td>36,000</td>
</tr>
<tr>
<td>March</td>
<td>33,000</td>
</tr>
<tr>
<td>April</td>
<td>40,000</td>
</tr>
<tr>
<td>May</td>
<td>29,000</td>
</tr>
</tbody>
</table>
Each rabbit requires basic materials that Daffy purchases from a single supplier at $3.50 per rabbit. Voice boxes are purchased from another supplier at $1.00 each. Assembly labor cost is $2.00 per rabbit and variable overhead cost is $0.50 per rabbit. Fixed manufacturing overhead applicable to rabbit production is $12,000 per month.

Daffy's policy is to manufacture 1.5 times the coming month's projected sales every other month starting with January (i.e., odd-numbered months) for February sales, and to manufacture 0.5 times the coming month's projected sales in alternate months (i.e., even-numbered months). This allows Daffy to allocate limited manufacturing resources to other products as needed during the even-numbered months.

The unit production budget for animated rabbits for January is:

A. 60,000 units.
B. 14,500 units.
C. 45,000 units.
D. 54,000 units.

The production in odd numbered months is 1.5 times the projected sales for the following month. Therefore, the production budget for January is 1.5 times the projected sales for February or 1.5(36,000 units) = 54,000 units.

**Question 55:**
Which of the following would not appear in the cash disbursements section of a cash budget?

A. Depreciation expense.
B. Interest expense.
C. Salaries and wages expenses.
D. Payments to suppliers.

Depreciation is a non-cash entry and would not appear on a cash budget.

**Question 56:**
Prudent Corporation's budget for the upcoming accounting period reveals total sales of $700,000 in April and $750,000 in May. The sales cash collection pattern is

- 20% of each month's sales are cash sales.
- 5% of a month's credit sales are uncollectible.
70% of a month's credit sales are collected in the month of sale.
25% of a month's credit sales are collected in the month following the sale.

If Prudent anticipates the cash sale of a piece of old equipment in May for $25,000, May's total budgeted cash receipts would be:

A. $735,000.
B. $560,000.
C. $737,500.
D. $702,500.

Budgeted cash receipts for May can be calculated as follows:

Budgeted cash receipts, May = (amount collected from sale of equipment) + (collections from sales)

The amount collected from sale of equipment is given as $25,000.

Collections from sales during May are calculated as follows:

Collections from sales during May = (collections from May cash sales) + (collections from May credit sales) + (collections from April sales)

May cash sales = 20% of total sales made during May

May credit sales = 70%(portion of May sales that are made on credit)
May credit sales = 70%(80% of May sales)

Collections from April sales during May = 25%(80% of April sales)

Budgeted cash receipts, May = $25,000 + (0.2)($750,000) + (0.7)(0.8)($750,000) + (0.25)(0.8)($700,000)
Budgeted cash receipts, May = $25,000 + $150,000 + $420,000 + $140,000 = $735,000

Question 57:
EXHIBIT C:
Young Times Products projected sales for the first six months of the year are as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>5,150 units</td>
</tr>
<tr>
<td>February</td>
<td>5,200 units</td>
</tr>
<tr>
<td>March</td>
<td>5,250 units</td>
</tr>
<tr>
<td>April</td>
<td>6,000 units</td>
</tr>
<tr>
<td>May</td>
<td>5,800 units</td>
</tr>
<tr>
<td>June</td>
<td>5,500 units</td>
</tr>
</tbody>
</table>

Young's policy is that it maintains an ending finished goods inventory of 10% of the following month's sales. Furthermore, assume that Young's policy is to maintain an ending direct materials inventory of 20% of the following month's direct materials usage budget. Sales the previous December were 4,800 units. The firm generally ends each month by completing all units; therefore, there is no work-in-process inventory at the beginning or end of any period.

Standard (budgeted) production costs associated with one unit are:

- Direct materials: 3 pounds per unit @ $20/lb. = $60/unit
- Direct labor: 5 hours per unit @ $15/hour = $75
- Factory overhead: 10% of direct labor costs = $7.50
- Total production cost per unit = $142.50

Using the information from Exhibit C, how many pounds of direct materials must be purchased in February?

A. 15,660 pounds.
B. 15,695 pounds.
C. 15,630 pounds.
D. 15,687 pounds.

First, the number of units to be produced must be computed for February and March.
In February: 5,200 + 525 (10% of March's sales) − 520 (10% of February's sales) = 5,205 units.
In March: 5,250 + 600 (10% of April's sales) − 525 (10% of March's sales) = 5,325 units.

From these values, calculate the direct materials usage budget for each month by multiplying by 3.
February: 5,205 × 3 = 15,615 lbs. required for production.
March: 5,325 × 3 = 15,975 lbs. required for production.
To find the DM purchases budget, adjust the DM usage budget by adding desired ending DM inventory (20% of next month’s DM usage budget) and subtracting beginning DM inventory (20% of the current month’s DM usage budget.)

In February, the DM usage budget would be 15,687 lbs. = 15,615 + 3,195 (20% of 15,975) − 3,123 (20% of 15,615).

Question 58:

Netco’s sales budget for the coming year is as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>Volume in Units</th>
<th>Sales Price</th>
<th>Sales Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>200,000</td>
<td>$50</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>2</td>
<td>150,000</td>
<td>10</td>
<td>1,500,000</td>
</tr>
<tr>
<td>3</td>
<td>300,000</td>
<td>30</td>
<td>9,000,000</td>
</tr>
</tbody>
</table>

Total sales revenue $20,500,000

Items 1 and 3 are different models of the same product. Item 2 is a complement to Item 1. Past experience indicates that the sales volume of Item 2 relative to the sales volume of Item 1 is fairly constant. Netco is considering an 10% price increase for the coming year for Item 1, which will cause sales of Item 1 to decline by 20%, while simultaneously causing sales of Item 3 to increase by 5%. If Netco institutes the price increase for Item 1, total sales revenue will decrease by:

A. $750,000.
B. $1,050,000.
C. $850,000.
D. $550,000.

The new revenue for item 1, given a 10% price increase and a 20% volume decrease, would be calculated as follows:

New revenue, item 1 = (1.1)($50 price per unit)(200,000 units)(0.8) = $8,800,000.

Because item 2 is a complement to item 1, it will experience a 20% drop in volume, as well, resulting in a new revenue amount, which is calculated as follows:

New revenue, item 2 = (0.8)($1,500,000) = $1,200,000.
Item 3 will experience a 5% volume increase, which will result in the following revenue:

New revenue, item 3 = (1.05)($9,000,000) = $9,450,000

Total new revenue for items 1, 2 and 3 = $8,800,000 + $1,200,000 + $9,450,000 = $19,450,000

$19,450,000 is $1,050,000 less than the 20,500,000 originally projected.

**Question 59:**

Which of the following is the correct order of preparing operating budgets?

A. Sales budget, production budget, product cost budgets (including direct materials, direct labor, and factory overhead budgets), and cost of goods sold budget.

B. Production budget, product cost budget (including direct materials, direct labor, and factory overhead budgets), cost of goods sold budget, and sales budget.

C. Production budget, product cost budget (including direct materials, direct labor, and factory overhead budgets), sales budget, and cost of goods sold budget.

D. Sales budget, cost of goods sold budget, production budget, and product costs budgets (including direct materials, direct labor, and factory overhead budgets).

The sales forecast leads to the production budget and from there the product costs budgets are prepared. After product cost budgets are complete, the firm creates a cost of goods sold budget.

**Question 60:**

Karmee Company has been accumulating operating data in order to prepare an annual profit plan. Details regarding Karmee's sales for the first six months of the coming year are:

<table>
<thead>
<tr>
<th>Month</th>
<th>Estimated Monthly Sales</th>
<th>Type of Monthly Sale</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>$500,000</td>
<td>Cash sales</td>
<td>20%</td>
</tr>
<tr>
<td>February</td>
<td>$650,000</td>
<td>Credit sales</td>
<td>80%</td>
</tr>
<tr>
<td>March</td>
<td>$700,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>$625,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>$720,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>$800,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Karmee's cost of goods sold averages 40% of the sales value. Karmee's objective is to maintain a target inventory equal to 30% of the next month’s sales. Purchases of merchandise for resale are paid for in the month following the sale.

The variable operating expenses (other than cost of goods sold) for Karmee are 10% of sales and are paid for in the month following the sale. The annual fixed operating expenses are presented below. All of these are incurred uniformly throughout the year and paid monthly except for insurance and property taxes. Insurance is paid quarterly in January, April, July, and October. Property taxes are paid twice a year in April and October.

**Annual Fixed Operating Costs**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>$720,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>420,000</td>
</tr>
<tr>
<td>Insurance</td>
<td>180,000</td>
</tr>
<tr>
<td>Property taxes</td>
<td>240,000</td>
</tr>
<tr>
<td>Salaries</td>
<td>1,080,000</td>
</tr>
</tbody>
</table>

The total cash disbursements that Karmee Company will make for the operating expenses (expenses other than the cost of goods sold) during the month of April will be:

A. $290,000.
B. $420,000.
C. $255,000.
D. $385,000.

Cash disbursements for April operating expenses for Karmee would need to cover the following fixed and variable costs:

**Fixed costs:**

- 1/12 of the projected advertising expenditures
- 1/4 of the projected insurance expenditures
- 1/2 of the projected property tax expenditures
- 1/12 of the expected salary expenditures
Variable costs:

- 10% of March's sales

Total cash disbursements = advertising expenses + insurance expenses + property tax expenses + salary expenses + variable costs

Total cash disbursements = (1/12)($720,000) + (1/4)($180,000) + (1/2)($240,000) + (1/12)($1,080,000) + (0.1)($700,000)
= $60,000 + $45,000 + $120,000 + $90,000 + $70,000 = $385,000.

Note that depreciation expense is ignored, since it does not affect cash flow (it is a non-cash expense).

Question 61:

Jordan Auto has developed the following production plan.

<table>
<thead>
<tr>
<th>Month</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>10,000</td>
</tr>
<tr>
<td>February</td>
<td>8,000</td>
</tr>
<tr>
<td>March</td>
<td>9,000</td>
</tr>
<tr>
<td>April</td>
<td>12,000</td>
</tr>
</tbody>
</table>

Each unit contains three pounds of raw material; the desired raw material ending inventory each month is 120% of the next month's production, plus 500 pounds. (The beginning inventory meets this requirement.) Jordan has developed the following direct labor standards for production of these units.

<table>
<thead>
<tr>
<th>Hours per unit</th>
<th>Department 1</th>
<th>Department 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly rate</td>
<td>$8.75</td>
<td>$12.00</td>
</tr>
</tbody>
</table>

Jordan Auto's total budgeted direct labor dollars for February usage should be:

A. $156,000.
B. $175,500.
C. $210,600.
D. $165,750.

The budgeted direct labor costs per month are calculated by taking the monthly budgeted direct labor costs incurred in Department 1 and adding that to the monthly budgeted direct labor costs incurred in Department 2.
The monthly budgeted direct labor costs for Department 1 are calculated by taking the monthly budgeted production in units and multiplying that by the labor requirement of 2 direct labor hours per unit, and then multiplying that by the hourly direct labor rate of $6.75. The monthly budgeted direct labor costs for Department 2 are calculated by taking the monthly budgeted production in units and multiplying that by the labor requirement of 0.5 direct labor hours per unit, and then multiplying that by the hourly direct labor rate of $12.00.

Department 1 budgeted direct labor costs for February = (8,000 units)(2 direct labor hours per unit)($6.75) = $108,000

Department 2 budgeted direct labor costs for February = (8,000 units)(0.5 direct labor hours per unit)($12.00) = $48,000

Therefore, the budgeted direct labor costs for February for both Departments 1 and 2 = $108,000 + $48,000 = $156,000.

**Question 62:**

Health Foods Inc. has decided to start a cash budgeting program to improve overall cash management. Information gathered from the past year reveals the following cash collection trends:

- 40% of sales are on credit
- 50% of credit sales are collected in month of sale
- 30% of credit sales are collected first month after sale
- 15% of credit sales are collected second month after sale
- 5% of credit sales result in bad debts

Gross sales for the last five months were as follows.

<table>
<thead>
<tr>
<th>Month</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>$220,000</td>
</tr>
<tr>
<td>February</td>
<td>240,000</td>
</tr>
<tr>
<td>March</td>
<td>250,000</td>
</tr>
<tr>
<td>April</td>
<td>230,000</td>
</tr>
<tr>
<td>May</td>
<td>260,000</td>
</tr>
</tbody>
</table>

Sales for June are projected to be $255,000. Based on this information, the expected cash receipts for March would be:

A. $242,000
B. $243,200
C. $237,400
D. $230,000
Expected cash receipts for March are calculated as follows:

Expected cash receipts, March = (March cash sales) + (collections from March credit sales) + (collections from February credit sales) + (collections from January sales)

From the given information, we can determine the following:

March cash sales = Total March sales − (% of March sales made on credit)
March cash sales = 100% − 40%
March cash sales = 60% of March sales
March cash sales = (0.60)($250,000)
March cash sales = $150,000

Collections from March credit sales = (50%)(40% of March sales)
Collections from March credit sales = (0.5)(0.4)($220,000)
Collections from March credit sales = $50,000

Collections from February credit sales = (30%)(40% of February sales)
Collections from February credit sales = (0.3)(0.4)($240,000)
Collections from February credit sales = $28,800

Collections from January credit sales = (15%)(40% of January sales)
Collections from January credit sales = (0.15)(0.4)($220,000)
Collections from January credit sales = $13,200

Therefore,
Expected cash receipts, March = $150,000 + $50,000 + $28,800 + $13,200 = $242,000

Question 63:

Hannon Retailing Company prices its products by adding 30% to its cost. Hannon anticipates sales of $715,000 in July, $728,000 in August, and $624,000 in September. Hannon's policy is to have on hand enough inventory at the end of the month to cover 25% of the next month’s sales. What will be the cost of the inventory that Hannon should budget for purchase in August?

A. $509,600.
B. $560,000.
C. $540,000.
D. $680,000.

Sales = 1.3(cost of sales), which can also be stated as:
Cost of sales = (Sales)/1.3
The expected ending inventory for each month = 0.25(next month's sales)

The purchases in a given month can be computed as follows:

Inventory purchased for a month = (sales for the month/1.3) + (expected ending inventory/1.3) − (expected beginning inventory/1.3)

Inventory purchased for August = \([($728,000)/1.3]\) + \[((0.25)($624,000))/1.3\] − \[((0.25)($728,000))/1.3\]

Inventory purchased for August = $560,000 + $120,000 − $140,000 = $540,000

**Question 64:**
Tip-Top Cleaning Supply carries a large number of different items in its inventory, giving the firm a competitive advantage in its industry. Below is part of Tip-Top's budget for the first quarter of next year.

<table>
<thead>
<tr>
<th>Sales</th>
<th>$855,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of goods sold</td>
<td>425,000</td>
</tr>
<tr>
<td>Rent and salary expenses</td>
<td>375,000</td>
</tr>
</tbody>
</table>

Historically, all of the sales are on account and are made evenly over the quarter. 5% of all sales are determined to be uncollectible and written off. The balance of the receivables is collected in 50 days. This sales and collection experience is expected to continue in the first quarter. The projected balance sheet for the first day of the quarter includes the following account balances:

<table>
<thead>
<tr>
<th>Cash</th>
<th>$ 10,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts receivable (net)</td>
<td>450,000</td>
</tr>
<tr>
<td>Inventory</td>
<td>900,000</td>
</tr>
</tbody>
</table>

How much cash can Tip-Top anticipate collecting in the first quarter (based on a 90-day quarter)?

A. $830,000
B. $901,250
C. $902,500.
D. $811,000

In the first quarter, Tip-Top can expect to collect cash as follows (based on a 90-day quarter):

Cash collections, first quarter = (net accounts receivable balance, beginning of quarter) + (net, or 95% of sales for first quarter) − (accounts receivable balance at end of first quarter)

The 95% factor is calculated by taking the entire amount, or 100%, less 5%.
The expected accounts receivable balance at the end of the first quarter is calculated as follows:
Expected accounts receivable balance, end of first quarter = (95% of 50 days' sales)
Expected accounts receivable balance, end of first quarter = (0.95)($855,000 / 90 days)(50 days)
Expected accounts receivable balance, end of first quarter = $451,250
Therefore, the expected cash collections for the first quarter are calculated as follows:
Cash collections, first quarter = $450,000 + (0.95)($855,000) − $451,250
Cash collections, first quarter = $811,000.

Question 65:
Bootstrap Corporation anticipates the following sales during the last six months of the year:

<table>
<thead>
<tr>
<th>Month</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>$460,000</td>
</tr>
<tr>
<td>August</td>
<td>500,000</td>
</tr>
<tr>
<td>September</td>
<td>525,000</td>
</tr>
<tr>
<td>October</td>
<td>500,000</td>
</tr>
<tr>
<td>November</td>
<td>480,000</td>
</tr>
<tr>
<td>December</td>
<td>450,000</td>
</tr>
</tbody>
</table>

20% of Bootstrap's sales are for cash. The balance is subject to the collection pattern shown below:

| Percentage of balance collected in the month of sale | 40%  |
| Percentage of balance collected in the month following sale | 30%  |
| Percentage of balance collected in the second month following sale | 25%  |
| Percentage of balance uncollectable                  | 5%   |

What is the planned net accounts receivable balance as of December 31?

A. $294,000.
B. $360,000.
C. $279,300.
D. $367,500.

The planned net account receivable balance as of December 31 is calculated as follows:
Net accounts receivable balance, December = (60% of December's credit sales) − (expected December uncollectable sales, which is 5% of December sales) + (expected collectable sales remaining from November sales, which is 25% of November credit sales) (Note the credit sales account for 80% of sales.)
Net accounts receivable balance, December = (0.6)(0.8)($450,000) −
Karmee Company has been accumulating operating data in order to prepare an annual profit plan. Details regarding Karmee’s sales for the first six months of the coming year are:

<table>
<thead>
<tr>
<th>Estimated Monthly Sales</th>
<th>Type of Monthly Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>January $900,000</td>
<td>Cash sales 20%</td>
</tr>
<tr>
<td>February $650,000</td>
<td>Credit sales 80%</td>
</tr>
<tr>
<td>March $700,000</td>
<td></td>
</tr>
<tr>
<td>April $625,000</td>
<td></td>
</tr>
<tr>
<td>May $720,000</td>
<td></td>
</tr>
<tr>
<td>June $800,000</td>
<td></td>
</tr>
</tbody>
</table>

Collection Pattern for Credit Sales
- Month of sale 30%
- One month following sale 40%
- Second month following sale 25%

Karmee’s cost of goods sold averages 40% of the sales value. Karmee’s objective is to maintain a target inventory equal to 30% of the next month’s sales. Purchases of merchandise for resale are paid for in the month following the sale.

The variable operating expenses (other than cost of goods sold) for Karmee are 10% of sales and are paid for in the month following the sale. The annual fixed operating expenses are presented below. All of these are incurred uniformly throughout the year and paid monthly except for insurance and property taxes. Insurance is paid quarterly in January, April, July, and October. Property taxes are paid twice a year in April and October.

<table>
<thead>
<tr>
<th>Annual Fixed Operating Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising $720,000</td>
</tr>
<tr>
<td>Depreciation $420,000</td>
</tr>
<tr>
<td>Insurance $180,000</td>
</tr>
<tr>
<td>Property taxes $240,000</td>
</tr>
<tr>
<td>Salaries $1,000,000</td>
</tr>
</tbody>
</table>

The amount of cash collected in March for Karmee Company from the sales made during March will be:

A. $350,000.
Monthly sales are comprised of 20% cash sales and 80% credit sales. Collections on credit sales are 30% in the month of sale, which means that of the 80% credit sales amount, only 30% of that amount is collected in the month of sale.

March collections from sales made in March = (March cash sales) + (March credit sales)

March collections from sales made in March = (0.20)($700,000) + (0.30)(0.80)($700,000) = $140,000 + $168,000 = $308,000.

Question 67:

Which of the following is not a quality of a direct labor budget?

A. A direct labor budget can smooth out production over the year to keep work force size consistent.
B. A direct labor budget allows firms with unions to notify the union before changes are needed.
C. A direct labor budget can be broken down into fixed and variable direct labor.
D. A direct labor budget can be broken down by categories such as semiskilled, unskilled, and skilled.

Direct labor budgets are not broken down into fixed and variable direct labor because all direct labor is variable.

Question 68:

Which of the following correctly orders the breakdown of budgets from most general to most specific and in chronological sequence?

A. Operating, production, sales, overhead.
B. Production, operating, overhead, sales.
C. Operating, sales, overhead, production.
D. Operating, sales, production, overhead.
Operating budgets include sales budgets; sales budgets must precede production budgets. Production budgets must precede direct materials, direct labor, overhead, and cost of goods sold budgets.

Question 69:
Which of the following is the element that if inaccurate will throw off all of the other master budget elements?

A. Capital budget.
B. Sales forecast.
C. Production forecast.
D. Cash budget.

Without an accurate sales forecast, all other budget elements will be inaccurate because production levels, purchases, etc., are set to match expected sales.

Question 70:
In preparing the direct material purchases budget for next quarter, the plant controller has the following information available.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted unit sales</td>
<td>2,000</td>
</tr>
<tr>
<td>Pounds of materials per unit</td>
<td>4</td>
</tr>
<tr>
<td>Cost of materials per pound</td>
<td>$3</td>
</tr>
<tr>
<td>Pounds of materials on hand</td>
<td>400</td>
</tr>
<tr>
<td>Finished units on hand</td>
<td>250</td>
</tr>
<tr>
<td>Target ending units inventory</td>
<td>325</td>
</tr>
<tr>
<td>Target ending inventory of pounds of materials</td>
<td>800</td>
</tr>
</tbody>
</table>

How many pounds of materials must be purchased?

A. 9,300 pounds.
B. 8,700 pounds.
C. 2,475 pounds.
D. 7,900 pounds.

The direct material purchases budget is calculated as:

Direct materials purchases = (production requirement) + (expected ending inventory in pounds) − (expected beginning inventory in lbs.)
Direct materials purchases = 8,300 pounds + 800 pounds − 400 pounds = 8,700 pounds

Where production requirement was calculated as:

Production requirement = (4 pounds per unit)(expected production)  
Production requirement = (4 pounds per unit)(2,075 units) = 8,300 pounds

Where expected production was calculated as:

Expected production = (sales) + (expected ending finished goods inventory) − (expected beginning finished goods inventory)  
Expected production = 2,000 units + 325 units − 250 units = 2,075 units.

**Question 71:**
Krouse Company is in the process of developing its operating budget for the coming year. Given below are selected data regarding the company’s two products, laminated putter heads and forged putter heads, sold through specialty golf shops.

<table>
<thead>
<tr>
<th>Putter Heads</th>
<th>Forged</th>
<th>Laminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>2 pounds @ $5/lb.</td>
<td>1 pound @ $5/lb</td>
</tr>
<tr>
<td>Copper</td>
<td>None</td>
<td>1 pound @ $15/lb</td>
</tr>
<tr>
<td>Direct labor</td>
<td>1/4 hour @ $20/hr.</td>
<td>1 hour @ $22/hr.</td>
</tr>
<tr>
<td>Expected sales</td>
<td>8,200 units</td>
<td>2,000 units</td>
</tr>
<tr>
<td>Selling price per unit</td>
<td>$30</td>
<td>$80</td>
</tr>
<tr>
<td>Ending inventory target</td>
<td>100 units</td>
<td>60 units</td>
</tr>
<tr>
<td>Beginning inventory</td>
<td>300 units</td>
<td>60 units</td>
</tr>
<tr>
<td>Beginning inventory (cost)</td>
<td>$5,250</td>
<td>$3,120</td>
</tr>
</tbody>
</table>

Manufacturing overhead is applied to units produced on the basis of direct labor hours. Variable manufacturing overhead is projected to be $25,000, and fixed manufacturing overhead is expected to be $15,000.

The estimated cost to produce one unit of the laminated putter head is:

A. $46.  
B. $62.  
C. $52.
Production costs = direct materials + direct labor + manufacturing overhead

Direct materials = (1 lb. Steel)($5/lb.) + (1 lb. Copper)($15/lb.) = $5 + $15 = $20
Direct labor = (1 hour)($22/hour) = $22

Manufacturing overhead is calculated as follows:

Manufacturing overhead = (total expected overhead) / (total expected direct labor hours)
Manufacturing overhead = ($25,000 variable overhead + $15,000 fixed overhead) / 4,000 direct labor hours = $10

Use the following calculation to determine direct labor hours for the overhead calculation:

Direct labor hours = (# laminated PHs produced)(# hours/laminated PH) + (# forged PHs produced)(# hours/forged PH)

Production of PHs = (expected sales) + (expected ending inventory) − (expected beginning inventory)
Production of laminated PHs = 2,000 + 60 − 60 = 2,000 units
Production of forged PHs = 8,200 + 100 − 300 = 8,000 units

Direct labor hours = (2,000 units)(1 hr/unit) + (8,000 units)(0.25 hrs/unit) = 2,000 hours + 2,000 hours = 4,000 hours

Question 72:

The cash receipts budget includes:

A. loan proceeds.
B. interest expense.
C. extinguishment of debt.
D. operating supplies.

Loan proceeds are a cash receipt. All of the other choices are cash disbursements.
Playtime Toys estimates that it will sell 200,000 dolls during the coming year. The beginning inventory is 12,000 dolls; the target ending inventory is 15,000 dolls. Each doll requires two shoes which are purchased from an outside supplier. The beginning inventory of shoes is 20,000; the target ending inventory is 18,000 shoes. The number of shoes that should be purchased during the year is:

A. 396,000 shoes.  
B. 398,000 shoes.  
C. 402,000 shoes.  
D. **404,000 shoes.**

The purchase of shoes is calculated as follows:

\[
\text{Purchase of shoes} = (\text{production requirement}) + (\text{expected ending inventory}) - (\text{expected beginning inventory}) \\
\text{Production requirement} = (2 \text{ shoes per doll})(\text{number of dolls}) \\
\text{Expected production, dolls} = (\text{sales}) + (\text{expected ending finished goods inventory}) - (\text{expected beginning finished goods inventory}) \\
\text{Expected production, dolls} = 200,000 \text{ dolls} + 15,000 \text{ dolls} - 12,000 \text{ dolls} = 203,000 \text{ dolls}. \\
\]

Therefore, the number of shoes to be purchased during the year is calculated as follows:

\[
\text{Number of shoes to be purchased} = (2 \text{ shoes/doll})(203,000 \text{ dolls}) + 18,000 \text{ shoes} - 20,000 \text{ shoes} \\
\text{Number of shoes to be purchased} = 406,000 \text{ shoes} + 18,000 \text{ shoes} - 20,000 \text{ shoes} = 404,000 \text{ shoes} \\
\]

**Question 74:**
Monroe Products is preparing a cash forecast based on the following information:

- Monthly sales: December $200,000; January $200,000; February $350,000; March $400,000.
- All sales are on credit and collected the month following the sale.
- Purchases are 60% of next month's sales and are paid for in the month of purchase.
- Other monthly expenses are $25,000, including $5,000 of depreciation.
If the January beginning cash balance is $30,000, and Monroe is required to maintain a minimum cash balance of $10,000, how much short-term borrowing will be required by the end of February?

A. $60,000.

B. $70,000.

C. $80,000.

D. $75,000.

Monroe can expect to borrow $10,000 in January and $60,000 in February for a total of $70,000.

The expected cash balance at the end of January is calculated as follows:

Expected cash balance, end of January = (beginning balance) + (cash receipts from December sales) − (cash disbursements) − (monthly cash expenses)

Cash disbursements = 60% of February purchases
Monthly cash expenses for January = $25,000 − $5,000 depreciation expense

Expected cash balance, end of January = $30,000 + $200,000 − (0.6)($350,000) − $20,000

Expected cash balance, end of January = $230,000 − $230,000 = $0

Therefore, $10,000 needs to be borrowed in January to provide a $10,000 beginning balance for February.

The expected cash balance at the end of February is calculated as follows:

Expected cash balance, end of February = (beginning balance) + (cash receipts from January sales) − (cash disbursements) − (monthly cash expenses)

Cash disbursements = 60% of March purchases
Monthly cash expenses for February = $25,000 − $5,000 depreciation expense

Expected cash balance, end of February = $10,000 + $200,000 − (0.6)($400,000) − ($20,000)

Expected cash balance, end of February = $190,000 − $240,000 = −$50,000

Therefore, Monroe would need to borrow $60,000 in February to provide a $10,000 beginning balance for March.
EXHIBIT A:

Young Times Products projected sales for the first six months of the year are as follows:

January  5,000 units
February  5,100 units
March    5,300 units
April    6,000 units
May      5,800 units
June     5,500 units

Young's policy is that it maintains an ending finished goods inventory of 10% of the following month's sales. Furthermore, assume that Young's policy is to maintain an ending direct materials inventory of 20% of the following month's direct materials usage budget. Sales the previous December were 4,800 units. The firm generally ends each month by completing all units; therefore, there is no work-in-process inventory at the beginning or end of any period.

Standard (budgeted) production costs associated with one unit are:
- Direct materials: 3 pounds per unit @ $20/lb. = $60/unit
- Direct labor: 5 hours per unit @ $15/hour = $75
- Factory overhead: 10% of direct labor costs = $7.50
- Total production cost per unit = $142.50

Using the information from Exhibit A, compute the number of units to be produced in January.

A. 4,990 units.
B. 4,500 units.
C. **5,010 units.**
D. 5,030 units.

The number of units to be produced equals sales (5,000 units) plus desired ending inventory (10% of 5,100 = 510) less beginning inventory (10% of 5,000 = 500) = 5,010 units.

Question 76:
Total collections for the 2nd quarter of the year are estimated to be:

A. $217,000.
B. $218,400.
C. $214,060.
D. $215,580.

Collection patterns would be the following:

<table>
<thead>
<tr>
<th></th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>70% same month</td>
<td>$51,100</td>
<td>$51,800</td>
<td>$49,000</td>
</tr>
<tr>
<td>20% 1-month lag</td>
<td>15,000</td>
<td>14,600</td>
<td>14,800</td>
</tr>
<tr>
<td>8% 2-month lag</td>
<td>5,920</td>
<td>6,000</td>
<td>5,840</td>
</tr>
<tr>
<td>Total collections</td>
<td>$72,020</td>
<td>$72,400</td>
<td>$69,640</td>
</tr>
</tbody>
</table>

The sum of the collections for the quarter is $214,060.

**Question 77:**

For the month of December, Crystal Clear Bottling expects to sell 12,500 cases of Cranberry Sparkling Water at $24.80 per case and 33,100 cases of Lemon Dream Cola at $32.00 per case. Sales personnel receive six percent commission on each case of Cranberry Sparkling Water and eight percent commission on each case of Lemon Dream Cola. In order to receive a commission on a product, the sales personnel team must meet the individual product revenue quota. The sales quota for Cranberry Sparkling Water is $500,000, and the sales quota for Lemon Dream Cola is
$1,000,000. The sales commission that should be budgeted for December is:

A. $103,336.

B. $84,736.

C. $4,736.

D. $82,152.

Sales personnel receive six percent commission on each case of Cranberry Sparkling Water and eight percent commission on each case of Lemon Dream Cola. In order to receive a commission on a product, the sales personnel team must meet the individual product revenue quota. The sales quota for Cranberry Sparkling Water is $500,000, and the sales quota for Lemon Dream Cola is $1,000,000.

The projection of 12,500 cases of Cranberry Sparkling Water at $24.80 per case is $310,000 (12,500 cases x $24.80 per case) in sales. Since $310,000 is below the commission threshold of $500,000, the sales personnel would not receive a commission on Cranberry Sparkling Water sales.

The projection of 33,100 cases of Lemon Dream Cola at $32.00 per case equates to $1,059,200 in sales, which is above the $1,000,000 threshold for Lemon Dream Cola sales. Therefore, the sales personnel would receive a commission of 8% of $1,059,200, which works out to (0.08)(1,059,200) = $84,736 in budgeted commissions.

Question 78:
Which one of the following statements regarding selling and administrative budgets is most accurate?

A. Selling and administrative budgets need to be detailed so that the key assumptions can be better understood.

B. Selling and administrative budgets are fixed in nature.

C. Selling and administrative budgets are difficult to allocate by month and are best presented as one number for the entire year.

D. Selling and administrative budgets should be a certain percentage of sales and should be developed using a bottom-up approach.

Selling and administrative budgets need to be detailed in order to determine the relevant sales and administrative expense items. The
relevant detail provides for more enhanced communication of goals and objectives, coordination of actions, and control of activities.

**Question 79:**

1B5-CQ06

Tyler Company produces one product and budgeted 220,000 units for the month of August with the following budgeted manufacturing costs.

<table>
<thead>
<tr>
<th></th>
<th>Total Costs</th>
<th>Cost Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable costs</td>
<td>$1,408,000</td>
<td>$6.40</td>
</tr>
<tr>
<td>Batch set-up cost</td>
<td>880,000</td>
<td>4.00</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>1,210,000</td>
<td>5.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,498,000</strong></td>
<td><strong>$15.90</strong></td>
</tr>
</tbody>
</table>

The variable cost per unit and the total fixed costs are unchanged within a production range of 200,000 to 300,000 units per month. The total for the batch set-up cost in any month depends on the number of production batches that Tyler runs. A normal batch consists of 50,000 units unless production requires less volume. In the prior year, Tyler experienced a mixture of monthly batch sizes of 42,000 units, 45,000 units, and 50,000 units. Tyler consistently plans production each month in order to minimize the number of batches. For the month of September, Tyler plans to manufacture 260,000 units. What will be Tyler's total budgeted production costs for September?

A. $4,134,000.
B. **$3,930,000**.
C. $3,754,000.
D. $3,974,000.

**September budgeted production costs = (fixed costs) + (variable costs) + (batch set-up costs)**

**Variable costs = (260,000 units)($6.40 per unit) = $1,664,000**

**Batch set-up costs:**

260,000 units require a minimum of 6 batches.

In August, 220,000 units were produced in 5 batches for a total of $880,000.
The cost per batch was $880,000/5 = $176,000.
6 batches at $176,000 per batch = $1,056,000

September budgeted production costs = ($1,210,000) + ($1,664,000) +
($1,056,000) = $3,930,000

Question 80:
Troughton Company manufactures radio-controlled toy dogs. Summary
budget financial data for Troughton for the current year are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (5,000 units at $150 each)</td>
<td>$750,000</td>
</tr>
<tr>
<td>Variable manufacturing cost</td>
<td>400,000</td>
</tr>
<tr>
<td>Fixed manufacturing cost</td>
<td>100,000</td>
</tr>
<tr>
<td>Variable selling and administrative cost</td>
<td>80,000</td>
</tr>
<tr>
<td>Fixed selling and administrative cost</td>
<td>150,000</td>
</tr>
</tbody>
</table>

Troughton uses an absorption costing system with overhead applied based
on the number of units produced, with a denominator level of activity of
5,000 units. Underapplied or overapplied manufacturing overhead is written
off to cost of goods sold in the year incurred.

The $20,000 budgeted operating income from producing and selling 5,000
toy dogs planned for this year is of concern to Trudy George, Troughton's
president. She believes she could increase operating income to $50,000
(her bonus threshold) if Troughton produces more units than it sells, thus
building up the finished goods inventory.

How much of an increase in the number of units in the finished goods
inventory would be needed to generate the $50,000 budgeted operating
income?

A. 556 units.
B. 600 units.
C. 1,500 units.
D. 7,500 units.

Increasing production over sales allows the company to “bury” fixed
overhead costs in the ending inventory, resulting in an increase in net
income. The increase in net income from the extra production can be
calculated as follows:
Increase in net income = (fixed overhead rate)(excess of production over sales) = $30,000

Fixed overhead rate = (fixed manufacturing costs)/(the denominator activity level) Fixed overhead rate = $100,000 / 5,000 units = $20 per unit

Therefore, the increase in production over sales = $30,000 / $20 per unit = 1,500 units.

C1: Cost and Variance Measure

Question 1:

The direct material (DM) price variance is $2,650 favorable and the DM usage variance is $3,000 unfavorable. The budgeted amount of DM for each unit of product is 2 lbs. to be purchased at the standard price of $10 per pound. 2,000 units were budgeted to be manufactured but the actual output was 2,500 units. (Assume material purchased equaled material used.) What was the actual price paid to purchase DM?

A. $10.00 per pound.
B. $9.50 per pound.
C. $10.50 per pound.
D. $9.75 per pound.

The standard amount of material to be used to produce 2,500 units is 5,000 lbs. (2,500 units × 2 lbs./unit).

The actual amount of material used is found by solving for the unknown variable in the DM usage variance formula:
DM usage variance = (actual quantity − standard quantity) × budgeted price
$3,000 = (Y − 5,000 lbs.) × $10/lb.
300 lbs. = Y − 5,000 lbs.
5,300 lbs. = Y

The actual price paid to purchase the direct material is found by solving for the unknown variable in the DM price variance formula:
DM price variance = (actual price − budgeted price) × actual quantity
The appropriate method for the disposition of underapplied or overapplied factory overhead:

A. depends on the significance of the amount.
B. is to finished goods inventory only.
C. is to cost of goods sold only.
D. is apportioned to cost of goods sold and finished goods inventory.

The disposition of under-applied or over-applied factory overhead depends on the significance of the amount. If the amount is considered to be immaterial (small compared to the actual overhead) it is closed to cost of goods sold. If the amount is considered to be material (large compared to the actual overhead) it is allocated on a pro rata basis to the ending work in process inventory, the ending finished goods inventory, and to cost of goods sold.

If the standard for direct materials (DM) is $70 per unit and each unit requires 10 lbs. at $7 per pound and the flexible budget at actual unit production calls for 200,000 lbs. of material but 190,000 lbs. were actually purchased and used at a price of $9 per pound, what is the price variance for DM?

A. $400,000 unfavorable.
B. $380,000 unfavorable.
C. $70,000 unfavorable.
D. $20,000 unfavorable.

The price variance is the difference between the actual input and the standard input prices times the actual quantity of input units (pounds): 
($9/lb. − $7/lb.) × 190,000 lbs. = $380,000.

The JoyT Company manufactures Maxi Dolls for sale in toy stores. In planning for this year, JoyT estimated variable factory overhead of $600,000 and fixed factory overhead of $400,000. JoyT uses a standard
costing system, and factory overhead is allocated to units produced on the basis of standard direct labor hours. The denominator level of activity budgeted for this year was 10,000 direct labor hours, and JoyT used 10,300 actual direct labor hours. Based on the output accomplished during this year, 9,900 standard direct labor hours should have been used. Actual variable factory overhead was $596,000, and actual fixed factory overhead was $410,000 for the year. Based on this information, the variable overhead spending variance (VOSV) for JoyT for this year was:

A. $22,000 favorable.
B. $4,000 favorable.
C. $24,000 unfavorable.
D. $2,000 unfavorable.

The variable overhead spending variance is calculated as follows:

\[
\text{VOSV} = (\text{actual variable overhead}) - (\text{budgeted variable overhead at the actual level of direct labor hours used})
\]

\[
\text{VOSV} = ($596,000) - (\text{budgeted variable overhead at the actual level of direct labor hours used})
\]

The budgeted variable overhead at the actual level of direct labor hours used is calculated as follows:

Budgeted variable overhead at the actual level of direct labor hours used = (variable overhead rate, or SRV)(actual direct labor hours used)

\[
\text{Budgeted variable overhead at the actual level of direct labor hours used} = (\text{SRV})(10,300 \text{ direct labor hours})
\]

\[
\text{SRV} = \frac{\text{estimated variable overhead}}{\text{budgeted direct labor hours}} = \frac{($600,000)}{(10,000 \text{ budgeted direct labor hours})} = $60 \text{ per direct labor hour}
\]

\[
\text{Budgeted variable overhead at the actual level of direct labor hours used} = 60(10,300 \text{ hours})
\]

\[
\text{Budgeted variable overhead at the actual level of direct labor hours used} = $618,000
\]

\[
\text{VOSV} = ($596,000) - 618,000 = -$22,000, or, $22,000 favorable.
\]

**Question 5:**

Which of the following variances plus the flexible budget variance equals the total static budget variance?
A. Efficiency variance.
B. Price variance.
C. Sales mix variance.
D. Sales volume variance.

The sales volume variance is the flexible budget amount adjusted for actual output minus the static budget amount.

Question 6:

The direct material (DM) price variance is $2,650 favorable and the DM usage variance is $3,000 unfavorable. The budgeted amount of DM for each unit of product is 2 lbs. to be purchased at the standard price of $10 per pound. 2,000 units were budgeted to be manufactured but the actual output was 2,500 units. (Assume material purchased equaled material used.) What was the total cost of material purchased?

A. $53,500.
B. $50,000.
C. $47,500.
D. $50,350.

The standard amount of material to be used to produce 2,500 units was 5,000 lbs.

The actual amount of material used is found by solving for the unknown variable in the DM usage variance formula:
DM usage variance = (actual quantity − budgeted quantity) × budgeted price
$3,000 = (Y − 5,000 lbs.) × $10/lb.
300 lbs. = Y − 5,000 lbs.
5,300 lbs. = Y

The cost of material purchased is found by solving the DM usage variance formula:
DM price variance = (actual price − budgeted price) × actual quantity
DM price variance = (actual price × actual quantity) − (budgeted price × actual quantity)
−$2,650 = (actual price × actual quantity) − ($10/lb × 5,300 lbs.)
− $2,650 = (actual price × actual quantity) − $53,000
−$2,650 + $53,000 = (actual price × actual quantity)
$50,350 = (actual price \times actual quantity), which is the cost of material purchased.

**Question 7:**

The standard cost sheet for King Industries show the following unit costs for direct materials and direct labor for each package of wrapping paper made:

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>Unit Cost</th>
<th>Total Cost Per Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 square feet of paper at $0.05</td>
<td>$5.00</td>
<td>$13.00</td>
</tr>
<tr>
<td>Direct labor:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 standard hour at $8</td>
<td>$8.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total standard materials and labor costs per package</strong></td>
<td><strong>$13.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

During the month of November, 150,000 square feet of paper was used to produce 1,425 packages of wrapping paper, and the following actual costs were incurred:

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper purchased:</td>
<td>175,000</td>
<td>$0.06 per square foot</td>
<td>$10,500</td>
</tr>
<tr>
<td>Direct labor:</td>
<td>1,390</td>
<td>$8.10 per hour</td>
<td>$11,259</td>
</tr>
</tbody>
</table>

The standard selling price per package is $39. King expects to sell 1,100 packages during December. Actual revenue results from December are as follows:

Actual revenue: 1,065 packages sold at $40 per package = $42,600

What are the materials price and quantity variances for King Industries?

A. $1,750 unfavorable and $375 unfavorable.
B. $1,500 unfavorable and $1,625 unfavorable.
C. $1,750 favorable and $375 favorable.
D. $1,500 favorable and $1,625 favorable.

Compute the materials price and quantity variances as follows:
The materials quantity variance is calculated as the Standard Cost × (Standard Quantity Allowed − Actual Quantity Used) = $0.05 × (7,500) = ($375) unfavorable because the actual usage was greater than the standard usage. Note that although this variance is concerned with the physical usage of materials, it is generally stated in monetary ($) terms.

The material price variance is calculated as Quantity Purchased × (Actual Price − Standard Price) = 175,000 × ($0.06 − $0.05) = 175,000 × $0.01 = $1,750 unfavorable because the actual price was greater than the standard price.

Question 8:
1C1-LS89
The following information is from the accounting records of St. Charles Enterprises.

<table>
<thead>
<tr>
<th></th>
<th>Static Budget</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales volume (units)</td>
<td>82,000</td>
<td>75,000</td>
</tr>
<tr>
<td>Selling price/unit</td>
<td>$15.00</td>
<td>$15.00</td>
</tr>
<tr>
<td>Variable cost/unit</td>
<td>$9.00</td>
<td>$9.25</td>
</tr>
<tr>
<td>Fixed cost</td>
<td>$280,000.00</td>
<td>$285,000.00</td>
</tr>
</tbody>
</table>

A staff assistant performed a comparison of budget and actual data, and calculated an unfavorable operating income variance of $65,750. The assistant concluded that performance did not meet expectations because there was an unfavorable variance in operating income. Which one of the following is the best evaluation of this preliminary conclusion?

* Source: Retired ICMA CMA Exam Questions.
A. The conclusion is incorrect, but the variance calculation is informative.

B. The conclusion is correct, but the variance calculation could be more informative.

C. The conclusion is incorrect and the variance calculation is correct.

D. Both the conclusion and the variance calculation are incorrect.

In this problem, there is an unfavorable variance in the sales volume versus the actual, therefore, it would cause an unfavorable variance in operating income. Given that a static budget was used, the staff assistance should have provided additional information to state why the variances have occurred, and suggest that a flexible budget be used.

Question 9:

A company has a fixed overhead volume variance that is $10,000 unfavorable. The most likely cause for this variance is that:

* Source: Retired ICMA CMA Exam Questions.

A. the production supervisory salaries were less than planned.

B. less was produced than planned.

C. the production supervisory salaries were greater than planned.

D. more was produced than planned.

When there is a fixed overhead volume variance that is unfavorable, it is assumed that the volume was lower than what was budgeted. Therefore, less was produced than planned.

Question 10:

Garland Company uses a standard cost system. The standard for each finished unit of product allows for three pounds of plastic at $0.72 per pound. During December, Garland bought 4,500 pounds of plastic at $0.75 per pound and used 4,100 pounds in the production of 1,300 finished units of product. What is the material purchase price variance for the month of December?

A. $135 unfavorable.

B. $150 unfavorable.

C. $117 unfavorable.

D. $123 unfavorable.

To calculate the direct materials price variance, the quantity used in the calculation should always be the amount of material purchased, not the
amount of material used in production.

\[(\text{Actual price} - \text{standard price}) \times \text{number of pounds purchased} = (0.72 - 0.75) \times 4,500 \text{ pounds} = 135 \text{ unfavorable}\]

**Question 11:**
Which of the following would lead to a favorable variable manufacturing overhead spending variance?

A. Less maintenance was required than expected.
B. Too much indirect labor was used.
C. Employees used too much electricity during production.
D. Excess supplies were used.

All other answers will lead to unfavorable variances.

**Question 12:**
Arkin Co.'s controller has prepared a flexible budget for the year just ended, adjusting the original static budget for the unexpected large increase in the volume of sales. Arkin's costs are mostly variable. The controller is pleased to note that both actual revenues and actual costs approximated amounts shown on the flexible budget. If actual revenues and actual costs are compared with amounts shown on the original (static) budget, what variances would arise?

A. Revenue variances would be unfavorable and cost variances would be favorable.
B. Both revenue variances and cost variances would be favorable.
C. Revenue variances would be favorable and cost variances would be unfavorable.
D. Both revenue variances and cost variances would be unfavorable.

When a static budget is developed, only one level of activity is used in its preparation. Therefore, it would cause favorable revenue variances due to the higher level of activity, and cost variances would be unfavorable because costs associated with the new level of activity would not be considered in the static budget.

**Question 13:**
After taking into account an operation's flexible budget results, a manager is concerned because although the operation was efficient, it was not
effective. Assume a standard static budget of 10,000 units to sell, $300,000 variable costs, and $100,000 in operating income (OI). Which of the following actual results matches this scenario?

A. 12,000 units sold; $370,000 variable costs; $120,000 OI.
B. 12,000 units sold; $355,000 variable costs; $90,000 OI.
C. 9,000 units sold; $290,000 variable costs; $90,000 OI.
D. 8,000 units sold; $280,000 variable costs; $120,000 OI.

An efficient operation would have costs per unit that are lower than the standard cost and an effective operation would exceed the expected operating income for the same level of sales. The standard budget for variable costs of $30/unit ($300,000/10,000 units) multiplied by the actual units sold is $360,000, so actual variable costs of $355,000 are efficient. However, the operation was not effective because it did not meet or exceed the operating income goal of $100,000.

Question 14:
1C1-AT31
The purpose of identifying manufacturing variances and assigning their responsibility to a person/department should be to:

A. pinpoint fault for operating problems in the organization.
B. determine the proper cost of the products produced so that selling prices can be adjusted accordingly.
C. use the knowledge about the variances to promote continuous improvement in the manufacturing operations.
D. trace the variances to finished goods so that the inventory can be properly valued at year end.

The purpose of identifying manufacturing variances and assigning their responsibility to a person/department is to promote continuous improvement in the manufacturing operations.

Question 15:
1C1-LS85
An advantage of using a flexible budget compared to a static budget is that in a flexible budget:

A. standards can easily be changed to adjust to changing circumstances.
B. fixed cost variances are more clearly presented.
C. budgeted costs for a given output level can be compared with actual costs for that same level of output.

D. shortfalls in planned production are clearly presented.

When using a flexible budgeting system, the activity levels for all costs are adjusted according to that activity level. Unlike a static budget, in a flexible budget, fixed cost variances are more clearly presented as those fixed costs are related directly to the activity level of the given period.

**Question 16:**

At the beginning of the year, Douglas Company prepared the following monthly budget for direct materials:

<table>
<thead>
<tr>
<th>Units produced and sold</th>
<th>10,000</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct material</td>
<td>$15,000</td>
<td>$22,500</td>
</tr>
</tbody>
</table>

At the end of the month, the company's records showed that 12,000 units were produced and sold and $20,000 was spent for direct materials. The variance for direct materials is:

A. $2,000 favorable.
B. $5,000 favorable.
C. $2,000 unfavorable.
D. $5,000 unfavorable.

The variance for direct materials is calculated as:

\[
\text{Variance for direct materials} = (\text{actual direct material cost}) - (\text{budgeted direct material cost at actual level of production})
\]

\[
\text{Variance for direct materials} = ($20,000) - (12,000 \text{ units})(\frac{15,000}{10,000})
\]

\[
\text{Variance for direct materials} = $20,000 - $18,000 = $2,000 \text{ unfavorable}
\]

**Question 17:**

For a given time period, a company had a favorable material quantity variance, a favorable direct labor efficiency variance, and a favorable fixed overhead volume variance. Of the following, the one factor that could not have caused all three variances is:

* Source: Retired ICMA CMA Exam Questions.
A. the purchase of higher quality materials.
B. the use of lower-skilled workers.
C. the purchase of more efficient machinery.
D. an increase in production supervision.

If all variances in an analysis are favorable, the items that would not cause these favorable variances would be any situation that would cause the variances to be unfavorable. Out of the choices, the one that would cause an unfavorable variance would be the use of lower-skilled workers.

Question 18:
The inventory control supervisor at Wilson Manufacturing Corporation reported that a large quantity of a part purchased for a special order that was never completed remains in stock. The order was not completed because the customer defaulted on the order. The part is not used in any of Wilson's regular products. After consulting with Wilson's engineers, the vice president of production approved the substitution of the purchased part for a regular part in a new product. Wilson's engineers indicated that the purchased part could be substituted providing it was modified. The units manufactured using the substituted part required additional direct labor hours resulting in an unfavorable direct labor efficiency variance in the Production Department. The unfavorable direct labor efficiency variance resulting from the substitution of the purchased part in inventory would best be assigned to the:

A. inventory supervisor.
B. production manager.
C. vice president of production.
D. engineering manager.

The vice president of production approved the substitution of the purchased part for a regular part in a new product. He/she has to assume the ultimate responsibility. The responsibility cannot be delegated.

Question 19:
Based on past experience, a company has developed the following budget formula for estimating its shipping expenses. The company's shipments average 12 pounds per shipment.

Shipping costs = $16,000 + ($0.50 \times \text{pounds shipped})
The planned activity and actual activity regarding orders and shipments for the current month are given in the following schedule.

<table>
<thead>
<tr>
<th></th>
<th>Plan</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales orders</td>
<td>800</td>
<td>730</td>
</tr>
<tr>
<td>Shipments</td>
<td>800</td>
<td>820</td>
</tr>
<tr>
<td>Units shipped</td>
<td>8,000</td>
<td>9,000</td>
</tr>
<tr>
<td>Sales</td>
<td>$120,000</td>
<td>$144,000</td>
</tr>
<tr>
<td>Total pounds shipped</td>
<td>9,600</td>
<td>12,300</td>
</tr>
</tbody>
</table>

The actual shipping costs for the month amounted to $21,000.

The appropriate monthly flexible budget allowance for shipping costs for the purpose of performance evaluation would be:

A. $20,680.
B. $22,150.
C. $20,800.
D. $20,920.

The appropriate monthly flexible budget allowance for shipping costs for the purpose of performance evaluation would be $22,150.

The $22,150 is calculated as:
$16,000 in fixed costs + (($0.50 per pound shipped)(12,300 pounds shipped)) = $16,000 + $6,150 = $22,150.

Question 20:  
A company has a raw material price variance that is unfavorable. An analysis of this variance indicates that the company’s only available supplier of one of its raw materials unexpectedly raised the price of the material. The action management should take regarding this situation should be to:

A. negatively evaluate the performance of the production manager.
B. ask the production manager to lower the material usage standard to compensate for higher material costs.
C. change the raw material price standard.
D. negatively evaluate the performance of the purchasing manager.

* Source: Retired ICMA CMA Exam Questions.
Any time it is found that a cost standard is changed either in a positive or negative manner, the cost standard should be adjusted accordingly to allow for variances to be more in-line with current market conditions. In this case, the company's only supplier increased the price of the material, forcing an unfavorable price variance. Therefore, management should change the raw material price standard.

**Question 21:**

Ardmore Enterprises uses a standard cost system in its small appliance division. The standard cost of manufacturing one unit of Zeb is:

<table>
<thead>
<tr>
<th>Item</th>
<th>Standard Cost per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>$90</td>
</tr>
<tr>
<td>Labor</td>
<td>$36</td>
</tr>
<tr>
<td>Factory overhead</td>
<td>$24</td>
</tr>
<tr>
<td><strong>Total standard cost per unit</strong></td>
<td><strong>$150</strong></td>
</tr>
</tbody>
</table>

The budgeted variable factory overhead rate is $3 per labor hour, and the budgeted fixed factory overhead is $27,000 per month. During May, Ardmore produced 1,650 units of Zeb compared to a normal capacity of 1,800 units. The actual cost per unit was:

<table>
<thead>
<tr>
<th>Item</th>
<th>Actual Cost per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials (purchased and used)</td>
<td>$95.70</td>
</tr>
<tr>
<td>Labor</td>
<td>$37.20</td>
</tr>
<tr>
<td>Factory overhead</td>
<td>$24.20</td>
</tr>
<tr>
<td><strong>Total actual cost per unit</strong></td>
<td><strong>$157.10</strong></td>
</tr>
</tbody>
</table>

The total material quantity variance for May is:

A. $18,450 favorable.
B. $18,450 unfavorable.
C. $4,950 unfavorable.
D. $4,950 favorable.

The material quantity variance is calculated as:

\[
\text{Material quantity variance} = (\text{standard price of the material}) \times \left(\text{the actual quantity used} - \text{the standard quantity needed for the output}\right)
\]

\[
\text{Material quantity variance} = 1.50 \times [(58 \text{ pounds per unit})(1,650 \text{ units}) - (60 \text{ pounds per unit})(1,650 \text{ units})]
\]

\[
\text{Material quantity variance} = 1.50(95,700 - 99,000) = 1.50(-3,300) = -4,950 \text{ or } 4,950 \text{ favorable.}
\]
It is favorable because the actual quantity used exceeds the standard quantity allowed for the output.

**Question 22:**

The company should investigate:

A. neither the material variance nor the labor variance.

B. the labor variance only.

C. both the material variance and the labor variance.

D. the material variance only

The material variance should be investigated since it is $11,000 which is greater than 10% of the budget ($100,000 \times 0.1). The direct labor variance is $4,000 which is less than 10% of budget ($50,000 \times 0.1) so it would not be investigated under the company policy.

**Question 23:**

A. Wage Rate = $6.55, Hours Worked = 42.

B. Wage Rate = $7.50, Hours Worked = 38.

C. Wage Rate = $7.45, Hours Worked = 42.

D. Wage Rate = $6.67, Hours Worked = 42.71.
The labor efficiency variance of $(14), or $14 favorable, is used in the following formula to determine the AH:

\[
\text{Labor efficiency variance} = (\text{standard rate})(\text{actual hours} - \text{standard hours})
\]

\[-14 = (7)(AH - (160 \text{ units})(1/4 \text{ hour per unit})]
\[-14 = 7(AH - 40)
\[-14 = 7AH - 280
\[-14 = 7AH - 280
\[266 = 7AH
\[AH = 38
\]

The labor rate variance of $19, or $19 unfavorable, is used in the following formula to determine the actual wage rate (AR):

\[
\text{Labor rate variance} = (\text{actual hours})(\text{actual wage rate} - \text{standard wage rate})
\]

\[19 = (38)(AR - 7)
\[19 = 38AR - 266
\[285 = 38AR
\[AR = 7.50
\]

**Question 24:**

Highlight Inc. uses a standard cost system and applies factory overhead to products on the basis of direct labor hours. If the firm recently reported a favorable direct labor efficiency variance, then the:

* Source: Retired ICMA CMA Exam Questions.

A. variable overhead efficiency variance must be favorable.

B. fixed overhead volume variance must be unfavorable.

C. direct labor rate variance must be unfavorable.

D. variable overhead spending variance must be favorable.

**Question 25:**

Fortune Corporation's Marketing Department recently accepted a rush order for a nonstock item from a valued customer. The Marketing Department filed the necessary paperwork with the Production Department, which complained greatly about the lack of time to do the job the right way.
Nevertheless, the Production Department accepted the manufacturing commitment and filed the required paperwork with the Purchasing Department for the needed raw materials. A purchasing clerk temporarily misplaced the paperwork. By the time the paperwork was found, it was too late to order from the company's regular supplier. A new supplier was located, and that vendor quoted a very attractive price. The materials arrived and were rushed into production, bypassing the normal inspection processes (as directed by the Production Department supervisor) to make up for lost time. Unfortunately, the goods were of low quality and created considerable difficulty for Fortune's assembly-line personnel. Which of the following best indicates the responsibility for the materials usage variance in this situation?

* Source: Retired ICMA CMA Exam Questions.

**A. Purchasing, Marketing, and Production.**

**B. Purchasing and Marketing.**

**C. Marketing and Production.**

**D. Purchasing.**

In this situation, Purchasing had ultimate responsibility of the quality of the materials included in this order. However, given that all departments had a hand in pushing this order through the system quickly, each department has the responsibility to ensure the quality.

**Question 26:**

If direct materials (DM) purchased were 180,000 pounds at an actual cost of $95,000 compared to the budgeted amount of 200,000 pounds at a standard cost of $100,000, what is the DM price variance?

**A. $10,000 unfavorable.**

**B. $10,000 favorable.**

**C. $5,000 unfavorable.**

**D. $5,000 favorable.**

The material price variance is the difference between the actual and budgeted input price multiplied by the actual input volume. The standard cost divided by the budgeted amount equates to the budgeted input price of $0.50 per pound. Actual cost is given as $95,000, which equals the actual unit price times the actual quantity purchased. Therefore $95,000 − ($0.50/lb. × 180,000 lbs.) = $5,000 unfavorable.

**Question 27:**
If the budgeted fixed overhead costs are $400,000 for 50,000 budgeted direct labor hours (DLH), and the actual direct labor standard or earned hours was 48,000 DLH, what was the actual fixed overhead cost if the underapplied overhead was $8,000?

A. $384,000.
B. $408,000.
C. $392,000.
D. $376,000.

Overhead (OH) application rate is $8/DLH, applied OH = $8/DLH × 48,000 DLH or $384,000. Actual OH is ($384,000 + $8,000) = $392,000.

Question 28:
When using a flexible budgeting system, the computation for the variable overhead spending variance is the difference between:

* Source: Retired ICMA CMA Exam Questions.

A. the amount applied to work-in-process and actual variable overhead.
B. actual variable overhead and actual inputs times the budgeted rate.
C. actual variable overhead and the previously budgeted amount.
D. the previously budgeted amount and actual inputs times the budgeted rate.

The computation for the variable overhead spending variance is the difference between actual variable overhead and actual inputs times the budgeted rate.

Question 29:
If direct materials (DM) used were 180,000 pounds at an actual cost of $95,000 compared to the flexible budget amount of 200,000 pounds at a standard cost of $100,000, what is the DM efficiency variance?

A. $10,000 unfavorable.
B. $5,000 favorable.
C. $5,000 unfavorable.
D. $10,000 favorable.

The efficiency variance is the difference between the actual and budgeted input quantities multiplied by the budgeted input price. The standard cost divided by the budgeted amount equates to the budgeted input price of
$0.50 per pound. Therefore, \((180,000 \text{ pounds} - 200,000 \text{ pounds}) \times$0.50/pound = $10,000 favorable.

**Question 30:**

The difference between the actual amounts and the flexible budget amounts for the actual output achieved is the:

A. budget variance.
B. sales volume variance.
C. standard cost variance.
D. flexible budget variance.

The flexible budget variance measures the difference between the actual amounts and the flexible budget amounts for the actual output.

**Question 31:**

A company has a direct labor price variance that is favorable. Of the following, the most serious concern the company may have about this variance is that:

A. the circumstances giving rise to the favorable variance will not continue in the future.
B. the cause of the favorable variance may result in other larger unfavorable variances in the value-chain.
C. the production manager may not be using human resources as efficiently as possible.
D. actual production is less than budgeted production.

In any situation, and in any organization, all variances in the value chain must be analyzed to assure that any unfavorable variances are scrutinized and, if possible, fixed to be more adaptable to changes in operating activities.

**Question 32:**

The standard cost sheet for King Industries show the following unit costs for direct materials and direct labor for each package of wrapping paper made:
During the month of November, 150,000 square feet of paper was used to produce 1,425 packages of wrapping paper, and the following actual costs were incurred:

\[
\begin{align*}
\text{Direct materials:} & \quad 100 \text{ square feet of paper at } \$0.05 & \quad \$5.00 \\
\text{Direct labor:} & \quad 1 \text{ standard hours at } \$8 & \quad \$8.00 \\
\text{Total standard materials and labor costs per package} & \quad \$13.00
\end{align*}
\]

The standard selling price per package is $39. King expects to sell 1,100 packages during December. Actual revenue results from December are as follows:

Actual revenue: 1,065 packages sold at $40 per package = $42,600

What are the sales price and volume variances for King Industries? (The volume variance in this context means the effect on revenue, not the effect on contribution margin)

A. $1,065 favorable and $1,365 unfavorable.

B. $1,065 unfavorable and $1,365 favorable.

C. $1,100 favorable and $2,600 favorable.

D. $1,100 unfavorable and $1,365 favorable.

Compute the labor rate and efficiency variances as follows:

<table>
<thead>
<tr>
<th>Sales Price Variance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual price</td>
<td>$40.00</td>
</tr>
<tr>
<td>Standard price</td>
<td>$39.00</td>
</tr>
<tr>
<td>Difference</td>
<td>$1.00 favorable</td>
</tr>
<tr>
<td>Actual quantity of packages sold</td>
<td>1,065</td>
</tr>
<tr>
<td>Total sales price variance</td>
<td>$1,065.00 favorable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labor efficiency variance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard direct labor hours allowed</td>
<td>1,065 units</td>
</tr>
<tr>
<td>Actual direct labor hours</td>
<td>1,100 units</td>
</tr>
<tr>
<td>Difference</td>
<td>(35) unfavorable units</td>
</tr>
<tr>
<td>Standard direct labor rate</td>
<td>$39.00</td>
</tr>
<tr>
<td>Total labor efficiency variance</td>
<td>$(1,365) unfavorable</td>
</tr>
</tbody>
</table>
Question 33:
A company isolates its raw material price variance in order to provide the earliest possible information to the manager responsible for the variance. The budgeted amount of material usage for the year was computed as follows:

150,000 units of finished goods × 3 pounds/unit × $2.00/pound = $900,000

Actual results for the year were the following:

<table>
<thead>
<tr>
<th>Finished goods produced</th>
<th>160,000 units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials purchased</td>
<td>500,000 pounds</td>
</tr>
<tr>
<td>Raw materials used</td>
<td>490,000 pounds</td>
</tr>
<tr>
<td>Cost per pound</td>
<td>$2.02</td>
</tr>
</tbody>
</table>

The raw material price variance for the year was:

A. $20,000 unfavorable.

B. **$10,000 unfavorable.**

C. $9,600 unfavorable.

D. $9,800 unfavorable.

The raw material price variance is calculated as follows:

Raw material price variance = (actual quantity purchased)(actual price − standard price)

Raw material price variance = (500,000)($2.02 − $2.00) = $10,000 unfavorable

Question 34:
The benefits of management by exception reporting include all of the following except a reduction in:

* Source: Retired ICMA CMA Exam Questions.

A. information overload.

B. reporting of production costs.

C. unfocused management actions.

D. reliance on advance planning.
Benefits of management by exception reporting include reduction of the reporting of production costs, information overload, and unfocused management actions.

**Question 35:**
Richter Company has an unfavorable materials efficiency (usage) variance for a particular month. Which one of the following is least likely to be the cause of this variance?

* Source: Retired IMA CMA Exam Questions.

A. Inadequate training of the direct labor employees.
B. Poor quality of the raw materials.
C. Poor performance of the shipping employees.
D. Poor design of the production process or product.

A materials efficiency usage variance would be affected by a poor quality of raw materials, poor design of the product process or product, or lack of skilled direct labor. A materials efficiency variance would not be affected by those employees, or indirect labor, associated with the production and shipping of the end product.

**Question 36:**
The standard cost sheet for King Industries show the following unit costs for direct materials and direct labor for each package of wrapping paper made:

| Direct materials: | 100 square feet of paper at $0.05 | $5.00 |
| Direct labor:     | 1 standard hours at $8           | $8.00 |
|                   | Total standard materials and labor costs per package | $13.00 |

During the month of November, 150,000 square feet of paper was used to produce 1,425 packages of wrapping paper, and the following actual costs were incurred:

| Paper purchased: | 175,000 square feet at $.06 per square foot | $10,500 |
| Direct labor:    | 1,390 hours at $8.10 per hour              | $11,259 |

The standard selling price per package is $39. King expects to sell 1,100 packages during December. Actual revenue results from December are as follows:

Actual revenue: 1,065 packages sold at $40 per package = $42,600
What are the labor rate and efficiency variances for King Industries?

A. $139 unfavorable and $280 favorable.
B. $142.50 unfavorable and $2,600 favorable.
C. $139 favorable and $280 favorable.
D. $142.50 favorable and $2,600 favorable.

Compute the labor rate and efficiency variances as follows:

<table>
<thead>
<tr>
<th>Labor Rate Variance:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard rate</td>
<td>$ 8.00</td>
</tr>
<tr>
<td>Actual rate</td>
<td>$ 8.10</td>
</tr>
<tr>
<td>Difference</td>
<td>$(0.10) unfavorable</td>
</tr>
<tr>
<td>Actual direct labor hours used</td>
<td>1,390</td>
</tr>
<tr>
<td>Total labor rate variance</td>
<td>$(139.00) unfavorable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labor Efficiency Variance:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard direct labor hours allowed</td>
<td>1,425 hours</td>
</tr>
<tr>
<td>Actual direct labor hours</td>
<td>1,390 hours</td>
</tr>
<tr>
<td>Difference</td>
<td>35 hours favorable</td>
</tr>
<tr>
<td>Standard direct labor rate</td>
<td>$ 8.00</td>
</tr>
<tr>
<td>Total labor efficiency variance</td>
<td>$ 280 favorable</td>
</tr>
</tbody>
</table>

Question 37:
Of the following pairs of variances found in a flexible budget report, which pair is most likely to be related?

* Source: Retired ICMA CMA Exam Questions.

A. Material price variance and variable overhead efficiency variance.
B. Material usage variance and labor efficiency variance.
C. Labor rate variance and variable overhead efficiency variance.
D. Labor efficiency variance and fixed overhead volume variance.

When looking at variances on a flexible budget report, there are always related pair of items on the reports. For instance, if there is an increase in level of activity, it should be expected that there will be an increase in materials usage and labor activity.

Question 38:
Richmond Enterprises is reviewing its policies and procedures in an effort to enhance goal congruence throughout the organization. The processes that are most likely to encourage this behavior are:
A. cost-based transfer pricing, imposed budgeting, and activity-based costing.

B. participatory budgeting, reciprocal cost allocation, and management-by-objective performance evaluation.

C. management-by-objective performance (MBO) evaluation and participatory budgeting.

D. reciprocal cost allocation, zero-base budgeting, and standard costing.

Goal congruence is enhanced by lower management participation in budgeting and by MBO. MBO identifies managers' areas of responsibility and ties performance measurements to the areas. It pushes responsibilities for meeting goals and objectives down to the lowest possible management levels and encourages participation.

Question 39:

Cordell Company uses a standard cost system. On January 1 of the current year, Cordell budgeted fixed manufacturing overhead cost of $600,000 and production at 200,000 units. During the year, the firm produced 190,000 units and incurred fixed manufacturing overhead of $595,000. The production volume variance for the year was:

A. $5,000 unfavorable.
B. $10,000 unfavorable.
C. $30,000 unfavorable.
D. $25,000 unfavorable.

The fixed overhead volume variance (FOVV) is calculated as:

\[ \text{FOVV} = (\text{fixed overhead rate}) \times (\text{normal base level of production} - \text{actual production level}) \]

Fixed overhead rate = SRF

\[ \text{FOVV} = (\text{SRF})(200,000 \text{ units} - 190,000 \text{ units}) \]
\[ \text{FOVV} = 10,000 \text{ SRF} \]

The fixed overhead rate (SRF) is equal to the budgeted fixed overhead of $600,000, divided by the normal (budgeted) base of 200,000 units, which comes to $3.00 per unit.

Therefore, the FOVV = (10,000)($3) = $30,000 unfavorable.
Question 40:

The JoyT Company manufactures Maxi Dolls for sale in toy stores. In planning for this year, JoyT estimated variable factory overhead of $600,000 and fixed factory overhead of $400,000. JoyT uses a standard costing system, and factory overhead is allocated to units produced on the basis of standard direct labor hours. The denominator level of activity budgeted for this year was 10,000 direct labor hours, and JoyT used 10,300 actual direct labor hours.

Based on the output accomplished during the year, 9,900 standard direct labor hours should have been used. Actual variable factory overhead was $596,000, and actual fixed factory overhead was $410,000 for the year.

Based on this information, the volume variance for JoyT for this year is:

A. $10,000 unfavorable.
B. $4,000 unfavorable.
C. $6,000 unfavorable.
D. $16,000 unfavorable.

To calculate the volume variance, take the fixed overhead rate and multiply it by the difference between the denominator (or normal-level) hours and the standard number of hours.

Fixed overhead rate (normal level hours – standard level hours).

Fixed overhead rate = $400,000 budgeted fixed overhead/10,000 budgeted direct labor hours = $40/direct labor hour

Volume variance = $40 rate (10,000 normal-level direct labor hours – 9,900 standard-level direct labor hours) = $4,000 unfavorable.

The variance is unfavorable since the normal-level hours came in higher than the standard-level hours.

Question 41:

Use of a standard cost system can include all of the following advantages except that it:

A. permits development of flexible budgeting.
B. allows employees to better understand what is expected of them.

C. emphasizes qualitative characteristics.

D. assists in performance evaluation.

Under a standard cost system, advantages include that it assists in performance evaluations, permits development of flexible budgeting, and allows employees to better understand what is expected of them.

Question 42:
A manager receives automated notices of both favorable and unfavorable variations from the budget. Which of the following methods is the manager using?

A. Management by objective.

B. Balanced scorecard.

C. Total quality management.

D. Management by exception.

Management by exception flags exceptions for managers to concentrate on with the goal of more efficient management.

Question 43:
Johnson Inc. has established per unit standards for material and labor for its production department based on 900 units normal production capacity as shown below:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 lbs of direct materials @ $4 per lb</td>
<td>$12</td>
</tr>
<tr>
<td>1 direct labor hour @ $15 per hour</td>
<td>$15</td>
</tr>
<tr>
<td>Standard cost per unit</td>
<td>$27</td>
</tr>
</tbody>
</table>

During the year 1,000 units were produced. The accounting department has charged the production department supervisor with the following unfavorable variances:
Bob Sterling, the production supervisor, has received a memorandum from his boss stating that he did not meet the established standards for material prices and quantity and corrective action should be taken. Sterling is very unhappy about the situation and is preparing to reply to the memorandum explaining the reasons for his dissatisfaction.

All of the following are valid reasons for Sterling's dissatisfaction except that the:

A. material price variance is the responsibility of the purchasing department.

B. cause of the unfavorable material usage variance was the acquisition of substandard material.

C. variance calculations fail to properly reflect that actual production exceeded normal production capacity.

D. standards have not been adjusted to the engineering changes.

Production variances (cost, spending, and efficiency variances) are based upon actual production volumes. They are not based upon normal, capacity, budgeted, estimated, projected, or expected production, or any other measure of production. Therefore, the difference between actual production and any other measure of production is irrelevant. Standards do need to be adjusted for the effect of engineering changes. Whether the material was substandard needs to be investigated.

Question 44:
A paint manufacturing plant has two white pigments that are substitutable for the same product. Natural pigment costs $3/gallon, and artificial pigment costs $1/gallon. Standards call for 60% natural and 40% synthetic, but the actual ratio used was 50% of each. The actual total quantity of both ingredients was 30,000 gallons while the budgeted total quantity was 32,000 gallons. What is the mix variance for these ingredients?

A. $6,000 favorable.
B. $17,400 favorable.
C. $17,400 unfavorable.
D. $6,000 unfavorable.

The mix variance is calculated in five steps.

1. Multiply the budgeted cost per unit times the actual total quantity times the actual mix ratio for each item:
   - natural = $3/gallon × 30,000 gallons × 0.5 = $45,000
   - artificial = $1/gallon × 30,000 gallons × 0.5 = $15,000

2. Add these two amounts: $45,000 + $15,000 = $60,000

3. Multiply the budgeted cost/unit times the actual total quantity used times the budgeted mix ratio for each item:
   - natural = $3/gallon × 30,000 gallons × 0.6 = $54,000
   - artificial = $1/gallon × 30,000 gallons × 0.4 = $12,000

4. Add these two amounts: $54,000 + $12,000 = $66,000

5. The first sum less the second sum equals the mix variance: $60,000 − $66,000 = $6,000 favorable

**Question 45:**
Which one of the following variances is most controllable by the production supervisor?

A. fixed overhead budget variance.
B. material usage variance.
C. fixed overhead volume variance.
D. material price variance.

The only items that a production supervisor can control are the usages of materials, direct labor, supplies, and utilities. The supervisor has control over usage of resources, but not the purchase prices of resources.

**Question 46:**
Comparing actual results with a budget based on achieved volume is possible with the use of a:

A. master budget.
B. monthly budget.
A flexible budget shows the expected revenue and costs for the levels of activity (output) over a relevant range. A flexible budget can be "flexed" or adjusted to the actual level of activity for the period, so that actual results can be compared to budget expectations at the same level of output.

Question 47:

Franklin Products has an estimated practical capacity of 90,000 machine hours, and each unit requires two machine hours. The following data apply to a recent accounting period.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual variable overhead</td>
<td>$240,000</td>
</tr>
<tr>
<td>Actual fixed overhead</td>
<td>$442,000</td>
</tr>
<tr>
<td>Actual machine hours worked</td>
<td>83,000</td>
</tr>
<tr>
<td>Actual finished units produced</td>
<td>42,000</td>
</tr>
<tr>
<td>Budgeted variable overhead at 90,000 hours</td>
<td>$200,000</td>
</tr>
<tr>
<td>Budgeted fixed overhead</td>
<td>$450,000</td>
</tr>
</tbody>
</table>

Of the following factors, Baltimore's production volume variance is most likely to have been caused by:

A. temporary employment of workers with lower skill levels than originally anticipated.
B. a wage hike granted to a production supervisor.
C. a newly imposed initiative to reduce finished goods inventory levels.
D. acceptance of an unexpected sales order.

Volume variances are caused by a difference in the budgeted fixed overhead and the amount allocated on the basis of actual output. A newly imposed initiative to reduce finished goods inventory levels is consistent with the change in production compared to budget.

A wage hike would affect the spending variance, not the volume variance.

Since the volume variance in this case is unfavorable (amount allocated less than budget), acceptance of an unexpected sales order would not be correct because an unexpected sales order would increase the amount allocated.

Question 48:
Randall Company uses standard costing and flexible budgeting and is evaluating its direct labor. The total direct labor budget variance can usually be broken down into two other variances identified as the:

A. direct labor cost variance and the direct labor volume variance.
B. direct labor rate variance and direct labor volume variance.
C. direct labor cost variance and direct labor efficiency variance.
D. direct labor rate variance and direct labor efficiency variance.

The labor rate variance and labor efficiency variances are two components of the total direct labor budget variance which must be analyzed to better understand the true cause of the overall direct labor variance.

See Wiley CMALS Part 1 SSG pages 127 – 128 for the key formulas for the DL Rate Variance and DL Efficiency Variance and see pages 142 – 143 for a discussion of component DL variance analysis.

Question 49:
Harper Company’s performance report indicated the following information for the past month:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual total overhead</td>
<td>$1,600,000</td>
</tr>
<tr>
<td>Budgeted fixed overhead</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Applied fixed overhead at $3 per labor hour</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Applied variable overhead at $.50 per labor hour</td>
<td>200,000</td>
</tr>
<tr>
<td>Actual labor hours</td>
<td>430,000</td>
</tr>
</tbody>
</table>

Harper’s total overhead spending variance (OSV) for the month was:

A. $200,000 unfavorable.
B. $115,000 favorable.
C. $100,000 favorable.
D. $185,000 unfavorable.

The overhead spending variance is calculated as follows:
OSV = (actual overhead) − (budgeted overhead at actual direct labor hours used)

OSV = ($1,600,000) − (budgeted overhead at actual direct labor hours used)

Budgeted overhead at the actual direct labor hours used = (fixed overhead) + (actual direct labor hours)(rate of labor hours used to apply variable overhead)

Budgeted overhead at the actual direct labor hours used = ($1,500,000) + (430,000 hours)($0.50 per direct labor hour)
Budgeted overhead at the actual direct labor hours used = $1,500,000 + $215,000 = $1,715,000

OSV = $1,600,000 − $1,715,000 = $(115,000) favorable.

**Question 50:**

If the budgeted fixed overhead (OH) costs are $177,000 applied at the rate of $3 per direct labor hour (DLH), and the actual DLH standard or earned hours was 56,000 DLH, what was the actual fixed OH cost if the overapplied OH was $12,000?

A. $180,000.
B. $177,000.
C. $168,000.
D. $156,000.

**D. $156,000.**

OH application rate is $3/DLH, applied OH = $3/DLH × 56,000 DLH = $168,000. Actual OH is $168,000 − $12,000 = $156,000.

**Question 51:**

Christopher Akers is the chief executive officer of SBL Inc., a masonry contractor. The financial statements have just arrived showing a $3,000 loss on the new stadium job that was budgeted to show a $6,000 profit. Actual and budget information relating to the materials for the job are as follows:

<table>
<thead>
<tr>
<th>Bricks - number of bundles</th>
<th>Actual</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,000</td>
<td>2,850</td>
</tr>
<tr>
<td>Bricks - cost per bundle</td>
<td>$7.90</td>
<td>$8.00</td>
</tr>
</tbody>
</table>
Which one of the following is a correct statement regarding the stadium job for SBL?

A. The flexible budget variance was unfavorable by $900.
B. The price variance was favorable by $285.
C. The price variance was favorable by $300.
D. The efficiency variance was unfavorable by $1,185.

The material price variance is calculated as follows:

Material price variance = (actual quantity purchased)(actual price - standard price)
Material price variance = (3,000)($7.90 - $8.00) = $(300) favorable.

The other available answer choices are incorrect. Note that the flexible budget variance includes all variable cost variances (material, direct labor, and variable overhead) as well as the fixed overhead budget variance.

Question 52:
During the month of May, Tyler Company experienced a significant unfavorable material efficiency variance in the production of its single product at one of Tyler's plants. Which one of the following reasons would be least likely to explain why the unfavorable variance arose?

A. Replacement production equipment had just been installed.
B. Inferior materials were purchased.
C. Workers used were less-skilled than expected.
D. Actual production was lower than planned production.

In the event that there is a significant unfavorable material efficiency variance in the production of a single product, it could mean that inferior materials were purchased, workers were less skilled than expected, or the replacement production equipment had just been installed creating some downtime leading to the unfavorable variance.

Question 53:
A company applies variable overhead based upon direct labor hours and has a variable overhead efficiency variance that is $25,000 favorable. A possible cause of this variance is that:
A. less units of finished goods were produced.
B. electricity rates were lower than expected.
C. higher skilled labor was used.
D. less supplies were used than anticipated.

In this case, variable overhead is based upon direct labor hours. Given that the variable overhead efficiency variance was $25,000 favorable, we can assume that the labor force was higher skilled and, though the learning curve, became more efficient in the production process.

Question 54:
1C1-AT36
Which one of the following statements regarding the difference between a flexible budget and a static budget is correct?

A. A flexible budget provides cost allowances for different levels of activity whereas a static budget provides costs for one level of activity.
B. A flexible budget primarily is prepared for planning purposes while a static budget is prepared for performance evaluation.
C. A flexible budget includes only variable costs whereas a static budget includes only fixed costs.
D. A flexible budget is established by operating management while a static budget is determined by top management.

Static budgets are established for one level of activity only. Flexible budgets can be "flexed" or adjusted as the output level changes, in order to reflect actual output levels.

Question 55:
1C1-LS70
If 200,000 machine-hours are the flexible budget cost driver for variable overhead at a standard rate of $5/machine-hour, but 220,000 machine-hours were actually used at an actual rate of $6/machine-hour, what is the variable overhead efficiency variance?

A. $100,000 favorable.
B. $100,000 unfavorable.
C. $320,000 unfavorable.
D. $320,000 favorable.
The variable overhead efficiency variance is the product of the actual quantity of the cost driver times the standard variable overhead rate minus the product of the standard quantity of the cost driver times the standard variable overhead rate. \((220,000 \text{ machine-hours} \times \$5/\text{machine-hour}) - (200,000 \times \$5/\text{machine-hour}) = \$100,000 \text{ unfavorable.}\)

**Question 56:**

If actual results for a period have $400,000 in direct materials (DM) costs and $40,000 in operating income (OI) but the static budget was $500,000 in DM costs and $50,000 in OI, which of the following is true?

A. $100,000 favorable DM; $10,000 unfavorable OI.
B. $100,000 unfavorable DM; $10,000 favorable OI.
C. $100,000 unfavorable DM; $10,000 unfavorable DM.
D. $100,000 favorable DM; $10,000 favorable OI.

Costs that are lower than expected are favorable, while revenues or income that are lower than expected are unfavorable.

**Question 57:**

Which of the following results from substituting one direct material for another?

A. Efficiency variance.
B. Yield variance.
C. Sales mix variance.
D. Mix variance.

When a product has two or more ingredients that can be substituted for one another, the product can have a mix variance or a variance in the usage of the substitutable materials.

**Question 58:**

If 200,000 machine-hours are budgeted for variable overhead at a standard rate of $5 per machine-hour, but 220,000 machine-hours were actually used at an actual rate of $6 per machine-hour, what is the variable overhead spending variance?

A. $100,000 favorable.
B. $220,000 favorable.
C. $220,000 unfavorable.
D. $100,000 unfavorable.

The variable overhead spending variance is the difference between the actual rate and the standard rate times the actual quantity. ($6/machine-hour − $5/machine-hour) × 220,000 machine-hours = $220,000 unfavorable.

Question 59:

The following performance report was prepared for Dale Manufacturing for the month of April.

<table>
<thead>
<tr>
<th></th>
<th>Actual Results</th>
<th>Static Budget</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Units</td>
<td>100,000</td>
<td>80,000</td>
<td>20,000 F</td>
</tr>
<tr>
<td>Sales Dollars</td>
<td>$190,000</td>
<td>$160,000</td>
<td>$30,000 F</td>
</tr>
<tr>
<td>Variable Costs</td>
<td>125,000</td>
<td>96,000</td>
<td>29,000 U</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>45,000</td>
<td>40,000</td>
<td>5,000 U</td>
</tr>
<tr>
<td>Operating Income</td>
<td>$20,000</td>
<td>$24,000</td>
<td>$4,000 U</td>
</tr>
</tbody>
</table>

Using a flexible budget, Dale's total sales-volume variance is:

A. $6,000 favorable.
B. $16,000 favorable.
C. $20,000 unfavorable.
D. $4,000 unfavorable.

The sales-volume variance is the difference between the static budget profit of $24,000 and the flexible budget profit at the actual volume of 100,000 sales units.

The flexible budget profit at 100,000 units = budgeted sales − budgeted variable costs − budgeted fixed costs all at 100,000 units.

Budgeted sales = (budgeted price)(actual sales in units)
Budgeted sales = ($160,000 / 80,000 units)(100,000 units)
Budgeted sales = $200,000
Budgeted variable costs = (unit variable cost)(actual sales in units)
Budgeted variable costs = ($96,000 / 80,000 units)(100,000 units)
Budgeted variable costs = $120,000

Budgeted fixed costs = $40,000 at any volume in the relevant range.

Flexible budget profit = $200,000 − $120,000 - $40,000 = $40,000

Total sales-volume variance = $24,000 − $40,000 = $(16,000), or $16,000 favorable

Question 60:
1C1-AT34
The variance that arises solely because the quantity actually sold differs from the quantity budgeted to be sold is:

A. sales mix variance.

B. sales volume variance.

C. flexible budget variance.

D. static budget variance.

The sales volume variance is the difference between the budgeted contribution margin at the actual volume and the original (static budget) budgeted contribution margin. It measures the change in profit that would be expected from an actual volume that differs from the original budgeted volume.

Question 61:
1C1-LS82
Which one of the following statements is correct concerning a flexible budget cost formula? Variable costs are stated:

A. in total and fixed costs are stated in total.

B. per unit and fixed costs are stated per unit.

C. per unit and fixed costs are stated in total.

D. in total and fixed costs are stated per unit.

In the flexible budget cost formula, variable costs are stated per unit and fixed costs are stated in total.

Question 62:
1C1-LS76
The static budget fixed costs are $60,000 for static budget output of 24,000 units. Actual fixed costs are $50,000 for 25,000 actual units. What is the flexible budget fixed costs?

A. $57,600.
B. $60,000.
C. $62,500.
D. $48,000.

Fixed costs do not change as the volume of activity changes.

Question 63:
When there are multiple inputs of either labor or material, the efficiency variance for either labor or material can be subdivided into:

A. yield variance and mix variance.
B. mix variance and price variance.
C. yield variance and price variance.
D. volume variance and mix variance.

When there are multiple inputs of either labor or material, the efficiency of usage is affected by the mix of the inputs, creating a mix component in the efficiency variance. The remainder of the efficiency variance is the yield component.

Question 64:
A sales-volume variance of $36,000 unfavorable and a flexible-budget variance of $56,000 favorable equals:

A. an efficiency variance of $92,000 favorable.
B. a static-budget variance of $20,000 favorable.
C. a static-budget variance of $92,000 favorable.
D. an efficiency variance of $20,000 favorable.

Sales-volume variance plus flexible-budget variance equals the static budget variance. A favorable and unfavorable variance will partially cancel each other out.

Question 65:
The monthly sales volume of Shugart Corporation varies from 7,000 units to 9,800 units over the course of a year. Management is currently studying
anticipated selling expenses along with the related cash resources that will be needed. Which of the following types of budgets (1) should be used by Shugart in planning, and (2) will provide Shugart the best feedback in performance reports for comparing planned expenditures with actual amounts?

* Source: Retired ICMA CMA Exam Questions.

A. Planning-Static; Performance Reporting-Static.
B. Planning-Static; Performance Reporting-Flexible.
C. Planning-Flexible; Performance Reporting-Static.
D. Planning-Flexible; Performance Reporting-Flexible.

The best methodology to use when planning is a static budget and when reporting on performance is a flexible budgeting methodology. A static budget, like a company's master budget, is prepared based on the planned output at the start of the budget period. A flexible budget is based on the actual output for the period and is useful in measuring actual performance.

Question 66:
A major disadvantage of a static budget is that:

* Source: Retired ICMA CMA Exam Questions.

A. variances tend to be smaller than when flexible budgeting is used.

B. it is more difficult to develop than a flexible budget.

C. it is made for only one level of activity.

D. variances are more difficult to compute than when flexible budgeting is used.

A major disadvantage of a static budget is that it is developed using only one level of activity, whereas a flexible budget uses multiple levels of activity in its preparation.

Question 67:
The difference between applied fixed overhead of $45,000 and budgeted fixed overhead of $40,000 is known as:

A. $5,000 favorable production volume variance.

B. $5,000 overapplied overhead.

C. $5,000 unfavorable production volume variance.

D. $5,000 underapplied overhead.
Production volume variance is defined as budgeted fixed overhead less applied fixed overhead, where budgeted fixed overhead = standard quantity times x fixed overhead rate and applied fixed overhead = actual quantity x standard fixed overhead rate. Production volume variance is favorable in this example because overhead is a cost and this cost was less than expected due to a lower than expected actual quantity of the cost driver.

**Question 68:**
A company has a fixed overhead spending variance of $5,000 favorable and a fixed overhead production-volume variance of $80,000 unfavorable. Which of the following is the **most likely** cause of these variances?

A. There were variances in worker skill level, scheduling, supervision, or setup efficiency.

B. **The company made fewer units in the period than expected.**

C. The budget procedure missed or failed to predict changes in fixed costs.

D. Inadequate control was exercised over departmental spending due to accidents or unexpected repairs.

The spending variance is very small and positive, while the production-volume variance is relatively larger and unfavorable. Therefore, the problem lies with the production-volume variance, which is often caused when the demand for a product changes from what was expected.

**C2: Responsibility Centers and Reporting**

**Question 1:**
Which of the following is a true statement regarding the allocation of common costs when using segment reporting?

A. Common costs must be allocated using the incremental cost allocation method.

B. Common costs cannot be allocated using the contribution approach.

C. **Common costs reduce the value of the segment margin when reporting profitability.**

D. Common costs deduct all traceable fixed costs for the segment.

Common costs dilute the value of the segment margin on reporting profitability, so some businesses allocate common costs to segments only...
when all or most of the cost would disappear if the segment were to be discontinued.

**Question 2:**

Patriotic Flag Manufacturing Company uses an accounting system that charges costs to the manager who has the responsibility to make decisions incurring the costs. For example, if the sales manager accepts a rush order from the government, requiring additional production costs of flags, these additional costs are charged to the sales manager because the authority for the order lies in the hands of the sales manager. The type of accounting system used in this case is:

A. Functional accounting.
B. Profit center accounting.
C. Bonus focused accounting.
D. Feedback accounting.

Profit center accounting is accounting used for profit centers. In this case, the sales manager had the control over costs associated with the sale, thus they are a profit center and are charged with the additional costs associated with the rush order.

**Question 3:**

Parkside Inc. has several divisions that operate as decentralized profit centers. Parkside’s Entertainment Division manufactures video arcade equipment using the products of two of Parkside's other divisions. The Plastics Division manufactures plastic components, one type that is made exclusively for the Entertainment Division, while other less complex components are sold to outside markets. The products of the Video Cards Division are sold in a competitive market; however, one video card model is also used by the Entertainment Division. The actual costs per unit used by the Entertainment Division are presented below.

<table>
<thead>
<tr>
<th></th>
<th>Plastic Components</th>
<th>Video Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct material</td>
<td>$1.25</td>
<td>$2.40</td>
</tr>
<tr>
<td>Direct labor</td>
<td>2.35</td>
<td>3.00</td>
</tr>
<tr>
<td>Variable overhead</td>
<td>1.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Fixed overhead</td>
<td>4.00</td>
<td>2.25</td>
</tr>
<tr>
<td>Total cost</td>
<td>$5.00</td>
<td>$8.15</td>
</tr>
</tbody>
</table>

The Plastics Division sells its commercial products at full cost plus a 25% markup and believes the proprietary plastic component made for the Entertainment Division would sell for $6.25 per unit on the open market.
The market price of the video card used by the Entertainment Division is $10.98 per unit.

A per-unit transfer price from the Video Cards Division to the Entertainment Division at full cost, $9.15, would:

A. allow evaluation of both divisions on a competitive basis.

B. encourage the Entertainment Division to purchase video cards from an outside source.

C. demotivate the Entertainment Division and cause mediocre performance.

D. provide no profit incentive for the Video Cards Division to control or reduce costs.

Using full costs as a transfer price would allow the selling division to pass on any cost increases to the buying division. The seller would have no incentive to control the costs of the item transferred.

Question 4:
1C2-LS46
With respect to a firm's transfer pricing policy, an advantage of using a dual pricing arrangement is that it:

* Source: Retired ICMA CMA Exam Questions.

A. promotes goal congruence between the supplying and buying subunits of the firm.

B. provides an incentive for the supplying subunit to control costs.

C. exposes the supplying subunit to the discipline of market prices.

D. simplifies tax calculations when the buying and supplying subunits are taxed in different jurisdictions.

A dual pricing arrangement promotes goal congruence between the supplying and buying subunits of the firm.

Question 5:
1C2-AT30
Richardson Motors uses ten units of Part Number T305 each month in the production of large diesel engines. The cost to manufacture one unit of T305 is presented below.
Material handling, which is not included in manufacturing overhead, represents the direct variable costs of the Receiving Department that are applied to direct materials and purchased components on the basis of their cost. Richardson's annual manufacturing overhead budget is one-third variable and two-thirds fixed. Simpson Castings, one of Richardson's reliable vendors, has offered to supply T305 at a unit price of $30,000.

Assume the rental opportunity does not exist and Richardson Motors could use the idle capacity to manufacture another product that would contribute $104,000 per month. If Richardson chooses to manufacture the ten T305 units in order to maintain quality control, Richardson's opportunity cost is:

A. $36,000.
B. $(96,000).
C. $8,000.
D. $(40,000).

The cost to purchase ten T305's from Simpson Castings is $360,000 ($300,000 total purchase price for 10 units ($30,000 × 10), plus $60,000 (0.2 × $30,000 in material handling costs per unit × 10 units).

The cost to make the T305 per unit consists of avoidable variable costs per unit, avoidable fixed costs per unit and the unit cost of any lost opportunities.

This equals $368,000, which is calculated as follows: (10 units)($2,000 direct materials + $400 material handling costs + $16,000 direct labor + $8,000 (1/3 of $24,000) in variable overhead) = $264,000, plus the $104,000 in lost contribution caused by making the T305's. The difference between the cost to buy ten units ($360,000) and the cost to make the ten units ($368,000) is $8,000.

Question 6:

Sara Bellows, manager of the telecommunication sales team, has the following department budget.
A revenue center is an identifiable department, division, or unit of a firm that generates revenue through sale of goods and/or services. In this example, the telecommunication sales team is a revenue center based on the definition.

Question 7:

In theory, the **optimal** method for establishing a transfer price is:

A. budgeted cost with or without a markup.

B. **market price**.

C. incremental cost.

D. flexible budget cost.

The market price transfer pricing model helps the divisions maintain autonomy and causes the divisions to be competitive with external suppliers. Market-based transfer prices are objective and verifiable.

Question 8:

Kern Manufacturing has several divisions and evaluates performance using segment income. Since sales include transfers to other divisions, Kern has established a price for internal sales as cost plus 10%. Red Division has requested 10,000 units of Green Division's product. Green Division is selling its product externally at a 60% markup over cost. The corporate policy will encourage the Green Division to:
A. reject the sale to the Red Division because it does not provide the same markup as external sales.

B. transfer the product to the Red Division because all costs are being covered and the division will earn a 10% profit.

C. accept the sale to the Red Division if it is operating at full capacity and the sale will contribute to fixed costs.

D. transfer the product to the Red Division if it does not require the Green Division to give up any external sales.

Kern Manufacturing established a corporate policy for internal sales as cost plus 10%. This policy would encourage Green Division to transfer the product to the Red Division if it does not require Green Division to give up any external sales.

Question 9:
1C2-LS43
Manhattan Corporation has several divisions that operate as decentralized profit centers. At the present time, the Fabrication Division has excess capacity of 5,000 units with respect to the UT-371 circuit board, a popular item in many digital applications. Information about the circuit board follows.

| Market price | $48 |
| Variable selling/distribution costs on external sales | 5 |
| Variable manufacturing cost | 21 |
| Fixed manufacturing cost | 10 |

Manhattan's Electronic Assembly Division wants to purchase 4,500 circuit boards either internally, or else use a similar board in the marketplace that sells for $46. The Electronic Assembly Division’s management feels that if the first alternative is pursued, a price concession is justified, given that both divisions are part of the same firm. The best process to determine the price ultimately charged by the Fabrication Division to the Assembly Division for the circuit board is to:

A. establish the price by top management.
B. establish the price by an arbitration committee.

C. establish the price through negotiations between the Fabrication's and Electronic Assembly's Division management.

D. set the price equal to the price that would be charged if the Fabrication Department had no excess capacity.

When we deal with transfer pricing, the best process is to establish the price through negotiations between the both responsibility center’s management.

**Question 10:**

Fox Enterprises' income statement for profit center store number 2 for July includes:

- Contribution margin: $90,000
- Manager's salary: $50,000
- Depreciation on facilities: $10,500
- Allocated corporate expenses: $9,500

The profit center's manager would most likely be able to control which of the following:

A. $140,000.
B. $150,500.
C. $160,000.
D. $90,000.

Profit centers are responsible for both costs and revenues. Since profit is a function of both revenue and costs, a manager for a profit center is responsible for generating profits. The contribution margin is the amount that contributed towards fixed expenses and profits. Therefore, the manager can only have control over the contribution margin (sales – variable costs). The other items included are not under the manager's control.

**Question 11:**

Parkside Inc. has several divisions that operate as decentralized profit centers. Parkside's Entertainment Division manufactures video arcade equipment using the products of two of Parkside's other divisions. The Plastics Division manufactures plastic components, one type that is made exclusively for the Entertainment Division, while other less complex components are sold to outside markets. The products of the Video Cards
Division are sold in a competitive market; however, one video card model is also used by the Entertainment Division. The actual costs per unit used by the Entertainment Division are presented below.

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</tr>
<tr>
<td>Total cost</td>
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<td>$8.15</td>
</tr>
</tbody>
</table>

The Plastics Division sells its commercial products at full cost plus a 25 percent markup and believes the proprietary plastic component made for the Entertainment Division would sell for $6.25 per unit on the open market. The market price of the video card used by the Entertainment Division is $10.98 per unit.

Assume that the Plastics Division has excess capacity and it has negotiated a transfer price of $5.60 per plastic component with the Entertainment Division. This price will:

A. motivate both divisions as estimated profits are shared.
B. cause the Plastics Division to reduce the number of commercial plastic components it manufactures.
C. encourage the Entertainment Division to seek an outside source for plastic components.
D. motivate the Plastics Division to increase the portion of its manufacturing devoted to the Entertainment Division.

Since the Plastics Division has excess capacity, the cost to manufacture the plastic component is calculated by taking its unit variable cost of $4.60 ($1.25 in direct material + $2.35 in direct labor + $1.00 in variable overhead). The transfer price for the video cards is $5.60.

Therefore, the Plastics Division would earn a contribution margin of $1.00 per unit transferred ($5.60 – $4.60). The Entertainment Division will have a contribution of $0.65 per unit transferred (the $6.25 selling price – $5.60 transfer price).

Question 12:

All of the following are true of a contribution approach to an income statement except:
A. The contribution approach helps decide whether to make or buy a good.

B. The contribution approach helps analyze product lines.

C. Managers can view their cost by function.

D. The contribution approach could be used to evaluate profit center manager's performance regarding fixed and variable controllable costs.

Under the contribution approach, managers can view costs by their behavior instead of by function such as sales, administration, or production.

**Question 13:**
Most firms allocate corporate and other support costs to divisions and departments for all of the following reasons except to:

A. remind profit-center managers that earnings must be adequate to cover some share of the indirect costs.

B. stimulate profit-center managers to put pressure on central managers to control service costs.

C. create competition between divisions and departments, and their managers.

D. fix accountability and evaluate profit centers.

Corporate and support costs should be allocated to divisions and departments to remind profit-center managers that earnings must be adequate to cover some share of the indirect costs, create competition between divisions and departments, and their managers, and to fix accountability and evaluate profit centers.

**Question 14:**
Consider the following for Gridiron Sporting Goods Manufacturing Company for the prior year:

- The company produced 1,500 units and sold 1,300 units, both as budgeted
- There were no beginning or ending work-in-process inventories and not beginning finished good inventory
- Budgeted and actual fixed costs were equal, all variable manufacturing costs were affected by production volume only, and all variable selling costs were affected by sales volume only.
- Budgeted per unit revenues and costs were as follows:
The contribution margin earned by Gridiron Sporting Goods Manufacturing Company for the prior year was:

A. $24,700.
B. $19,200.
C. $18,200.
D. $10,400.

The contribution margin equals total sales minus all variable costs expensed. Provided that there was no work-in-process and no beginning finished goods, the contribution margin is $18,200 (1,300 units × ($50 − $15 − $10 − $5 − $6)).

Fixed costs are not included in the computation of contribution margin.

The receipt of raw materials for its production of certain products and the shipping of the completed goods to its customers is under the control of the warehouse supervisor. The warehouse supervisor's time is spent approximately 70% on receiving activities and 30% on shipping activities. Separate staffs of employees are employed for the receiving and shipping functions. The labor-related costs for the warehousing function are:

<table>
<thead>
<tr>
<th>Labor Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warehouse supervisor's salary</td>
<td>$65,000</td>
</tr>
<tr>
<td>Receiving clerks' wages</td>
<td>$85,000</td>
</tr>
<tr>
<td>Shipping clerks' wages</td>
<td>$67,000</td>
</tr>
<tr>
<td>Employee benefit costs (40% of salary and wage costs)</td>
<td>$86,800</td>
</tr>
</tbody>
</table>

The company utilizes a responsibility accounting system for reporting the performance of business segments. All costs on the report are classified as period or product costs. The total labor-related costs attributable to product
costs under the control of the warehouse supervisor would appear on the responsibility accounting performance report as:

A. $152,000.
B. $119,000.
C. $210,000.
D. $303,800.

The responsibility accounting report lists only the costs over which the warehousing supervisor controls. The supervisor's salary should be excluded from the report as the salary is controlled by a superior. Only the product costs should be considered in the responsibility accounting report. Therefore, the shipping clerks' wages are excluded as well, as they are considered a selling expense (period cost). The only product cost included is the receiving clerks' wages of $85,000 and the fringe benefit associated with the receiving clerks of $34,000 ($85,000 × 40%) for a total of $119,000.

Question 16:

An organization plans to implement a bonus plan based on segment performance. In addition, the company plans to convert to a responsibility accounting system for segment reporting. The following costs, which have been included in the segment performance reports that have been prepared under the current system, are being reviewed to determine if they should be included in the responsibility accounting segment reports:

I. Corporate CEO salary allocated on the basis of net segment sales
II. Corporate training costs assigned on the basis of the number of employees in each segment
III. Fixed computer facility costs divided equally among each segment
IV. Variable computer operational costs charged to each segment based on actual hours used times a predetermined standard rate; any variable cost efficiency or inefficiency remains in the computer department.

Of the four cost items, the item that would most logically be included in the segment performance reports prepared on a responsibility accounting basis would be the:

A. Fixed computer facility costs.
B. Corporate administrative costs.
C. Training costs.
D. Variable computer operational costs.

The variable computer costs should be included since the segments are charged for actual usage, which is under their control. The standard rate used is set at the beginning of the year and is known by the segment managers. The efficiencies and inefficiencies of the computer department are not passed on to the segments. Both procedures promote a degree of control by segments.

Question 17:

The manager for a profit center is responsible for generating profits:

A. and making investments but not controlling costs.

B. and controlling costs but not making investments.

C. and controlling costs and making investments.

D. but not controlling costs or making investments.

A manager for a revenue center is responsible for generating profits and controlling costs, but usually has no control over making investments.

Question 18:

Which one of the following allocation approaches will ensure that the production departments do not underestimate their planned usage of service at the start of the budget period as well as make the service departments cost efficient?

A. The use of rates and quantities based on long-term historical averages for both variable and fixed costs.

B. The use of a budgeted lump-sum amount based on estimates provided by the production departments for both variable and fixed costs.

C. Budgeted rates and standard hours allowed for output attained for variable costs and budgeted rates and capacity available for fixed costs.

D. The use of actual rates and actual hours for both fixed and variable costs.

The ensure a production department does not underestimate their planned usage of service at the start of the budget period, as well as make the service department's costs cost efficient is to develop budgeted rates and standard hours allowed for output attained for variable costs and budgeted rates and capacity available for fixed costs.
Question 19:
A company sets the transfer price for an intermediate product at $12 per unit even though the selling department can sell the unit on the market for $18 per unit. The production department is currently producing with excess capacity. Which of the following is the most likely result of this action?

A. The selling department will increase its market share by being a price leader.
B. The purchasing department's profits will be decreased relatively while the selling department's profits will be increased.
C. The selling department's manager will switch to the market price model.
D. The selling department's profits will be decreased relatively while the purchasing department's profits will be increased.

The intermediate product is being transferred at such a low price compared to the market price that the purchasing department's manager may not have any incentive to keep costs low.

Question 20:
Lawson Company discloses segment financial information for its operating segments. The following information is available for Year 1:

<table>
<thead>
<tr>
<th>Operating Segments</th>
<th>Sales</th>
<th>Traceable Expenses</th>
<th>Nontraceable Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment A</td>
<td>$600,000</td>
<td>$360,000</td>
<td></td>
</tr>
<tr>
<td>Segment B</td>
<td>$800,000</td>
<td>$600,000</td>
<td></td>
</tr>
<tr>
<td>Segment C</td>
<td>$400,000</td>
<td>$340,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,800,000</td>
<td>$1,300,000</td>
<td>$300,000</td>
</tr>
</tbody>
</table>

Nontraceable expenses are allocated based on the ratio of a segment's income before non-traceable expenses. The segment profit for Operating Segment B is (approximately):

A. $80,000.
B. $50,000.
C. $90,000.
D. $60,000.

The profit for Lawson is $500,000 before deducting nontraceable expenses. Segment B has profitability of $200,000 or 40% of the total. Hence, its share of non-traceable expense is 40% of $300,000 or $120,000. $200,000 less $120,000 = $80,000.
Question 21:

A company has $80,000 in common costs, plus departments 1 and 2 have $40,000 and $60,000 in individual costs, respectively. The segments share a fleet of vehicles (the costs of which are included in common costs): department 1 uses the vehicles for five months out of the year and department 2 uses the vehicles for the remaining seven months. Using stand-alone cost allocation, what is allocated to department 1?

A. $40,000.
B. $80,000.
C. $66,667.
D. $33,333.

The stand-alone cost allocation method allocates common costs, so the individual costs are ignored. The common cost is allocated by months of use: $80,000 \times \frac{5}{12} = $33,333.

Question 22:

Which one of the following is an incorrect description of transfer pricing?

* Source: Retired ICMA CMA Exam Questions.

A. It measures exchanges between a company and external customers.
B. It measures the value of goods or services furnished by a profit center to other responsibility centers within a company.
C. If no market price exists, the transfer price may be based on cost.
D. If a market price exists, this price may be used as a transfer price.

Transfer pricing measures the value of goods or services furnished by a profit center to other responsibility centers within a company. These transfer prices may be set at a market price, or some other price agreed to between the responsibility center managers.

Question 23:

A firm that uses reporting segments shows a bottom line for each segment that includes traceable fixed costs but not common fixed costs. Which of the following is this bottom line called?

A. Controllable costs.
B. Operating income.
C. Net income.

D. Segment margin.

The segment margin of a segment is its contribution margin less all traceable fixed costs for the segment.

**Question 24:**
The basic purpose of a responsibility accounting system of reporting is:

A. Motivation.

B. Authority.

C. Variance analysis.

D. Budgeting.

The basic purpose of a responsibility accounting system is to motivate management to perform in a manner consistent with overall company objectives. The assignment of responsibility implies that some revenues and costs can be influenced through effective management. The system should have certain controls that provide for feedback reports indicating variations from expectations. Higher-level management may focus on those variations for either reinforcement or correction.

**Question 25:**
Which of the following transfer pricing models would be **best** for when a company is producing an intermediate product at full capacity and the company wants to encourage the purchasing department to purchase externally if possible?

A. Market price.

B. Full cost (absorption).

C. Variable cost.

D. Negotiated price.

The market price model is best for this situation because the department could sell the item at full price on the open market due to its full capacity situation. Any other price used would reduce the company's overall profits. The market price model will encourage the purchasing department to purchase externally if a better price can be found.

**Question 26:**
Characteristics of a responsibility accounting system include all of the following **except** that:
A. cost centers are responsible for revenues as well as common costs.

B. responsibility for performance according to budget must be linked to the appropriate authority.

C. each level of management is responsible for their department's operations and employees.

D. the system should encourage employee involvement and participation.

A responsibility accounting system is a formal financial and non-financial information communication system used to control operations and evaluate performance. A responsibility accounting system is based upon responsibility centers, where activities are under managers’ control. A cost center is a responsibility center whose manager is responsible for costs, but not for revenues. In addition, common costs should not be charged to a cost center, but allocated among all centers involved.

Question 27:
An appropriate transfer price between two divisions of Speaker's Warehouse can be determined from the following data:

<table>
<thead>
<tr>
<th>Fabricating division:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Market price of subassembly</td>
<td>$50</td>
</tr>
<tr>
<td>Variable cost of subassembly</td>
<td>$25</td>
</tr>
<tr>
<td>Excess capacity (in units)</td>
<td>40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assembling Division:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of units needed</td>
<td>30</td>
</tr>
</tbody>
</table>

What is the natural bargaining range for the two divisions?

A. Any amount between $75 and $105.

B. Any amount less than $75.

C. Any amount between $25 and $50.

D. Any amount over $75.

Each division should have the ability to operate independently of one another, and strive for achieving its divisional goals, as well as working towards the goals of the overall company. Figuring transfer prices can be determined using normal market price, negotiated price, variable costs, or full absorption costs. In this case, if the fabrication division has no excess capacity, it would charge the assembling division the regular market price. However, the Fabrication division has excess capacity sufficient to meet
Assembly division's need so negotiation is possible. Any price greater than the variable costs of subassembly of $25 is acceptable, and will increase profits of the Fabrication division by accepting any negotiated price between $25 and $50.

**Question 28:**
Which of the following usually makes a manager responsible for all financial business decisions?

A. Investment center.
B. Profit center.
C. Revenue center.
D. Cost center.

The investment center gives its manager control over that center's investments, costs, and revenues. The other types listed have less autonomy than an investment center.

**Question 29:**
A company's sales department is responsible for generating income but has few controllable costs. Conversely, the production department manager is responsible for controlling costs but not setting prices. Which of the following places each department in the best responsibility center based on the managers' responsibilities?

A. Sales: cost center; production: profit center.
B. Sales: profit center; production: cost center.
C. Sales: cost center; production: revenue center.
D. Sales: revenue center; production: cost center.

A revenue center is often used in place of a profit center when the manager is not expected to control costs and thus is concerned only with revenue, a very unusual situation. The production facility cannot directly sell or generate profits, so it is treated as a cost center because it is responsible only for costs.

**Question 30:**
An appropriate transfer price between two divisions of Vroom Motorcycle Company can be determined from the following data:
What is the natural bargaining range for the two divisions?

A. Any amount over $75.

B. **Any amount between $30 and $75.**

C. Any amount less than $75.

D. Any amount between $75 and $105.

Each division should have the ability to operate independently of one another, and strive for achieving its divisional goals, as well as working towards the goals of the overall company. Figuring transfer prices can be determined using normal market price, negotiated price, variable costs, or full absorption costs. In this case, if the fabrication division has no excess capacity, it would charge the assembling division the regular market price. However, the Fabrication division has excess capacity sufficient to meet Assembly division's need so negotiation is possible. Any price greater than the variable costs of subassembly of $30 is acceptable, and will increase profits of the Fabrication division by accepting any negotiated price between $30 and $75.

**Question 31:**

1C2-AT25

Decentralized firms can delegate authority and yet retain control and monitor managers' performance by structuring the organization into responsibility centers. Which one of the following organizational segments is most like an independent business?

A. profit center.

B. cost center.

C. revenue center.

D. **investment center.**

An investment center is much like an independent, autonomous business. It has control over profits (revenues and costs), the investment in the center, and the return on the investment.

**Question 32:**

1C2-AT26
An appropriate transfer price between two divisions of The Stark Company can be determined from the following data.

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<th></th>
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<tbody>
<tr>
<td>Market price of subassembly</td>
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<tr>
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<td>$20</td>
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<tr>
<td>Excess capacity (in units)</td>
<td>1,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assembling Division</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of units needed</td>
<td>900</td>
</tr>
</tbody>
</table>

What is the natural bargaining range for the two divisions?

A. $20 is the only acceptable price.
B. $50 is the only acceptable price.
C. between $20 and $50.
D. any amount less than $50.

The Assembly Division can buy the item from the outside for $50. The $50 would be the ceiling, or maximum transfer price. The Fabricating Division has excess capacity. It can make a contribution at any transfer price greater than its $20 unit variable costs. The $20, therefore, is the transfer price floor, or minimum transfer price. The bargaining range would then be between $20 and $50.

Question 33:

Manhattan Corporation has several divisions that operate as decentralized profit centers. At the present time, the Fabrication Division has excess capacity of 5,000 units with respect to the UT-371 circuit board, a popular item in many digital applications. Information about the circuit board follows:

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</tbody>
</table>

Manhattan's Electronic Assembly Division wants to purchase 4,500 circuit boards either internally, or else use a similar board in the marketplace that sells for $46. The Electronic Assembly Division's management feels that if the first alternative is pursued, a price concession is justified, given that
both divisions are part of the same firm. To optimize the overall goals of Manhattan, the minimum price to be charged for the board from the Fabrication Division to the Electronic Assembly Division should be:

A. $46.
B. $31.
C. $21.
D. $26.

The optimal transfer price is calculated as follows:

Optimal transfer price, \( T(o) \) = (manufacturing division's opportunity cost of production) + (any avoidable fixed costs) + (any foregone contribution from manufacturing the product)

The manufacturing division's opportunity cost of production is equal to its relevant unit variable cost per unit, or $21 in this case.

Since the Fabrication Division has excess capacity, the foregone contribution = $0.

There is no mention of avoidable fixed costs.

\[ T(o) = 21 + 0 + 0 = 21. \]

Question 34:

The production manager of the Super T-shirt Company is responsible for the activity of her department and the costs associated with production. Super T adheres to a responsibility centered budget process, and the manager's performance is measured by how well she performs to budget. Recently, the dark horse team won the local college basketball tournament. As a result, the sales department, which operates as a profit center, received an order for 10,000 t-shirts, but only if they could be delivered in three days. The production manager said she could meet the schedule, but only by incurring overtime pay that would cause her to be over budget for hourly wages paid. What would be the best course of action for the sales department and the production manager to undertake in this case?

* Source: Retired ICMA CMA Exam Questions.

A. Charge the overtime to the sales department's budget.
B. Accept the order and overrun the production manager's budget.
C. Refuse the overtime and produce only what the production department is capable of while staying within the budget.

D. Accept the order and ignore the effect on the production department budget when conducting the performance review.

Given that the order was extraordinary in nature, and the production department would incur additional costs over and above its normal operations, it would be the best course of action for the sales department to be charged for the additional overtime incurred because of this order.

Question 35:
Morrison’s Plastics Division, a profit center, sells its products to external customers as well as to other internal profit centers. Which one of the following circumstances would justify the Plastics Division selling a product internally to another profit center at a price that is below the market-based transfer price?

* Source: Retired ICMA CMA Exam Questions.

A. Routine sales commissions and collection costs would be avoided.

B. The selling unit is operating at full capacity.

C. The profit centers' managers are evaluated on the basis of unit operating income.

D. The buying unit has excess capacity.

In day-to-day operations of a business, a cost conscious approach needs to be taken. A cost savings justification can be used in the problem as well. As justification for the Plastics Division to sell a product internally to another profit center at a price that is below the market-based transfer price would be to avoid the routine sales commissions and collection costs from selling externally.

Question 36:
Happy Time Industries uses segment reporting for all of its decentralized divisions. It has several products that are transferred from one division to other divisions. Happy Time wants to motivate the manager of the selling division to produce efficiently. Assuming the following methods are available, the optimal transfer pricing method should be a:

* Source: Retired ICMA CMA Exam Questions.

A. cost-based transfer price that uses budgeted amounts.

B. variable cost-based transfer price that uses actual amounts.
C. market-based transfer price

D. cost-based transfer price that uses actual amounts.

In this problem, given that Happy Time Industries has "decentralized divisions," the optimal transfer pricing method to use is a market-based transfer price.

Question 37:
Parkside Inc. has several divisions that operate as decentralized profit centers. Parkside's Entertainment Division manufactures video arcade equipment using the products of two of Parkside's other divisions. The Plastics Division manufactures plastic components, one type that is made exclusively for the Entertainment Division, while other less complex components are sold to outside markets. The products of the Video Cards Division are sold in a competitive market; however, one video card model is also used by the Entertainment Division. The actual costs per unit used by the Entertainment Division are presented below.

<table>
<thead>
<tr>
<th></th>
<th>Plastic Components</th>
<th>Video Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct material</td>
<td>$1.25</td>
<td>$2.40</td>
</tr>
<tr>
<td>Direct labor</td>
<td>2.35</td>
<td>3.00</td>
</tr>
<tr>
<td>Variable overhead</td>
<td>1.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Fixed overhead</td>
<td>40</td>
<td>2.25</td>
</tr>
<tr>
<td>Total cost</td>
<td>$5.00</td>
<td>$8.15</td>
</tr>
</tbody>
</table>

The Plastics Division sells its commercial products at full cost plus a 25 percent markup and believes the proprietary plastic component made for the Entertainment Division would sell for $6.25 per unit on the open market. The market price of the video card used by the Entertainment Division is $10.98 per unit.

Assume that the Entertainment Division is able to purchase a large quantity of video cards from an outside source at $8.70 per unit. The Video Cards Division, having excess capacity, agrees to lower its transfer price to $8.70 per unit. This action would:

A. optimize the profit goals of the Entertainment Division while subverting the profit goals of Parkside Inc.

B. allow evaluation of both divisions on the same basis.

C. subvert the profit goals of the Video Cards Division while optimizing the profit goals of the Entertainment Division.

D. optimize the overall profit goals of Parkside Inc.
Since the Video Cards Division has excess capacity, the cost to manufacture the video cards is calculated by taking its unit variable cost of $6.90 ($2.40 in direct material + $3.00 in direct labor + $1.50 in variable overhead). The outside purchase price for the video cards is $8.70. Therefore, Parkside, Inc. will optimize profit by having the Video Card Division manufacture the video cards and transfer them to the Entertainment Division. The transfer price used is irrelevant to Parkside, Inc.

Question 38:
The least complex segment or area of responsibility for which costs are allocated is a(n):

A. cost center.
B. profit center.
C. investment center.
D. contribution center.

A cost center is responsible for costs, only. A classic example of a cost center would be a "captive supplier." A captive supplier is a division producing only for other divisions in the same corporation.

C3: Performance Measure

Question 1:
Vroom Motorcycle Company, headquartered in the United States, presently manufactures their motorcycles in the country of Utopia due to their lower costs of production, low tariffs, favorable exchange rates, and access to lower cost raw materials, which are 50% lower than that of the U.S. However, in recent years, Utopia has seen a boom in companies relocating their production to Utopia. Due to this factor, the exchange rates have become unfavorable to Vroom, and as a result the cost of raw materials has increased over 25% in the past year. Which of the following actions would you recommend Vroom's management take?

A. Do nothing.
B. Relocate all operations back to the U.S. immediately as costs of production has become too high.

C. Wait out the economic situation in Utopia. Economic factors are cyclical and will return to normal.

D. Continue operations as they are, however, closely monitor the current economic situation in Utopia.

When evaluating the performance of Vroom, management will see deterioration in income as materials costs have increased. However, since the cost of raw materials is still lower than that of the U.S., costs of production are still lower in the country of Utopia. It is important for the segment manager in Utopia to appropriately represent the current economic conditions in Utopia to the executive management of Vroom. And, while executive management should never lose their focus on profits, they could target their performance measures on other more stable indicators, such as revenues, market share and operating efficiencies.

Question 2: 1C3-LS40

A department that is considered profitable by the current measurement tools rejects a project that would improve the company's overall profitability but would lower the department's profits. Which of the following methods is not likely to have caused this situation?

A. Cash flow return on investment (CFROI).
B. Market value added (MVA).
C. Return on investment (ROI).
D. Residual Income (RI).

Managers compensated on ROI, CFROI, or MVA may reject capital investments that do not promise as good or better a return than the rate being currently earned even if the investment is strategically beneficial to the organization as a whole. RI is a dollar amount that if positive indicates a project that would likely be accepted.

Question 3: 1C3-LS45

All of the following are categories of the balanced scorecard except?

A. investment
B. learning and innovation.
C. financial.
D. customer.
The final category of the balanced scorecard is internal business process.

**Question 4:**

cTeaneck Inc. sells two products, Product E and Product F, and had the following data for last month.

<table>
<thead>
<tr>
<th></th>
<th>Product E</th>
<th></th>
<th>Product F</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Budget</td>
<td>Actual</td>
<td>Budget</td>
<td>Actual</td>
</tr>
<tr>
<td>Unit sales</td>
<td>5,500</td>
<td>5,000</td>
<td>4,500</td>
<td>8,000</td>
</tr>
<tr>
<td>Unit contribution margin</td>
<td>$4.50</td>
<td>$4.80</td>
<td>$10.00</td>
<td>$10.50</td>
</tr>
</tbody>
</table>

The company's sales mix variance is:

A. $3,300 favorable.

B. $3,420 favorable.

C. $18,150 favorable.

D. $17,250 favorable.

**CM = Contribution Margin**

<table>
<thead>
<tr>
<th></th>
<th>Budgeted mix</th>
<th></th>
<th>Actual mix</th>
<th>$2,750</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55% E × $4.50 CM</td>
<td>$2,475</td>
<td>50% E × $4.50 CM</td>
<td>$2,250</td>
</tr>
<tr>
<td></td>
<td>45% F × $10.00 CM</td>
<td>4,500</td>
<td>50% F × $10.00 CM</td>
<td>5,000</td>
</tr>
<tr>
<td>Per unit CM</td>
<td></td>
<td>$6,975</td>
<td>Per unit CM</td>
<td>$7,250</td>
</tr>
<tr>
<td>Increase in CM</td>
<td>$3,300 Favorable</td>
<td>.275</td>
<td>$3,300 Favorable</td>
<td></td>
</tr>
</tbody>
</table>

× actual units of 12,000

**Question 5:**

After investing in a new project, Lee Company discovered that its residual income remained unchanged. Which one of the following must be true about the new project?

A. The net present value of the new project must have been positive.

B. The return on investment (ROI) of the new project must have been equal to the firm's cost of capital.

C. The net present value of the new project must have been negative.
D. The return on investment of the new project must have been less than the firm's cost of capital.

If residual income remains unchanged, then the residual income of the new project must be zero. This can only occur when the ROI of the new addition is exactly equal to the firm's cost of capital.

Question 6:
XYZ Company has two business units selling two different products. Business unit A produces and sells sprinkler heads and requires customers to pay for their purchase prior to the production of the sprinkler heads. Business unit A recognizes revenue at the time of payment. Business unit B produces and sells household faucets and allows customers to pay for their faucets after they are delivered to the customer. Business unit B recognizes revenue when the customer receives the product. What is the likely effect that will occur by management in measuring and comparing the performance of each business unit?

A. Business unit A will have overstated revenue in comparison to business unit B.
B. Business unit A and business unit B can be effectively compared.
C. Business unit A will have understated revenue in comparison to business unit B.
D. Management cannot effectively compare the business units.

In comparing business units that have different revenue recognition policies, it is necessary for executive management to understand that business units will report results separately based on their individual revenue and expense recognition policies and as such the reports cannot be compared without reconciliation that negates the impact of the different accounting policies.

Question 7:
Which one of the following statements pertaining to performance measurement and behavior is incorrect?

A. The use of residual income to measure divisional performance can cause goal congruence problems for corporations with divisions that have unequal operating asset bases.
B. An organization using measures such as growth in market share, increases in productivity, and throughput time, in addition to various financial ratios, is relying on a more balanced approach to performance evaluation.
C. A lack of commitment on the part of top management can turn budgets into ritualistic exercises without significance.

D. The development of information technology in the 1990s can permit organizations to do away with feedback in the design of management control systems.

Any performance measurement system, manual or computerized, requires a feedback (or control) mechanism in order to be effective. The control mechanism compares actual results to planned results (or budgeted results) and “feeds” it back to those involved in improving processes.

Question 8:

P.C. Programs Inc. produces software for individual users and small businesses. Rita Morgan manages the customer hot line department for the firm and is responsible for answering customer questions related to software products produced by all divisions of the firm. For purposes of promoting goal congruence, which one of the following would be the least appropriate measure of her performance?

A. Number of calls to the hot line for each new release of software.
B. Average time to provide an answer or solution to a customer.
C. Average time a customer is on hold.
D. Number of customer complaints due to incorrect responses given to customers.

Performance measures should always have a positive effect on motivation and performance of managers and employees alike. In this case, providing a performance measure based on number of calls to the hot line for each new release of software would not motivate or improve performance.

Question 9:

The process time critical success factor would be measured best by which of the following?

A. Return on investment
B. Customer satisfaction
C. Turnaround
D. Surveys

Turnaround time measures the time from when a process begins and when it ends, a primary element for process time.
Question 10:
To ensure that a divisional vice president places appropriate focus on both the short-term and the long-term objectives of the division, the best approach would be to evaluate the vice president's performance by using:

A. return on investment (ROI), which permits easy and quick comparisons to other similar divisions.

B. residual income, since it will eliminate the rejection of capital investments that have a return less than ROI but greater than the cost of capital.

C. financial and nonfinancial measures, including the evaluation of quality, customer satisfaction, and market performance.

D. division segment margin or profit margin.

When there is a focus on short- and long-term objectives of a firm or division, it is important to measure performance based on financial and nonfinancial measures.

Question 11:
Assume the following information from the financial section of the Balanced Scorecard for Dry Erase Kit, Inc.:

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Strategic Objectives</th>
<th>Y1 Target</th>
<th>Y1 Actual</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>F1: Maximize return on equity</td>
<td>9%</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>F2: Positive EVA</td>
<td>$20,000</td>
<td>$18,000</td>
<td>$2,000</td>
</tr>
<tr>
<td></td>
<td>F3: 10% revenue growth</td>
<td>8%</td>
<td>6%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>F4: Asset utilization</td>
<td>85%</td>
<td>87%</td>
<td>2%</td>
</tr>
<tr>
<td>Customer</td>
<td>C1: Price</td>
<td>-4%</td>
<td>-4%</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>C2: Customer retention</td>
<td>75%</td>
<td>70%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>C3: Lowest-cost suppliers</td>
<td>-6%</td>
<td>-7%</td>
<td>-1%</td>
</tr>
<tr>
<td></td>
<td>C4: Product innovation</td>
<td>10%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Internal business process</td>
<td>P1: Improve production workflow</td>
<td>0.3 days</td>
<td>0.25 days</td>
<td>0.05 days</td>
</tr>
<tr>
<td></td>
<td>P2: New product success</td>
<td>1,000 orders</td>
<td>800 orders</td>
<td>200 orders</td>
</tr>
<tr>
<td></td>
<td>P3: Sales penetration</td>
<td>0%</td>
<td>-7%</td>
<td>-7%</td>
</tr>
<tr>
<td></td>
<td>P4: Reduce inventory</td>
<td>30%</td>
<td>29%</td>
<td>1%</td>
</tr>
<tr>
<td>Learning and growth</td>
<td>L1: Link strategy to reward system</td>
<td>65%</td>
<td>53%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>L2: Fill critical competency gaps</td>
<td>75%</td>
<td>75%</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>L3: Become customer-driven culture</td>
<td>77%</td>
<td>74%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>L4: Quality leadership</td>
<td>8.9</td>
<td>8.9</td>
<td>0</td>
</tr>
</tbody>
</table>
What perspective of the Balance Scorecard had the least opportunistic results for Dry Erase Kit, Inc.?

A. The Learning and growth perspective.
B. The financial perspective.
C. The internal business process perspective.
D. The customer perspective.

The balanced scorecard assists an organization in analyzing benchmarks. In the case of Dry Erase Kit, Inc., the organization can see that the customer perspective is weak, and may want to hone in on the customer retention area as this provided the greatest unfavorable variance within the customer perspective of the balanced scorecard.

Question 12:

The balanced scorecard provides an action plan for achieving competitive success by focusing management attention on critical success factors. Which one of the following is not one of the critical success factors commonly focused upon in the balanced scorecard?

A. Employee innovation and learning.
B. Internal business processes.
C. Financial performance measures.
D. Competitor business strategies.

The critical success factors used in the balanced scorecard are:

- financial performance
- customer satisfaction
- internal business processes
- innovation and learning

Question 13:

Which of the following methods would not be helpful in measuring international business performance?

A. Total quality management.
B. Balanced scorecard.
C. Time series analysis.
D. Activity-based costing.
Measuring international business performance relies on the same principles as measuring domestic business performance. Time series analysis relies on historical information, but cannot be relied on to predict present and future performance. Balanced scorecard, activity-based costing, and total quality management are the three most widely used methods of measuring business performance.

**Question 14:**
Which of the following perspectives of the balanced scorecard should every cause-and-effect chain be linked to?

A. Learning and growth.
B. Customer.
C. Financial.
D. Internal business process.

Each cause-and-effect relationship chain should end with a relevant financial measure to determine the success of the endeavor.

**Question 15:**
The two key components of a customer profitability analysis are:

A. revenue analysis and cost analysis.
B. cost activities and cost drivers.
C. unit level costs and batch-level costs.
D. total sales and net sales.

By definition, a customer profitability analysis traces and reports customer revenues and costs; it enables a firm to determine the profitability (or unprofitability) of specific customers and provides data needed to improve profits. The two key components of a customer profitability analysis are revenue analysis and cost analysis.

**Question 16:**
Which one of the following best identifies a profit center?

A. The production operations department of a small job-order machine shop company.
B. A new car sales division for a large local auto agency.
C. A large toy company.
A profit center is a responsibility center whose manager is responsible for revenues as well as costs. Profit is used to measure performance of a new car sales division of a local auto agency, which best identifies a profit center as it has its own costs and revenues.

**Question 17:**
When using a contribution margin format for internal reporting purposes, the major distinction between segment manager performance and segment performance is:

A. direct variable cost of selling the product.

B. **direct fixed cost controllable by others.**

C. unallocated fixed cost.

D. direct fixed cost controllable by the segment manager.

The segment manager's performance is measured by the controllable segment margin. Segment performance is measured by deducting fixed costs which are controllable by others from the controllable segment margin.

Controllable segment margin = contribution margin − fixed costs controllable by segment manager

Contribution margin = sales − all variable costs.

**Question 18:**
Paul Cooper, shipping manager for DFG Distributors, is responsible for managing the staff and all related transportation equipment to fill orders for bakery products from local retailers and deliver the products to those retailers. Which one of the following groups of three performance measures **most likely** would result in the highest level of goal congruence?

A. Labor cost per order; transportation cost per order; number of orders completed per day.

B. Customer satisfaction; elapsed time to complete an order; percentage of orders filled accurately.

C. The percentage of orders filled on time; the percentage of orders filled accurately; average cost to fill and deliver an order.
Goal congruence requires members of an organization or division to work together towards a common goal. Of these four question choices: the percentage of orders filled on time; the percentage of orders filled accurately; average cost to fill and deliver an order, are all goals that would result in the highest level of goal congruence.

**Question 19:**
Residual income is a better measure for performance evaluation of an investment center manager than return on investment (ROI) because:

A. returns do not increase as assets are depreciated.
B. only the gross book value of assets needs to be calculated.
C. desirable investment decisions will not be neglected by high-return divisions.
D. the problems associated with measuring the asset base are eliminated.

If ROI is used for performance measurement, a division will not invest in any project whose ROI is less than the division's ROI. There are situations when the project ROI is less than the division's ROI, but higher than the corporate ROI. The division would reject such projects if they were using ROI and this would be detrimental to the corporation. Residual income removes this problem.

Residual income is calculated as follows:

\[
\text{Residual income} = (\text{division's income}) - (\text{the corporation's target ROI})(\text{the division's assets})
\]

Using residual income, any division project whose ROI exceeds the corporate target ROI would be acceptable to the division.

**Question 20:**
The imputed interest rate used in the residual income (RI) approach to performance evaluation can best be described as the:

A. target return on investment (ROI) set by the company's management.
B. historical weighted average cost of capital for the company.
C. average ROIs for the company over the last several years.
D. marginal after-tax cost of capital on new equity capital.
RI is calculated as:

\[ RI = (\text{division's income}) - (\text{the imputed interest charge})(\text{the division's assets}) \]

The imputed interest charge is normally the target ROI set by the company's management or the corporation's cost of capital.

**Question 21:**
Albert Hathaway recently joined Brannen University as the chief information officer of the University Computing Services Department. His assigned task is to help reduce the recurrent problem of cost overruns due to uncontrolled computer usage by the user community, while at the same time not curtailing the use of information technology for research and teaching. To ensure goal congruence, which one of the following algorithms should be used to allocate the cost of the University Computing Services Department to other departments within the university?

A. Actual rate times actual hours of computer usage  
B. Budgeted rate times budgeted hours of computer usage  
C. **Budgeted rate times actual hours of computer usage**  
D. Actual rate times budgeted hours of computer usage

Allocating costs requires taking a budgeted rate of some activity and multiplying it by the actual hours of the particular activity. In this case, the university CIO would use the algorithm of budgeted rate times actual hours of computer usage to ensure goal congruence.

**Question 22:**
Which of the following balanced scorecard factors would include the critical success factors of market share, quality, and timeliness?

A. Learning and innovation.  
B. Financial.  
C. Internal business process.  
D. **Customer.**

The customer factor is concerned with market share, quality, timeliness, customer acquisition, satisfaction, and retention.

**Question 23:**

A company sets goals for improving quality levels and also links these goals to reducing cycle time. However, these initiatives soon become stagnant and seem to be an end in themselves. Which of the following is this process missing?

A. Outcome measures.
B. Critical success factors.
C. Motivating factors.
D. Performance drivers.

Without an outcome measure (a specific financial measure), an initiative such as total quality management can become an end in itself.

Question 24:
Which one of the following statements about a balanced scorecard is incorrect?

* Source: Retired ICMA CMA Exam Questions.

A. It seeks to address the problems associated with traditional financial measures used to assess performance.
B. It relies on the perception of the users with regard to service provided.
C. It is directly derived from the scientific management theories.
D. The notion of value chain analysis plays a major role in the drawing up of a balanced scorecard.

The balanced scorecard seeks to address the problems associated with traditional financial measures used to assess performance, the notion of value chain analysis plays a major role in the drawing up of a balanced scorecard, and it relies on the perception of the users with regard to service provided.

Question 25:

Edith Carolina, president of the Deed Corporation, requires a minimum return on investment (ROI) of 8% for any project to be undertaken by her company. The company is decentralized and leaves investment decisions up to the discretion of the division managers as long as the 8% return is expected to be realized. Michael Sanders, manager of the Cosmetics Division, has had a ROI of 14% for his division for the past three years and expects the division to have the same return in the coming year. Sanders has the opportunity to invest in a new line of cosmetics, which is expected to have a return on investment of 12%.
If the Deed Corporation evaluates managerial performance using ROI, what will be the preference for taking on the proposed cosmetics line by Edith Carolina and Michael Sanders?

A. Carolina: accept; Sanders: accept.

B. Carolina: accept; Sanders: reject.

C. Carolina: reject; Sanders: accept.

D. Carolina: reject; Sanders: reject.

Carolina would accept the new line of cosmetics, since its ROI of 12% is greater than the minimum corporate ROI of 8%. Sanders would reject the new line of cosmetics, since its ROI of 12% is less than the division’s ROI of 14%.

Question 26:

Listed below is selected financial information for the Western Division of the Hinzel Company for last year.

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average working capital</td>
<td>$825</td>
</tr>
<tr>
<td>General and administrative expense</td>
<td>75</td>
</tr>
<tr>
<td>Net sales</td>
<td>4,000</td>
</tr>
<tr>
<td>Average plant and equipment</td>
<td>1,775</td>
</tr>
<tr>
<td>Cost of goods sold</td>
<td>3,525</td>
</tr>
</tbody>
</table>

If Hinzel treats the Western Division as an investment center for performance measurement purposes, what is the before-tax return on investment for last year?

A. 26.8%.

B. 19.8%.

C. 16.7%.

D. 22.5%.

The before-tax return on investment (ROI) is calculated as follows:

Before-tax ROI = (Western Division operating income) / (Western Division Investment)
Before-tax ROI = $400 / $2,400 = 0.167, or 16.7%
Operating Income = Sales − Cost of Goods Sold − General and Administrative Expense
Operating Income = $4,000 − $3,525 − $75 = $400

Western Division Investment = Average Plant & Equipment + Average Working Capital
Western Division Investment = $1,775 + $625 = $2,400.

Question 27:

Alfa Inc. produces educational materials for children. They pride themselves in serving their customers better than do their competitors and have been able to grow their business by keeping a focus on customer service. Alfa has recently adopted a balanced scorecard performance measurement system. Which of the following would be the primary measure used by Alfa Inc. in their balanced scorecard?

A. Number of repeat sales by current customers.
B. Gross margin.
C. Timeliness of new products to market.
D. Cycle time.

The number of repeat sales by current customers ties to the corporate mission of serving their customers better than their competitors serve their customers.

Question 28:

Which one of the following statements pertaining to the return on investment (ROI) as a performance measurement is incorrect?

A. The use of ROI can lead managers to emphasize the ROI of their division over the profitability of the parent organization.
B. The use of ROI can make it undesirable for a skillful manager to take on troubleshooting assignments such as those involving turning around unprofitable divisions.
C. ROI relies on financial measures that are capable of being independently verified while other forms of performance measures are subject to manipulation.
D. The use of ROI may lead managers to reject capital investment projects that can be justified by using discounted cash flow models.

All performance measures, including ROI, are subject to manipulation.
Question 29:
Critical success factors in the balanced scorecard (BSC) must:

A. improve quality.
B. be measurable.
C. be financial.
D. consider the customer first.

According to Kaplan and Norton, "If you can't measure it, you can't manage it." These measurements must encompass more than just financial measures for the BSC to be successful.

Question 30:
KHD Industries is a multidivisional firm that evaluates its managers based on the return on investment (ROI) earned by their divisions. The evaluation and compensation plans use a targeted ROI of 15% (equal to the cost of capital) and managers receive a bonus of 5% of basic compensation for every one-percentage point that the division's ROI exceeds 15%.

David Evans, manager of the Consumer Products Division, has made a forecast of the division's operations and finances for next year that indicates the ROI would be 24%. In addition, new short-term programs were identified by the Consumer Products Division and evaluated by the finance staff as follows:

<table>
<thead>
<tr>
<th>Program</th>
<th>Projected ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>13%</td>
</tr>
<tr>
<td>B</td>
<td>19%</td>
</tr>
<tr>
<td>C</td>
<td>22%</td>
</tr>
<tr>
<td>D</td>
<td>31%</td>
</tr>
</tbody>
</table>

Assuming no restrictions on expenditures, what is the optimal mix of new programs that would add value to KHD Industries?

A. C and D only.
B. B, C, and D only.
C. A, B, C, and D.
D. D only.
KHD would want to invest in any project whose ROI exceeds the corporate target of 15%. Programs B, C, and D all have ROI's that exceed 15%.

**Question 31:**

A product profitability analysis includes in its analysis all of the following **except**:

A. per-unit fixed costs untraceable to the product line.
B. per-unit variable costs.
C. how the product line affects company strategy.
D. the opportunity cost of all lost sales for the product line.

The per-unit fixed costs that would not disappear if the product line were discontinued are removed from the product profitability analysis.

**Question 32:**

Which of the following measurement tools allows a company to align unit goals to overall strategy?

A. Activity-based management.
B. Balanced scorecard.
C. Management by exception.
D. Total quality management.

The balanced scorecard is not only aligned with strategy; it is a blueprint for achieving strategy.

**Question 33:**

Generally, the most appropriate basis on which to evaluate the performance of a division manager is the division's:

A. net revenue less variable division costs.
B. net revenue less controllable division costs.
C. net income less the division's fixed costs.
D. contribution margin.

Responsibility accounting involves holding managers responsible for only those things under their discretion and control, such as net revenue and controllable division costs.

**Question 34:**
REB Service Co. is a computer service center. For the month of May, REB had the following operating statistics:

Sales $450,000  
Operating Income 25,000  
Net profit 8,000  
Total assets 500,000  
Shareholders' equity 200,000  
Cost of Capital 6%

Based on the above information, which one of the following statements is correct? REB has a:

A. residual income (RI) of $13,000.  
B. residual income (RI) of $(22,000).  
C. return on investment (ROI) of 4%.  
D. residual income (RI) of $(5,000).

RI is the excess of the actual ROI in dollars over a targeted amount equal to an imputed interest charge on invested capital. The rate used is ordinarily the weighted-average cost of capital. Some entities measure managerial performance in terms of the amount of RI rather than the percentage ROI.

The formula for RI = Division's Income − (Total assets × cost of capital). Let's assume that the investment base is defined by Total Assets figure provided. REB's targeted amount of investment is $30,000, which is computed by taking $500,000 total assets × 6% cost of capital. Given operating income of $25,000, we assume that to be the return on investment. Therefore, using the residual income formula, we take the $25,000 Operating Income − $30,000 Investment, and come up with a RI of $(5,000).

Question 35:

Consider the following categories of performance measures.

I. Profitability measures.  
II. Customer-satisfaction measures.  
III. Efficiency, quality, and time measures.  
IV. Innovation measures.

A cruise line operates on a national scale in a very competitive marketplace. In view of this information, which measures should the
company use in the evaluation of its managers?

* Source: Retired ICMA CMA Exam Questions.

A. I only.
B. II and III.
C. I and II.
D. I, II, III, and IV.

Regardless of industry, a firm should always evaluate managers based on profitability, customer satisfaction, efficiency, quality, time, and innovation measures.

Question 36:
Which of the following is the best key outcome measure for the innovation internal business process factor of the balanced scorecard?

A. Cycle time.
B. Time to market.
C. Quality.
D. New patents.

Time to market is a key metric for evaluating the success of a new product introduction because the first company to introduce a product has a distinct market share advantage. New patents and cycle time are performance drivers.

Question 37:
Oakmont Company has two divisions, Household Appliances and Construction Equipment. The manager of the Household Appliances Division is evaluated on the basis of return on investment (ROI). The manager of the Construction Equipment Division is evaluated on the basis of residual income. The cost of capital has been 12% and the ROI has been 16% for the two divisions. Each manager is currently considering a project with a 14% rate of return. According to the current evaluation system for managers, which manager(s) would have incentive to undertake the project?

A. Neither manager would have incentive to undertake the project.
B. Both managers would have incentive to undertake the project.
C. The manager of the Construction Equipment Division would have incentive to undertake the project while the manager of the Household Appliances Division would not have incentive to undertake the project.

D. The manager of the Household Appliances Division would have incentive to undertake the project while the manager of the Construction Equipment Division would not have incentive to undertake the project.

Given the cost of capital and ROI for the two divisions, the project would offer the most incentive for the Construction Equipment Division.

Question 38:
A customer profitability analysis shows that a customer costs more to maintain than the profits gained during his or her first year as a customer. Which of the following is a valid financial measure of whether or not to retain the customer?

A. Customer satisfaction costs
B. Customer retention measures
C. Lifetime profitability
D. Customer acquisition costs

While the other options are nonfinancial measures, lifetime profitability is a financial measure that will determine if this customer will be profitable in the long run.

Question 39:
For several years, Northern Division of Marino Company has maintained a positive residual income (RI). Northern is currently considering investing in a new project that will lower the division's overall return on investment (ROI) but increase its RI. What is the relationship between the expected rate of return on the new project, the firm's cost of capital, and the division's current ROI?

A. The expected rate of return on the new project is higher than the division's current ROI but lower than the firm's cost of capital.
B. The expected rate of return on the new project is higher than the firm's cost of capital but lower than the division's current ROI.
C. The division's current ROI is higher than the expected rate of return on the new project but lower than the firm's cost of capital.
D. The firm's cost of capital is higher than the expected rate of return on the new project but lower than the division's current ROI.
Theoretically, to accept any new project, the expected rate of return on the new project should be higher than the firm's cost of capital, meaning the company is making a profit from the new project. However, it can be lower than the division's current ROI so long as the return remains positive.

**Question 40:**
A toy company has four product lines: stuffed animals (contribution margin $200,000), balls ($50,000), action figures ($70,000), and plastic horses ($130,000). The company has $100,000 in untraceable fixed costs and $400,000 in fixed costs for advertising that can be traced to each of the four departments (40% to stuffed animals, 10% to balls, 20% to action figures, and 30% to plastic horses). Which of the following product lines would most likely be discontinued based on a product profitability analysis?

A. Balls.
B. Stuffed animals.
C. Action figures.
D. Plastic horses.

The product profitability analysis does not include untraceable fixed costs. Contribution after all relevant costs equals $40,000 for stuffed animals [$200,000 − ($400,000 × 0.4)], $10,000 for balls, −$10,000 for action figures, and $10,000 for plastic horses. Therefore, action figures are the most likely to be discontinued.

**Question 41:**
A periodic survey of employee motivation is an example of a:

A. learning and growth outcome measure.
B. customer outcome measure.
C. customer performance driver.
D. learning and growth performance driver.

Performance drivers include periodic surveys of employee motivation because they are measures that can be made to judge the current progress toward a goal and are part of learning and growth because they measure employee motivation and morale.

**Question 42:**
All of the following are considered appropriate goals for measuring a division manager's efficiency for a budgeting period except:
A. a reduction in the organizational structure (fewer employees doing a given amount of work).

B. a targeted share of the market.

C. budgeted operating income.

D. earnings per share projections.

Measuring a division manager's efficiency for a budgeting period should include those measures that the division manager can control, including budgeted operating income, a targeted share of the market, and a more efficient organizational structure.

Question 43:
Which of the following business unit profitability measures would allow a manager to be evaluated based on whether or not the business unit can be profitable even when common costs are deducted from the unit's profits?

A. Contribution margin.

B. Indirect profit.

C. Controllable profit.

D. Income before taxes.

Income before taxes deducts all fixed and variable costs from a business unit's profits except taxes. This measure forces a manager to be realistic about the level of profitability needed to sustain the unit.

Question 44:
Why is revenue and cost analysis important in assessing the profitability or unprofitability of a customer?

A. Low profits make it difficult to endure the competition.

B. High prices and margins lessen price elasticity.

C. Distribution channel costs fluctuate.

D. Net proceeds from customers can vary.

Different customers may generate approximately the same amount of total sales. But not all sales revenues are equal. Net proceeds from customers can vary based on factors such as sales discounts, payment and delivery terms, and sales returns and allowances.
Edith Carolina, president of the Deed Corporation, requires a minimum return on investment (ROI) of 8% for any project to be undertaken by her company. The company is decentralized and leaves investment decisions up to the discretion of the division managers as long as the 8% return is expected to be realized. Michael Sanders, manager of the Cosmetics Division, has had a ROI of 14% for his division for the past three years and expects the division to have the same return in the coming year. Sanders has the opportunity to invest in a new line of cosmetics, which is expected to have a ROI of 12%.

If the Deed Corporation evaluates managerial performance using residual income based on the corporate minimum required rate of return, what will be the preference for taking on the proposed cosmetics line by Edith Carolina and Michael Sanders?

A. Carolina: accept; Sanders: accept.
B. Carolina: accept; Sanders: reject.
C. Carolina: reject; Sanders: accept.
D. Carolina: reject; Sanders: reject.

Both Carolina and Sanders would accept the new line of cosmetics. The 12% ROI for the line is higher than the minimum corporate ROI of 8%, which is used as the imputed interest charge in the residual income model.

Question 46:
A company is concerned that its divisional managers are not making decisions that are in the best interests of the overall corporation. In order to prevent this, the company should use a performance evaluation system that focuses on:

A. residual income.
B. controllable costs.
C. flexible budget variances.
D. operating income.

Residual income is the amount of income that a division has left over after incurring all of its expenses. A decision to focus on residual income as a performance evaluation measure would focus the divisional manager's attention on cost-cutting measures.

Question 47:
A business is started with an investment of $1,000,000. The investor requires a rate of return of 10%. If the business produced total sales of
$1,000,000 and a contribution margin of $500,000 and had $300,000 of fixed costs, what is its residual income (RI)?

A. $100,000.
B. $200,000.
C. $900,000.
D. $400,000.

RI is income less the product of the required rate of return and the investment. Income is sales less contribution margin and less fixed costs or $200,000. RI = $200,000 − (0.1 × $1,000,000) = $100,000.

Question 48:
Performance results for four geographic divisions of a manufacturing company are as follows:

<table>
<thead>
<tr>
<th>Division</th>
<th>Target Return on Investment</th>
<th>Actual Return on Investment</th>
<th>Return on Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>18%</td>
<td>18.1%</td>
<td>8%</td>
</tr>
<tr>
<td>B</td>
<td>16%</td>
<td>20.0%</td>
<td>8%</td>
</tr>
<tr>
<td>C</td>
<td>14%</td>
<td>15.8%</td>
<td>6%</td>
</tr>
<tr>
<td>D</td>
<td>12%</td>
<td>11.0%</td>
<td>9%</td>
</tr>
</tbody>
</table>

The division with the **best** performance is:

A. Division C.
B. **Division B.**
C. Division A.
D. Division D.

Division B exceeded its target return on investment (ROI) by 25%, which is calculated as:

Percent of ROI achieved = (Actual ROI − Target ROI) / (Target ROI)
Percent of ROI achieved = (20 − 16) / (16) = 25%

Divisions A and C exceeded their targets by much less. Division D's actual ROI was lower than its target ROI.
What is the return on investment (ROI) for a company with revenues of $500,000, income of $200,000, and total assets of $800,000?

A. 0.4.  
B. 0.25.  
C. 0.625.  
D. 0.75.

ROI is income divided by investment (total assets).

**Question 50:**
Which one of the following best describes the performance elements contained in most balanced scorecards?

A. Financial performance measures: No; Nonfinancial performance measures: Yes.  
B. Financial performance measures: Yes; Nonfinancial performance measures: No.  
C. Financial performance measures: No; Nonfinancial performance measures: No.  
D. Financial performance measures: Yes; Nonfinancial performance measures: Yes.

The balanced scorecard contains both financial performance measures and nonfinancial performance measures.

**Question 51:**
Which one of the following items would most likely not be incorporated into the calculation of a division's investment base when using the residual income approach for performance measurement and evaluation?

A. Division inventories when division management exercises control over the inventory levels  
B. Division accounts receivable when division management exercises control over credit policy and credit terms  
C. Land being held by the division as a site for a new plant  
D. Fixed assets employed in division operations

The division's asset base should only include assets employed in the business. Land being held by the division as a site for a new plant is not currently employed in the business.
Question 52:
In responsibility accounting, a center's performance is measured by those costs which are controllable. Controllable costs are best described as including:

A. only direct material and direct labor.
B. only discretionary costs.
C. incremental and fixed costs.
D. only those costs that the manager can influence in the current time period.

The manager should only be held responsible for those things over which he/she can exercise control over during the performance measurement time period.

Question 53:
Vincent Hospital has installed a new computer system. The system was designed and constructed based on the anticipated number of hours of usage required by the various hospital departments according to projections made by the departmental managers. Virtually all of the operating costs of the system are fixed. What would be the most systematic and rational manner in which to allocate the new computer system costs to the various hospital departments?

* Source: Retired ICMA CMA Exam Questions.

A. By actual usage by each department

B. By the anticipated number of hours of usage

C. To each department equally

D. By the revenue generated in each department

When new costs are allocated, there should be an adequate understanding of the activity level of the asset being purchased. In this case, a computer system is being purchased for use by multiple departments. Understanding the hours of usage each department will be utilizing the new computer system will assist the appropriate allocation of costs among the departments.

Question 54:
David Burke is manager of claims processing for Continental Health Care System. His performance is evaluated using various measures agreed upon in advance with Diane Lewis, general manager. Lewis asked Burke to
recommend several measures to evaluate the performance of his unit next year. Which one of the following performance measures would likely have the least positive effect on Burke's motivation and performance?

A. Percentage of claims processed accurately the first time
B. Total dollar amount of claims processed per month
C. Processing cost per claim
D. Average processing time per claim

Performance measures should always have a positive effect on motivation and performance of managers and employees alike. In this case, providing a performance measure based on total dollar amount of claims processed per month would not motivate or improve performance.

**Question 55:**
Responsibility accounting defines an operating center that is responsible for revenue and costs as a(n):

A. revenue center.
B. profit center.
C. investment center.
D. division.

Since profit equals revenues less expenses (costs), a profit center is responsible for both revenues and costs.

**Question 56:**
Assume the following information from the financial section of the Balanced Scorecard for Dry Erase Kit, Inc.:
What overall factors may have most likely lead to the -7% result in sales penetration for Dry Erase Kit, Inc.?

A. The lack of customer retention and a customer-driven culture, leading to managing customer retention more effectively.

B. The quality leadership.

C. The lack of revenue growth.

D. The lack of sales force competency, leading to more effective product training for the sales force.

The balanced scorecard assists an organization in analyzing benchmarks. In the case of Dry Erase Kit, Inc., the organization can see that the customer retention and the customer-driven culture is weak, and most likely has lead to the lack of sales penetration.

Question 57:
Which of the following is a customer performance driver?

A. Market share

B. Lead time

C. Profitability
D. Retention

Customer performance drivers include lead time, while the other options are outcome measures.

**Question 58:**

Which one of the following should be used for evaluating the performance of the Repair and Maintenance Department that repairs production equipment in a firm devoted to making keyboards for computers?

* Source: Retired ICMA CMA Exam Questions.

A. The variance between the firm's budgeted and actual net income.

B. The fixed overhead volume variances.

C. The response time and degree of satisfaction among the production departments.

D. The total factory overhead variances.

Performance measures should always have a positive effect on motivation and performance of managers and employees alike. In this case, providing a performance measure based on the response time and degree of satisfaction among the production departments would motivate and improve performance.

**D1: Measurement Concepts**

**Question 1:**

Using information from Exhibit B, what is the gross profit per unit?

| Exhibit B |
|-----------------|-----------------|
| The estimated unit costs for a company using full absorption costing and a plan to produce 20,000 units this period are as follows: |
| Sales price per unit | $200 |
| Direct materials/unit | $50 |
| Direct labor/unit | $40 |
| Variable overhead/unit | $10 |
| Fixed overhead/unit | $8 |
| Variable selling costs/unit | $3 |
| Fixed selling costs/unit | $2 |

A. $110.
B. $92.
C. $97.
D. $100.

Gross profit per unit is sales price per unit less the product costs per unit. In this case $200 − ($50 + $40 + $10 + $8) = $92.

**Question 2:**

Lar Company has found that its total electricity cost has both a fixed component and a variable component within the relevant range. The variable component seems to vary directly with the number of units produced. Which one of the following statements concerning Lar's electricity cost is incorrect?

*A. The variable electricity cost per unit of production will remain constant as production volume increases.*

*B. The total electricity cost per unit of production will increase as production volume increases.*

*C. The total electricity cost will increase as production volume increases.*

*D. The fixed electricity cost per unit of production will decline as production volume increases.*

*Source: Retired ICMA CMA Exam Questions.*

When we are measuring a semivariable cost, such as electricity, given its fixed and variable cost components, the total electricity cost per unit of production will actually decrease as production volume decreases.

**Question 3:**

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

The value of Valyn Corporation's actual year end finished goods inventory under the variable costing basis was:

A. $750,000.
B. $1,050,000.
C. $1,000,000. [Correct answer]
D. $1,400,000.

Variable costing product costs consist of direct material, direct labor, and variable indirect manufacturing costs (variable overhead).

The unit product cost using variable costing is calculated as:

<table>
<thead>
<tr>
<th></th>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inventory in units</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales in units</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production in units</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Per Unit</th>
<th>Total</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct material</td>
<td>$12.00</td>
<td>$1,680,000</td>
<td>$1,560,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
<td>1,170,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
<td>560,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
<td>715,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>880,000</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
<td>280,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
<td>425,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50.00</td>
<td>$7,100,000</td>
<td>$6,820,000</td>
</tr>
</tbody>
</table>
Unit product cost (variable costing) = direct materials cost per unit + direct labor cost per unit + variable manufacturing overhead cost per unit

Unit product cost (variable costing) = $12 + $9 + $4 = $25 per unit

Valyn's ending finished goods inventory is 40,000 units (35,000 units in beginning inventory + 130,000 units produced − 125,000 units sold). Thus, the year-end finished goods inventory under variable costing is $25(40,000 units) = $1,000,000.

Question 4:
In a standard cost system, the investigation of an unfavorable material usage variance should begin with the:

A. plant controller only.
B. purchasing manager only.
C. production manager and/or the purchasing manager.
D. production manager only.

Assuming the material usage standard is realistic, the material usage variance would be caused by either production problems or inferior materials having been purchased and used in production. The former is a production issue, while the latter is a purchasing issue.

Question 5:
Mill Corporation had the following unit costs for the recently concluded calendar year.

<table>
<thead>
<tr>
<th></th>
<th>Variable</th>
<th>Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>$8.00</td>
<td>$3.00</td>
</tr>
<tr>
<td>Nonmanufacturing</td>
<td>$2.00</td>
<td>$5.50</td>
</tr>
</tbody>
</table>

Inventory for Mill's sole product totaled 6,000 units on January 1 and 5,200 units on December 31. When compared to variable costing income, Mill's absorption costing income is:

A. $6,800 higher.
B. $6,800 lower.
C. $2,400 higher.
D. $2,400 lower.
The income under these two methods can be compared by taking the fixed manufacturing cost per unit and multiplying it by the change in inventory.

Fixed manufacturing cost per unit = $3.00
Change in inventory = (5,200 − 6,000) = −800 units

Difference in absorption costing income = ($3)(−800 units) = −$2,400

Therefore, the full absorption operating income is $2,400 lower than the variable cost operating income.

**Question 6:**
A firm believes it needs to grow its product line diversity to take advantage of market opportunities. Which of the following cost drivers is this firm expanding?

A. Scale structural cost driver.
B. Supplier relationships executional cost driver.
C. Production process design executional cost driver.
D. **Complexity structural cost driver.**

With the complexity structural cost driver, the more complex a firm gets (more products, more levels of hierarchy), the more it costs to sustain the complexity, but too low a level of complexity may mean the firm is missing out on market opportunities.

**Question 7:**
Which one of the following items would not be considered a manufacturing cost?

A. Tires for an automobile manufacturer.
B. **Sales commissions for a car manufacturer.**
C. Plant property taxes for an ice cream maker.
D. Cream for an ice cream maker.

Manufacturing costs are those costs directly related to the production of the good. The answers include all costs associated with the production of a good, except for the sales commissions for a car manufacturer.

**Question 8:**
During the month of May, Robinson Corporation sold 1,000 units. The cost per unit for May was:

<table>
<thead>
<tr>
<th>Cost Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
</tr>
<tr>
<td>Direct labor</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
</tr>
<tr>
<td>Variable administrative costs</td>
</tr>
<tr>
<td>Fixed administrative costs</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

May's income using absorption costing was $9,500. The income for May, if variable costing had been used, would have been $9,125. The number of units Robinson produced during May was:

A. 750 units.

**B. 1,250 units.**

C. 925 units.

D. 1,075 units.

Use the following formula to solve for the production units:

Full absorption cost operating income = (variable cost operating income) + (fixed manufacturing cost per unit)(production units − sales units)

Full absorption cost operating income is given as $9,500.

Variable cost operating income is given as $9,125.

$9,500 = $9,125 + ($1.50)(production units − 1,000 units)

$9,500 = $9,125 + $1.50(production units) − $1,500

$9,500 = $7,625 + $1.50(production units)

$1,875 = $1.50 (production units)

1,250 = production units

**Question 9:**

Whitehall Corporation produces chemicals used in the cleaning industry. During the previous month Whitehall incurred $300,000 of joint costs in producing 60,000 units of AM-12 and 40,000 units of BM-36. Whitehall uses the units-of-production method to allocate joint costs. Currently, AM-
12 is sold at split-off for $3.50 per unit. Flank Corporation has approached Whitehall to purchase all of the production of AM-12 after further processing. The further processing will cost Whitehall $90,000.

Concerning AM-12, which one of the following alternatives is most advantageous?

A. Whitehall should process further and sell to Flank if the total selling price per unit after further processing is greater than $5.00.

B. Whitehall should process further and sell to Flank if the total selling price per unit after further processing is greater than $3.00, which covers the joint costs.

C. Whitehall should continue to sell at split-off unless Flank offers at least $4.50 per unit after further processing, which covers Whitehall's total costs.

D. Whitehall should process further and sell to Flank if the total selling price per unit after further processing is greater than $1.50, which covers the incremental costs.

Whitehall should process the AM-12 after split-off as long as the increase in market value (selling price) at the split-off point is greater than the additional processing costs of $1.50 per unit.

AM-12 can be sold at the split-off point for $3.50 per unit. The increase in selling price after further processing has to be greater than the $1.50 per unit processing costs. Therefore, the final selling price has to exceed $5.00 ($3.50 + $1.50).

The joint costs of $300,000 are irrelevant to the decision, since they are sunk costs.

**Question 10:**

Exhibit A

<table>
<thead>
<tr>
<th>Twinks, Inc. had the following inventories at the beginning and end of the current period:</th>
<th>Beginning</th>
<th>Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished goods inventory</td>
<td>$20,000</td>
<td>$22,000</td>
</tr>
<tr>
<td>WIP inventory</td>
<td>$13,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>Direct materials inventory</td>
<td>$40,000</td>
<td>$33,000</td>
</tr>
</tbody>
</table>

Additional information assembled:

| Direct materials purchased | $58,000 |
| Purchase discounts | $4,000 |
| Transportation in | $12,000 |
| Direct labor costs | $42,000 |
| Factory overhead (actual) | $13,000 |
Using the information from Exhibit A, compute total manufacturing costs for the period.

A. $116,000.

B. $128,000.

C. $126,000.

D. $109,000.

Net purchases in this problem is $58,000 − $4,000 + $12,000 = $66,000. Direct materials used is $40,000 + $66,000 − $33,000 = $73,000. Adding direct materials used, direct labor and factory overhead, manufacturing costs total $73,000 + $42,000 + $13,000 = $128,000.

Question 11:

Wagner Corporation applies factory overhead based upon machine hours. At the beginning of the year, Wagner budgeted factory overhead at $250,000 and estimated that 100,000 machine hours would be used to make 50,000 units of product. During the year, the company produced 48,000 units, using 97,000 machine hours. Actual overhead for the year was $252,000. Under a standard cost system, the amount of factory overhead applied during the year was:

A. $250,000.

B. $240,000.

C. $242,500.

D. $252,000.

To calculate the predetermined overhead rate, take the budgeted overhead cost and divide it by the budgeted machine hours: $250,000 overhead/100,000 machine hours = $2.50 per machine hour.

Next, calculate the number of machine hours needed to produce 50,000 units: 100,000 hours/50,000 units = 2 hours per unit $2.50 × 2 hours × 48,000 units = $240,000.

Question 12:

A manufacturing company has a tennis ball manufacturing machine that had maintenance, direct labor, and depreciation costs during a period. Which of the following is true for this situation?
A. Maintenance and depreciation are period costs, while direct labor is a product cost.

B. Maintenance, direct labor, and depreciation are all product costs.

C. Depreciation is a period cost, while maintenance and direct labor are product costs.

D. Maintenance and direct labor are period costs, while depreciation is a product cost.

All costs listed are product costs because they relate to the manufacturing process. Depreciation and maintenance of equipment are indirect costs, labor is a direct cost.

Question 13:

A manager who is compensated based on operating income decides to increase operating income by producing extra inventory for items that have high fixed manufacturing costs even though the demand for this inventory does not exist. Which of the following costing methods caused this situation to occur, and which solution would fix the problem?

A. Variable costing; apply a carrying charge for all ending inventory.

B. Absorption costing; switch to variable costing for internal and external reporting.

C. Absorption costing; apply a carrying charge for all ending inventory.

D. Variable costing; switch to absorption costing for internal and external reporting.

Absorption costing allows managers to manipulate operating income simply by increasing production. The manager may increase inventory or produce items that absorb the highest fixed manufacturing costs even though no additional demand exists. One disincentive to creating excess inventory would be to apply a percentage carrying charge for all ending inventory.

Question 14:

If a manufacturing company uses variable costing to cost inventories, which of the following costs are considered inventoriable costs?

A. Only raw material, direct labor, variable manufacturing overhead and variable selling and administrative costs.

B. Only raw material and direct labor costs.

* Source: Retired ICMA CMA Exam Questions.
C. Only raw material, direct labor, variable and fixed manufacturing overhead costs.

D. Only raw material, direct labor, and variable manufacturing overhead costs.

Inventoriable costs under a variable costing system include only raw material, direct labor, and variable manufacturing overhead costs.

**Question 15:**

Ardmore Enterprises uses a standard cost system in its small appliance division. The standard cost of manufacturing one unit of Zeb is:

- Materials—60 pounds at $1.50 per pound  $90
- Labor—3 hours at $12 per hour  36
- Factory overhead—3 hours at $8 per hour  24
- Total standard cost per unit  $150

The budgeted variable factory overhead rate is $3 per labor hour, and the budgeted fixed factory overhead is $27,000 per month. During May, Ardmore produced 1,650 units of Zeb compared to a normal capacity of 1,800 units. The actual cost per unit was:

- Materials (purchased and used)—
  - 58 pounds at $1.65 per pound  $95.70
- Labor—3.1 hours at $12 per hour  37.20
- Factory overhead—$39,930 per 1,850 units  24.20
- Total actual cost per unit  $157.10

The flexible budget overhead variance for May is:

- A. $1,920 favorable.
- B. $1,920 unfavorable.
- C. $330 unfavorable.
- D. $2,415 favorable.

The flexible budget overhead variance is calculated as follows:

Flexible budget overhead variance = (the actual overhead − the budgeted overhead for the actual output)

The actual overhead is $39,930.
The budgeted overhead for the actual output = Fixed overhead + Variable overhead
$27,000 + ($3/direct labor hour)(3 direct labor hours per unit)(1,650 units)
= $27,000 + $14,850 = $41,850

Flexible budget overhead variance = $39,930 − $41,850 = -$1,920 or $1,920 favorable.
It is favorable because the actual overhead is less than the flexible budget (less was spent than was budgeted, so that makes it a favorable variance).

Question 16:
Jones, Inc. processes cedar logs, producing lumber of various sizes as well as a by-product of cedar mulch, sold to gardening centers. At the end of the period, Jones' accountant is attempting to allocate the joint costs of $900,000, after which time each product may or may not require further processing. Data collected:

<table>
<thead>
<tr>
<th>Product</th>
<th>Quantity</th>
<th>Market Value @ Split-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x4’s</td>
<td>400,000  ft.</td>
<td>$2.00 per foot</td>
</tr>
<tr>
<td>2x6’s</td>
<td>800,000  ft.</td>
<td>$3.00 per foot</td>
</tr>
<tr>
<td>Mulch</td>
<td>300,000  lbs.</td>
<td>$0.20/lb.</td>
</tr>
</tbody>
</table>

If Jones allocates joint product costs using the sales value at split-off, how much of the joint costs is allocated to the mulch?

A. $60,000.
B. $34,650.
C. $180,000.
D. $16,560.

By-products are allocated joint costs that are expected to be equal to the expected sales value of the by-product.

Question 17:
Which one of the following best describes direct labor?

A. a product cost.
B. a period cost.
C. both a product cost and a prime cost.
D. a prime cost.

Following generally accepted accounting principles, product costs consist of direct material, direct labor, and indirect manufacturing costs (overhead). Prime costs are defined as direct material plus direct labor.
Question 18:

Consider the following situation for Weisman Corporation for the prior year.

- The company produced 1,000 units and sold 900 units, both as budgeted.
- There were no beginning or ending work-in-process inventories and no beginning finished goods inventory.
- Budgeted and actual fixed costs were equal, all variable manufacturing costs are affected by volume of production only, and all variable selling costs are affected by sales volume only.
- Budgeted per unit revenues and costs were:

<table>
<thead>
<tr>
<th></th>
<th>Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price</td>
<td>$100</td>
</tr>
<tr>
<td>Direct materials</td>
<td>30</td>
</tr>
<tr>
<td>Direct labor</td>
<td>20</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>10</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5</td>
</tr>
<tr>
<td>Variable selling costs</td>
<td>12</td>
</tr>
<tr>
<td>Fixed selling costs</td>
<td>4</td>
</tr>
<tr>
<td>Fixed administrative costs</td>
<td>2</td>
</tr>
</tbody>
</table>

The operating income for Weisman for the prior year using absorption costing was:

A. $13,600.
B. $15,840.
C. $14,200.
D. $15,300.

The full absorption cost operating income is calculated as:
Full absorption cost operating income = (sales) - (cost of sales) - (variable selling costs) - (fixed selling costs) - (fixed administrative costs)
Sales = (900 units)($100 each) = $90,000
Cost of sales = (number of units)(direct materials cost per unit + direct labor cost per unit + variable manufacturing overhead cost per unit + fixed manufacturing overhead cost per unit)
Cost of sales = (900 units)($30 + $20 + $10 + $5) = $58,500
Variable selling costs = (900 units)($12 each) = $10,800
Fixed selling costs = $3,600
Fixed administrative costs = $1,800
Full absorption cost operating income = $90,000 − $58,500 − $10,800 − $3,600 - $1,800
Full absorption cost operating income = $15,300
There is no volume variance since actual production is equal to budgeted production.

Question 19:
From the following budgeted data, calculate the budgeted indirect cost rate that would be used in a normal costing system.

<table>
<thead>
<tr>
<th>Total direct labor hours</th>
<th>250,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct costs</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>Total indirect labor hours</td>
<td>50,000</td>
</tr>
<tr>
<td>Total indirect labor-related costs</td>
<td>$5,000,000</td>
</tr>
<tr>
<td>Total indirect non-labor related costs</td>
<td>$7,000,000</td>
</tr>
</tbody>
</table>

A. $28/DLH.
B. $40/DLH.
C. $48/DLH.
D. $20/DLH.

The budgeted indirect cost rate per direct labor hour is calculated as follows:

Budgeted indirect labor cost rate per direct labor hour = (budgeted indirect costs) / (budgeted direct labor hours)
Budgeted indirect labor cost rate per direct labor hour = ($5,000,000 + $7,000,000) / 250,000
Budgeted indirect labor cost rate per direct labor hour = $12,000,000 / 250,000
Budgeted indirect labor cost rate per direct labor hour = $48 per direct labor hour.

Question 20:
What is the cost of goods sold for a manufacturing company that has the following data?

- Beginning work-in-process inventory of $5,000
- Ending work-in-process inventory of $15,000
- Total manufacturing costs of $110,000
- $20,000 in beginning finished goods inventory
- $30,000 in ending finished goods inventory
First, the cost of goods manufactured (COGM) must be computed. COGM is equal to the beginning work-in-process inventory plus total manufacturing costs minus the ending work-in-process inventory ($5,000 + $110,000 − $15,000 = $100,000). Then cost of goods sold can be computed. The cost of goods sold is equal to the beginning finished goods inventory plus the cost of goods manufactured minus the ending finished goods inventory ($20,000 + $100,000 − $30,000) = $90,000.

Question 21:
Which one of the following is the best reason for using variable costing?

* Source: Retired ICMA CMA Exam Questions.

A. Variable costing is acceptable for income tax reporting purposes.
B. Fixed factory overhead is more closely related to the capacity to produce than to the production of specific units.
C. All costs are variable in the long term.
D. Variable costing usually results in higher operating income than if a company uses absorption costing.

A decision to use a variable costing system can best be decided on due to fixed factory overhead being more closely related to the capacity to produce than to the production of specific units.

Question 22:
Petro-Chem Inc. is a small company that acquires high-grade crude oil from low-volume production wells owned by individuals and small partnerships. The crude oil is processed in a single refinery into Two Oil, Six Oil, and impure distillates. Petro-Chem does not have the technology or capacity to process these products further and sells most of its output each month to major refineries. There were no beginning inventories of finished goods or work-in-process on November 1. The production costs and output of Petro-Chem for November are:

Crude oil acquired and placed in production $5,000,000
Direct labor and related costs 2,000,000
Factory overhead 3,000,000
Production and sales:

- Two Oil, 300,000 barrels produced; 80,000 barrels sold at $20 each.
- Six Oil, 240,000 barrels produced; 120,000 barrels sold at $30 each.
- Distillates, 120,000 barrels produced and sold at $15 per barrel.

The portion of the joint production costs assigned to Two Oil based upon the relative sales value of output would be:

A. $4,000,000.
B. $3,076,923.
C. $4,545,454.
D. $2,285,714.

The sales value of Two Oil at split-off is $6,000,000 (300,000 barrels times $20 per barrel).

The total sales value at split-off is $15,000,000. This is calculated as:
Total sales value at split-off = $6,000,000 for Two Oil + $7,200,000 for Six Oil (240,000 barrels x $30 per barrel) + $1,800,000 for impure distillates (120,000 barrels x $15 per barrel)
Total sales value at split-off = $15,000,000

Therefore, the joint costs allocated to Two Oil using relative sales value of output is calculated as:
Joint Costs = ($6,000,000/$15,000,000) x ($10,000,000) = $4,000,000.

Question 23:

A lumber products company incurs $140,000 in costs to produce 100,000 board-feet of finished lumber that sells for $1/board-foot and 50,000 board-feet of plywood that sells for $0.50/board-foot (sales value at split-off).

Using the sales value at split-off method, what is the cost per board-foot for each joint product?

A. $0.64/board-foot finished lumber; $0.32/board-foot plywood.
B. $0.92/board-foot finished lumber; $0.48/board-foot plywood.
C. $1.12/board-foot finished lumber; $0.56/board-foot plywood.

D. $0.82/board-foot finished lumber; $0.44/board-foot plywood.

The sales value at split-off is calculated in four steps:
1. Calculate the total sales value for each joint product by multiplying the price per unit by the number of units: $100,000 for lumber and $25,000 for plywood.
2. Determine the proportion of each product to the total sales value: $100,000/$125,000 = 0.8 and 0.2, respectively.
3. Multiply the proportion by the total cost: 0.8 × $140,000 = $112,000 and $28,000, respectively.
4. Divide the proportional cost by the total volume: $112,000/100,000 board-feet = $1.12 and $28,000/50,000 = $0.56.

**Question 24:**
If a company has cost of goods sold of $180,000, selling and administrative expenses of $40,000, cost of goods manufactured of $220,000 and sales of $450,000, what is its operating income?

A. $230,000.
B. $190,000.
C. $10,000.
D. $20,000.

Sales less cost of goods sold less selling and administrative expenses equals operating income ($450,000 − $180,000 − $40,000 = $230,000).

**Question 25:**
In a production process where joint products are produced, the primary factor that will distinguish a joint product from a by-product is the:

A. accounting method used to allocate joint costs.
B. relative total sales value of the products.
C. relative ease of selling the products.
D. relative total volume of the products.

The primary factor that will distinguish a joint product from a by-product in a production process where joint products are product is the relative total sales value of the products.

**Question 26:**
Which type of cost driver is primarily intended to reduce short-term operational costs?

A. Executional cost drivers.
B. Volume-based cost drivers.
C. Activity-based cost drivers.
D. Structural cost drivers.

Executional cost drivers are the short-term decisions that can be made to reduce operational costs.

Question 27:

Using information from Exhibit B, what are conversion costs per unit?

A. $18.
B. $113.
C. $108.
D. $58.

Conversion costs per unit are defined as direct labor per unit plus overhead per unit. In this case, $40 + $10 + $8 = $58.

Question 28:

Manchester Airlines is in the process of preparing a contribution margin income statement that will allow a detailed look at its variable costs and profitability of operations. Which one of the following cost combinations should be used to evaluate the variable cost per flight of the company's Boston–Las Vegas flights?

A. Communication system operation, food service, and ramp personnel.

* Source: Retired ICMA CMA Exam Questions.
B. Flight crew salary, fuel, and engine maintenance.

C. Fuel, food service, and airport landing fees.

D. Airplane depreciation, baggage handling, and airline marketing.

Variable costs are those costs that fluctuate based on activity-levels. In this problem, fuel, food service, and airport landing fees are industry specific variable costs.

**Question 29:**

When identifying fixed and variable costs, which one of the following is a typical assumption concerning cost behavior?

* Source: Retired ICMA CMA Exam Questions.

A. Cost behavior is assumed to be realistic for all levels of activity from zero to maximum capacity.

B. Total costs are assumed to be linear when plotted on a graph.

C. General and administrative costs are assumed to be variable costs.

D. The relevant time period is assumed to be five years.

A typical assumption concerning cost behaviors is that total costs are assumed to be linear when plotted on a graph.

**Question 30:**

The following information was gathered for the current period of manufacturing production for a firm:

<table>
<thead>
<tr>
<th></th>
<th>DM</th>
<th>CC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning WIP</td>
<td>$14,000</td>
<td>$8,000</td>
<td>$22,000</td>
</tr>
<tr>
<td>Current Period Costs</td>
<td>$254,000</td>
<td>$190,000</td>
<td>$444,000</td>
</tr>
<tr>
<td>Total costs</td>
<td>$268,000</td>
<td>$208,000</td>
<td>$476,000</td>
</tr>
</tbody>
</table>

There were 100 units in beginning work-in-process (WIP) inventory, which were 20% complete in direct materials (DM) and 30% complete in conversion costs (CC). During the period 2,000 units were started in production and 1,900 were completed. If the firm uses the first-in, first-out (FIFO) inventory method, and equivalent units are calculated as 2,000 for DM and 1,980 for CC, what is the total cost assigned to the units completed?

A. $408,600.

B. $436,140.

C. $431,300.
Several steps are required to solve this problem:

1. Compute the number of units started and completed during the period (units completed less units in beginning WIP completed first): $1,900 - 100 = 1,800$.

2. Compute the current period cost per equivalent unit: $\text{DM} = $254,000/2,000 = $127; \text{CC} = $198,000/1,980 = $100$.

3. The 1,900 units completed are made up of the 100 units in beginning WIP inventory plus 1,800 units started and completed during the period.

4. Compute the cost of these units:

| Units started and completed: $1,800 \times (\$127 + \$100) = \$408,600$ |
|---|---|
| Units completed that were in beginning WIP: |
| Costs from prior period: $(\$14,000 + \$8,000) = \$22,000$ |
| DM used this period to complete beginning WIP: $(100 \times 0.8 \times \$127) = 10,160$ |
| CC used this period to complete beginning WIP: $(100 \times 0.7 \times \$100) = 7,000 \$35,160$ |
| Total cost for units completed $\$447,760$ |

**Question 31:**

A company employs a just-in-time (JIT) production system and utilizes backflush accounting. All acquisitions of raw materials are recorded in a raw materials control account when purchased. All conversion costs are recorded in a control account as incurred, while the assignment of conversion costs are from an allocated conversion cost account. Company practice is to record the cost of goods manufactured at the time the units are completed using the estimated budgeted cost of the goods manufactured.

The budgeted cost per unit for one of the company's products is as follows:

- Direct Materials: $15.00
- Conversion costs: $35.00
- Total budgeted unit cost: $50.00

During the current accounting period, 80,000 units of product were completed, and 75,000 units were sold. Which of the following entries should be used to record the cost of the completed units for the period would be
With JIT, there is no work-in-process inventory. To record the cost of the completed units during the period, the following entries would be made:

- Credit Raw Material-Control account for $1,200,000 (80,000 units @ $15 direct materials each) to show the transfer of raw materials to finished goods. The offsetting debit would go to the Finished Goods-Control account.
- Credit Conversion Cost Allocated account for $2,800,000 (80,000 units @ $35 conversion costs each) to show the transfer of conversion costs to finished goods. The offsetting debit would go to the Finished Goods-Control account.

In total, the Finished Goods-Control account would receive a debit in the amount of $4,000,000, which is made up of $1,200,000 of raw materials and $2,800,000 of conversion costs.

**Question 32:**

The following information was gathered for the current period of manufacturing production for a firm:

<table>
<thead>
<tr>
<th></th>
<th>DM</th>
<th>CC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning WIP</strong></td>
<td>$ 14,000</td>
<td>$ 15,000</td>
<td>$ 29,000</td>
</tr>
<tr>
<td><strong>Current Period Costs</strong></td>
<td>$240,000</td>
<td>$200,000</td>
<td>$440,000</td>
</tr>
<tr>
<td><strong>Total costs</strong></td>
<td>$254,000</td>
<td>$215,000</td>
<td>$469,000</td>
</tr>
</tbody>
</table>

There were 100 units in beginning work-in-process (WIP), which were 20% complete in direct materials (DM) and 30% complete in conversion costs (CC). During the period, 2,000 units were started in production and 1,900 were completed. Ending WIP inventory was 70% complete in DM and 60% complete in CC. If the firm uses the first-in, first-out (FIFO) inventory method, what are equivalent units for the period?
Compute the number of units in ending inventory = 100 + 2,000 − 1,900 = 200 units. Compute units to account for = 100 units in beginning WIP + 2,000 units started = 2,100 units. Units started and finished = units to account for − ending WIP − beginning WIP completed first = 2,100 − 200 − 100 = 1,800 units. The EU calculation is:

<table>
<thead>
<tr>
<th></th>
<th>DM</th>
<th>CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning WIP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(100 units)</td>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>Units started and finished</td>
<td>1,800</td>
<td>1,800</td>
</tr>
<tr>
<td>Ending WIP</td>
<td>110</td>
<td>120</td>
</tr>
<tr>
<td>(200 units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total EU</td>
<td>2,020</td>
<td>1,990</td>
</tr>
</tbody>
</table>

Question 33:
Bethany Company has just completed the first month of producing a new product, but has not yet shipped any of this product. The product incurred variable manufacturing costs of $5,000,000, fixed manufacturing costs of $2,000,000, variable marketing costs of $1,000,000, and fixed marketing costs of $3,000,000. If Bethany uses the variable cost method to value inventory, the inventory value of the new product would be:

A. $11,000,000.
B. $6,000,000.
C. $8,000,000.
D. $5,000,000.

The variable cost method includes only variable manufacturing costs in the value of the inventory. Therefore, the inventory value would be $5,000,000.

Question 34:
Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year’s planned unit manufacturing cost which was the same as the current year’s planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

Valyn Corporation’s actual manufacturing contribution margin (actual revenue less actual variable manufacturing cost of sales) for the year calculated under the variable costing basis was:

- A. $5,625,000.
- B. $4,375,000.
- C. $5,500,000.
- D. $4,200,000.

Manufacturing contribution margin is calculated as:

Manufacturing contribution margin = sales − variable cost of goods sold

<table>
<thead>
<tr>
<th></th>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inventory in units</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales in units</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production in units</td>
<td>140,000</td>
<td>130,000</td>
</tr>
<tr>
<td><strong>Planned Costs</strong></td>
<td><strong>Incurred</strong></td>
<td></td>
</tr>
<tr>
<td>Direct material</td>
<td>$12.00 $1,680,000</td>
<td>$1,580,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00 1,260,000</td>
<td>1,170,000</td>
</tr>
<tr>
<td>Variable manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>overhead</td>
<td>4.00 560,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00 700,000</td>
<td>715,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00 1,120,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00 880,000</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>expenses</td>
<td>2.00 280,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00 420,000</td>
<td>425,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$50.00 $7,000,000</strong></td>
<td><strong>$6,620,000</strong></td>
</tr>
</tbody>
</table>
Sales revenue is calculated by multiplying the $70 price per unit by the number of units sold, which is 125,000. So, total sales revenue = $70(125,000) = $8,750,000.

Product costs using variable costing consist of direct material, direct labor, and variable indirect manufacturing costs (variable overhead).

Therefore, Valyn's product cost per unit using variable costing is calculated as:

Unit product cost (variable costing) = direct materials cost per unit + direct labor cost per unit + variable manufacturing overhead cost per unit

Unit product cost (variable costing) = $12 + $9 + $4 = $25 per unit

Variable cost of goods sold = (cost of goods sold per unit)(number of units sold)

Variable cost of goods sold = $25(125,000) = $3,125,000

Manufacturing contribution margin = $8,750,000 - $3,125,000 = $5,625,000.

**Question 35:**

Dremmon Corporation uses a standard cost accounting system. Data for the last fiscal year are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
<th>Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory of finished goods</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Production during the year</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Ending inventory of finished goods</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Product selling price</td>
<td>$200</td>
<td></td>
</tr>
<tr>
<td>Standard variable manufacturing cost</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Standard fixed manufacturing cost</td>
<td>20 *</td>
<td></td>
</tr>
</tbody>
</table>

Budgeted selling and administrative costs (all fixed) $45,000

*Denominator level of activity is 750 units for the year.

There were no price, efficiency, or spending variances for the year, and actual selling and administrative expenses equaled the budget amount. Any volume variance is written off to cost of goods sold in the year incurred. There are no work-in-process inventories.

Assuming that Dremmon used absorption costing, the amount of operating income earned in the last fiscal year was:
A. $28,000.
B. $27,000.
C. $21,500.
D. $30,000.

The full absorption costing operating income can be calculated as follows:

Full absorption costing operating income = (sales) − (standard cost of sales) − (unfavorable volume variance) − (selling and administrative costs)
Sales = (750 units)($200 each) = $150,000
Standard cost of sales = (number of units)(variable + fixed manufacturing costs)
Standard cost of sales = (750 units)($90 + $20) = (750)($110) = $82,500
Unfavorable volume variance = ($20 fixed overhead per unit)(denominator level of activity − actual activity)
Unfavorable volume variance = ($20)(750-700) = $20(50) = $1,000
Selling and administrative costs = $45,000
Full absorption costing operating income = $150,000 − $82,500 − $1,000 − $45,000
Full absorption costing operating income = $21,500.

Question 36:
Which of the following is not a period cost?

A. Depreciation costs on the VP’s company car.
B. Drill bits for a drill press.
C. Data entry costs.
D. Sales commissions.

Drill bits for a drill press are product costs because they relate directly to production and provide measurable future benefits. Selling and administrative costs, advertising costs, data processing, and executive costs are all period costs.

Question 37:
The marketing manager of Ames Company has learned the following about a new product that is being introduced by Ames:

- Sales of this product are planned at $100,000 for the first year.
• Sales commission expense is budgeted at 8% of sales plus the marketing manager's incentive budgeted at an additional 0.5%.
• The preparation of a product brochure will require 20 hours of marketing salaried staff time at an average rate of $100 per hour, and 10 hours, at $150 per hour, for an outside illustrator's effort.

The variable marketing cost for this new product will be:

A. $8,500.
B. $8,000.
C. $10,500.
D. $10,000.

The variable marketing costs for the new product can be calculated as follows:
Variable marketing costs = (8.5%)(sales)
Variable marketing costs = (0.085)($100,000) = $8,500
All of the other costs are discretionary fixed costs.

Question 38:
Which of the following would a merchandising company use in place of cost of goods manufactured on a statement of cost of goods sold?

A. Net purchases.
B. Prime costs.
C. Materials inventory.
D. Conversion costs.

The income statement for a merchandising company looks similar to that of a manufacturing company, except that it uses net purchases instead of cost of goods manufactured.

Question 39:
If a firm was more concerned with reliability of data than with the speed at which the data is available, which of the following costing methods would be the best fit?

A. Variable (direct) costing.
B. Standard costing.
C. Actual costing.
D. Normal costing.

An actual costing system uses actual costs, which are very reliable because they rely on actual invoices, but results are delayed due to the wait for invoices and other evidence.

Question 40:

Merlene Company uses a standard cost accounting system. Data for the last fiscal year are:

<table>
<thead>
<tr>
<th>Description</th>
<th>Units</th>
<th>Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory of finished goods</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Production during the year</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Ending inventory of finished goods</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Product selling price</td>
<td>$200</td>
<td></td>
</tr>
<tr>
<td>Standard variable manufacturing cost</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Standard fixed manufacturing cost</td>
<td>20 *</td>
<td></td>
</tr>
<tr>
<td>Budgeted selling and administrative costs (all fixed)</td>
<td>$45,000</td>
<td></td>
</tr>
</tbody>
</table>

*Denominator level of activity is 750 units for the year.

There were no price, efficiency, or spending variances for the year, and actual selling and administrative expenses equaled the budget amount. Any volume variance is written off to cost of goods sold in the year incurred. There are no work-in-process inventories.

The amount of operating income earned by Merlene for the last fiscal year using variable costing was:

A. $22,500
B. $31,000.
C. $21,500.
D. $28,000.

The variable costing operating income is calculated as:

Variable costing operating income = (sales) − (variable costs) − (fixed manufacturing costs) − (fixed selling and administrative costs)
Sales = (750 units)($200 per unit) = $150,000
Variable costs = (750 units)($90 each) = $67,500
Fixed manufacturing costs = $20(denominator level of 750) = $15,000
Fixed selling and administrative costs = $45,000

Thus, the operating income is calculated as:

Variable costing operating income = $150,000 − $67,500 − $15,000 − $45,000 = $22,500
Variable costing operating income = $150,000 − $67,500 − $15,000 − $45,000 = $22,500.

Question 41:
1D1-LS38
A plant meters electricity usage at the department level. The department has several product operations, including tennis ball manufacture. Electricity is considered which of the following for a can of tennis balls?

A. A variable direct cost.
B. A fixed indirect cost.
C. A fixed direct cost.
D. A variable indirect cost.

The electricity is a variable cost, because as the quantity of tennis balls produced is increased, electricity costs also increase. Indirect costs include electricity because it is metered at the department level and cannot be traced to the cost for a can of tennis balls in a cost-effective manner.

Question 42:
1D1-LS78
Fowler Co. provides the following summary of its total budgeted production costs at three production levels.

<table>
<thead>
<tr>
<th>Unit Levels</th>
<th>10,000</th>
<th>15,000</th>
<th>20,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost A</td>
<td>$1,420</td>
<td>$2,130</td>
<td>$2,840</td>
</tr>
<tr>
<td>Cost B</td>
<td>1,550</td>
<td>2,200</td>
<td>2,900</td>
</tr>
<tr>
<td>Cost C</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Cost D</td>
<td>1,630</td>
<td>2,445</td>
<td>3,260</td>
</tr>
</tbody>
</table>

The cost behavior of each of the Costs A through D, respectively, is:

*A. variable, semi-variable, fixed, and variable.*

B. variable, fixed, fixed, and variable.
C. semi-variable, variable, fixed, and variable.
D. variable, semi-variable, fixed, and semi-variable.

Variable, semi-variable, fixed, and variable is the correct answer. Costs A and D are considered variable costs as they change in proportion to the
level of activity. Cost B is considered a semi-variable cost as it is variable in the sense that greater levels of production increase total cost. If no production occurs, then a fixed cost is still incurred. Cost C is a fixed cost, as it remains constant at any level of activity.

**Question 43:**
Which one of the following refers to a cost that remains the same as the volume of activity decreases within the relevant range?

* Source: Retired ICMA CMA Exam Questions.

A. Variable cost per unit.
B. Total variable cost.
C. Unit fixed cost.
D. Average cost per unit.

Variable cost per unit remains the same as the volume of activity decreases within the relevant range.

**Question 44:**
Tucariz Company processes Duo into two joint products, Big and Mini. Duo is purchased in 1,000 gallon drums for $2,000. Processing costs are $3,000 to process the 1,000 gallons of Duo into 800 gallons of Big and 200 gallons of Mini. The selling price is $9 per gallon for Big and $4 per gallon for Mini. The 800 gallons of Big can be processed further into 600 gallons of Giant if $1,000 of additional processing costs are incurred. Giant can be sold for $17 per gallon. If the net-realizable-value method were used to allocate costs to the joint products, the total cost of producing Giant would be:

A. $4,600.
B. $5,600.
C. $5,520.
D. $5,564.

The NRV of a product at split-off is its market value less the costs to complete and dispose of the product.

The NRV of Giant at split-off is calculated as:

\[
\text{NRV of Giant at split-off} = (\text{market value}) - (\text{separable processing costs})
\]

Market value of Giant = (600 gallons)($17 each) = $10,200
NRV of Giant at split-off = ($10,200) - ($1,000) = $9,200
The NRV of Mini at split-off is calculated as follows:
NRV of Mini at split-off = (market value) - (separable processing costs)  
NRV of Mini at split-off = (200 gallons)($4 each) = $800
The NRV of Giant and Mini = $9,200 + $800 = $10,000
Therefore, Giant's share of the joint costs is ($9,200 / $10,000)($5,000) = $4,600
Cost of using NRV at split-off, Giant = (separable costs) + (share of joint processing costs)
Cost of using NRV at split-off, Giant = ($1,000) + ($4,600) = $5,600.

Question 45:
Which one of the following considers the impact of fixed overhead costs?

A. full absorption costing.
B. direct costing.
C. prime costing.
D. variable costing.

Full absorption costing considers direct material, direct labor, and both fixed and variable overhead costs as product costs. The other methods noted consider fixed overhead to be a period cost rather than a product cost.

Question 46:
The relevant range refers to the activity levels over which:

A. cost relationships hold constant.
B. production varies.
C. costs fluctuate.
D. relevant costs are incurred.

The relevant range refers to the activity levels over which cost relationships hold constant.

Question 47:
Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

Valyn Corporation's total fixed costs charged to income under the absorption costing basis were:

A. $2,030,000.
B. $2,055,000.
C. **$2,095,000**.
D. $2,120,000.

The total fixed costs of $2,095,000 charged to cost of goods sold and income under the absorption costing basis consist of all of the selling and administrative expenses, plus the fixed overhead in cost of goods sold.
Total fixed costs charged to cost of goods sold and income = fixed selling expenses + fixed administrative expenses + fixed overhead in cost of goods sold
Total fixed costs charged to cost of goods sold and income = $980,000 + $425,000 + $690,000 = $2,095,000

The fixed selling and fixed administrative expenses are the actual expenses given in the problem. The $690,000 of fixed expenses in cost of goods sold is made up of the fixed portion of applied overhead in cost of goods sold and the unfavorable fixed overhead budget variance.

Fixed expenses in cost of goods sold = fixed portion of applied overhead in cost of goods sold + fixed overhead budget variance

To calculate the amount of the fixed portion of overhead applied, it is first necessary to compute the predetermined overhead rate for the fixed portion of manufacturing overhead charges.
Predetermined overhead rate for fixed portion of manufacturing overhead = total budgeted fixed overhead / total number of budgeted units
Predetermined overhead rate for fixed portion of manufacturing overhead = $700,000 / 140,000 units = $5 per unit (this is also given in the schedule for Valyn)

The amount of fixed overhead applied is calculated by taking the predetermined overhead rate for fixed manufacturing overhead and multiplying it by the number of units produced.
Applied overhead (fixed portion) = (predetermined overhead rate for fixed overhead)(number of units produced)
Applied overhead (fixed portion) based on number of units produced = $5(130,000) = $650,000

Since only 125,000 units were sold, the fixed portion of applied overhead in cost of goods sold is calculated by taking the 125,000 units sold and multiplying that number by $5, to arrive at $625,000 as the amount of fixed overhead applied, which was charged to cost of goods sold.

Finally, the fixed overhead budget variance must be calculated. This is done by comparing the actual overhead to the total fixed overhead that was applied.
Fixed overhead budget variance = total actual fixed overhead − total fixed overhead applied
Fixed overhead budget variance = $715,000 − $650,000 = $65,000 fixed overhead budget variance (unfavorable, since actual fixed overhead was
greater than the amount that was applied).

The total fixed overhead in cost of goods sold is $690,000 and is made up of the applied overhead of $625,000 in cost of goods sold and the $65,000 unfavorable fixed overhead budget variance.

Total fixed costs charged to cost of goods sold and income = fixed selling expenses + fixed administrative expenses + fixed overhead in cost of goods sold
Total fixed costs charged to cost of goods sold and income = $980,000 + $425,000 + $690,000 = $2,095,000.

Question 48:
Consider the following situation for Donaldson Company for the prior year.

- The company produced 1,000 units and sold 900 units, both as budgeted.
- There were no beginning or ending work-in-process inventories and no beginning finished goods inventory.
- Budgeted and actual fixed costs were equal, all variable manufacturing costs are affected by volume of production only, and all variable selling costs are affected by sales volume only.
- Budgeted per unit revenues and costs were:

<table>
<thead>
<tr>
<th>Per Unit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price</td>
<td>$100</td>
</tr>
<tr>
<td>Direct materials</td>
<td>30</td>
</tr>
<tr>
<td>Direct labor</td>
<td>20</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>10</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5</td>
</tr>
<tr>
<td>Variable selling costs</td>
<td>12</td>
</tr>
<tr>
<td>Fixed selling costs ($3,600 total)</td>
<td>4</td>
</tr>
<tr>
<td>Fixed administrative costs ($1,800 total)</td>
<td>2</td>
</tr>
</tbody>
</table>

Assuming that Donaldson uses variable costing, the operating income for the prior year was:

A. $14,200.

B. $14,800.

C. $13,600.
D. $15,300.

The variable cost operating income is calculated as:

Variable cost operating income = (sales) − (all variable costs) − (all fixed costs)

Sales = (900 units)($100 each) = $90,000

Total variable costs = (number of units)(direct materials cost per unit +
direct labor cost per unit + variable manufacturing overhead cost per unit +
variable selling and administrative cost per unit)
Total variable costs = (900 units)($30 + $20 + $10 + $12) = $64,800

Total fixed costs = (fixed manufacturing costs) + (fixed selling and
administrative costs)

Fixed manufacturing costs = (fixed manufacturing overhead cost per
unit)(budgeted production level)
Fixed manufacturing costs = ($5)(1,000 units) = $5,000

Fixed selling costs are given at $3,600, and fixed administrative costs are
given at $1,800.

Variable cost operating income = $90,000 − $64,800 − $5,000 − $3,600 −
$1,800 = $14,800.

Question 49:

A company makes two joint products from recycled plastic: artificial joists
for construction and plastic designer chairs. The total joint costs are
$140,000, and the process produces 3,000 joists and 2,000 chairs. Joists
sell for $20 and chairs for $50. The average cost per unit is determined to
be $28, resulting in a gross margin of −$24,000 for joists and $44,000 for
chairs. Which of the following joint cost allocation methods was used for
these calculations?

A. Physical measure method.
B. Net realizable value method.
C. Sales value at split-off method.
D. Gross profit method.

The example calculates the price per unit by dividing the total cost by the
total number of units, a physical measure. The resulting skewed gross
margins that make the joists seem very unprofitable are the primary problem with using the physical measure method.

Question 50:
Which one of the following is an advantage of using variable costing?

A. Variable costing is most relevant to long-run pricing strategies.
B. Variable costing complies with the U.S. Internal Revenue Code.
C. Variable costing complies with generally accepted accounting principles.
D. Variable costing makes cost-volume relationships more easily apparent.

Variable costing is a method of inventory costing in which all variable manufacturing costs are included as inventoriable costs. Fixed manufacturing costs are considered period expenses; consequently, fixed costs are not allocated to the units of production in a cost-volume analysis. Thus, with variable costing the analysis is more apparent; the per unit cost stays constant as the volume of production changes.

Question 51:
Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th></th>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inventory in units</td>
<td>35,000</td>
<td>36,000</td>
</tr>
<tr>
<td>Sales in units</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production in units</td>
<td>140,000</td>
<td>130,000</td>
</tr>
<tr>
<td></td>
<td>Per Unit</td>
<td>Total Costs</td>
</tr>
<tr>
<td>Direct material</td>
<td>$12.00</td>
<td>$1,680,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
</tr>
<tr>
<td>Variable manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>overhead</td>
<td>4.00</td>
<td>600,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>660,000</td>
</tr>
<tr>
<td>Variable administrative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>expenses</td>
<td>2.00</td>
<td>280,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
</tr>
<tr>
<td>Total</td>
<td>$65.00</td>
<td>$7,000,000</td>
</tr>
</tbody>
</table>

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined
manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

The value of Valyn Corporation's actual year end finished goods inventory under the absorption costing basis was:

A. $900,000.
B. $1,400,000.
C. $1,200,000.
D. $1,050,000.

Absorption costing product costs consist of direct material, direct labor, and indirect manufacturing costs (both variable and fixed overhead).

The unit product cost using absorption costing is calculated as:
Unit product cost (absorption costing) = direct materials cost per unit + direct labor cost per unit + variable manufacturing overhead cost per unit + fixed manufacturing overhead cost per unit
Unit product cost (absorption costing) = $12 + $9 + $4 + $5 = $30 per unit

Valyn's ending finished goods inventory is 40,000 units (35,000 units in beginning inventory + 130,000 units produced − 125,000 units sold). Thus, the year-end finished goods inventory cost under absorption costing is $30(40,000 units) = $1,200,000.

Question 52:

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year’s planned unit manufacturing cost which was the same as the current year’s planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

The difference between Valyn Corporation’s operating income calculated on the absorption costing basis and calculated on the variable costing basis was:

A. $25,000.
B. $65,000.
C. $40,000.
D. $90,000.

Using absorption costing, product costs consist of direct material, direct labor, and indirect manufacturing costs (both variable and fixed overhead). Using variable costing, product costs consist of direct material, direct labor,
and variable indirect manufacturing costs (variable overhead). Variable costing treats fixed overhead as a period cost. Therefore, the profit under absorption costing is equal to the profit under variable costing, plus the change in the fixed overhead in the absorption costing inventory. When the fixed overhead rate is constant, the only difference between the operating income amounts using variable and absorption costing will be related to the fixed overhead costs.

So, calculate the difference between operating income using absorption costing and operating income using variable costing, by taking the fixed overhead rate per unit and multiplying that by the difference between the number of units produced and the number of units sold.

In this case, the change (difference) = $5(130,000 units produced − 125,000 units sold) = $5(5,000 units) = $25,000.

Question 53:
A manager is charting out the costs for a production process and finds that if she calculates costs at various expected production levels, the change in costs is constant. Above a very high level of sales, the rate is no longer constant. The latter portion is:

A. outside the cost-benefit constraint.
B. no longer a variable cost.
C. no longer a fixed cost.
D. outside the relevant range.

The relevant range is the expected range for a cost driver such as a quantity or amount. Amounts outside the relevant range do not change in a linear fashion.

Question 54:
If a company is implementing business-to-business (B2B) electronic data interchange (EDI) to cut short-term costs, which of the following types of cost drivers is it attempting to influence?

A. Production process design executional cost driver.
B. Complexity structural cost driver.
C. Supplier relationships executional cost driver.
D. Technology structural cost driver.

Executional cost drivers are short-term decisions, and B2B EDI is a means of automating supplier relationships to save time and money.
Question 55:
Normal costing systems are said to offer a user several distinct benefits when compared with actual costing systems. Which one of the following is not a benefit associated with normal costing systems?

* Source: Retired ICMA CMA Exam Questions.

A. A smoothing of product costs throughout the period.
B. A more economical way of attaching overhead to a job or product.
C. More timely costing of jobs and products.
D. Improved accuracy of job and product costing.

Normal costing systems offer the benefits of more timely costing of jobs and products, a smoothing of product costs throughout the period, and a more economical way of attaching overhead to a job or product.

Question 56:
Reducing costs by improving relationships with a vendor over the short term is one example of:

A. an activity-based cost driver.
B. an executional cost driver.
C. a structural cost driver.
D. a volume-based cost driver.

Executional cost drivers focus on short-term operations, reducing costs through concern with work-force commitment and involvement, production design, and supplier relationships.

Question 57:
Which of the following statements is true concerning fixed costs, variable costs, and total costs? Within the relevant range:

A. fixed costs per unit increases as the number of units produced increases.
B. total cost per unit decreases as the number of units produced increases.
C. variable cost per unit increases as the number of units produced increases.
D. fixed costs per unit does not change as the number of units produced increases.

While fixed costs (in total) stay constant over the relevant range, as output increases, fixed costs per unit declines. Since variable costs per unit is a
constant, then total costs per unit must decline as the number of units produced increases.

**Question 58:**

Fitzpatrick Corporation uses a joint manufacturing process in the production of two products, Gummo and Xylo. Each batch in the joint manufacturing process yields 5,000 pounds of an intermediate material, Valdene, at a cost of $20,000.

Each batch of Gummo uses 60% of the Valdene and incurs $10,000 of separate costs. The resulting 3,000 pounds of Gummo sells for $10 per pound.

The remaining Valdene is used in the production of Xylo which incurs $12,000 of separable costs per batch. Each batch of Xylo yields 2,000 pounds and sells for $12 per pound.

Fitzpatrick uses the net realizable value method to allocate the joint material costs. The company is debating whether or not to process Xylo further into a new product, Zinten, which would incur an additional $4,000 in costs and sell for $15 per pound. If Zinten is produced, income would increase by:

A. $2,000.
B. $5,760.
C. $26,000.
D. $14,000.

The increase in income from producing Zinten is calculated by taking the $30,000 market value of Zinten (2,000 pounds at $15 per pound) and subtracting both the $24,000 market value of Xylo (2,000 pounds at $12 per pound) and the $4,000 in additional processing costs.

Increase in income = $30,000 − $24,000 − $4,000 = $2,000

The joint costs and their allocation are sunk and are therefore, irrelevant.

**Question 59:**

Dawn Company has significant fixed overhead costs in the manufacturing of its sole product, auto mufflers. For internal reporting purposes, in which one of the following situations would ending finished goods inventory be higher under direct (variable) costing rather than under absorption costing?
A. If more units were produced than were sold during a given year.

B. None of these situations.

C. In all cases when ending finished goods inventory exists.

D. If more units were sold than were produced during a given year.

Ending finished goods inventory will always be higher under absorption costing because absorption costing involves all costs associated with the manufacturing process using total direct costs and overhead costs associated with the manufacturing of a product as the cost base.

Question 60:

Tempo Company produces three products from a joint process. The three products are sold after further processing as there is no market for any of the products at the split-off point. Joint costs per batch are $315,000. Other product information is shown here:

<table>
<thead>
<tr>
<th>Units produced per batch</th>
<th>Product A</th>
<th>Product B</th>
<th>Product C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20,000</td>
<td>30,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Further processing and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>marketing cost per unit</td>
<td>0.70</td>
<td>3.00</td>
<td>1.72</td>
</tr>
<tr>
<td>Final sales value per unit</td>
<td>5.00</td>
<td>6.00</td>
<td>7.00</td>
</tr>
</tbody>
</table>

If Tempo uses the net realizable value (NRV) method of allocating joint costs, how much of the joint costs will be allocated to each unit of Product C?

A. $3.15.
B. $2.65.
C. $2.10.
D. $3.78.

The joint cost per unit assigned to Product C using the NRV at split-off method is calculated by taking the product’s share of the joint costs of $315,000 and dividing it by the 50,000 units produced.

NRV at split-off for Product A = (product A market value) − (separable costs)
NRV at split-off for Product A = (20,000 units)($5 per unit) − (20,000)($0.70
NRV at split-off for Product A = $100,000 − $14,000 = $86,000
NRV at split-off for Product B = (product B market value) − (separable costs)
NRV at split-off for Product B = (30,000 units)($6 per unit) − (30,000 units)($3.00 per unit) = $180,000 − $90,000 = $90,000
NRV at split-off for Product C = (product C market value) − (separable costs)
NRV at split-off for Product C = (50,000 units)($7 per unit) − (50,000 units)($1.72 per unit) = $350,000 − $86,000 = $264,000
Sum of the three NRV's = $86,000 + $90,000 + $264,000 = $440,000
Product C's share of total costs = ($264,000 / $440,000)($315,000) = $189,000
Product C's cost per unit using NRV at split-off method = $189,000 / 50,000 units = $3.78.

**Question 61:**
In cost terminology, prime costs consist of:

A. direct labor and variable factory overhead.
B. direct labor and direct materials.
C. direct materials and variable factory overhead.
D. direct labor and indirect labor.

Following generally accepted accounting principles, product costs consist of direct material, direct labor, and indirect manufacturing costs (overhead). Prime costs are defined as direct material plus direct labor.

**Question 62:**
Jansen Inc. pays bonuses to its managers based on operating income. The company uses absorption costing, and overhead is applied on the basis of direct labor hours. In order to increase bonuses, Jansen's managers may do all of the following except:

A. increase production schedules independent of customer demands.
B. decrease production of those items requiring the most direct labor.
C. produce those products requiring the most direct labor.
D. defer expenses such as maintenance to a future period.

Absorption costing considers fixed overhead to be a product cost. Therefore, absorption costing operating income is a function of production as well as sales. As production increases, operating income increases; as production decreases, operating income decreases. Since overhead is applied based upon direct labor hours, decreasing production of those items requiring the most direct labor would lower operating income and, consequently, bonuses.

Question 63:
The variance in an absorption costing system that measures the departure from the denominator level of activity that was used to set the fixed overhead rate is the:

A. sales volume variance.
B. flexible budget variance.
C. efficiency variance.
D. production volume variance.

The production volume variance is calculated as:

\[
\text{Production volume variance (or fixed overhead volume variance)} = (\text{fixed overhead rate}) \times (\text{the denominator level of activity} - \text{the standard level of activity for the output achieved})
\]

The denominator level of activity is sometimes referred to as the denominator or normal base.

Question 64:
Roberta Johnson is the manager of SleepWell Inn, one of a chain of motels located throughout the United States. An example of an operating cost at SleepWell that is semivariable is:

A. electricity.
B. the security guard's salary.
C. postage for reservation confirmations.
D. local yellow pages advertising.

* Source: Retired ICMA CMA Exam Questions.
Semivariable costs are costs that are composed of both fixed and variable components. Electricity is considered a semivariable cost as there is a fixed base charge, and as electricity usage increases, the cost of electricity increases.

Question 65:
Xylon Company uses direct (variable) costing for internal reporting and absorption costing for the external financial statements. A review of the firm's internal and external disclosures will likely find:

* Source: Retired ICMA CMA Exam Questions.

A. a difference in the treatment of fixed selling and administrative costs.
B. a contribution margin rather than gross margin in the reports released to shareholders.
C. internal income figures that vary closely with sales and external income figures that are influenced by both units sold and productive output.
D. a higher inventoriable unit cost reported to management than to the shareholders.

When an organization used a variable costing method for internal reporting and absorption costing for external financial statements, an organization will likely find internal income figures that vary closely with sales and external income figures that are influenced by both units sold and productive output.

Question 66:
The distinction between joint products and by-products is largely dependent on:

* Source: Retired ICMA CMA Exam Questions.

A. salvage value.
B. historical costs.
C. prime costs.
D. market value.

The distinction between joint products and by-products is largely dependent on market value.

Question 67:
Which of the following correctly shows the treatment of (1) factory insurance, (2) direct labor, and (3) finished goods shipping costs under absorption costing and variable costing?

*A. Absorption Costing -> Product Cost: 1 2  Period Cost: 3
   Variable Costing -> Product Cost: 2,3  Period Cost: 1.*

*B. Absorption Costing -> Product Cost: 2  Period Cost: 3, 1
   Variable Costing -> Product Cost: 1,2  Period Cost: 3.*

*C. Absorption Costing -> Product Cost: 1, 2  Period Cost: 3
   Variable Costing -> Product Cost: 2  Period Cost: 1, 3.*

*D. Absorption Costing -> Product Cost: 1  Period Cost: 2, 3
   Variable Costing -> Product Cost: 1, 2  Period Cost: 3.*

Absorption costing involves expensing all costs associated with the manufacturing process using total direct costs and overhead costs associated with the manufacturing of a product as the cost base. Under absorption costing, factory insurance and direct labor are considered product costs, and finished goods shipping costs is considered a period cost. Variable costing involves expensing all variable costs associated with the manufacturing of a product. Under variable costing, direct labor is considered a product cost, and factory insurance and finished goods shipping costs are considered period costs.

**Question 68:**

The estimated unit costs for a company using full absorption costing and a plan to produce 20,000 units this period are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Price per unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price per unit</td>
<td>$200</td>
</tr>
<tr>
<td>Direct materials/unit</td>
<td>$ 50</td>
</tr>
<tr>
<td>Direct labor/unit</td>
<td>$ 40</td>
</tr>
<tr>
<td>Variable overhead/unit</td>
<td>$ 10</td>
</tr>
<tr>
<td>Fixed overhead/unit</td>
<td>$ 0</td>
</tr>
<tr>
<td>Variable selling costs/unit</td>
<td>$ 3</td>
</tr>
<tr>
<td>Fixed selling costs/unit</td>
<td>$ 2</td>
</tr>
</tbody>
</table>

Using information from Exhibit B, what are prime costs per unit?

A. $90

B. $108

C. $113.
Prime costs per unit are defined as direct materials per unit plus direct labor per unit. In this case, $50 + $40 = $90 prime costs.

Question 69:
Which one of the following statements is correct regarding absorption costing and variable costing?

A. Gross margins are the same under both costing methods.
B. Overhead costs are treated in the same manner under both costing methods.
C. Variable manufacturing costs are lower under variable costing.
D. If finished goods inventory increases, absorption costing would result in higher income.

Absorption costing considers fixed indirect manufacturing (fixed overhead) to be a product cost chargeable to inventory. Variable costing considers fixed indirect manufacturing (fixed overhead) to be a period cost chargeable to net income. Therefore, the difference between absorption costing income and variable costing income is the change in the amount of fixed overhead in the full absorption cost inventory over the income statement period.

When inventories increase, the amount of the fixed overhead deferred to the balance sheet causes the cost of goods sold in an absorption costing scenario to be lower than the cost of goods sold if variable costing were used. This results in an absorption cost income which is higher than the variable cost income.

Question 70:
Cell Company has discovered that the cost of processing customer invoices is strictly variable within the relevant range. Which one of the following statements concerning the cost of processing customer invoices is incorrect?

A. The cost of processing the 100th customer invoice will be the same as the cost of processing the first customer invoice.
B. The total cost of processing customer invoices will increase as the volume of customer invoices increases.

* Source: Retired ICMA CMA Exam Questions.
C. The cost per unit for processing customer invoices will decline as the volume of customer invoices increases.

D. The average cost per unit for processing a customer invoice will equal the incremental cost of processing one more customer invoice.

Relevant costs are those costs relevant to a process. In this problem, the cost per unit for processing customer invoices will decline as volume of customer invoices increases is incorrect as the cost per unit would actually remain the same if it were a variable cost.

Question 71:

The following information was gathered for the current period of manufacturing production for a firm:

<table>
<thead>
<tr>
<th></th>
<th>DM</th>
<th>CC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning WIP</td>
<td>$14,000</td>
<td>$15,000</td>
<td>$29,000</td>
</tr>
<tr>
<td>Current Period Costs</td>
<td>$240,000</td>
<td>$190,000</td>
<td>$430,000</td>
</tr>
<tr>
<td>Total costs</td>
<td>$254,000</td>
<td>$205,000</td>
<td>$459,000</td>
</tr>
</tbody>
</table>

There were 100 units in beginning work-in-process, which were 20% complete in direct materials (DM) and 30% complete in conversion costs (CC). During the period 2,000 units were started in production and 1,900 were completed. If the firm uses the weighted average inventory method, and equivalent units are calculated as 2,000 for DM and 2,050 for CC, what is the total cost assigned to the units completed?

A. $436,140.
B. $447,760.
C. $408,600.
D. $431,300.

First, compute the cost per equivalent unit: DM = $254,000/2,000 = $127; CC = $205,000/2,050 = $100. Then multiply the total cost of $227 by the number of units completed (1,900) to find $431,300.

Question 72:

Ardmore Enterprises uses a standard cost system in its small appliance division. The standard cost of manufacturing one unit of Zeb is:

- Materials—60 pounds at $1.50 per pound $90
- Labor—3 hours at $12 per hour $36
- Factory overhead—3 hours at $8 per hour $24
- Total standard cost per unit $150
The budgeted variable factory overhead rate is $3 per labor hour, and the budgeted fixed factory overhead is $27,000 per month. During May, Ardmore produced 1,650 units of Zeb compared to a normal capacity of 1,800 units. The actual cost per unit was:

Materials (purchased and used)—
- 58 pounds at $1.65 per pound $95.70
- Labor—3.1 hours at $12 per hour 37.20
- Factory overhead—$39,930 per 1,850 units 24.20
- Total actual cost per unit $157.10

The material price variance for May is:

A. $14,355 unfavorable.
B. $14,355 favorable.
C. $4,950 unfavorable.
D. $4,950 favorable.

The material price variance is calculated as:

Material price variance = (the actual quantity purchased)(the actual price paid − the standard price of the material)

Material price variance = [(58 pounds per unit)(1,650 units)]($1.65 − $1.50) = 95,700($0.15) = $14,355 unfavorable.

It is unfavorable because the actual price paid for the material exceeds the standard price.

Note that the material price variance uses the actual quantity purchased, not the actual quantity used in production.

Question 73:
A firm has $100,000 in direct materials costs, $50,000 in direct labor costs, and $80,000 in overhead. Which of the following is true?

A. Prime costs are $150,000; conversion costs are $180,000.
B. Prime costs are $130,000; conversion costs are $150,000.
C. Prime costs are $150,000; conversion costs are $130,000.
D. Prime costs are $180,000; conversion costs are $150,000.
Prime costs are the combination of direct labor and direct materials costs. Conversion costs are the combination of direct labor and overhead costs.

Question 74:

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory in units</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales in units</td>
<td>140,000</td>
</tr>
<tr>
<td>Production in units</td>
<td>140,000</td>
</tr>
</tbody>
</table>

| Planned Costs | Incurred Costs |
|----------------|
| Per Unit | Total |
| Direct material | $12.00 | $1,680,000 | $1,560,000 |
| Direct labor | 9.00 | 1,260,000 | 1,170,000 |
| Variable manufacturing overhead | 4.00 | 560,000 | 520,000 |
| Fixed manufacturing overhead | 5.00 | 700,000 | 715,000 |
| Variable selling expenses | 8.00 | 1,120,000 | 1,000,000 |
| Fixed selling expenses | 7.00 | 660,000 | 860,000 |
| Variable administrative expenses | 2.00 | 280,000 | 250,000 |
| Fixed administrative expenses | 3.00 | 420,000 | 425,000 |
| Total | $50.00 | $7,000,000 | $6,620,000 |

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

The total variable cost expensed by Valyn Corporation under the variable costing basis was:

A. $3,250,000.
Total variable cost expensed by Valyn is equal to the variable cost per unit multiplied by the number of units sold. Note that this includes all variable costs, not just variable costs related to production.

Variable cost per unit is calculated as follows:
Variable cost per unit = direct materials cost per unit + direct labor cost per unit + variable manufacturing overhead cost per unit + variable selling cost per unit + variable administrative expenses
Variable cost per unit = $12 + $9 + $4 + $8 + $2 = $35 per unit

Sales volume is 125,000 units.
Total variable cost expensed = (variable cost per unit)(number of units sold)
Total variable cost expensed = ($35 per unit)(125,000 units) = $4,375,000.

**Question 75:**

A production process has laborers who work for two hours, must wait for a half hour while a machine is set up, and then work for another two hours before taking a half-hour unpaid lunch. On this day, a breakdown occurs after lunch, and the laborers lose one hour of productive time before putting in a final three hours for the day. How many direct labor (DL) hours and indirect labor (IL) hours per person were spent?

A. Seven hours DL; one-and-a-half hours IL.
B. Seven hours DL; two hours IL.
C. Eight-and-a-half hours DL.
D. Seven-and-a-half hours DL; one-hour IL.

The seven hours of productive time are counted as direct labor. The half-hour of wait time and the one hour of downtime are both counted as indirect labor, since the workers were idle during that time. The lunch period is unpaid, so it is not counted at all.

**Question 76:**

In a decision analysis situation, which one of the following costs is not likely to contain a variable cost component?

A. labor.
Variable costs are those that respond automatically to change in an activity level (cost driver). Depreciation is usually determined by a time-based method rather than an activity-based method. Therefore, depreciation has no variable component and is a fixed cost.

**Question 77:**

Ardmore Enterprises uses a standard cost system in its small appliance division. The standard cost of manufacturing one unit of Zeb is:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials—60 pounds at $1.50 per pound</td>
<td>$90</td>
</tr>
<tr>
<td>Labor—3 hours at $12 per hour</td>
<td>36</td>
</tr>
<tr>
<td>Factory overhead—3 hours at $8 per hour</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total standard cost per unit</strong></td>
<td><strong>$150</strong></td>
</tr>
</tbody>
</table>

The budgeted variable factory overhead rate is $3 per labor hour, and the budgeted fixed factory overhead is $27,000 per month. During May, Ardmore produced 1,650 units of Zeb compared to a normal capacity of 1,800 units. The actual cost per unit was:

<table>
<thead>
<tr>
<th>Item (purchased and used)</th>
<th>Cost per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>58 pounds at $1.65 per pound</td>
<td>$95.70</td>
</tr>
<tr>
<td>Labor—3.1 hours at $12 per hour</td>
<td>37.20</td>
</tr>
<tr>
<td>Factory overhead—$39,930 per 1,850 units</td>
<td>24.20</td>
</tr>
<tr>
<td><strong>Total actual cost per unit</strong></td>
<td><strong>$157.10</strong></td>
</tr>
</tbody>
</table>

The labor rate variance for May is:

A. $1,650 unfavorable.
B. $3,300 unfavorable.
C. $3,300 favorable.
D. $0.

The labor rate variance is calculated as follows:

\[
\text{Labor rate variance} = (\text{the actual hours worked and paid for})(\text{the actual labor rate paid} - \text{the standard labor rate used})
\]

\[
\text{Labor rate variance} = [(3.1 \text{ hours per unit})(1,650 \text{ units})](\$12 - \$12) = (5,115)(\$0) = \$0.
\]
The actual rate is equal to the standard rate, so there is no labor rate variance.

**Question 78:**

Petro-Chem Inc. is a small company that acquires high-grade crude oil from low-volume production wells owned by individuals and small partnerships. The crude oil is processed in a single refinery into Two Oil, Six Oil, and impure distillates. Petro-Chem does not have the technology or capacity to process these products further and sells most of its output each month to major refineries. There were no beginning inventories of finished goods or work-in-process on November 1. The production costs and output of Petro-Chem for November are:

| Crude oil acquired and placed in production | $5,000,000 |
| Direct labor and related costs           | 2,000,000  |
| Factory overhead                         | 3,000,000  |

**Production and sales:**

- Two Oil, 300,000 barrels produced; 80,000 barrels sold at $20 each.
- Six Oil, 240,000 barrels produced; 120,000 barrels sold at $30 each.
- Distillates, 120,000 barrels produced and sold at $15 per barrel.

The portion of the joint production costs assigned to Six Oil based upon physical output would be:

A. $3,750,000.
B. $4,800,000.
C. $1,818,181.
D. **$3,636,363**.

Out of a total of 660,000 barrels (240,000 Six Oil + 300,000 Two Oil + 120,000 impure distillates), 240,000 barrels of Six Oil were produced.

The total joint costs to be allocated to the products are $10,000,000 ($5,000,000 crude oil acquired and placed in production + $2,000,000 direct labor and related costs + $3,000,000 factory overhead).
Therefore, the joint costs allocated to Six Oil using physical units is calculated as:
Joint costs allocated to Six Oil = (240,000 barrels/660,000 barrels)($10,000,000) = $3,636,363.

**Question 79:**
Tucariz Company processes Duo into two joint products, Big and Mini. Duo is purchased in 1,000 gallon drums for $2,000. Processing costs are $3,000 to process the 1,000 gallons of Duo into 800 gallons of Big and 200 gallons of Mini. The selling price is $9 per gallon for Big and $4 per gallon for Mini. If the sales value at split-off method is used to allocate joint costs to the final products, the per gallon cost (rounded to the nearest cent) of producing Big is:

A. $3.38 per gallon.
B. $4.50 per gallon.
C. $5.00 per gallon.
D. $5.63 per gallon.

The per gallon cost of Big, using the relative sales value at split-off method is calculated by finding Big's share of the joint costs and dividing it by the 800 gallons produced.

Sales value of Big at split-off = (800 gallons)($9) = $7,200
Sales value of Mini at split-off = (200 gallons)($4) = $800
Total sales value (Big + Mini) at split-off = $7,200 + $800 = $8,000
Big's share of the joint costs = ($7,200/$8,000)($5,000) = $4,500
Big's cost per gallon = $4,500 / 800 gallons = $5.625, or $5.63 rounded.

**Question 80:**
Taylor Corporation is determining the cost behavior of several items in order to budget for the upcoming year. Past trends have indicated the following dollars were spent at three different levels of output.

<table>
<thead>
<tr>
<th>Unit Levels</th>
<th>10,000</th>
<th>12,000</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost A</td>
<td>$25,000</td>
<td>$29,000</td>
<td>$35,000</td>
</tr>
</tbody>
</table>
In establishing a budget for 14,000 units, Taylor should treat Costs A, B, and C, respectively, as:

* Source: Retired ICMA CMA Exam Questions.

A. semivariable, fixed, and variable.
B. variable, fixed, and variable.
C. semivariable, semivariable, and semivariable.
D. variable, semivariable, and semivariable.

The cost behavior pattern over a relevant range of production would be semivariable, fixed, and variable for cost A, cost B, and cost C, respectively. A relevant range is a range of production volumes where the range of activity for which the assumptions of cost behavior reasonably hold true and the range of activity over which the company plans to operate.

Semivariable costs are costs that are composed of both fixed and variable components. The variable component causes them to vary in total with changes in volume. The fixed component, however, prevents them from varying in direct proportion to the change in volume. Cost A is considered a semivariable cost as it is variable in the sense that greater levels of production increase total cost however the variable cost per unit does not remain constant regardless of production volume. As production increases, the cost per unit decreases. The cost per unit at 10,000 unit levels, 12,000 unit levels, and 15,000 unit levels is $2.90, $2.42, and $2.33 respectively.

Cost B is a fixed cost of $15,000, as it remains constant at any level of activity.

Cost C is a variable cost as it changes in proportion to the level of activity. Variable costs per unit remain constant regardless of production volume. The cost per unit remains at $0.67 when production is 10,000, 12,000 and 15,000 (computed by dividing cost C by the applicable unit level).

**Question 81:**

A company has a beginning material inventory of $50,000, makes purchases of $20,000, and has an ending materials inventory of $30,000. If its beginning work-in-process (WIP) inventory is $100,000 and ending WIP
inventory is $60,000 and its conversion costs are $80,000, what is its cost of goods manufactured for the period?

A. $180,000.
B. $160,000.
C. $360,000.
D. $220,000.

Direct materials (DM) used is equal to the beginning material inventory plus purchases minus ending material inventory ($50,000 + $20,000 − $30,000 = $40,000). Cost of goods manufactured is beginning WIP inventory plus DM, plus conversion costs, minus ending WIP inventory ($100,000 + $40,000 + $80,000 − $60,000 = $160,000).

Question 82:
Huron Industries has recently developed two new products, a cleaning unit for laser discs and a tape duplicator for reproducing home movies taken with a video camera. However, Huron has only enough plant capacity to introduce one of these products during the current year. The company controller has gathered the following data to assist management in deciding which product should be selected for production.

Huron's fixed overhead includes rent and utilities, equipment depreciation, and supervisory salaries. Selling and administrative expenses are not allocated to products.

For Huron's tape duplicator, the unit costs for raw materials, machining, and assembly represent:

A. prime costs.
B. common costs.
Following generally accepted accounting principles (GAAP), product costs consist of direct material, direct labor, and indirect manufacturing costs (overhead). Prime costs are defined as direct material plus direct labor.

**Question 83:**

Indirect and common costs often make up a significant portion of the cost of a product. All of the following are reasons for indirect cost allocation to cost objects except to:

* Source: Retired ICMA CMA Exam Questions.

A. justify costs for reimbursement purposes.

B. measure income and assets for external reporting purposes.

C. to conform to GAAP.

D. reduce total costs identified with products.

Indirect cost allocation to cost objects include the measure of income and assets for external reporting purposes, to justify costs for reimbursement purposes, and to conform to GAAP.

**Question 84:**

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over or underapplied manufacturing overhead is closed to the cost of goods sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price was $70.00 per unit.

Valyn Corporation's absorption costing operating income was:

A. lower than variable costing operating income because actual production exceeded actual sales.

B. higher than variable costing operating income because actual production exceeded actual sales.

C. lower than variable costing operating income because actual sales exceeded actual production.

D. higher than variable costing operating income because actual sales exceeded actual production.

Using an absorption costing system, product costs consist of direct
material, direct labor, and indirect manufacturing costs (both variable and fixed overhead). Using a variable costing system, product costs consist of direct material, direct labor, and variable indirect manufacturing costs (variable overhead only; fixed overhead is not included in product costs using variable costing).

Fixed manufacturing overhead is not included in product costs in a variable costing system. Instead, a variable costing system treats fixed overhead as a period cost. Therefore, the profit under absorption costing is calculated by taking the profit under variable costing and adding the change in the fixed overhead in the absorption cost inventory. When production exceeds sales, the change is positive. If sales exceed production, then the change is negative.

**Question 85:**

When comparing absorption costing with variable costing, the difference in operating income can be explained by the difference between the:

* Source: Retired ICMA CMA Exam Questions.

A. ending inventory in units and the beginning inventory in units, multiplied by the budgeted fixed manufacturing cost per unit.

B. units sold and the units produced, multiplied by the budgeted variable manufacturing cost per unit.

C. units sold and the units produced, multiplied by the unit sales price.

D. ending inventory in units and the beginning inventory in units, multiplied by the unit sales price.

The difference in operating income when comparing absorption costing with variable costing can be explained by taking the ending inventory in units and the beginning inventory in units, multiplied by the budgeted fixed manufacturing cost per unit.

**Question 86:**

Whitehall Corporation produces chemicals used in the cleaning industry. During the previous month Whitehall incurred $300,000 of joint costs in producing 60,000 units of AM-12 and 40,000 units of BM-36. Whitehall uses the units-of-production method to allocate joint costs. Currently, AM-12 is sold at split-off for $3.50 per unit. Flank Corporation has approached Whitehall to purchase all of the production of AM-12 after further processing. The further processing will cost Whitehall $90,000.

Assume that Whitehall Corporation agreed to sell AM-12 to Flank Corporation after further processing for $5.50 per unit. During the first
month of production, Whitehall sold 50,000 units with 10,000 units remaining in inventory at the end of the month. With respect to AM-12, which one of the following statements is correct?

A. The gross profit last month was $200,000 and the inventory value is $45,000.

B. The gross profit last month was $50,000 and the inventory value is $45,000.

C. The gross profit last month was $200,000 and the inventory value is $30,000.

D. The gross profit last month was $50,000 and the inventory value is $15,000.

The gross profit for AM-12 is derived by taking its sales revenue less its cost of goods sold.

Sales is calculated by taking the selling price per unit and multiplying it by the number of units sold, as follows:
Sales revenue = $5.50(50,000 units) = $275,000

Cost of goods sold is calculated by taking the unit cost and multiplying it by the number of units sold. The unit cost is made up of $3.00 per unit of joint costs ($300,000 in total joint costs, divided by 100,000 units produced) and $1.50 per unit in separable costs.

Cost of goods sold = $4.50(50,000 units sold) = $225,000
Gross profit = sales revenue − cost of goods sold = $275,000 − $225,000 = $50,000

Inventory value = (cost per unit)(number of units remaining in inventory)
Inventory value = $4.50(10,000 units) = $45,000.

Question 87:
Assuming that a management accountant wants to minimize reported net income, which of the following costing methods would show the lowest net income when the company increases its ending inventory?

A. Absorption costing.

B. Standard costing.

C. Normal costing.

D. Variable costing.
When more units are produced than sold, variable costing will have lower net income than absorption costing, because variable costing leaves more costs in the cost of goods sold than in inventory. Higher costs in the cost of goods sold equate to a lower net income.

**Question 88:**

Property taxes are a:

A. committed direct cost.
B. discretionary indirect cost.
C. committed indirect cost.
D. discretionary direct cost.

Costs can be discretionary or committed. Committed costs are costs that cannot be omitted due to strategic or operational priorities. Property taxes are a committed cost. Indirect costs are costs that cannot be directly traced to a process or product, such as depreciation, taxes, salaries paid to sales people, insurance, and lease costs.

**Question 89:**

Using the information from Exhibit A, assume that the goods sold were sold with a 50% mark-up. What is gross profit this period?

A. $62,000.
B. $124,000.
C. $44,000.
D. $56,000.
Net purchases in this problem is $58,000 − $4,000 + $12,000 = $66,000. Direct materials used is $40,000 + $66,000 − $33,000 = $73,000.

Manufacturing costs are the total of direct materials used, direct labor and factory overhead, so, manufacturing costs = $73,000 + $42,000 + $13,000 = $128,000.

Cost of goods manufactured (COGM) = beginning work-in-process (WIP) inventory + manufacturing costs − ending WIP inventory, so,
COGM = $13,000 + $128,000 − $15,000 = $126,000.

Cost of goods sold (COGS) = beginning finished goods inventory + COGM − ending FG inventory, so,
COGS = $20,000 + $126,000 − $22,000 = $124,000.

If sold at a mark-up of 50%, the sales price is $124,000 × 1.5 = $186,000 and the gross profit is $186,000 − $124,000 = $62,000.

Question 90:

The primary purpose for allocating common costs to joint products is to determine:

* Source: Retired ICMA CMA Exam Questions.

A. the variance between budgeted and actual common costs.
B. the inventory cost of joint products for financial reporting.
C. the selling price of a by-product.
D. whether or not one of the joint products should be discontinued.

The primary purpose for allocating common costs to joint products is to determine the inventory cost of joint products for financial reporting.

Question 91:

The method of inventory costing in which direct manufacturing costs and manufacturing overhead costs, both variable and fixed, are considered as inventoriable costs is best described as:

A. absorption costing.
B. variable costing.
C. direct costing.
D. conversion costing.
Absorption costing follows generally accepted accounting principles (GAAP). Under GAAP, product costs consist of direct material, direct labor, and both variable and fixed indirect manufacturing costs (overhead).

**Question 92:**
Assuming that a management accountant wants to maximize reported net income, which of the following costing methods would show the greatest net income when the company increases its ending inventory?

A. Normal costing.
B. Standard costing.
C. Variable costing.
D. Absorption costing.

When more units are produced than sold, absorption costing will have higher net income than variable costing, because absorption costing leaves a higher proportion of costs in inventory. Lower costs for the items actually sold equate to a higher net income.

**Question 93:**

<table>
<thead>
<tr>
<th>Exhibit A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twinks, Inc. had the following inventories at the beginning and end of the current period:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Finished goods inventory</td>
</tr>
<tr>
<td>WIP inventory</td>
</tr>
<tr>
<td>Direct materials inventory</td>
</tr>
<tr>
<td>Additional information assembled:</td>
</tr>
<tr>
<td>Direct materials purchased</td>
</tr>
<tr>
<td>Purchase discounts</td>
</tr>
<tr>
<td>Transportation in</td>
</tr>
<tr>
<td>Direct labor costs</td>
</tr>
<tr>
<td>Factory overhead (actual)</td>
</tr>
</tbody>
</table>

Using the information from Exhibit A, what is cost of goods manufactured (COGM) for the period?

A. $128,000.
B. $114,000.
C. $107,000.
D. $126,000.
Net purchases in this problem is $58,000 − $4,000 + $12,000 = $66,000. Direct materials (DM) used is $40,000 + $66,000 − $33,000 = $73,000. Adding DM used, direct labor and factory overhead, manufacturing costs total $73,000 + $42,000 + $13,000 = $128,000. COGM = beginning work-in-process (WIP) inventory + manufacturing costs - ending WIP inventory. In this problem, COGM = $13,000 + $128,000 − $15,000 = $126,000.

Question 94:

The law of diminishing marginal capacity applies to:

A. volume-based cost drivers as they reach the end of their relevant range.
B. activity-based cost drivers as they attain their minimum marginal capacity.
C. activity-based cost drivers as they bridge between two different activities.
D. volume-based cost drivers as they begin to get past their learning curves.

Up to a certain level of production, costs will increase linearly with the increase in production (the relevant range). At a certain point when the capacity of the persons or equipment reaches its limit, rises in volume will generate a more than proportional increase in costs, called the law of diminishing marginal capacity. This curve applies to volume-based cost drivers.

Question 95:

The estimated unit costs for a company using absorption (full) costing and planning to produce and sell at a level of 12,000 units per month are:

<table>
<thead>
<tr>
<th>Cost item</th>
<th>Estimated Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct material</td>
<td>$32</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$20</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$15</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$6</td>
</tr>
<tr>
<td>Variable selling</td>
<td>$3</td>
</tr>
<tr>
<td>Fixed selling</td>
<td>$4</td>
</tr>
</tbody>
</table>

Estimated total variable costs per unit are:

A. $70.
B. $32.
C. $67.
D. $52.

Total variable cost per unit = Direct Materials costs + Direct Labor Costs +
Variable Manufacturing Overhead Costs + Variable Selling Costs
Total variable cost per unit = $32 + $20 + $15 + $3 = $70.

Question 96:
Chassen Company, a cracker and cookie manufacturer, has the following unit costs for the month of June:

<table>
<thead>
<tr>
<th>Variable manufacturing cost</th>
<th>Variable marketing cost</th>
<th>Fixed manufacturing cost</th>
<th>Fixed marketing cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5.00</td>
<td>$3.50</td>
<td>$2.00</td>
<td>$4.00</td>
</tr>
</tbody>
</table>

A total of 100,000 units were manufactured during June of which 10,000 remain in ending inventory. Chassen uses the first-in, first-out (FIFO) inventory method, and the 10,000 units are the only finished goods inventory at month-end. Using the full absorption costing method, Chassen's finished goods inventory value would be:

A. $70,000.
B. $145,000.
C. $85,000.
D. $50,000.

The full absorption cost inventory consists of variable and fixed manufacturing costs per unit multiplied by the number of units in the inventory.

Full absorption cost inventory = ($5 + $2)(10,000 units) = $7(10,000 units) = $70,000.

D2: Costing Systems

Question 1:
Jones Corporation uses a first-in, first-out (FIFO) process costing system. Jones has the following unit information for the month of August:
The number of equivalent units of production for conversion costs for the month of August is:

A. 88,000 units.
B. 92,300 units.
C. 92,700 units.
D. 87,300 units.

FIFO follows the actual flow of the units through the process. Therefore, the equivalent units of production used to calculate conversion costs for December can be calculated as:

\[
\text{Equivalent units, conversion costs} = (\text{units in beginning inventory})(1 − \text{the completion rate at the beginning of the period}) + (\text{units started and finished}) + (\text{units in ending inventory})(\text{completion %})
\]

\[
\text{Equivalent units, conversion costs} = (10,000 \text{ units})(1 − 0.75) + (80,000 \text{ units}) + (8,000 \text{ units})(0.6)
\]

\[
\text{Equivalent units, conversion costs} = 2,500 + 80,000 + 4,800 = 87,300.
\]

**Question 2:**

Smile Labs develops 35mm film using a four-step process that moves progressively through four departments. The company specializes in overnight service and has the largest drug store chain as its primary customer. Currently, direct labor, direct materials, and overhead are accumulated by department. The cost accumulation system that **best** describes the system Smile Labs is using is:

A. operation costing.
B. job order costing.
C. activity-based costing.
D. process costing.

Process costing accumulates costs by process or department rather than by job. It is used when costing continuous production operations, as opposed to intermittent, or batch, production operations.

**Question 3:**

Kimbeth Manufacturing uses a process cost system to manufacture dust density sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
<td>16,000</td>
</tr>
<tr>
<td>Started in production during May</td>
<td>100,000</td>
</tr>
<tr>
<td>Completed production during May</td>
<td>92,000</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are:

- Beginning inventory costs are: materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are: materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the first-in, first-out (FIFO) method, the equivalent units of production for conversion costs are:

A. 101,600 units.
B. 85,600 units.
C. **98,400 units.**
D. 88,800 units.

The FIFO approach follows the production flow and assumes that units will be sold in the order in which they were placed in inventory.

To calculate the equivalent units of production for conversion costs using FIFO, calculate the equivalent units for:
1. units in beginning inventory,
2. products started into production during the month, and,
3. units in ending inventory.

First, the 16,000 units in the beginning inventory would be completed, requiring the addition of 12,800 \([(16,000)(1 - 0.2)]\) equivalent units for conversion costs.

Next, of the 100,000 units started during the month, 76,000 would be completed, requiring 76,000 equivalent units for conversion costs. (92,000 units completed during month − 16,000 units from beginning inventory = 76,000 units)

Lastly, of the 100,000 units started, 24,000 would be in the ending inventory, 40% complete with respect to conversion costs, requiring 9,600 \([(0.40)(24,000)]\) equivalent units for conversion costs.

Therefore, the total equivalent units for conversion costs would be 12,800 + 76,000 + 9,600 = 98,400.

**Question 4:**

Pelder Products Company manufactures two types of engineering diagnostic equipment used in construction. The two products are based upon different technologies, x-ray and ultra-sound, but are manufactured in the same factory. Pelder has computed the manufacturing cost of the x-ray and ultra-sound products by adding together direct materials, direct labor, and overhead cost applied based on the number of direct labor hours. The factory has three overhead departments that support the single production line that makes both products. Budgeted overhead spending for the departments is as follows:

<table>
<thead>
<tr>
<th>Department</th>
<th>Engineering Design</th>
<th>Material Handling</th>
<th>Setup</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$6,000</td>
<td>$5,000</td>
<td>$3,000</td>
<td>14,000</td>
</tr>
</tbody>
</table>

Pelder's budgeted manufacturing activities and costs for the period are:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X-Ray</td>
</tr>
<tr>
<td>Units produced and sold</td>
<td>50</td>
</tr>
<tr>
<td>Direct materials used</td>
<td>$5,000</td>
</tr>
<tr>
<td>Direct labor hours used</td>
<td>100</td>
</tr>
<tr>
<td>Direct labor cost</td>
<td>$4,000</td>
</tr>
<tr>
<td>Number of parts used</td>
<td>400</td>
</tr>
</tbody>
</table>
Number of engineering changes | 2 | 1
Number of product setups | 8 | 7

The budgeted cost to manufacture one ultra-sound machine using the activity-based costing method is:

A. $264.
B. $293.
C. $225.
D. $305.

The budgeted cost to manufacture one ultra-sound machine using the activity-based costing method is calculated as:

Budgeted cost, one machine, activity-based costing = (direct material cost per machine) + (direct labor cost per machine) + (manufacturing overhead cost per machine)

Budgeted cost, one machine, activity-based costing = ($8,000/100 units) + ($12,000/100 units) + (manufacturing overhead cost per machine)

Budgeted cost, one machine, activity-based costing = $80 + $120 + (manufacturing overhead cost per machine)

The manufacturing overhead costs consist of engineering design, material handling, and set-up costs assigned to ultra-sound machines. To compute the per unit manufacturing overhead cost, divide the total manufacturing overhead costs by 100 units.

Manufacturing overhead costs = (engineering design costs) + (material handling costs) + (set-up costs)
Manufacturing overhead costs = ($6,000)/(2+1) + ((5,000)(600) / (1,000 parts used)) + (($3,000)(7) / (15 set-ups))

Manufacturing overhead costs = $2,000 + $3,000 + $1,400 = $6,400

Manufacturing overhead costs per unit = ($6,400) / 100 units = $64 per unit

Budgeted cost, one machine, activity-based costing = $80 + $120 + $64 = $264.

Question 5:
A manufacturing company has begun work on a batch of units at the beginning of the current period with no work in process at that point. The manufacturing process adds direct materials at the beginning of the process and adds direct labor and factory overhead evenly throughout the
process. If the units are considered to be 60% complete in conversion costs at the end of the period, in which of the following accounts are the costs held?

A. 60% of conversion costs are in factory overhead and direct materials costs are in finished goods inventory.

B. 60% of conversion costs are in work-in-process inventory and direct materials costs are in finished goods inventory.

C. Direct materials costs are in materials inventory and all conversion costs are in work-in-process inventory.

D. All costs are in work-in-process inventory.

The work-in-process inventory account contains the cost of all materials and conversion costs that have begun the production process but are not finished by the end of the reporting period. Even though direct materials are added at the beginning of the process, the units themselves are not complete; the material costs remain with the units.

**Question 6:**

The Chocolate Baker specializes in chocolate baked goods. The firm has long assessed the profitability of a product line by comparing revenues to the cost of goods sold. However, Barry White, the firm's new accountant, wants to use an activity-based costing system that takes into consideration the cost of the delivery person. Listed below are activity and cost information relating to two of Chocolate Baker's major products.

<table>
<thead>
<tr>
<th></th>
<th>Muffins</th>
<th>Cheesecake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$53,000</td>
<td>$46,000</td>
</tr>
<tr>
<td>Cost of goods sold</td>
<td>26,000</td>
<td>21,000</td>
</tr>
</tbody>
</table>

**Delivery Activity**

- Number of deliveries: 150, 85
- Average length of delivery: 10 Minutes, 15 Minutes
- Cost per hour for delivery: $20.00, $20.00

Using activity-based costing, which one of the following statements is correct?

A. The cheesecakes are $75 more profitable.

B. The muffins are $2,000 more profitable.

C. The muffins have a higher profitability as a percentage of sales and, therefore, are more advantageous.
D. The muffins are $1,925 more profitable.

The gross profit for muffins after assigning delivery costs would be calculated as:

Gross profit, muffins = revenue − cost of goods sold − assigned delivery costs
Gross profit, muffins = $53,000 − $26,000 − assigned delivery costs
Gross profit, muffins = $27,000 − assigned delivery costs

The assigned delivery costs are calculated as:
Assigned delivery costs, muffins = (number of deliveries)(cost per delivery)
Assigned delivery costs, muffins = (150 deliveries)(10 minutes/60 minutes)($20 per hour) = $500
Gross profit for muffins = $27,000 − $500 = $26,500

The gross profit for cheesecake after assigning delivery costs would be calculated as:
Gross profit, cheesecake = revenue − cost of goods sold − assigned delivery costs
Gross profit, cheesecake = $46,000 − $21,000 − assigned delivery costs
Gross profit, cheesecake = $25,000 − assigned delivery costs

The assigned delivery costs are calculated as:
Assigned delivery costs, cheesecake = (number of deliveries)(cost per delivery)
Assigned delivery costs, cheesecake = (85 deliveries)(15 minutes/60 minutes)($20 per hour) = $425
Gross profit for cheesecake = $25,000 − $425 = $24,575

The gross profit for cheesecake is $1,925 less than the gross profit for muffins.
$26,500 − $24,575 = $1,925.

Question 7:
A company has a method of collecting and organizing cost information in an accounting system, called (1)_______. This system performs (2)_______, which (3)_______ indirect costs and (4)_______ direct costs.

A. (1) cost assignment, (2) cost accumulation, (3) allocates, (4) traces.
B. (1) cost assignment, (2) cost accumulation, (3) traces, (4) allocates.
C. (1) cost accumulation, (2) cost assignment, (3) allocates, (4) traces.
D. (1) cost accumulation, (2) cost assignment, (3) traces, (4) allocates.

Cost accumulation collects and organizes cost information in an accounting system. Cost assignment uses both allocation and tracing to
assign accumulated costs to a cost object. Indirect relationship costs are allocated and direct relationship costs are traced.

**Question 8:**
SANSCOM Corporation utilizes an activity-based costing system for applying costs to its two products, P and Q. In the assembly department, material handling costs vary directly with the number of parts inserted into the product. Machinery is recalibrated and oiled each weekend regardless of the number of parts inserted during the previous week. Both material handling and machinery maintenance costs are charged to the product on the basis of the number of parts inserted. Due to reengineering of the production process for Product P, the number of insertion parts per finished unit has been reduced. How will the redesign of the production process for Product P affect the activity-based cost of Product Q?

A. Material handling cost per Q unit will increase, and machinery maintenance cost per Q unit will remain unchanged.

B. Material handling cost per Q unit will increase, and machinery maintenance cost per Q unit will increase.

C. Material handling cost per Q unit will remain unchanged, and machinery maintenance cost per Q unit will remain unchanged.

D. Material handling cost per Q unit will remain unchanged, and machinery maintenance cost per Q unit will increase.

Material handling costs are variable and machinery maintenance costs are fixed. Because the variable costs are being assigned by the cost driver, material handling cost per Q unit will remain unchanged. The fixed cost per unit will increase, as that cost will now be spread over a smaller number of cost driver units.

**Question 9:**
Kimbeth Manufacturing uses a process cost system to manufacture dust density sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
<td>16,000</td>
</tr>
<tr>
<td>Started in production during May</td>
<td>100,000</td>
</tr>
<tr>
<td>Completed production during May</td>
<td>92,000</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.
Costs pertaining to the month of May are:

- Beginning inventory costs are: materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are: materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the first-in, first-out (FIFO) method, the cost per equivalent unit of conversion cost for May is:

A. $5.65.
B. $6.00.
C. $6.20.
D. $5.83.

The FIFO approach follows the production flow and assumes that units will be sold in the order in which they were placed in inventory.

In order to compute the cost per equivalent unit for conversion costs, it is first necessary to calculate the number of equivalent units with respect to conversion costs.

To calculate the equivalent units of production for conversion costs using FIFO, calculate the equivalent units for:
1. units in beginning inventory,
2. products started into production during the month, and,
3. units in ending inventory.

First, the 16,000 units in the beginning inventory would be completed, requiring the addition of 12,800 \([(16,000)(1 - 0.2)]\) equivalent units for conversion costs.

Next, of the 100,000 units started during the month, 76,000 would be completed, requiring 76,000 equivalent units for conversion costs. (92,000 units completed during month − 16,000 units from beginning inventory = 76,000 units)

Lastly, of the 100,000 units started, 24,000 would be in the ending inventory, 40% complete with respect to conversion costs, requiring 9,600 \([(0.40)(24,000)]\) equivalent units for conversion costs.
The total equivalent units for conversion costs would be 12,800 + 76,000 + 9,600 = 98,400.

Conversion costs consist of direct labor and factory overhead.
Conversion costs = $182,880 (direct labor) + $391,160 (factory overhead)
Conversion costs = $574,040

Therefore, the equivalent unit cost for conversion = ($574,040 conversion costs) / (98,400 equivalent units for conversion costs) = $5.83 per unit.

Question 10:
A sporting goods manufacturer buys wood as a direct material for baseball bats. The Forming Department processes the baseball bats, and the bats are then transferred to the Finishing Department where a sealant is applied. The Forming Department began manufacturing 10,000 "Casey Sluggers" during the month of May. There was no beginning inventory. Costs for the Forming Department for the month of May were as:

<table>
<thead>
<tr>
<th>Direct materials</th>
<th>Conversion costs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$33,000</td>
<td>17,000</td>
<td>$50,000</td>
</tr>
</tbody>
</table>

A total of 8,000 bats were completed and transferred to the Finishing Department; the remaining 2,000 bats were still in the forming process at the end of the month. All of the Forming Department's direct materials were placed in process but, on average, only 25% of the conversion cost was applied to the ending work-in-process inventory.

The cost of the units transferred to the Finishing Department is:

A. $50,000.
B. $30,000.
C. $42,400.  
D. $40,000.

In a process costing system, costs may be added to a product at different points in the manufacturing process. In this scenario, all of the direct material costs have been placed in process for the 10,000 units transferred to the Finishing Department, but only 25% of the conversion costs (conversion costs = direct labor + manufacturing overhead) have been applied to the units which were transferred to the Finishing Department.
The cost of the units transferred to the Finishing Department is calculated by taking the number of units that were transferred out and multiplying that number by the total manufacturing cost per unit.

Cost of units transferred out = (units transferred out)(manufacturing cost per unit)

Number of units transferred to Finishing Department = 8,000 units

Manufacturing cost per unit = direct material cost applied per unit + conversion cost applied per unit

Direct material costs applied per unit = $33,000 / 10,000 units = $3.30 per unit
(Note that direct material costs are related to all 10,000 units, so that number must be used as the denominator).

Conversion costs applied during the period totaled $17,000 and they were applied in full to the 8,000 units that were transferred out, as well as 25% applied to the units remaining in process (2000 units x 0.25 = 500 equivalent units).

Conversion costs per unit = ($17,000) / (8,000 units + 500 units) = $17,000 / 8,500 units = $2.00 per unit

Cost of units transferred out = (units transferred out)(manufacturing cost per unit)

Cost of units transferred out = (8,000)($3.30 + $2.00) = (8,000)($5.30) = $42,400

Question 11:

New-Rage Cosmetics has used a traditional cost accounting system to apply quality control costs uniformly to all products at a rate of 14.5% of direct labor cost. Monthly direct labor cost for Satin Sheen makeup is $27,500. In an attempt to more equitably distribute quality control costs, New-Rage is considering activity-based costing (ABC). The monthly data shown in the chart below have been gathered for Satin Sheen makeup.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost Driver</th>
<th>Cost Rates</th>
<th>Quantity for Satin Sheen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming material inspection</td>
<td>Type of material</td>
<td>$11.50 per type</td>
<td>12 types</td>
</tr>
<tr>
<td>In-process inspection</td>
<td>Number of units</td>
<td>$0.14 per unit</td>
<td>17,500 units</td>
</tr>
<tr>
<td>Product certification</td>
<td>Per order</td>
<td>$77 per order</td>
<td>25 orders</td>
</tr>
</tbody>
</table>

The monthly quality control cost assigned to Satin Sheen makeup using ABC is:

A. $525.50 lower than the cost using the traditional system.
B. $8,500.50.

C. $525.50 higher than the cost using the traditional system.

D. $3,987.50.

To answer this question, it is necessary to calculate the monthly quality control costs for both a traditional and ABC system.

The quality control cost using a traditional costing system would be calculated by taking the total direct labor cost (overhead is applied based on direct labor cost) and multiplying it by the 14.5% rate.

Traditional costing overhead application = (total direct labor costs)(overhead rate)

Traditional costing overhead application = ($27,500 × 0.145 = $3,987.50)

ABC system calculates the quality control cost to be assigned by assessing how much of the quality control activities are related to the product. This is calculated by taking the sum of the rate for each activity, multiplied by the quantity of that activity that is consumed by the Satin Sheen product.

ABC overhead application = (rate per type for incoming material inspection)(number of types of material for Satin Sheen product) + (rate per unit for in-process inspection)(number of units of Satin Sheen) + (rate per order for product certification)(number of orders for Satin Sheen)

ABC overhead application = ($11.50)(12 types) + ($0.14)(17,500 units) + ($77)(25 orders) = $138 + $2,450 + $1,925 = $4,513

ABC quality control cost − traditional costing quality control cost = $4,513 − $3,987.50 = $525.50

The monthly quality control cost assigned to Satin Sheen makeup using ABC is $525.50 higher than the traditional costing system.

Question 12:

Atmel Inc. manufactures and sells two products. Data with regard to these products are given below.
Total budgeted machine hours are 100,000. The budgeted overhead costs are shown below.

<table>
<thead>
<tr>
<th></th>
<th>Product A</th>
<th>Product B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units produced and sold</td>
<td>30,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Machine hours required per unit</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Receiving orders per product line</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Production orders per product line</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Production runs</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Inspections</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

Using activity-based costing, the per unit overhead cost allocation of receiving costs for product A is:

A. $10.75.
B. $19.50.
C. $3.75.

Using activity-based costing, the per unit overhead cost allocation of receiving costs for product A is calculated as:

\[
\text{Overhead cost allocation, receiving costs, product A} = \frac{(\text{cost rate for receiving costs})(\text{number of product A receipts})}{\text{(number of units of product A)}}
\]

Cost rate for receiving costs = $450,000 / 200 total receipts = $2,250
Number of product A receipts = 50
Number of units of product A = 30,000
Overhead cost allocation, receiving costs, product A = \([($2,250)(50)] / (30,000) = $3.75 per unit.\]
When considering normal and abnormal spoilage, which one of the following is theoretically the best accounting method for spoilage in a process-costing system?

A. Both normal and abnormal spoilage costs should be charged to good units.

B. Normal spoilage costs should be charged to a separate expense account and abnormal spoilage cost should be charged to good units.

C. Both normal and abnormal spoilage cost should be charged to a separate expense account.

D. Normal spoilage cost should be charged to good units and abnormal spoilage cost should be charged to a separate expense account.

The theoretical best accounting method for spoilage in a process-cost system is by taking the normal spoilage cost and charging it to good units and abnormal spoilage cost should be charged to a separate expense account.

**Question 14:**

A company is considering the implementation of an activity-based costing and management program. The company:

A. would probably find a lack of software in the marketplace to assist with the related recordkeeping.

B. would normally gain added insights into causes of cost.

C. should focus on manufacturing activities and avoid implementation with service-type functions.

D. would likely use fewer cost pools than it did under more traditional accounting methods.

Any organization that would implement an activity-based costing and management program would normally gain added insights into the causes of costs as an activity-based costing method provides more detailed information over other costing methods.

**Question 15:**

Fashion Inc. manufactures women's dresses using cotton and polyester. Since the same style dresses are made out of both fabrics, Fashions uses operation costing. During June, 1,000 cotton dresses were completely produced. Also during June, 1,500 polyester dresses were started by adding all materials at the beginning of the process. Of these 1,500
dresses, 700 were completely finished and the remainder were 25 percent complete by the end of the month. There was no work-in-process inventory at the beginning of June. Costs incurred during June were as follows.

<table>
<thead>
<tr>
<th>Material</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>$10,000</td>
</tr>
<tr>
<td>Polyester</td>
<td>22,500</td>
</tr>
<tr>
<td>Conversion costs</td>
<td>13,300</td>
</tr>
</tbody>
</table>

The cost per unit to manufacture one polyester dress during June was:

- A. $20.32.
- B. $32.00.
- **C. $22.00**
- D. $18.32.

The cost to manufacture one polyester dress in June is calculated as follows:

Cost to manufacture, one dress = (raw material cost per dress) + (conversion cost per dress)

Raw material cost per dress = ($22,500/1,500 dresses) = $15

Conversion cost per dress = ($13,300) / (equivalent unit of conversion incurred in June)

Equivalent units of conversion in June = (1,700 dresses started and finished) + (800 started multiplied by a 25% completion rate)

Equivalent units of conversion in June = (1,700) + (200) = 1,900 dresses

Therefore, the conversion cost per polyester dress = ($13,300) / 1,900 dresses = $7 per dress.

Cost to manufacture, one dress = ($15 + $7) = $22.

**Question 16:**

A company uses job-order costing and begins the period with no finished goods inventory, but with a beginning work-in-process (WIP) of the following jobs:

- Job #15 = $42,000
- Job #16 = $33,000
Job #17 = $12,000
Total WIP = $87,000

During the period, a new job is started (Job #18) and the following costs are incurred:

- Direct materials: $100,000 (20% each for Jobs #15, #16, #17 and 40% for Job #18)
- Direct labor: 5,000 hours at $15 per hour (hours for Jobs #15, #16, #17, and #18 are 1,500, 1,500, 1,200, and 800, respectively)
- Factory overhead (using a predetermined rate where total overhead for the year is estimated to be $200,000 and total direct labor (cost driver) is 50,000 hours).

Jobs #15 and #16 are completed and sold during the period. What is cost of goods sold for the period?

A. $97,000.
B. $175,000.
C. $160,000.
D. $172,000.

The cost of the jobs completed can be broken down as follows (note the predetermined overhead rate is $200,000/50,000 or $4/direct labor hour):

<table>
<thead>
<tr>
<th></th>
<th>Job #15</th>
<th>Job #16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beg. WIP</td>
<td>$42,000</td>
<td>$33,000</td>
</tr>
<tr>
<td>Current:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>DL</td>
<td>22,500</td>
<td>22,500</td>
</tr>
<tr>
<td>OH</td>
<td>6,000</td>
<td>6,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50,500</td>
<td>$81,500</td>
</tr>
</tbody>
</table>

Grand total = $172,000

Question 17:
In life-cycle costing, which of the these is the primary method of lowering downstream costs?

A. Improving supplier relationships.
B. Improving product designs in the downstream phase.
C. Improving the upstream and manufacturing cost phases.
D. Proactive management during the downstream phase such as streamlining manufacturing costs.

By the time a product reaches the downstream phase, it is too late to be proactive about changes unless the product has been correctly and efficiently designed during the upstream and manufacturing cost phases.

Question 18:

A company uses job-order costing and begins the period with no finished goods inventory, but with a beginning work-in-process (WIP) of these jobs:

- Job #15 = $42,000
- Job #16 = $33,000
- Job #17 = $12,000
- Total WIP = $87,000

During the period, a new job is started (Job #18) and these costs are incurred:

- Direct materials: $100,000 (20% each for Jobs #15, #16, #17 and 40% for Job #18)
- Direct labor: 5,000 hours at $15 per hour (hours for Jobs #15, #16, #17, and #18 are 1,500, 1,500, 1,200, and 800, respectively)
- Factory overhead (using a predetermined rate where total overhead for the year is estimated to be $200,000 and total direct labor (cost driver) is 50,000 hours).

Jobs #15 and #16 are completed and sold during the period. What is ending WIP inventory?

A. $90,000.
B. $98,000.
C. $112,000.
D. $110,000.

The cost of the jobs not completed can be broken down as: (note the predetermined overhead rate is $200,000/50,000 or $4/direct labor hour).
Question 19:

All of the following are likely to be used as a cost allocation base in activity-based costing except the:

* Source: Retired ICMA CMA Exam Questions.

A. units of materials used to manufacture the product.

**B. cost of materials used to manufacture the product.**

C. number of vendors supplying the materials used to manufacture the product.

D. number of different materials used to manufacture the product.

In an activity-based costing system, cost allocation bases typically include a number of different materials used to manufacture the product, the units of materials used to manufacture the product, and a number of vendors supplying the materials used to manufacture the product.

**Question 20:**

Select between job order and process costing for what is best suited to each of the products:

I. Skyscraper
II. Magazine
III. Check processing
IV. Advertising campaign
V. Car repair

A. Job order costing for II and III; process costing for I, IV, and V.

**B. Job order costing for I, IV, and V; process costing for II and III.**

C. Job order costing for III and IV; process costing for I, II and V.

D. Job order costing for I, II and IV; process costing for III and V.

Job order costing is best for specific custom jobs, including capital asset construction (the skyscraper) in the manufacturing sector and advertising campaigns and repair jobs in the service sector. Process costing is best for large numbers of nearly identical products or services such as magazines in the manufacturing sector and check processing in the service sector.

**Question 21:**
A firm has three processes in its manufacturing plant: processes 1, 2, and 3. Assume you are computing equivalent units for process 2 and find the following data:

- Beginning work-in-process (WIP): 5,000 units (30% complete for conversion cost [CC])
- Units started during period: 93,000 units
- Ending WIP: 8,000 units (20% complete for CC)

All direct materials (DM) are added at the beginning of the process and CC are added evenly throughout production. The firm uses the first-in, first-out (FIFO) method for its inventory. What are the equivalent units for this period (broken down into categories of transferred-in, DM and CC, respectively)?

A. 93,000; 91,600; 90,100.
B. 93,000; 85,000; 89,900.
C. 93,000; 91,600; 89,900.
D. 93,000; 93,000; 90,100.

Given the information, one can find the number of units started and completed as 93,000 − 8,000 = 85,000 units. Since DM is added at the beginning of the process, all units that enter the process are 100% complete in DM costs (and transferred-in costs): [(0% × 5,000 beginning WIP) + 85,000 started and completed + (100% × 8,000 ending WIP)] = 93,000 units. To find conversion cost EU: (5,000 × 70%) + 85,000 + (8,000 × 20%) = 90,100 units.

**Question 22:**

During December, Krause Chemical Company had the selected data concerning the manufacture of Xyzine, an industrial cleaner:

<table>
<thead>
<tr>
<th>Production Flow</th>
<th>Physical Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed and transferred to the next department</td>
<td>100</td>
</tr>
<tr>
<td>Add: Ending work-in-process inventory</td>
<td>10 (40% complete as conversion)</td>
</tr>
<tr>
<td>Total units to account for</td>
<td>110</td>
</tr>
<tr>
<td>Less: Beginning work-in-process inventory</td>
<td>20 (60% complete as conversion)</td>
</tr>
<tr>
<td>Units started during December</td>
<td>90</td>
</tr>
</tbody>
</table>
All material is added at the beginning of processing in this department, and conversion costs are added uniformly during the process. The beginning work-in-process (WIP) inventory had $120 of raw material and $180 of conversion costs incurred. Material added during December was $540 and conversion costs of $1,484 were incurred. Krause uses the weighted-average process-costing method. The total raw material costs in the ending WIP inventory for December is:

A. $120.

B. $72.

C. $60.

D. $36.

The total raw material cost in the ending inventory is calculated by taking the equivalent units of raw material in the ending inventory and multiplying it by the raw material costs per equivalent unit.

Total raw material cost, ending inventory = (equivalent units, raw material ending inventory)(raw material costs per equivalent unit)

The weighted-average method assumes that all units and costs are current (i.e., there is no beginning inventory). Therefore, 110 equivalent units of raw material are required to yield a transfer-out of 100 units and 10 units in the ending inventory.

Raw material cost per equivalent unit = (total material cost) / (equivalent units)

Raw material cost per equivalent unit = ($120 + $540) / (110 equivalent units)

Raw material cost per equivalent unit = $660 / 110 units = $6 per unit

Therefore, the total raw material cost, ending inventory = (10 equivalent units)($6 per unit) = $60.

Question 23:
Kimbeth Manufacturing uses a process cost system to manufacture dust density sensors for the mining industry. The following information pertains to operations for the month of May.
The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are:

- Beginning inventory costs are: materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are: materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the first-in, first-out (FIFO) method, the total cost of units in the ending work-in-process inventory at May 31 is:

A. $156,960.
B. $154,800.
C. $153,168.
D. $155,328.

The FIFO approach follows the production flow and assumes that units will be sold in the order in which they were placed in inventory.

In order to compute the total cost of units in the ending work-in-process inventory, it is necessary to calculate the number of equivalent units with respect to materials, as well as the equivalent units with respect to conversion costs.

To calculate the equivalent units of production for both materials and conversion costs using FIFO, calculate the equivalent units for each for:

1. units in beginning inventory,
2. products started into production during the month, and,
3. units in ending inventory.

Equivalent units for materials
First, the 16,000 units in the beginning inventory would be completed,
requiring the addition of 6,400 \(\times (16,000)(1 - 0.6)\) equivalent units for materials.

Next, of the 100,000 units started during the month, 76,000 would be completed, requiring 76,000 equivalent units for materials. (92,000 units completed during month – 16,000 units from beginning inventory = 76,000 units)

Lastly, of the 100,000 units started, 24,000 would be in the ending inventory, 90% complete with respect to materials, requiring 21,600 \(\times (0.90)(24,000)\) equivalent units for materials.

The total equivalent units for materials would be 6,400 + 76,000 + 21,600 = 104,000.

**Equivalent units for conversion costs**
First, the 16,000 units in the beginning inventory would be completed, requiring the addition of 12,800 \(\times (16,000)(1 - 0.2)\) equivalent units for conversion costs.

Next, of the 100,000 units started during the month, 76,000 would be completed, requiring 76,000 equivalent units for conversion costs. (92,000 units completed during month – 16,000 units from beginning inventory = 76,000 units)

Lastly, of the 100,000 units started, 24,000 would be in the ending inventory, 40% complete with respect to conversion costs, requiring 9,600 \(\times (0.40)(24,000)\) equivalent units for conversion costs.

The total equivalent units for conversion costs would be 12,800 + 76,000 + 9,600 = 98,400.

Cost per equivalent unit for both materials and conversion costs is calculated by separately taking the materials cost and conversion costs and dividing each by their respective equivalent unit.

**Cost per equivalent unit – materials**
The cost of materials used is $468,000

Therefore, the equivalent unit cost for materials = \(\frac{($468,000 \text{ material cost})}{(104,000 \text{ equivalent units for materials})}\) = $4.50 per unit

**Cost per equivalent unit – conversion costs**
Conversion costs consist of direct labor and factory overhead. 
Conversion costs = $182,880 (direct labor) + $391,160 (factory overhead) 
Conversion costs = $574,040

Therefore, the equivalent unit cost for conversion = ($574,040 conversion costs) / (98,400 equivalent units for conversion costs) = $5.83 per unit

Cost of ending inventory
Ending inventory, materials = 0.9(24,000 units) = 21,600 equivalent units
Ending inventory, conversion costs = 0.4(24,000 units) = 9,600 equivalent units

Cost of ending inventory = (ending inventory, materials)(materials cost per equivalent unit) + (ending inventory, conversion costs)(conversion cost per equivalent unit)

Cost of ending inventory = (21,600 equivalent units)($4.50 per equivalent unit) + (9,600 equivalent units)($5.83 per equivalent unit)

Cost of ending inventory = $153,168.

**Question 24:**

An accounting system that collects financial and operating data on the basis of the underlying nature and extent of the cost drivers is:

A. target costing.
B. variable costing.
C. activity-based costing (ABC).
D. direct costing.

ABC is an accounting technique that allocates production support costs to the activities that drive these costs. The ABC system then reassigns the costs from the activities to the products produced.

**Question 25:**

A company that uses a process costing system inspects its goods at the 60% stage of completion. If the firm's ending work-in-process inventory is 80% complete, how would the firm account for its normal and abnormal spoilage?

* Source: Retired ICMA CMA Exam Questions.
A. Both normal and abnormal spoilage costs would be added to the cost of the
good units completed during the period.

B. Normal spoilage costs would be allocated between the cost of good units
completed during the period and the ending work-in-process inventory. In
contrast, abnormal spoilage costs would be written off as a loss.

C. Normal spoilage costs would be added to the cost of the good units
completed during the period; in contrast, abnormal spoilage costs would be
written off as a loss.

D. Both normal and abnormal spoilage costs would be written off as an expense
of the period.

Normal spoilage costs would be allocated between the cost of good units
completed during the period and the ending work-in-process inventory. In
contrast, abnormal spoilage costs would be written off as a loss. If a firm
has normal and abnormal spoilage, the normal spoilage costs would be
allocated between the cost of good units completed during the period and
the ending work-in-process inventory. In contrast, abnormal spoilage costs
would be written off as a loss.

Question 26:

Which one of the following alternatives correctly classifies the business
application to the appropriate costing system?

A. job costing system: wallpaper manufacturer; processing costing system: oil
   refinery.

B. job costing system: aircraft assembly; processing costing system: public
   accounting firm.

C. job costing system: microcomputer manufacturer; processing costing system:
   construction company.

D. job costing system: print shop; processing costing system: beverage drink
   manufacturer.

Job costing systems are appropriate for intermittent (batch-, unit- or lot-
based) production. Process costing is appropriate for continuous
processing. Print shops involve lot-oriented, intermittent production. A
beverage drink producer would normally use continuous processing.

Question 27:

The use of activity-based costing (ABC) normally results in:

A. decreased set-up costs being charged to low-volume products.
B. substantially greater unit costs for low-volume products than is reported by traditional product costing.

C. equalizing set-up costs for all product lines.

D. lower unit costs for low-volume products than is reported by traditional product costing.

Traditional costing systems are volume-based systems. They normally allocate overhead by either direct labor hours (costs) or machine hours. ABC allocates overhead based upon the activities driving the overhead. Therefore, traditional costing tends to apply too much overhead to the high volume products and too little to low volume products. The use of ABC normally results in greater unit costs for low-volume products than is reported by traditional product costing, since the lower volume products will receive their “fair share” of overhead costs using ABC.

Question 28:

Clarendon, Inc. has two production departments, machining and assembly. James Irving, the manager of the assembly department, has noted a concern about the indirect costs allocated to his department, which, based on direct labor hours, seem excessive. He argues that his department is only half the size (in square footage used) of the machining department and uses a small portion of the engineering services and yet he is allocating nearly half of the indirect costs provided by engineering services and occupancy costs. Mr. Irving argues that adopting activity-based costing (ABC), and using multiple cost drivers, would more fairly divide the costs. Assume this data is collected by Mr. Irving:

<table>
<thead>
<tr>
<th></th>
<th>Machining Department</th>
<th>Assembly Department</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Square feet occupied</strong></td>
<td>40,000</td>
<td>20,000</td>
<td>60,000 ft.</td>
</tr>
<tr>
<td><strong>Total engineering hours</strong></td>
<td>4,000</td>
<td>1,000</td>
<td>5,000 hours</td>
</tr>
<tr>
<td><strong>Direct labor hours</strong></td>
<td>5,700</td>
<td>5,500</td>
<td>11,200 hours</td>
</tr>
<tr>
<td><strong>Occupancy costs</strong></td>
<td>$185,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Engineering costs</strong></td>
<td></td>
<td>$150,000</td>
<td></td>
</tr>
</tbody>
</table>

If Clarendon changes to the ABC system recommended, how much would indirect costs change in Mr. Irving's department?

A. $103,000 reduction.

B. $92,000 reduction.

C. $82,500 reduction.
D. $73,000 reduction.

Currently the assembly department is allocated \( \frac{5,500}{11,200} \times (\$186,000 + \$150,000) = \$165,000 \). If the change occurred, assembly would be charged \( \$62,000 \) of the occupancy costs \( \$186,000 \times \left( \frac{20,000}{60,000} \right) \) and \( \$30,000 \) of the engineering costs \( \$150,000 \times \left( \frac{1,000}{5,000} \right) \), declining in total to \( \$92,000 \). The reduction in cost is \( \$165,000 - \$92,000 = \$73,000 \).

Question 29:

Oster Manufacturing uses a weighted-average process costing system and has the following costs and activity during October:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>$40,000</td>
</tr>
<tr>
<td>Conversion cost</td>
<td>$32,500</td>
</tr>
<tr>
<td>Total beginning work-in-process inventory</td>
<td>$72,500</td>
</tr>
<tr>
<td>Materials</td>
<td>$700,000</td>
</tr>
<tr>
<td>Conversion cost</td>
<td>$617,500</td>
</tr>
<tr>
<td>Total production costs – October</td>
<td>$1,317,500</td>
</tr>
</tbody>
</table>

Production completed 60,000 units
Work-in-process, October 31 20,000 units

All materials are introduced at the start of the manufacturing process, and conversion cost is incurred uniformly throughout production. Conversations with plant personnel reveal that, on average, month-end in-process inventory is 25% complete. Assuming no spoilage, how should Oster's October manufacturing cost be assigned?

A. Production Completed = \$1,155,000, Work-in-Process = \$235,000.
B. Production Completed = \$1,095,000, Work-in-Process = \$222,500.
C. Production Completed = \$1,042,500, Work-in-Process = \$347,500.
D. Production Completed = \$1,283,077, Work-in-Process = \$106,923.

The cost of the units completed is calculated as:

Cost of units completed = (number of units)(total cost per equivalent unit)
Cost of units completed = (60,000 units)(total cost per equivalent unit)

Because all materials are introduced at the start of the manufacturing process, the equivalent units of material for October consists of the completed units and the work-in-process units.
The equivalent units of material for October = (Completed production units) + (Work-in-process units) = 60,000 + 20,000 = 80,000.

The equivalent units for conversion are calculated by adding together the units that were started and finished to the equivalent units that were in work-in-process inventory.

Equivalent units for conversion = (units started and finished) + (% complete for conversion) (ending work-in-process inventory)
Equivalent units for conversion = (60,000) + (0.25)(20,000) = 65,000 equivalent units for conversion.

Cost per equivalent unit for materials = ($40,000 + $700,000) / 80,000 equivalent units
Cost per equivalent unit for materials = $740,000 / 80,000 equivalent units = $9.25

Cost per equivalent unit for conversion = ($32,500 + $617,500) / 65,000 equivalent units
Cost per equivalent unit for conversion = $650,000 / 65,000 equivalent units = $10

Total cost per equivalent unit = ($9.25 + $10) = $19.25

The cost of the 60,000 units completed would be calculated as:

Cost of units completed = (60,000 units)($19.25) = $1,155,000

Cost of the ending inventory = (equivalent units for materials)(materials cost per equivalent unit) + (equivalent units for conversion costs)(conversion cost per equivalent unit)

Cost of the ending inventory = (20,000 equivalent units for materials)($9.25 per unit) + (5,000 equivalent units for conversion)($10 per unit) = $235,000.

**Question 30:**

Southwood Industries uses a process costing system and inspects its goods at the end of manufacturing. The inspection as of June 30 revealed the following information for the month of June:

- Good units completed 16,000
- Normal spoilage (units) 300
- Abnormal spoilage (units) 100
Unit costs were: materials, $3.50; and conversion costs, $6.00, based on total cost divided by 16,400 units. The number of units that Southwood would transfer to its finished goods inventory and the related cost of these units are:

A. Units Transferred = 16,300, Cost = $154,850.
B. Units Transferred = 16,000, Cost = $154,850.
C. Units Transferred = 16,000, Cost = $155,800.
D. Units Transferred = 16,000, Cost = $152,000.

Using process costing, normal spoilage costs are “spread” over the cost of the 16,000 good units. Abnormal spoilage costs are charged to a loss account. 16,000 good units were produced and transferred.

The cost of these units is calculated as:

Per unit cost, units transferred to finished goods inventory = (materials cost per unit) + (conversion cost per unit)
Per unit cost, units transferred to finished goods inventory = ($3.50) + ($6.00) = $9.50.

Total cost of units transferred to finished goods inventory = (16,300 units)($9.50) = $154,850.

Question 31:
A promotional department for a retailer uses job order costing. At the beginning of the period Job #154 had a work-in-process (WIP) inventory balance of $5,000. During the current period, Job #154 required $4,000 in direct materials and $6,000 in direct labor. The department has an overhead cost pool of $80,000 for all jobs. (The pool uses labor-hours as a cost-allocation base.) All jobs in the department consumed 10,000 labor-hours. If Job #154 used 1,000 labor-hours and sold for $34,000, what is its gross profit margin?

A. $18,000.
B. $11,000.
C. $6,000.
D. $12,000.

To calculate the gross profit margin, first calculate the indirect cost rate by dividing the overhead cost by the total cost allocation base ($80,000/10,000 = $8 per labor-hour). Then, calculate the direct labor cost as $6,000. Finally, calculate the total cost as $5,000 (WIP) + $4,000 (materials) + $6,000 (direct labor) = $15,000. The gross profit is $34,000 - $15,000 = $19,000. Therefore, the gross profit margin is $19,000 / $34,000 = 0.5588 or 55.88%. This value does not match any of the provided options, indicating a potential error in the question or the provided options.
Then multiply the indirect cost rate by the actual units of the allocation base for the job ($8/labor-hour × 1,000 labor-hours = $8,000).

This amount plus the beginning work in process and current period direct materials and direct labor costs equals the total costs ($8,000 + $5,000 + $4,000 + $6,000 = $23,000).

The gross profit margin is the profit less the total costs ($34,000 − $23,000 = $11,000).

Question 32:

Kimbeth Manufacturing uses a process cost system to manufacture dust density sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
</tr>
<tr>
<td>Started in production during May</td>
</tr>
<tr>
<td>Completed production during May</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are:

- Beginning inventory costs are: materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are: materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the first-in, first-out (FIFO) method, the cost per equivalent unit of materials for May is:

- B. $4.60.
- C. $5.03.
- D. $4.50.

The FIFO approach follows the production flow and assumes that units will be sold in the order in which they were placed in inventory.
In order to compute the cost per equivalent unit for materials, it is first necessary to calculate the number of equivalent units with respect to materials.

To calculate the equivalent units of production for materials using FIFO, calculate the equivalent units for materials for:
1. units in beginning inventory,
2. products started into production during the month, and,
3. units in ending inventory.

First, the 16,000 units in the beginning inventory would be completed, requiring the addition of 6,400 \([(16,000)(1 − 0.6)]\) equivalent units for materials.

Next, of the 100,000 units started during the month, 76,000 would be completed, requiring 76,000 equivalent units for materials. (92,000 units completed during month − 16,000 units from beginning inventory = 76,000 units)

Lastly, of the 100,000 units started, 24,000 would be in the ending inventory, 90% complete with respect to materials, requiring 21,600 \([(0.90)(24,000)]\) equivalent units for materials.

The total equivalent units for materials would be 6,400 + 76,000 + 21,600 = 104,000.

The cost of materials used is $468,000.

Therefore, the equivalent unit cost for materials = \(\left(\frac{468,000 \text{ material cost}}{104,000 \text{ equivalent units for materials}}\right)\) = $4.50 per unit

**Question 33:**

Absorption costing and variable costing are two different methods of assigning costs to units produced. Of the four cost items listed, identify the one that is not correctly accounted for as a product cost.

A. packaging and shipping costs-part of product cost under absorption cost: yes; part of product cost under variable cost: yes.

B. insurance on factory-part of product cost under absorption cost: yes; part of product cost under variable cost: no.

C. direct labor cost-part of product cost under absorption cost: yes; part of product cost under variable cost: yes.
D. manufacturing supplies—part of product cost under absorption cost: yes; part of product cost under variable cost: yes.

Under absorption costing, product costs consist of direct material, direct labor, and indirect manufacturing costs (both variable and fixed overhead).

Under variable costing, product costs consist of direct material, direct labor, and variable indirect manufacturing costs (variable overhead).

Packaging costs, if the packaging is an integral part of the product, are considered to be direct material costs under both absorption and variable costing.

However, shipping costs are not classified as product costs under either costing system. They are a part of marketing and selling costs under both absorption costing and variable costing, and they are expensed in the period during which they are incurred.

Question 34:
A firm wants to study how changing the steps for an operation can lower the overall cost of the operation. Which of these will help the firm achieve its goals?

A. Relevant range analysis.

B. Variable costing.

C. Volume analysis for volume-based cost drivers.

D. Activity analysis for activity-based cost drivers.

Firms use an activity analysis to determine a detailed description of each type of activity. Each step becomes a different cost driver. The intent is to determine how changing the steps will change the overall cost of the operation.

Question 35:
A wig company using process costing has a weaving department and a cutting and styling department for the same product. When weaving is complete, all weaving department costs should:

A. be transferred to finished goods inventory.

B. remain in the weaving department's WIP inventory account until all departments finish the wig and then debited to the company's transferred-in costs account.
C. be transferred to the cutting and styling department's work-in-process (WIP) inventory account.

D. remain in the company's WIP inventory account until the good is complete and then be transferred to finished goods inventory.

In process costing, each department must have its own WIP inventory account. All costs charged to that account are transferred to the next department's WIP inventory account by debiting a transferred-in costs account on the next department's books. When the good is fully complete, all costs are transferred to finished goods inventory.

**Question 36:**

Kimbeth Manufacturing uses a process cost system to manufacture dust density sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
<td>16,000</td>
</tr>
<tr>
<td>Started in production during May</td>
<td>100,000</td>
</tr>
<tr>
<td>Completed production during May</td>
<td>92,000</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are:

- Beginning inventory costs are: materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are: materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the first-in, first-out (FIFO) method, the equivalent units of production for materials are:

A. 113,600 units.

B. **104,000 units**.

C. 97,600 units.

D. 106,000 units.
The FIFO approach follows the production flow and assumes that units will be sold in the order in which they were placed in inventory.

To calculate the equivalent units of production for materials using FIFO, calculate the equivalent units for materials for:
1. units in beginning inventory,
2. products started into production during the month, and,
3. units in ending inventory.

First, the 16,000 units in the beginning inventory would be completed, requiring the addition of 6,400 \( [(16,000)(1 – 0.6)] \) equivalent units for materials.

Next, of the 100,000 units started during the month, 76,000 would be completed, requiring 76,000 equivalent units for materials.
\((92,000 \text{ units completed during month} - 16,000 \text{ units from beginning inventory} = 76,000 \text{ units})\)

Lastly, of the 100,000 units started, 24,000 would be in the ending inventory, 90% complete with respect to materials, requiring 21,600 \( [(0.90)(24,000)] \) equivalent units for materials.

Therefore, the total equivalent units for materials would be 6,400 + 76,000 + 21,600 = 104,000.

**Question 37:**

Kepler Optics makes lenses for telescopes. Because Kepler will only sell lenses of the highest quality, the normal spoilage during a reporting period is 1,000 units. At the beginning of the current reporting period, Kepler had 2,200 units in inventory, and during the period, production was started and completed on 4,000 units. Units in inventory at the end of the current reporting period were 1,500, and the units transferred out were 3,000. During this period, the abnormal spoilage for Kepler's lens production was:

A. 1,000 units.
B. 700 units.
C. 1,700 units.
D. 3,200 units.

Total spoilage = beginning units + units started and completed − units transferred out − ending units = 2,200 + 4,000 − 3,000 - 1,500 = 1,700
Abnormal spoilage = Total spoilage − Normal spoilage = 1,700 − 1,000 = 700.

Question 38:
Which of the following costing systems would work best for a firm that spent a considerable percentage of its overall costs on research and development (R&D)?

A. Process costing.
B. Activity-based costing.
C. Job order costing.
D. Life-cycle costing.

Life-cycle costing considers the entire life cycle of a product or service in its scope, so operations with a high percentage of R&D costs can benefit from an approach that takes design and R&D costs into account when evaluating the overall profitability of a product.

Question 39:
When using activity-based costing techniques, which one of the following departmental activities would be expected to use machine hours as a cost driver to allocate overhead costs to production?

A. Machine setups.
B. Plant cafeteria.
C. Material handling.
D. Robotics painting.

Of the list, the only one that requires machinery in its process is that of robotics painting. The others would require other activity cost drivers.

Question 40:
Which of the following is not an advantage of using activity-based cost drivers?

A. Costs are more reliably determined.
B. Implementation is relatively inexpensive compared to other methods.
C. Detailed breakdown of activities helps firms remove non-value-added activities.
Activity-based cost drivers require a detailed description of each type of activity, so initial implementation can be costly and time-consuming.

**Question 41:**
Kimber Company has the following unit cost for the current year:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material</td>
<td>$20.00</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$25.00</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$10.00</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$15.00</td>
</tr>
<tr>
<td><strong>Total unit cost</strong></td>
<td><strong>$70.00</strong></td>
</tr>
</tbody>
</table>

Fixed manufacturing cost is based on an annual activity level of 8,000 units. Based on these data, the total manufacturing cost expected to be incurred to manufacture 9,000 units in the current year is:

- A. $630,000.
- B. $575,000.
- C. $615,000.
- D. $560,000.

Total manufacturing costs to be incurred for 9,000 units can be calculated as follows:

- Total manufacturing costs for 9,000 units = (fixed manufacturing costs) + (variable manufacturing costs per unit)(number of units produced)
- Fixed manufacturing costs = (fixed manufacturing overhead per unit)(8,000 units of annual activity used to determine the fixed overhead per unit)
- Fixed manufacturing costs = $15(8,000) = $120,000
- Variable manufacturing costs per unit = (raw materials cost) + (direct labor cost) + (variable manufacturing overhead cost)
- Variable manufacturing costs per unit = $20 + $25 + $10 = $55
- Total manufacturing costs to be incurred for 9,000 units = $120,000 + $55(9,000 units) = $120,000 + $495,000 = $615,000.

**Question 42:**
A company is using process costing with weighted average inventory valuation and all costs are added evenly throughout the manufacturing process. For a period with 5,000 units in beginning work-in-process (WIP) inventory (30% complete), 10,000 units in ending WIP inventory (60% complete), and 25,000 units started in process, how many equivalent units are there for this period?
A. 25,000 units.
B. 24,500 units.
C. 26,000 units.
D. 22,500 units.

The weighted-average method assumes that all units and costs are current, i.e. there is no beginning inventory; therefore, the Equivalent Units for Conversion Cost= (Units Completed) + (Units in Ending Inventory) (% Complete). Since there were 5,000 units in beginning WIP plus 25,000 started in process, there are 30,000 units to be accounted for. Of those 30,000 units, 10,000 are in ending WIP inventory; therefore, 20,000 units must have been completed during the period plus 60% of the remaining 10,000 units which equals 6000 units in the ending WIP inventory. Therefore, the equivalent units for this period is 26,000 units.

Question 43:
A profitable company with five departments uses plantwide overhead rates for its highly diversified operation. The firm is studying a change to either allocating overhead by using departmental rates or using activity-based costing (ABC). Which one of these two methods will likely result in the use of a greater number of cost allocation bases and more accurate costing results?

* Source: Retired ICMA CMA Exam Questions.

A. Greater number of cost allocation bases: Departmental; More accurate costing results: ABC.
B. Greater number of cost allocation bases: ABC; More accurate costing results: ABC.
C. More accurate cost allocation bases: ABC; More accurate costing results: Departmental.
D. Greater number of cost allocation bases: Departmental; More accurate costing results: Departmental.

An activity-based costing system provides a greater number of allocation bases and more accurate costing results than other costing systems. However, it's not clear that number of activities will always be greater than number of departments.

Question 44:
Claremont Company has been asked to evaluate the profitability of a product that it manufactured and sold from 1997 through 2000. The product had a one-year warranty from date of sale. The following information appears in the financial records.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$5,000,000</td>
<td>$7,000,000</td>
<td>$200,000</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

The life-cycle cost for this product is:

A. $12,200,000.
B. $12,000,000.
C. $10,000,000.
D. $12,300,000.

The life cycle cost for the product = Manufacturing and distribution costs + R&D and design costs + Total warranty costs = $7,000,000 + $5,000,000 + $200,000 + $100,000 = $12,300,000.

Question 45:
A company is using process costing (with first-in first-out [FIFO]) and all costs are added evenly throughout the manufacturing process. If there are 5,000 units in beginning work-in-process (WIP) inventory (30% complete), 10,000 units in ending WIP inventory (60% complete), and 25,000 units started in process this period, how many equivalent units are there for this period?

A. 22,500 units.
B. 26,000 units.
C. 24,500 units.
D. 25,000 units.

Using FIFO, we need to consider the number of units started and completed (25,000 − 10,000) and adjust for equivalent units in both beginning and ending WIP inventory. 70% of beginning WIP inventory are completed in the period (5,000 × 0.7 = 3,500) and 60% of ending WIP inventory are completed in the period (10,000 × 0.6 = 6,000). The sum of 24,500 (15,000 + 3,500 + 6,000) represents the equivalent units for the period.
**Question 46:**

Life-cycle costing:

A. includes only manufacturing costs incurred over the life of the product.

B. is often used in financial and income tax reporting.

C. includes only manufacturing cost, selling expense, and distribution expense.

D. is sometimes used as a basis for cost planning and product pricing.

Life cycle costing is used for cost planning and pricing over the life of a product, from its inception through its ultimate demise.

**Question 47:**

Loyal Co. produces three types of men's undershirts: T-shirts, V-neck shirts, and athletic shirts. In the Folding and Packaging Department, operations costing is used to apply costs to individual units, based on the standard time allowed to fold and package each type of undershirt. The standard time to fold and package each type of undershirt is as follows.

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-shirt</td>
<td>40 seconds</td>
</tr>
<tr>
<td>V-neck shirt</td>
<td>40 seconds</td>
</tr>
<tr>
<td>Athletic shirt</td>
<td>20 seconds</td>
</tr>
</tbody>
</table>

During the month of April, Loyal produced and sold 50,000 T-shirts, 30,000 V-neck shirts, and 20,000 athletic shirts. If costs in the Folding and Packaging Department were $78,200 during April, how much folding and packaging cost should be applied to each T-shirt?

A. $0.5213.

B. $0.7820.

C. $0.8689.

D. $0.6256.

The folding and packaging cost applied to each T-shirt can be calculated as:

\[
\text{Folding and packaging cost applied} = (40 \text{ seconds})(\text{cost rate per second})
\]

The cost rate per second = \( \frac{78,200}{\text{total seconds}} \)
Cost rate per second = ($78,200) / [(50,000 T-shirts)(40 seconds per shirt) + (30,000 V-neck shirts)(40 seconds per shirt) + (20,000 athletic shirts)(20 seconds per shirt)]

Cost rate per second = ($78,200)/(2,000,000 seconds +1,200,000 seconds + 400,000 seconds)

Cost rate per second = $78,200 / 3,600,000 seconds
Cost rate per second = $0.0217222 per second

Cost applied to each T-shirt = (40 seconds)(0.0217222 per second) = $0.8689.

D3: Overhead Costs

Question 1:
Adam Corporation manufactures computer tables and has the following budgeted indirect manufacturing cost information for next year.

<table>
<thead>
<tr>
<th>Support Departments</th>
<th>Operating Departments</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Systems</td>
<td>Systems</td>
<td>Machining</td>
</tr>
<tr>
<td>Budget Overhead</td>
<td>$360,000</td>
<td>$95,000</td>
</tr>
</tbody>
</table>

Support Work Furnished

From Maintenance

10% 50% 40% 100%

From Systems

5% 45% 50% 100%

If Adam uses the direct method to allocate support department costs to production departments, the total overhead (rounded to the nearest dollar) for the Machining Department to allocate to its products would be which of the following?

A. $422,750.
B. $445,000.
C. $418,000.
D. $442,053.

The direct method of cost allocation assumes service departments serve production only. There are no inter-service department services. Therefore,
the total overhead for the Machining Department to allocate to its products is calculated as:

\[
\text{Total overhead, Machining Dept.} = (\text{Machining Dept. overhead}) + (\text{Machining Dept. share of Maintenance overhead}) + (\text{Machining Dept. share of Systems' overhead})
\]

\[
\text{Total overhead, Machining Dept.} = ($200,000) + [(0.50) / (0.50+0.40)]($360,000) + [(0.45) / (0.45 + 0.50)]($95,000)
\]

\[
\text{Total overhead, Machining Dept.} = $200,000 + $200,000 + $45,000 = $445,000.
\]

**Question 2:**

Parker Company pays each member of its sales staff a salary as well as a commission on each unit sold. For the coming year, Parker plans to increase all salaries by 5% and to keep unchanged the commission paid on each unit sold. Because of increased demand, Parker expects the volume of sales to increase by 10%. How will the total salaries and commissions change for the coming year?

A. Increase by more than 10%.

B. Increase by 10%.

C. Increase by 5% or less.

D. Increase by more than 5% but less than 10%.

The cost of salaries will increase by exactly 5%. The cost of commissions paid (a variable cost) will increase by the level of activity, which is 10%. Because total compensation is a blend of these two costs, total compensation will increase by some amount between 5% and 10%.

**Question 3:**

Nash Glassworks Company has budgeted fixed manufacturing overhead of $100,000 per month. The company uses absorption costing for both external and internal financial reporting purposes. Budgeted manufacturing overhead rates for cost allocations for the month of April using alternative unit output denominator levels are shown below.
Actual output for the month of April was 800,000 units of glassware.

When Nash Glassworks Company allocates fixed costs, management will select a capacity level to use as the denominator or volume. All of the following would be appropriate as the capacity level that approximates actual volume levels except:

A. master-budget capacity.
B. expected annual capacity.
C. normal capacity.
**D. theoretical capacity.**

Theoretical capacity volume would exceed actual volume in all cases. Theoretical capacity assumes 24/7/365 day operation. In addition, it ignores any problems such as downtime, scrap, rework, spoilage, and material shortages. In addition, it does not allow for worker breaks. Therefore, theoretical capacity is unrealistic and would not be an appropriate capacity level to approximate actual volume levels.

**Question 4:**
Which one of the following costing methods does not utilize sequential tracking?

A. Operation costing.
B. Job costing.
C. Process costing.
**D. Backflush costing.**

Backflush costing system omits recording some or all of the sequential journal entries relating to the four trigger points that traditional costing systems use: purchase of materials, production, completion of finished goods, and sale of finished goods.

**Question 5:**
Variable overhead is applied on the basis of standard direct labor hours. If for a given period the direct labor efficiency variance is unfavorable, the variable overhead efficiency variance will be:

A. unfavorable.
B. favorable.
C. the same amount as the labor efficiency variance.
D. indeterminable since it is not related to the labor efficiency variance.

The variable overhead efficiency variance is calculated as:

\[
\text{Variable overhead efficiency variance} = (\text{the variable overhead rate})(\text{the actual base for the variable overhead application} - \text{the standard base for the variable overhead application})
\]

It measures the efficiency of the base. If the base used is direct labor hours, the variable overhead efficiency variance is the labor efficiency variance evaluated with the variable overhead rate. It would, therefore, be in the same direction as the labor efficiency variance.

**Question 6:**

Logo Inc. has two data services departments (the Systems Department and the Facilities Department) that provide support to the company's three production departments (Machining Department, Assembly Department, and Finishing Department). The overhead costs of the Systems Department are allocated to other departments on the basis of computer usage hours. The overhead costs of the Facilities Department are allocated based on square feet occupied (in thousands). Other information pertaining to Logo is as follows.

<table>
<thead>
<tr>
<th>Department</th>
<th>Overhead</th>
<th>Computer Usage Hours</th>
<th>Square Feet Occupied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems</td>
<td>$200,000</td>
<td>300</td>
<td>1,000</td>
</tr>
<tr>
<td>Facilities</td>
<td>100,000</td>
<td>900</td>
<td>600</td>
</tr>
<tr>
<td>Machining</td>
<td>400,000</td>
<td>3,600</td>
<td>2,000</td>
</tr>
<tr>
<td>Assembly</td>
<td>550,000</td>
<td>1,800</td>
<td>3,000</td>
</tr>
<tr>
<td>Finishing</td>
<td>620,000</td>
<td>2,700</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9,300</td>
<td>11,600</td>
</tr>
</tbody>
</table>
If Logo employs the direct method of allocating service department costs, the overhead of the Systems Department would be allocated by dividing the overhead amount by:

A. 9,000 hours.
B. 1,200 hours.
C. 8,100 hours.
D. 9,300 hours.

The direct method of cost allocation assumes service departments serve production only. There are no inter-service department services. Therefore, the relevant denominator for the allocation of the Systems Department costs would be the computer hours used by production only. In this case, the number of hours total 8,100, which is the sum of the Machining, Assembly and Finishing departments' computer usage hours.

\[ 3,600 + 1,800 + 2,700 = 8,100 \text{ hours}. \]

Question 7:

Wilcox Industrial has two support departments, the Information Systems Department and the Personnel Department, and two manufacturing departments, the Machining Department and the Assembly Department. The support departments service each other as well as the two production departments. Company studies have shown that the Personnel Department provides support to a greater number of departments than the Information Systems Department. If Wilcox uses the step-down method of departmental allocation, which one of the following cost allocations would not occur? Some of the costs of the:

* Source: Retired ICMA CMA Exam Questions.
department costs that recognizes that some service departments support the activities in other service departments as well as those in operating departments.

**Question 8:**
In practice, items such as wood screws and glue used in the production of school desks and chairs would most likely be classified as:

* Source: Retired ICMA CMA Exam Questions.

- A. period costs.
- B. direct labor.
- C. factory overhead.
- D. direct materials.

Factory overhead includes those items which cannot be directly traced to any one particular product. In this case, the wood screws and glue used in the production of school desks and chairs would most likely be classified as factory overhead.

**Question 9:**
Adam Corporation manufactures computer tables and has the following budgeted indirect manufacturing cost information for next year:

<table>
<thead>
<tr>
<th>Support Departments</th>
<th>Operating Departments</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budget Overhead</td>
<td>$360,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$95,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$300,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$955,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$300,000</td>
<td></td>
</tr>
<tr>
<td>Support Work Furnished</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From Maintenance</td>
<td>10%</td>
<td>50%</td>
</tr>
<tr>
<td>From Systems</td>
<td>5%</td>
<td>45%</td>
</tr>
</tbody>
</table>

If Adam uses the step-down method, beginning with the Maintenance Department, to allocate support department costs to production departments, the total overhead (rounded to the nearest dollar) for the Machining Department to allocate to its products would be:

- A. $442,053.
- B. $415,526.
- C. $422,750.
- D. $445,000.
Using the step-down method to allocate service costs, the Maintenance costs would be allocated 10% ($36,000) to Systems and 50% ($180,000) to Machining.

The Systems department would then have $131,000 ($95,000 + $36,000) to allocate 45/95th's ($62,053) to Machining.

Therefore, total overhead for the Machining Department to allocate to its products would equal $200,000 (its own overhead) + $180,000 + $62,053 = $442,053.

**Question 10:**
A vintage car restoration company using job order costing determines that all cars currently in production need rework done on their paint primer due to impurities that were in the air at the time of spraying. The firm has determined that nothing can be done to prevent such an incident from occurring occasionally. Which of the following is true of this type of rework?

A. These are abnormal defective units for a specific job, so they are charged to a loss from abnormal rework account.

B. These are abnormal defective units common to all jobs, so they are charged to factory overhead.

C. These are normal defective units common to all jobs, so the expense is charged to factory overhead.

D. These are normal defective units for a specific job, so they are charged to the job's work-in-process inventory account.

Because this situation occurs occasionally and the company knows about it, it is considered a normal defective unit. Since the car company uses job order costing, each car is considered a specific job, so these impurities are common to all jobs and therefore should be charged to factory overhead.

**Question 11:**
Lee Manufacturing uses a standard cost system with overhead applied based upon direct labor hours. The manufacturing budget for the production of 5,000 units for the month of May included:

- Direct labor (10,000 hours at $15 per hour) $150,000
- Variable overhead 30,000
- Fixed overhead 80,000

During May, 6,000 units were produced and the fixed overhead spending budget variance was $2,000 favorable. Fixed overhead during May was:
A. underapplied by $2,000.
B. overapplied by $16,000.
C. underapplied by $16,000.
D. overapplied by $18,000.

Applied fixed overhead is calculated by taking the predetermined overhead rate for fixed overhead and multiplying it by the standard number of hours.

In this case, the predetermined fixed overhead rate would be $8 per hour ($80,000/10,000 hours = $8 per hour) and the standard number of hours used to apply fixed overhead would be 12,000 hours (6,000 units × 2 direct labor hours per unit = 12,000 direct labor hours) Multiplying the predetermined fixed overhead rate by the standard number of direct labor hours as follows: ($8/hour × 12,000 direct labor hours = $96,000 applied fixed overhead.

Since the fixed overhead budget variance was $2,000 favorable, or less than budgeted, then the actual fixed overhead was $78,000 ($80,000 − $2,000). The fixed overhead budget variance is calculated by taking the difference between the applied fixed overhead and the actual fixed overhead. So, if applied fixed overhead was $96,000 and actual fixed overhead was $78,000, then fixed overhead was overapplied by $18,000.

Question 12:

Logo Inc. has two data services departments (the Systems Department and the Facilities Department) that provide support to the company’s three production departments (Machining, Assembly, and Finishing). The overhead costs of the Systems Department are allocated to other departments on the basis of computer usage hours. The overhead costs of the Facilities Department are allocated based on square feet occupied (in thousands). Other information pertaining to Logo is as follows:

<table>
<thead>
<tr>
<th>Department</th>
<th>Overhead</th>
<th>Computer Usage Hours</th>
<th>Square Feet Occupied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems</td>
<td>$200,000</td>
<td>300</td>
<td>1,000</td>
</tr>
<tr>
<td>Facilities</td>
<td>100,000</td>
<td>900</td>
<td>600</td>
</tr>
<tr>
<td>Machining</td>
<td>400,000</td>
<td>3,600</td>
<td>2,000</td>
</tr>
<tr>
<td>Assembly</td>
<td>550,000</td>
<td>1,800</td>
<td>3,000</td>
</tr>
<tr>
<td>Finishing</td>
<td>620,000</td>
<td>2,700</td>
<td>5,000</td>
</tr>
</tbody>
</table>

9,300 11,600
Logo employs the step-down method of allocating service department costs and begins with the Systems Department. Which one of the following correctly denotes the amount of the Systems Department's overhead that would be allocated to the Facilities Department and the Facilities Department's overhead charges that would be allocated to the Machining Department?

A. Systems to Facilities = $0, Facilities to Machining = $20,000.
B. Systems to Facilities = $19,355, Facilities to Machining = $20,578.
C. Systems to Facilities = $20,000, Facilities to Machining = $20,000.
D. Systems to Facilities = $20,000, Facilities to Machining = $24,000.

The amount of the Systems Department's overhead that would be allocated to the Facilities Department (Dept.) is calculated as:

\[
\text{Systems Dept. overhead allocated to Facilities Dept.} = \frac{(\text{number of Facilities computer usage hours})(\text{Systems Dept. overhead cost})}{(\text{number of computer usage hours used by all departments except System})}
\]

\[
\text{System's Dept. overhead allocated to Facilities Dept.} = \frac{(900 \text{ hours})($200,000)}{9,000 \text{ hours}} = $20,000
\]

The Facilities Department now has $120,000 to allocate to the three production departments.

The Facilities Department's overhead charges that would be allocated to the Machining Department are:

\[
\text{Facilities Dept. overhead to be allocated to Machining Dept.} = \frac{($120,000)(2,000 \text{ square feet occupied by machining})}{(10,000 \text{ square feet occupied by the three production departments})}
\]

Facilities Dept. overhead to be allocated to Machining Dept. = $24,000.

**Question 13:**

A company using the step-down method of allocating service department costs has two service departments and two production departments. The amount of each department's costs is used to determine the relative value of each department to the firm for purposes of allocation. HR costs $100,000, and maintenance costs $150,000. These departments respectively use 8,000 and 10,000 labor-hours. Production departments have original department costs and labor-hours of $400,000 (40,000 labor-
hours) for tennis balls and $300,000 (30,000 labor-hours) for racquet balls. What is the total cost for the tennis ball department if labor-hours are used as the sole cost driver? (Round all intermediate calculations to three decimal places.)

A. $542,857.
B. $475,065.
C. $596,343.
D. $514,286.

The maintenance department’s costs are allocated first to all other departments:
to HR $150,000 × [8,000/(8,000 + 40,000 + 30,000)] = $15,384;
to tennis balls $150,000 × 0.513 = $76,923.

Thus HR’s new costs to allocate are $115,384 ($100,000 + $15,384).
HR’s costs allocated to the tennis ball department are calculated as:
$115,384 × [40,000/(40,000 + 30,000)] = $65,934.
Thus the tennis ball department’s total costs are $400,000 + $76,923 + $65,934 = $542,857.

Question 14:
Regarding plant-wide overhead rates, departmental overhead rates, and activity-based costing (ABC) overhead costing, which of the following is true?

A. ABC overhead rates are the best selection for processes that are very homogeneous.
B. Cost drivers (allocation base) for all three methods are selected because of assumed or determined cause-and-effect relationships with costs.
C. Each method uses only one cost driver (allocation base) but multiple cost pools.
D. Departmental overhead is the most accurate of the methods.

Cost drivers (allocation base) should have a cause-and-effect relationship on costs. Obviously, the plant-wide overhead rate will have the most difficulty with this goal.

Question 15:
Which of the following allocates service department costs sequentially to both production and other service departments starting with the department that provides the most services and finishes in a single pass (doesn’t allocate costs to items higher in the sequence)?
A. Reciprocal method.
B. Indirect method.
C. Direct method.
D. Step-down method.

The question defines the step-down method of allocating service department costs.

Question 16:
Cynthia Rogers, the cost accountant for Sanford Manufacturing, is preparing a management report which must include an allocation of overhead. The budgeted overhead for each department and the data for one job are shown below.

<table>
<thead>
<tr>
<th>Departments</th>
<th>Tooling</th>
<th>Fabricating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplies</td>
<td>$ 690</td>
<td>$ 80</td>
</tr>
<tr>
<td>Supervisors' salaries</td>
<td>1,400</td>
<td>1,800</td>
</tr>
<tr>
<td>Indirect labor</td>
<td>1,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>1,200</td>
<td>5,200</td>
</tr>
<tr>
<td>Repairs</td>
<td>4,400</td>
<td>3,000</td>
</tr>
<tr>
<td>Total Budgeted Overhead</td>
<td>$ 8,690</td>
<td>$ 14,080</td>
</tr>
<tr>
<td>Total Direct Labor Hours</td>
<td>440</td>
<td>640</td>
</tr>
<tr>
<td>Direct Labor Hours on Job #231</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

Using the departmental overhead application rates, and allocating overhead on the basis of direct labor hours, overhead applied to Job #231 in the Tooling Department would be:

A. $241.50.
B. $197.50.
C. $44.00.
D. $501.00.
The overhead applied to Job #231 in the Tooling Department is calculated as follows:

Tooling overhead applied, Job #231 = (tooling overhead rate)(number of direct labor hours used by Job #231)

Tooling overhead rate = (total tooling overhead costs) / (total direct labor hours used in tooling dept.)

Tooling overhead rate = ($8,690) / (440 direct labor hours) = $19.75 per direct labor hour

Tooling overhead applied, Job #231 = ($19.75)(10 direct labor hours) = $197.50.

**Question 17:**

The most important criterion in accurate cost allocations is:

* Source: Retired ICMA CMA Exam Questions.

A. using multiple drivers for each cost pool.

B. using homogeneous cost pools.

C. using a simple allocation method.

D. allocating fixed and variable costs by using the same allocation base.

The most important criterion in accurate cost allocations is through the use of homogeneous cost pools. Homogeneous cost pools are a group of overhead costs associated with activities that can utilize the same cost driver.

**Question 18:**

In determining next year’s overhead application rates, a company desires to focus on manufacturing capacity rather than output demand for its products. To derive a realistic application rate, the denominator activity level should be based on:

A. normal capacity.

B. master-budget (expected annual) capacity.

C. maximum capacity.

D. practical capacity.

Maximum capacity would occur if there were no interruptions, which is
virtually impossible. Normal and master-budget capacity focus on output demand. Thus, practical capacity, which is the maximum production output the firm can reach at the usual level of interruptions, will produce the best overhead allocation rate given the circumstances.

Question 19:
Bluebird Enterprises has two production departments (P1 and P2) and two service departments (S1 and S2). A breakdown of current period costs and service usage for each department is:

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>S1</th>
<th>S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td>$30,000</td>
<td>$40,000</td>
<td>$24,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>S1 services</td>
<td>50%</td>
<td>30%</td>
<td>-0-</td>
<td>20%</td>
</tr>
<tr>
<td>S2 services</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
<td>-0-</td>
</tr>
</tbody>
</table>

If Bluebird uses the direct method for allocation of service costs, what are the total service costs allocated to the two production departments (P1 and P2)?

A. $19,800 to P1 and $15,400 to P2.
B. $24,000 to P1 and $20,000 to P2.
C. $25,000 to P1 and $19,000 to P2.
D. $20,000 to P1 and $15,200 to P2.

The direct method eliminates the service performed between service departments. The service provided by S1 ($24,000 total) is divided 5/8 to P1 and 3/8 to P2, which is $15,000 and $9,000, respectively. The service provided by S2 ($20,000 total) is divided evenly between the two production departments. So total cost allocated to P1 is $15,000 + $10,000 = $25,000 and total cost allocated to P2 is $9,000 + $10,000 = $19,000.

Question 20:
Boston Furniture Company manufactures several steel products. It has three production departments, Fabricating, Assembly, and Finishing. The service departments include Maintenance, Material Handling, and Designing. Currently, the company does not allocate service department costs to the production departments. John Baker, who has recently joined the company as the new cost accountant, believes that service department rates should be developed and charged to the production departments for services requested. If the company adopts this new policy, the production department managers would be least likely to:

A. refrain from using necessary services.

* Source: Retired ICMA CMA Exam Questions.
If there is a new corporate policy that would require a department or division to incur additional costs, management of those departments or divisions effected would be least likely to incur those additional costs. In this case, the product department manager would be least likely to request an excessive amount of service.

Question 21:

Wilcox Industrial has two support departments, the Information Systems Department and the Personnel Department, and two manufacturing departments, the Machining Department and the Assembly Department. The support departments service each other as well as the two production departments. Company studies have shown that the Personnel Department provides support to a greater number of departments than the Information Systems Department. Which one of the following departmental allocations is present in the reciprocal method of departmental allocation? The costs of the:

* A. Personnel Department costs are allocated solely to the Information Systems Department.

* B. Assembly Department costs are allocated to the Information Systems Department and the Personnel Department.

* C. The costs of the Information Systems Department are allocated to the Personnel Department, Machining Department, and Assembly Department.

* D. Information Systems Department costs are allocated to the Machining Department and the costs of the Machining Department are allocated to the Assembly Department.

Departmental cost allocation involves allocating the costs among the departments that the particular service department supports. In this case, the Information System Department costs are allocated to the Personnel Department, Machining Department, and Assembly Department. The reciprocal method includes allocation of services provided to all departments and services consumed by the same department.

Question 22:

Render Inc. has four support departments (maintenance, power, human resources, and legal) and three operating departments. The support
departments provide services to the operating departments as well as to the other support departments. The method of allocating the costs of the support departments that best recognizes the mutual services rendered by support departments to other support departments is the reciprocal allocation method.

* Source: Retired ICMA CMA Exam Questions.

A. direct allocation method.
B. step-down allocation method.
C. dual-rate allocation method.
D. reciprocal allocation method.

The method of allocating the costs of the support departments that best recognizes the mutual services rendered by support department to other support departments is the reciprocal allocation method.

**Question 23:**
Bluebird Enterprises has two production departments (P1 and P2) and two service departments (S1 and S2). A breakdown of current period costs and service usage for each department is as follows:

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>S1</th>
<th>S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td>$30,000</td>
<td>$40,000</td>
<td>$24,000</td>
<td>20,000</td>
</tr>
<tr>
<td>S1 services</td>
<td>50%</td>
<td>30%</td>
<td>-0-</td>
<td>20%</td>
</tr>
<tr>
<td>S2 services</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
<td>-0-</td>
</tr>
</tbody>
</table>

If Bluebird uses the reciprocal method for allocating service costs, what are the total service costs allocated to the two production departments (P1 and P2) (rounding all numbers to the nearest dollar)?

A. $24,917 to P1 and $19,083 to P2.
B. $24,400 to P1 and $20,600 to P2.
C. $24,667 to P1 and $19,333 to P2.
D. $25,000 to P1 and $19,000 to P2.

To find the reciprocal method of allocation, establish 2 cost equations for the service departments: S1 = $24,000 + .2S2 and S2 = $20,000 + .2S1. Solving for the unknowns in these two equations, S1 = $29,167 and S2 = $25,833. An example of how to solve for the unknowns and a table showing how to allocate these numbers follows:
Note that $24,916 + $19,083 = $43,999 rounded to $44,000 (to account for rounding differences) equals the amount necessary to allocate: $20,000 + $24,000.

**Question 24:**

During December, Krause Chemical Company had the following selected data concerning the manufacture of Xyzine, an industrial cleaner:

<table>
<thead>
<tr>
<th>Allocate</th>
<th>P1</th>
<th>P2</th>
<th>S1</th>
<th>S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$14,563</td>
<td>$6,750</td>
<td>($29,167)</td>
<td>$5,633</td>
<td></td>
</tr>
<tr>
<td>$10,333</td>
<td>$10,333</td>
<td>$5,167</td>
<td>($25,833)</td>
<td></td>
</tr>
<tr>
<td><strong>Total allocation</strong></td>
<td><strong>$24,916</strong></td>
<td><strong>$19,083</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All material is added at the beginning of processing in this department, and conversion costs are added uniformly during the process. The beginning work-in-process inventory had $120 of raw material and $180 of conversion costs incurred. Material added during December was $540 and conversion costs of $1,484 were incurred. Krause uses the first-in, first-out (FIFO) process-costing method. The equivalent units of production used to calculate conversion costs for December was:
A. 104 units.
B. 110 units.
C. 92 units.
D. 100 units

FIFO follows the actual flow of the units through the process. Therefore, the equivalent units of production used to calculate conversion costs for December can be calculated as:

Equivalent units, conversion costs = (units in beginning inventory)(1 − the completion rate at the beginning of the period) + (units started and finished) + (units in ending inventory)(completion %)

Equivalent units, conversion costs = (20 units)(1 − 0.6) + (80 units) + (10 units)(0.4)

Equivalent units, conversion costs = 8 units + 80 units + 4 units = 92 units.

Question 25:

Atmel Inc. manufactures and sells two products. Data with regard to these products are given below:

<table>
<thead>
<tr>
<th></th>
<th>Product A</th>
<th>Product B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units produced and sold</td>
<td>30,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Machine hours required per unit</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Receiving orders per product line</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Production orders per product line</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Production runs</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Inspections</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

Total budgeted machine hours are 100,000. The budgeted overhead costs are shown below.

- Receiving costs: $450,000
- Engineering costs: $300,000
- Machine setup costs: $25,000
- Inspection costs: $200,000

Total budget overhead: $975,000

The cost driver for engineering costs is the number of production orders per product line. Using activity-based costing, the engineering cost per unit for Product B would be:
The engineering cost per unit for Product B is calculated as:

\[
\text{Engineering cost per unit, Product B} = \left(\frac{\text{engineering cost per production order} \times \text{number of production orders for Product B}}{\text{number of units of Product B}}\right)
\]

The engineering cost per production order = \(\frac{\$300,000}{30\ \text{total production orders}}\) = \$10,000 per production order

Engineering cost per unit, Product B = \(\frac{\$10,000 \times 18}{12,000\ \text{units}}\) = \$15 per unit.

**Question 26:**

The management of ROX Company wishes to encourage all other departments to use the legal department, as circumstances warrant. To accomplish this, legal department costs should be:

* Source: Retired ICMA CMA Exam Questions.

A. absorbed as a corporate expense.
B. allocated to users on the basis of the budgeted cost of actual hours used.
C. allocated to users on the basis of standard cost for the type of service provided.
D. allocated to users on the basis of the actual cost of hours used.

Since the management of ROX Company wishes to encourage all other departments to use the legal department, as circumstances warrant, and the legal department assists the organization as a whole, these legal department costs should be absorbed as a corporate expense and not be allocated to each department based on use.

**Question 27:**

Which of the following methods is generally considered the most acceptable method of allocating service department costs?
A. Reciprocal method.

B. Step-down method.

C. Activity-based method.

D. Direct method.

The reciprocal method fully recognizes all interdepartmental service costs, allocating all costs to other affected departments using complex algorithms.

Question 28:

M&P Tools has three service departments that support the production area. Outlined below is the estimated overhead by department for the upcoming year.

<table>
<thead>
<tr>
<th>Service Departments</th>
<th>Estimated Overhead</th>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving</td>
<td>$25,000</td>
<td>2</td>
</tr>
<tr>
<td>Repair</td>
<td>$35,000</td>
<td>2</td>
</tr>
<tr>
<td>Tool</td>
<td>$10,000</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Production Departments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly</td>
<td>25</td>
</tr>
<tr>
<td>Bolting</td>
<td>12</td>
</tr>
</tbody>
</table>

The Repair Department supports the greatest number of departments, followed by the Tool Department. Overhead cost is allocated to departments based upon the number of employees.

Using the step-down method of allocation, the allocation from the Repair Department to the Tool Department would be:

A. $875.

B. $7,000.

C. $11,667.

D. $0.

The step-down (sequential) method of service department cost allocation recognizes inter-service department services in one direction only. Reciprocal services are ignored.

The Repair Department Costs would be allocated to all of the other departments. The resulting Tool Department costs would be allocated to the Repair Department and the production departments. The resulting
Repair Department costs would be allocated to the production departments, only.

Repair Department costs are allocated to other departments based on the number of employees in the other departments. The number of employees in the departments other than the Repair Department totals 40. The Tooling Department has 1 employee out of the total of 40 that are being used as the basis to allocate the Repair Department costs, therefore the Tooling Department receives 1/40th of the Repair Department’s costs.

The allocation of Repair Department costs to the Tool Department based upon the number of employees would be \((1/40)(35,000) = 875\).

Question 29:

Bluebird Enterprises has two production departments (P1 and P2) and two service departments (S1 and S2). A breakdown of current period costs and service usage for each department is:

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>S1</th>
<th>S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td>30,000</td>
<td>40,000</td>
<td>24,000</td>
<td>20,000</td>
</tr>
<tr>
<td>S1 services</td>
<td>50%</td>
<td>30%</td>
<td>-0-</td>
<td>20%</td>
</tr>
<tr>
<td>S2 services</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
<td>-0-</td>
</tr>
</tbody>
</table>

If Bluebird uses the step method for allocating service costs, allocating service department S1 first, what are the total service costs allocated to the two production departments (P1 and P2)?

A. $19,800 to P1 and $24,200 to P2.

B. $24,400 to P1 and $19,600 to P2.

C. $20,800 to P1 and $23,200 to P2.

D. $25,000 to P1 and $19,000 to P2.

The step-down method allocates some of the service performed for other service departments. In this case, S1 services are allocated to S2, P1 and P2, and then S2 costs ($20,000 + amount allocated from S1) are allocated to P1 and P2 evenly instead of including S1 because the step-down method does not allocate costs to departments that already allocated their own costs. Calculation is as follows:

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>S1</th>
<th>S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocate S1</td>
<td>12,000</td>
<td>7,200</td>
<td>(24,000)</td>
<td>(4,000)</td>
</tr>
<tr>
<td>Allocate S2</td>
<td>12,400</td>
<td>12,400</td>
<td>-0-</td>
<td>(24,000)</td>
</tr>
<tr>
<td>Total allocation</td>
<td>24,400</td>
<td>19,600</td>
<td>-0-</td>
<td>-0-</td>
</tr>
</tbody>
</table>

Question 30:
Henry Manufacturing, which uses direct labor hours to apply overhead to its product line, undertook an extensive renovation and modernization program two years ago. Manufacturing processes were reengineered, considerable automated equipment was acquired, and 60% of the company’s nonunion factory workers were terminated.

Which of the following statements would apply to the situation at Henry?

I. The company's factory overhead rate has likely increased.
II. The use of direct labor hours seems to be appropriate.
III. Henry will lack the ability to properly determine labor variances.
IV. Henry has likely reduced its ability to quickly cut costs in order to respond to economic downturns.

* Source: Retired ICMA CMA Exam Questions.

A. I and IV only.
B. I, II, III, and IV.
C. II and IV only.
D. I and III only.

In this situation, Henry’s manufacturing process was reengineered and it can be assumed that overhead costs were likely increased. And due to the new automated equipment that was acquired, Henry terminated 60% of nonunion factory workers, lowering those overhead costs. Henry has likely reduced its ability to quickly cut costs in order to respond to economic downturns.

Question 31:

A firm using a plant-wide overhead rate has four departments with the following overhead amounts: $200,000, $300,000, $100,000, and $200,000. The same departments respectively have the following annual labor-hours totals: 30,000, 40,000, 20,000, and 10,000. Assuming labor-hours are used as the allocation base, what overhead rate will the first department use?

A. $6.67/labor-hour.
B. $2/labor-hour.
C. $10/labor-hour.
D. $8/labor-hour.

Since the plant uses a plant-wide overhead rate, the overhead amounts and the labor-hours amounts are totaled and the total plant overhead is
divided by the total units of the cost driver: $800,000/100,000 labor-hours = $8/labor-hour.

**Question 32:**

The most accurate method of allocating service department costs is the:

A. step method.

B. reciprocal method.

C. composite method.

D. direct method.

The reciprocal or cross-allocation method of allocating service department costs to production recognizes all of the inter-service department service linkages. Therefore, it is more accurate than either the direct method, which ignores all inter-service department services, or the sequential (step-down) method, which only recognizes some of the inter-service department services.

**Question 33:**

Young Company is beginning operations, and is considering three alternative ways in which to allocate manufacturing overhead to individual units produced. Young can use a plantwide rate, departmental rates, or activity based costing. Young will produce many types of products in its single plant, and not all products will be processed through all departments. In which one of the following independent situations would reported net income for the first year be the same regardless of which overhead allocation method had been selected?

* Source: Retired ICMA CMA Exam Questions.

A. All ending inventory balances are zero.

B. All manufacturing overhead is a fixed cost.

C. All production costs approach those costs that were budgeted.

D. The sales mix does not vary from the mix that was budgeted.

If a period begins with no inventory balances, reported net income for the first year would be the same regardless of which overhead allocation method has been selected.

**Question 34:**

Lucy Sportswear manufactures a specialty line of T-shirts using a job order cost system. During March, the following costs were incurred in completing
Job ICU2: direct materials $13,700; direct labor $4,800; administrative $1,400; and selling $5,600. Factory overhead was applied at the rate of $25 per machine hour, and Job ICU2 required 800 machine hours. If Job ICU2 resulted in 7,000 good shirts, the cost of goods sold per unit would be:

- A. $5.70.
- B. $6.50.
- C. $5.50.
- D. $6.30.

The unit costs for Job ICU2 would consist of direct material, direct labor and applied overhead per unit.

Cost of goods sold per unit = (direct material costs + direct labor costs + applied overhead) / number of units

Applied overhead for Job ICU2 = (overhead rate)(number of machine hours)
Applied overhead for Job ICU2 = ($25)(800 machine hours) = $20,000

Cost of goods sold per unit = ($13,700 + $4,800 + $20,000) / (7,000 units)
Cost of goods sold per unit = ($38,500) / (7,000 units) = $5.50 per unit.

Question 35:
When allocating costs from one department to another, a dual-rate cost-allocation method may be used. The dual-rate cost-allocation method is most useful when:

- A. two or more products are produced.
- B. costs are separated into variable-cost and fixed-cost subpools.
- C. two or more cost pools are to be allocated.
- D. two or more departments' costs are to be allocated.

A dual-rate cost-allocation method is most useful when costs are separated into variable-cost and fixed-cost subpools.

Question 36:
Wilcox Industrial has two support departments, the Information Systems Department and the Personnel Department, and two manufacturing
departments, the Machining Department and the Assembly Department. The support departments service each other as well as the two production departments. Company studies have shown that the Personnel Department provides support to a greater number of departments than does the Information Systems Department. If Wilcox uses the direct method of departmental allocation, which one of the following cost allocations would occur? Some of the costs of the:

* Source: Retired ICMA CMA Exam Questions.

A. Personnel Department would be allocated to the Information Systems Department.

B. Machining Department would be allocated to the Information Systems Department.

C. Information Systems Department would be allocated to the Assembly Department.

D. Assembly Department would be allocated to the Machining Department.

The direct method of department allocation, no-consideration is given to services performed by one service department for another. Therefore, the Information Systems Department would be allocated to the Assembly Department.

**Question 37:**

"Committed costs" are costs that:

A. management decides to incur in the current period that do not have a clear cause and effect relationship between inputs and outputs.

B. result from a clear measurable relationship between inputs and outputs.

C. establish the present level of operating capacity and cannot be altered in the short run.

D. are responsive to management's attention.

Facility costs are committed costs resulting from past decisions related to establishing the firm's capacity level. A common definition of the short-run is the time period over which capacity is fixed. Once capacity is altered, the firm is in the long-run.

**Question 38:**

Which one of the following categories of cost is most likely not considered a component of fixed factory overhead?

A. property taxes.
B. supervisory salaries.

C. supplies.

D. rent.

Supply costs vary automatically in direct proportion to changes in activity level. Supply costs are variable.

Question 39:

A firm uses direct labor hours as its plant-wide cost driver for overhead. Managers estimate total overhead during the year to be $108,000 and direct labor hours to be 15,000. Assume that during the current period, 1,500 direct labor hours were recorded and actual overhead for the period was $9,350. Which of the following statements is true?

A. Overhead is overapplied by $1,450.

B. Overhead is underapplied by $350.

C. Overhead is underapplied by $1,450.

D. Overhead is overapplied by $350.

The predetermined overhead rate is $108,000/15,000 or $7.20 per hour. During the period, 1,500 hours were recorded so overhead applied would be 1,500 × $7.20 = $10,800. Since actual overhead was $9,350, overhead is overapplied by the difference of $1,450.

Question 40:

Ace Inc. estimates its total materials handling costs at two production levels as:

<table>
<thead>
<tr>
<th>Cost</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>$160,000</td>
<td>80,000</td>
</tr>
<tr>
<td>$132,000</td>
<td>60,000</td>
</tr>
</tbody>
</table>

What is the estimated total cost for handling 75,000 gallons?

A. $146,000.

B. $153,000.

C. $165,000.

D. $150,000.

Variable cost per gallon = ($160,000 − $132,000) / (80,000 − 60,000) =
$1.40 per gallon.

For the activity level of 60,000 gallons:
Variable costs = $1.40 \times 60,000 = $84,000.
Fixed costs = Total costs − Variable costs = $132,000 − $84,000 = $48,000.

For the activity level of 75,000 gallons:
Total costs = $1.40 \times 75,000 + $48,000 = $153,000.

**Question 41:**
When using normal costing, $1,000,000 of overhead was allocated to the production process but $1,020,000 was actually incurred. Which of the following is true of this situation?

A. If immaterial, the overapplied overhead decreases the cost of goods sold.
B. If immaterial, the underapplied overhead increases the cost of goods sold.
C. If material, the overapplied overhead decreases the cost of goods sold.
D. If material, the underapplied overhead increases the cost of goods sold.

Since the amount of overhead incurred was greater than what was budgeted, the difference is the amount that was underapplied. Only immaterial amounts are allowed to directly adjust the cost of goods sold.

**Question 42:**
Multiple or departmental overhead rates are considered preferable to a single or plant-wide overhead rate when:

A. manufacturing is limited to a single product flowing through identical departments in a fixed sequence.
B. individual cost drivers cannot accurately be determined with respect to cause-and-effect relationships.
C. various products are manufactured that do not pass through the same departments or use the same manufacturing techniques.
D. the single or plant-wide rate is related to several identified cost drivers.

Individual departmental rates rather than a plant-wide rate for applying overhead would be used if the departments have different cost drivers and various products are manufactured that do not pass through the same departments or use the same manufacturing techniques. For example, one department may be labor-intensive, while another may be machine-intensive, or use highly automated processes.
Question 43:

If a firm has a significant overapplied overhead at the end of the period, then which of the following statements is true?

A. The accountant should credit overhead and debit a combination of cost of goods sold, WIP inventory, and finished goods inventory for the overapplied amount.

B. The accountant should debit overhead and credit a combination of cost of goods sold, work-in-process (WIP) inventory, and finished goods inventory for the overapplied amount.

C. The accountant should credit overhead and debit cost of goods sold for the overapplied amount.

D. The accountant should debit overhead and credit cost of goods sold for the overapplied amount.

Overapplied overhead implies a credit balance in the overhead account (debit overhead for actual costs and credit overhead for applied). To eliminate this balance a debit to overhead is required. Since the overapplied amount is considered significant, the amount must be distributed between accounts that hold some part of the actual factory overhead, i.e., cost of goods sold, WIP inventory and finished goods inventory.

Question 44:

Jones Tax Company has three divisions—Compliance, Tax Planning, and Financial Consulting. Based on the divisional data presented below, which one of the allocation bases for common company expenses would likely have the least negative behavioral impact on the Financial Consulting Division manager?

<table>
<thead>
<tr>
<th></th>
<th>Compliance</th>
<th>Tax Planning</th>
<th>Financial Consulting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>$4,500,000</td>
<td>$6,000,000</td>
<td>$4,500,000</td>
</tr>
<tr>
<td>Variable expenses</td>
<td>1,500,000</td>
<td>3,750,000</td>
<td>2,250,000</td>
</tr>
<tr>
<td>No. of employees</td>
<td>68</td>
<td>76</td>
<td>56</td>
</tr>
</tbody>
</table>

* Source: Retired ICMA CMA Exam Questions.*

A. Contribution margin.

B. Revenues.
C. Equal sharing.

D. Number of employees.

Analyzing the data for the Financial Consulting Division, the number of employees would have the least negative behavioral impact on the division, as the contribution margin per employee is the lower than the other divisions.

Question 45:

Which of the following is often changed on a day-to-day basis?

A. Plant-wide overhead rate.

B. Departmental overhead rate.

C. Fixed overhead costs.

D. Variable overhead costs.

Variable overhead costs can be influenced on an ongoing basis, unlike fixed overhead costs, which cannot be influenced by daily attention.

Question 46:

Cotton Company has two service departments and three operating departments. In allocating service department costs to the operating departments, which of the following three methods (direct, step-down, reciprocal) will result in the same amount of service department costs being allocated to each operating department, regardless of the order in which the service department costs are allocated?

* Source: Retired ICMA CMA Exam Questions.

A. Direct and step-down methods only.

B. Direct method only.

C. Direct and reciprocal methods only.

D. Step-down and reciprocal methods only.

Direct and reciprocal methods of cost allocating will result in the same amount of service department costs being allocated to each operating department, regardless of the order in which the service department costs are allocated.

Question 47:

A plant's fixed overhead costs total $500,000 for a year to produce 400,000 widgets, among other items. If machine-hours are used as an allocation
base, all processes use a total of 40,000 machine-hours, and widgets use 16,000 of these hours, what is the fixed overhead applied to each widget?

A. $1.25/widget.
B. $5.00/widget.
C. $12.50/widget.
D. $0.50/widget.

The total fixed overhead costs divided by the machine-hours for the process equals the fixed overhead application rate: $500,000/40,000 = $12.50/machine-hour. Total hours used on widgets were 16,000 so fixed overhead applied to all widgets is $12.50 × 16,000 = $200,000. Since 400,000 widgets were produced, the fixed overhead applied per widget is $200,000/400,000 = $0.50.

Question 48:
1D3-L553
A plant using plant-wide overhead and machine-hours for the overhead application rate is considering switching to an activity-based costing (ABC) overhead costing method. Total overhead was $620,000 for a period that contained two jobs. Job 1 used 8,000 machine-hours; job 2 used 12,000 machine-hours. New data groups overhead costs into three pools for job 1: utilities measured by machine-hours at a predetermined driver rate of $10/machine-hour, materials handling of 60,000 pounds at a rate of $3/pound, and 200 setups at a rate of $300/setup. For job 1, what amount is allocated using the plant-wide and ABC methods?

A. Plant-wide: $310,000; ABC overhead costing: $320,000.
B. Plant-wide: $310,000; ABC overhead costing: $372,000.
C. Plant-wide: $248,000; ABC overhead costing: $320,000.
D. Plant-wide: $248,000; ABC overhead costing: $372,000.

The plant-wide rate is calculated by dividing the total cost by the machine-hours for the entire plant: $620,000/20,000 machine-hours = $31/machine-hour. This rate times 8,000 machine-hours equals $248,000 allocated to job 1. The ABC overhead costing method allocates costs as follows ($10/machine-hour × 8,000 machine-hours) + (60,000 pounds × $3/pound) + (200 setups × $300/setup) = $80,000 + $180,000 + $60,000 = $320,000.

Question 49:
1D3-C011
Clipper Industries manufactures two types of scissors: a basic model, and a more durable fabric model. During the current year, Clipper accumulated the following summary information about its two products:
Using the high-low method, estimate the fixed production costs of both the basic model and the fabric model.

A. $6,200 variable costs for fabric model, $3,080 fixed costs for basic model.

B. $6,200 fixed costs for basic model, $3,080 fixed costs for fabric model.

C. $6,200 variable costs for fabric model, $3,800 fixed costs for basic model.

D. $6,200 fixed costs basic model, $3,800 fixed costs for fabric model.

We must first estimate the variable production costs. In this case, the variable costs at the high and low levels of production are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Basic Model</th>
<th>Fabric Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-production month</td>
<td>30,000</td>
<td>44,000</td>
</tr>
<tr>
<td>Low-production month</td>
<td>6,000</td>
<td>9,200</td>
</tr>
<tr>
<td>Difference</td>
<td>24,000</td>
<td>34,800</td>
</tr>
<tr>
<td>Total production costs of high month</td>
<td>$ 282,500</td>
<td>$ 438,400</td>
</tr>
<tr>
<td>Total production costs of low month</td>
<td>51,400</td>
<td>92,920</td>
</tr>
<tr>
<td>Difference</td>
<td>$ 231,100</td>
<td>$ 340,480</td>
</tr>
</tbody>
</table>

Now that we know the differences of the two models, the change in units
(production) is divided into the change in costs to determine the variable cost rate.

\[
\frac{\text{Change in Costs}}{\text{Change in Units}} = \text{Variable Cost Rate}
\]

\[
\frac{\$221,100}{24,000} = \$9.21 \text{ for basic model}
\]

\[
\frac{\$340,480}{34,800} = \$9.78 \text{ for fabric model}
\]

As total variable costs equal unit variable costs times number of units produced, and total costs equal total variable costs plus fixed costs, fixed costs can now be calculated.

\[
\text{Total Costs} - (\text{Variable Cost per Unit} \times \text{Number of Units}) = \text{Total Fixed Costs}
\]

**Basic Model Fixed Costs**

\[
= \$282,500 - (\$9.21 \times 30,000)
= \$282,500 - \$276,300
= \$6,200 \text{ Fixed Costs for Basic Model}
\]

**Fabric Model Fixed Costs**

\[
= \$433,400 - (\$9.78 \times 44,000)
= \$433,400 - \$430,320
= \$3,080 \text{ Fixed Costs for Fabric Model}
\]

**Question 50:**

Patterson Corporation expects to incur $70,000 of factory overhead and $60,000 of general and administrative costs next year. Direct labor costs at $5 per hour are expected to total $50,000. If factory overhead is to be applied per direct labor hour, how much overhead will be applied to a job incurring 20 hours of direct labor?

A. $120.  
B. $260.  
C. $28.  
D. $140.

The overhead applied to a job incurring 20 direct labor hours would be calculated as:

\[
\text{Overhead applied} = (\text{overhead rate per direct labor hour})(20 \text{ direct labor hours})
\]
The number of direct labor hours to be used to calculate the overhead rate is 10,000 ($50,000 / $5 per hour = 10,000 hours).

The overhead rate = ($70,000) / 10,000 direct labor hours = $7 per direct labor hour.

Therefore, the overhead applied to a job incurring 20 direct labor hours = $7(20 direct labor hours) = $140.

Question 51:

Clipper Industries manufactures two types of scissors: a basic model, and a more durable fabric model. During the current year, Clipper accumulated the following summary information about its two products:

<table>
<thead>
<tr>
<th></th>
<th>Basic Model</th>
<th>Fabric Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling Price</td>
<td>$ 15.00</td>
<td>$ 28.00</td>
</tr>
<tr>
<td>Number of units manufactured and sold</td>
<td>150,000</td>
<td>210,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Basic Model</th>
<th>Fabric Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>Costs</td>
<td>Units</td>
</tr>
<tr>
<td>January</td>
<td>15,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>February</td>
<td>10,500</td>
<td>$108,150</td>
</tr>
<tr>
<td>March</td>
<td>9,000</td>
<td>$99,000</td>
</tr>
<tr>
<td>April</td>
<td>6,000</td>
<td>$61,400</td>
</tr>
<tr>
<td>May</td>
<td>10,500</td>
<td>$109,200</td>
</tr>
<tr>
<td>June</td>
<td>7,500</td>
<td>$78,750</td>
</tr>
<tr>
<td>July</td>
<td>7,500</td>
<td>$77,250</td>
</tr>
<tr>
<td>August</td>
<td>12,000</td>
<td>$124,800</td>
</tr>
<tr>
<td>September</td>
<td>13,500</td>
<td>$144,450</td>
</tr>
<tr>
<td>October</td>
<td>12,000</td>
<td>$123,600</td>
</tr>
<tr>
<td>November</td>
<td>16,500</td>
<td>$173,250</td>
</tr>
<tr>
<td>December</td>
<td>30,000</td>
<td>$282,500</td>
</tr>
<tr>
<td>Totals</td>
<td>150,000</td>
<td>1,531,350</td>
</tr>
</tbody>
</table>

Using the high-low method, estimate the variable production costs of both the basic model and the fabric model.

A. $9.12 variable cost rate for basic model, $9.78 variable cost rate for fabric model.

B. $9.12 variable cost rate for basic model, $9.87 variable cost rate for fabric model.
C. $9.78 variable cost rate for basic model, $9.21 variable cost rate for fabric model.

D. $9.21 variable cost rate for basic model, $9.78 variable cost rate for fabric model.

In this case, the variable costs at the high and low levels of production are:

<table>
<thead>
<tr>
<th></th>
<th>Basic Model</th>
<th>Fabric Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-production month</td>
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</tr>
<tr>
<td>Low-production month</td>
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<td>9,200</td>
</tr>
<tr>
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<td>34,800</td>
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<tr>
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</tr>
<tr>
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<td>61,400</td>
<td>92,920</td>
</tr>
<tr>
<td>Difference</td>
<td>$ 221,100</td>
<td>$ 340,480</td>
</tr>
</tbody>
</table>

Now that we know the differences of the two models, the change in units (production) is divided into the change in costs to determine the variable cost rate.

\[
\text{Change in Costs} \div \text{Change in Units} = \text{Variable Cost Rate}
\]

\[
\frac{221,100}{24,000} = \$ 9.21 \text{ for basic model}
\]

\[
\frac{340,480}{34,800} = \$ 9.78 \text{ for fabric model}
\]

Question 52:
Generally, individual departmental rates rather than a plant-wide rate for applying overhead would be used if:

A. a company wants to adopt a standard cost system.

B. a company's manufacturing operations are all highly automated.

C. the manufactured products differ in the resources consumed from the individual departments in the plant.

D. a company's manufacturing operations are basically labor based.

Individual departmental rates rather than a plant-wide rate for applying overhead would be used if the departments have different cost drivers and the manufactured products differ in the resources consumed from the individual departments in the plant. For example, one department may be...
labor-intensive, while another may be machine-intensive, or use highly automated processes.

**Question 53:**

Huron Industries has recently developed two new products, a cleaning unit for laser discs and a tape duplicator for reproducing home movies taken with a video camera. However, Huron has only enough plant capacity to introduce one of these products during the current year. The company controller has gathered the following data to assist management in deciding which product should be selected for production.

Huron's fixed overhead includes rent and utilities, equipment depreciation, and supervisory salaries. Selling and administrative expenses are not allocated to products.

<table>
<thead>
<tr>
<th></th>
<th>Tape Duplicator</th>
<th>Cleaning Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>$44.00</td>
<td>$36.00</td>
</tr>
<tr>
<td>Machining @ $12/hour</td>
<td>18.00</td>
<td>15.00</td>
</tr>
<tr>
<td>Assembly @ $10/hour</td>
<td>30.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Variable overhead @ $8/hour</td>
<td>36.00</td>
<td>18.00</td>
</tr>
<tr>
<td>Fixed overhead @ $4/hour</td>
<td>16.00</td>
<td>9.00</td>
</tr>
<tr>
<td><strong>Total cost</strong></td>
<td><strong>$146.00</strong></td>
<td><strong>$88.00</strong></td>
</tr>
<tr>
<td>Suggested selling price</td>
<td>$189.95</td>
<td>$99.98</td>
</tr>
<tr>
<td>Actual research and development costs</td>
<td>$240,000</td>
<td>$175,000</td>
</tr>
<tr>
<td>Proposed advertising and promotion costs</td>
<td>$500,000</td>
<td>$350,000</td>
</tr>
</tbody>
</table>

The costs included in Huron's fixed overhead are:

A. joint costs.
B. prime costs.
C. opportunity costs.
D. indirect costs.

*Indirect costs are those that are not economically traceable to a cost object. In product costing, the cost object is the product. Overhead costs, including fixed overhead, are product costs that are not easily traced to the product and are, therefore, indirect costs.*

**Question 54:**

John Sheng, cost accountant at Starlet Company, is developing departmental factory overhead application rates for the company's tooling
and fabricating departments. The budgeted overhead for each department and the data for one job are:

<table>
<thead>
<tr>
<th>Departments</th>
<th>Tooling</th>
<th>Fabricating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplies</td>
<td>$850</td>
<td>$200</td>
</tr>
<tr>
<td>Supervisors' salaries</td>
<td>1,500</td>
<td>2,000</td>
</tr>
<tr>
<td>Indirect labor</td>
<td>1,200</td>
<td>4,880</td>
</tr>
<tr>
<td>Depreciation</td>
<td>1,000</td>
<td>5,500</td>
</tr>
<tr>
<td>Repairs</td>
<td>4,075</td>
<td>3,540</td>
</tr>
</tbody>
</table>

| Total Budgeted Overhead | $8,625 | $16,120 |
| Total Direct Labor Hours | 460    | 620     |
| Direct Labor Hours on Job #231 | 12     | 3       |

Using the departmental overhead application rates, total overhead applied to Job #231 in the Tooling and Fabricating Departments will be:

A. $537.
B. $671.
C. $225.
D. $303.

The total overhead applied to Job #231 in the Tooling and Fabricating Departments can be calculated as:

Total overhead applied, Job #231 = (tooling overhead rate per direct labor hour)(number of direct labor hours on Job #231) + (fabricating overhead rate per direct labor hour)(number of direct labor hours on Job #231)

Tooling overhead rate = $8,625 / 460 total direct labor hours = $18.75 per direct labor hour

Fabricating overhead rate = $16,120 / 620 total direct labor hours = $26 per direct labor hour

Total overhead applied, Job #231 = ($18.75)(12 direct labor hours) + ($26)(3 direct labor hours)
Total overhead applied, Job #231 = $225 + $78 = $303.

**Question 55:**
A company’s maintenance department painted its tennis ball department, the racquet ball department, and its own department. The maintenance department uses square feet as its cost driver. The departments respectively have 80,000, 20,000, and 1,000 square feet of space. The total maintenance department costs before allocation are $60,000. Using the direct method of allocating service department costs, how much cost is allocated to each department?

A. Maintenance department: $0; tennis balls: $36,000; racquet balls: $24,000.
B. Maintenance department: $0; tennis balls: $48,000; racquet balls: $12,000.
D. Maintenance department: $594; tennis balls: $47,525; racquet balls: $11,881.

The direct method does not take into account any amount allocated to another service department, even itself, so nothing is allocated to the maintenance department and the square feet for this department are ignored. Therefore, the proportion of maintenance costs to the tennis ball department is calculated as 80,000/(80,000 + 20,000) = 0.8. This proportion times the total service department costs of $60,000 equals $48,000. Similarly, the racquet ball department is allocated $12,000.

**Question 56:**
A firm wants a simple method to allocate costs from service departments to production departments but never needs to allocate costs from one service department to another. Which of the following methods would satisfy these requirements?

A. Step-down method.
B. Activity-based method.
C. Direct method.
D. Reciprocal method.

The direct method is the most direct and simple method of allocating service department costs. This method cannot be used to allocate costs to other service departments.

**Question 57:**
M&P Tools has three service departments that support the production area. Outlined below is the estimated overhead by department for the upcoming
The Repair Department supports the greatest number of departments, followed by the Tool Department. Overhead cost is allocated to departments based upon the number of employees.

Using the direct method of allocation, how much of the Repair Department's overhead will be allocated to the Tool Department?

A. $0.
B. $11,667.
C. $7,000.
D. $875.

The direct method of service department cost allocation does not recognize the servicing of service departments. All services are assumed to go to production departments only. Therefore, no Repair Department costs would be allocated to either the Tool Department or the Receiving Department.

Question 58:

When allocating the cost of janitorial services to production departments, which of the following items would most likely be used as an activity base?

A. Units produced.
B. Machine-hours.
C. Square footage occupied.
D. Direct labor-hours.

Janitorial services are generally charged based on area that is cleaned. Of the choices, square footage occupied has the closest relationship to services provided.
**Question 1:**
When evaluating the cost of quality in an organization, which one of the following would be considered an internal failure cost?

* Source: Retired ICMA CMA Exam Questions.

A. The warranty repair costs.

B. The cost to rework defective units.

C. Product testing.

D. The cost to inspect units produced.

**Internal failure costs are those costs that could be avoided if internal operations were effective. In this case, the cost to rework defective units is an internal failure cost.**

**Question 2:**
Logical actions to determine best-in-class performance during a benchmarking study include:

A. determination of the desired state and identification of benchmarking partners.

B. identification of desired workflow process changes and collection of industry data.

C. review of core competencies and identification of desired workflow process changes.

D. agreement on a data-gathering method, identification of organizations to benchmark, and collection of data.

Through benchmarking, a firm identifies best levels and conducts a benchmarking study to help define how those levels can be adopted to create improved performance. Agreement on a data-gathering method, identification of organizations to benchmark, and collection of data are the logical activities when attempting to identify best-in-class performance.

**Question 3:**
The series of activities in which customer usefulness is added to the product is the definition of:

A. activity-based costing.
B. process value analysis.

C. a value chain.

D. integrated manufacturing.

The value chain is the sequence of activities, each of which is intended to add value to the final product or service. The sequence is as follows:

1. Research and Development;
2. Product Design;
3. Procurement;
4. Production;
5. Marketing;
6. Distribution; and,

Question 4:

Noncompetitive firms providing information to other companies about the processes they excel in is an example of:

A. reengineering.

B. value chain analysis.

C. benchmarking.

D. process analysis.

By definition, benchmarking is used to describe the continuous systematic process of measuring products, services, and practices against the best levels of performance. Benchmarking may capture "best-in-class" information or involve comparisons to external benchmarks of industry leaders or measures from other organizations (outside an industry) that have similar processes.

Question 5:

Which of the following best describes business process re-engineering?

A. It is used when "heavy blasting" is required to alleviate a dire situation.

B. It puts emphasis on the chain of activities that take input and create output of value to the customer.

C. It forces people to look at tacit rules and assumptions underlying the way they currently do business.
It reinvents, rather than improving or modifying. It disregards existing processes and invents new ways of doing work.

Business process reengineering is the radical redesign of processes to achieve significant productivity or cost reduction improvements. It is revolutionary, as opposed to evolutionary.

**Question 6:**

Based on activity-based management (ABM) information, organizations generally can:

I. make better decisions.
II. improve performance.
III. increase earnings on assets deployed.

A. III only.
B. I only.
C. I, II, and III.
D. II only.

ABM is the evaluation of the cause and effect relationships between activity costs and the drivers of the activities and costs. It helps management understand what is really happening in an operation. Therefore, ABM helps make better decisions, improve performance, increase profits, and optimize asset utilization.

**Question 7:**

What purpose does an internal differentiation analysis serve a firm conducting a value-chain analysis that assesses competitive advantage?

A. Diagnoses the cost drivers for each value-creating process.
B. Evaluates opportunities for achieving relative cost advantages.
C. Identifies the customer's value perceptions of the firm's products and services.
D. Determines sources of profitability and the relative cost of internal processes.

An internal differentiation analysis examines sources for creating and sustaining superior differentiation. The primary focus is the customer's value perceptions of the firm's products and services.
Question 8:
The concept of value added is best described as:

A. activities that convert resources into products and services consistent with external customer requirements.

B. a series of transactions between employees or between internal customers and internal suppliers to deliver an end product.

C. activities that can be eliminated with no deterioration in product service, functionality, performance, or quality in the eyes of the end user.

D. a series of transactions between employees to deliver an end product to external customers and external suppliers.

By definition, value added refers to activities that convert resources into products and services consistent with external customer requirements. The goal of the customer-supplier value chain is to integrate value into every aspect of a work process.

Question 9:
Which of the following would be the best choice for Timely, Inc., a producer of surface-mount chips (SMC), when it wants to benchmark average call waiting time in its customer service?

A. A minimum call waiting time set by a consultant that tracked "best" call waiting times at Timely, Inc.

B. The average call waiting time of a competing manufacturer that is a customer service leader.

C. The average call waiting time for the SMC industry overall.

D. Internal benchmarks created by reducing current average call waiting time at Timely, Inc.

Benchmarks should be for related industries (manufacturers) but should also focus on the best levels for the item being benchmarked instead of simply on a competitor or historical company results.

Question 10:
Which one of the following lists of functions is in proper value chain order?

* Source: Retired ICMA CMA Exam Questions.

A. Production, marketing, and production design.

B. Research and development, marketing, and customer service.

C. Production design, distribution, and marketing.
D. Research and development, customer service, and distribution.

In a value-chain, the functions should be in the order of the development, getting the product to market, and the servicing of the product after it enters the market. In this case, research and development, marketing, and customer service is the correct order.

Question 11:

All of the following are examples of benchmarking standards except:

A. the best performance of the unit in comparable past periods.
B. a comparison with a similar unit within the same company.
C. the performance of the unit during the previous year.
D. the best performance of a competitor with a similar operation.

Benchmarking standards include the best performance of the unit in comparable past periods, a comparison with a similar unit within the same company, and the best performance of a competitor with a similar operation.

Question 12:

A technique for improving performance of activities and processes that searches for best practices is called:

A. value-added reporting.
B. trend reporting.
C. benchmarking.
D. Kaizen costing.

Benchmarking involves comparing or contrasting your organization's processes with the best practices for those processes. Best practice is either “best in class” or “best in industry.” Benchmarking can be used in conjunction with process reengineering or with Total Quality Management and continuous improvement.

Question 13:

External failure costs include all of the following costs except those related to:

* Source: Retired ICMA CMA Exam Questions.
A. lost sales and lost customers.
B. product field testing.
C. warranty obligations.
D. product liability suits.

External failure costs are those costs that are beyond the company’s control. In this case, lost sales and lost customers, warranty obligations, and product liability suits are all external failure costs.

Question 14:

Retail Partners Inc., which operates eight discount store chains, is seeking to reduce the costs of its purchasing activities through reengineering and a heavier use of electronic data interchange (EDI). Which of the following benchmarking techniques would be appropriate in this situation?

I. A comparison of the purchasing costs and practices of each of Retail Partners’ store chains to identify their internal “best in class.”
II. A comparison of the practices of Retail Partners to those of Discount City, another retailer, whose practices are often considered “best in class.”
III. A comparison of the practices of Retail Partners to those of Capital Airways, an international airline, whose practices are often considered “best in class.”
IV. An in-depth review of a retail trade association publication on successful electronic data interchange applications.

* Source: Retired IMA CMA Exam Questions.

A. I and IV only.
B. II and IV only.
C. I, II, III, and IV.
D. I and II only.

Benchmarking techniques appropriate when reengineering and a heavier use of electronic data interchange takes place would include any comparison that is considered “best in class”. Looking at the above example, the internal processes, external competition, other companies, and other “best” applications, are all good benchmarking techniques.

Question 15:

Which of the following activities would not be considered as adding value?

A. Rework of defective product.
B. Quality assurance activities.
C. Redesign of a product.
D. Client support services for product fulfillment.

By definition, value-added refers to activities that convert resources into product and services consistent with external customer requirements; non-value-added refers to activities that can be eliminated with no deterioration in product service, functionality, performance, or quality in the eyes of the end user. Rework would be non-value-added because faulty products provide no direct value to a customer.

**Question 16:**
The key philosophy for total quality management (TQM) includes which of the following?

A. Absolute quality conformance.
B. Continuous improvement.
C. Statistical process control.
D. Gap analysis.

Continuous improvement (kaizen) is an integral philosophy for TQM. TQM is treated as a way of life rather than as a one-time process.

**Question 17:**
Analyzing how an industry partner has been successful with an innovative employee recognition program typifies a step in:

A. kaizen.
B. benchmarking.
C. process reengineering.
D. value chain analysis.

Identifying innovative ideas and concepts or program characteristics of another business' efforts typifies benchmarking. Metric for best levels in benchmarking may be financial or nonfinancial measures.

**Question 18:**
A company desiring to achieve dramatic improvements in customer relationship management would most likely undertake:

A. kaizen.
By definition, BPR is the fundamental analysis and radical redesign of business processes within and between enterprises to achieve dramatic improvements in performance measures. BPR promotes the idea that sometimes wiping the slate clean and radically redesigning and reorganizing an enterprise is necessary to lower costs and increase the quality of a product or service.

Question 19:
"Value-added activity" refers to:

I. Any activity within an organization.
II. An activity that can be eliminated with no deterioration in product or service functionality.
III. An activity that converts resources into products and services consistent with external customer requirements.

A. III only.
B. I only.
C. I, II, and III.
D. II only.

A value-added activity adds customer value to a product by increasing its quality or decreasing its cost. Customer value is the ratio of quality (as perceived by the customer) to cost.

Question 20:
Internal failure costs include:

A. warranty expense.
B. returns.
C. rework.
D. field repairs.

All other choices are components of external failure costs.

Question 21:
From the perspective of the management accountant, which one of the following represents a major disadvantage of business process reengineering?

* Source: Retired ICMA CMA Exam Questions.

A. The focus is, to a large extent, on short-term results.
B. It results in heavier maintenance for legacy systems.
C. Internal control mechanisms are often disassembled.
D. It often results in a decreased use of centralized data bases.

Business process reengineering includes a focus on short-term results, a decreased use of centralized data bases, and results in a heavier maintenance of legacy systems.

**Question 22:**

The cost of scrap, rework, and spoilage in a product quality cost system is categorized as a(n):

A. external failure cost.
B. prevention cost.
C. appraisal cost.
D. internal failure cost.

Internal failure costs are the costs of defective production found prior to customer delivery. Internal failure costs include the costs of scrap, rework, spoilage, and waste.

**Question 23:**

Consider the following manufacturing-related activities.

I. Conducting the final assembly of wooden furniture.
II. Moving completed production to the finished goods warehouse.
III. Painting newly-manufactured automobiles.
IV. Setting up a machine related to a new production run.
V. Reworking defective goods to bring them up to quality standards.

The activities that would be classified as value-added activities are.

* Source: Retired ICMA CMA Exam Questions.

A. I, IV and V only.
B. II, III, IV, and V only.
C. I, III, and V only.
D. I and III only.

Value-added activities include those activities which add value to a product throughout its complete production. Of the above items, conducting the final assembly of wooden furniture and painting newly-manufactured automobiles are all value-added activities.

Question 24:
A manufacturing company instituted a Total Quality Management (TQM) program producing the report shown here.

<table>
<thead>
<tr>
<th>Summary Cost of Quality Report</th>
<th>Year 1</th>
<th>Year 2</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention costs</td>
<td>$200</td>
<td>$300</td>
<td>+50</td>
</tr>
<tr>
<td>Appraisal costs</td>
<td>210</td>
<td>315</td>
<td>+50</td>
</tr>
<tr>
<td>Internal failure costs</td>
<td>180</td>
<td>114</td>
<td>-40</td>
</tr>
<tr>
<td>External failure costs</td>
<td>1,200</td>
<td>621</td>
<td>-48</td>
</tr>
<tr>
<td>Total quality costs</td>
<td>$1,600</td>
<td>$1,350</td>
<td>-25</td>
</tr>
</tbody>
</table>

On the basis of this report, which one of the following statements is **most** likely correct?

A. An increase in conformance costs resulted in a higher quality product and therefore resulted in a decrease in non-conformance costs.
B. Quality costs such as scrap and rework decreased by 48 percent.
C. Quality costs such as returns and repairs under warranty decreased by 40 percent.
D. An increase in inspection costs was solely responsible for the decrease in quality costs.

Conformance costs consist of prevention and appraisal costs. Non-conformance costs are the costs of internal and external failures. Conformance costs are incurred to reduce the costs of non-conformance by reducing problems and detecting them before customer delivery. Total quality costs are minimized (optimal) when conformance costs are equal to non-conformance costs. An increase in conformance costs could result in a higher quality product, which would in turn result in a decrease in non-conformance costs.

Question 25:
A term to describe continuous improvement at all levels in an organization is:

A. benchmarking.
B. trending.
C. value-adding.
D. kaizen.

Kaizen is the Japanese term for incorporating continuous improvement into all levels of an organization.

**Question 26:**

Appraisal costs include all of the following except:

A. process inspection.
B. inspection.
C. spoilage.
D. product testing.

Spoilage is part of internal failure costs.

**Question 27:**

A company desires to prepare two sets of financial statements. Conventional financial statements would be prepared along with a set that is totally consistent with value-chain analysis. How would customer service costs be treated in the two statements?

* Source: Retired ICMA CMA Exam Questions.


In conventional financial statements, customer service costs would be a noninventoriable cost due to the expense incurred from this activity. Since customer service is a link in the value chain, it is considered a product cost,
and though the value-chain financial statements become part of the product cost.

Question 28:
1DS-LS05
In the traditional cost of quality analysis, which of the following includes the cost of designing a quality system?

A. Internal failure costs.
B. Prevention costs.
C. Appraisal costs.
D. External failure costs.

Prevention costs are the costs of quality system design, implementation, and maintenance, including audits of the quality system itself.

Question 29:
1DS-AT03
Product-quality-related costs are part of a total quality control program. A product-quality-related cost incurred in detecting individual products that do not conform to specifications is an example of a(n):

A. prevention cost.
B. appraisal cost.
C. external failure cost.
D. internal failure cost.

Appraisal (detection) costs are incurred to detect problems in time to make needed corrections. Appraisal costs include the costs of incoming, in-process, and final inspections, testing, and quality audits.

Question 30:
1DS-LS25
When measuring the cost of quality, the cost of inspecting incoming raw materials is a(n):

A. prevention cost.
B. internal failure cost.
C. appraisal cost.
D. external failure cost.

* Source: Retired ICMA CMA Exam Questions.
An appraisal cost is cost of inspecting materials or products for quality purposes.

**Question 31:**

Leese Inc. has the following quality financial data for its most recent fiscal year.

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rework costs</td>
<td>$110,000</td>
</tr>
<tr>
<td>Warranty repair costs</td>
<td>$280,000</td>
</tr>
<tr>
<td>Product line inspection</td>
<td>$95,000</td>
</tr>
<tr>
<td>Design engineering</td>
<td>$300,000</td>
</tr>
<tr>
<td>Supplier evaluation</td>
<td>$240,000</td>
</tr>
<tr>
<td>Labor training</td>
<td>$150,000</td>
</tr>
<tr>
<td>Product testing</td>
<td>$65,000</td>
</tr>
<tr>
<td>Breakdown maintenance</td>
<td>$70,000</td>
</tr>
<tr>
<td>Product scrap</td>
<td>$195,000</td>
</tr>
<tr>
<td>Cost of returned goods</td>
<td>$180,000</td>
</tr>
<tr>
<td>Customer support</td>
<td>$35,000</td>
</tr>
<tr>
<td>Product liability claims</td>
<td>$80,000</td>
</tr>
</tbody>
</table>

The total amount of prevention costs that should be reported in a Cost of Quality report for the year is

A. $390,000.
B. $515,000.
C. $755,000.
D. $690,000.

Prevention costs include all costs incurred to try to prevent production of goods and services that do not conform to quality standards. The prevention costs presented are design engineering, labor training, product testing, and supplier evaluation.

The sum of design engineering ($300,000) + labor training ($150,000) + product testing ($65,000) + supplier evaluation ($240,000) = $755,000.

**Question 32:**

Listed below are selected line items from the Cost of Quality Report for Watson Products for last month.
What is Watson's total prevention and appraisal cost for last month?

A. $1,940.
B. $1,154.
C. $2,665.
D. $786.

Prevention costs are incurred to prevent problems before they happen. Examples of prevention costs are systems design, quality planning, training, maintenance, and supplier development costs. Appraisal (detection) costs are incurred to detect problems in time to make needed corrections. Appraisal costs include the costs of incoming, in-process, and final inspections, testing, and quality audits.

Watson's prevention costs consist of equipment maintenance costs of $1,154. Their appraisal costs are $786, which consists of product testing costs. The total of prevention and appraisal costs for Watson is $1,940.

**Question 33:**

Based on discussions with former customers, a company determines that sales have been lost due to the lengthy turnaround time and inflexible pricing in their proposal and bid process. Which of the following internal activities could **not** be used to improve the closing ratio?

A. Activity-based management.
B. Benchmarking best practices.
C. Process reengineering.
D. Activity-based costing (ABC).

ABC is a methodology that recognizes causal relationships of cost drivers to activities. All the others attempt to improve processes that are deemed important from the customer's perspective (such as turnaround time and special pricing options).
Which of the following statements best characterizes value-chain analysis (VCA)?

A. It examines a firm's hierarchal structure.
B. It emphasizes a firm's functions.
C. It promotes formulating a generic strategy.
D. It adopts a process perspective.

VCA adopts a process perspective. Because a value chain desegregates the firm into distinct strategic activities, organizations are able to use VCA to determine where in the operations, from design to distribution and customer service, customer value can be enhanced and costs lowered. In this way, VCA helps to identify sources of profitability and to understand the costs of the related activities and processes. VCA looks at activities differently than do the formal hierarchy of existing functions. Also, it should support implementing the firm's generic strategy, not formulating it.

Question 35:
In measuring the cost of quality, which one of the following is considered an appraisal cost?

* Source: Retired ICMA CMA Exam Questions.

A. Rework cost.
B. Product testing cost.
C. Equipment maintenance cost.
D. Warranty claims cost.

An appraisal cost is the cost of inspecting materials and products for quality purposes. In this case, the cost of product testing is considered an appraisal cost.

Question 36:
Conformance quality measures which of the following?

A. How well the product meets the customers' needs.
B. How well the design features meet the customers' needs.
C. How close the manufactured product is to the design specifications.
D. How closely the product has met the guidelines of regulatory bodies.

The correct answer defines conformance quality.
A distinguishing feature of kaizen as a management philosophy is the concept of:

A. lower costs.
B. cycle-time improvements.
C. design simplicity.
D. continuous improvement.

The kaizen process is often described as "a staircase of improvement." Moving from step to step, an organization follows a continuous process of following an improvement, maintaining an improvement, following an improvement, maintaining an improvement, and so on. While the steps may be small, they move the organization upwards toward sustained improvements.

**E1: Governance, Risk, and Compliance**

**Question 1:**
Which of the following is an example of segregation of duties?

A. The person who takes the order from a customer enters the order into the system and supervises the shipment of the product.

B. The president of a small company is able to access payroll records and adjust entries.

C. A clerk in the order department does not have access to the products and therefore cannot ship products to customers.

D. The shipping manager can access the order-entry computer software and enter an order.

One of the purposes of segregation of duties is to safeguard assets. If the same person can enter an order and then ship it, he or she may be able to steal product by shipping to him or herself or an accomplice.

**Question 2:**
Which of the following best describe the interrelated components of a system of internal control?

A. organizational structure, management philosophy, and planning.
The five interrelated components or elements of internal control as defined in the 1992 Committee of Sponsoring Organizations Model are the control environment, risk assessment, control activities, information and communication, and monitoring.

Question 3:

1E1-LS17

Inherent risk is the risk

A. that internal controls will not be followed.
B. that an internal audit will not uncover incidents where controls have not been followed.
C. that the business will naturally experience, regardless of internal controls.
D. that measures the effectiveness of a firm's internal controls.

Inherent risk is the normal risk of the business, such as the risk of droughts for farmers or the risk of a recession.

Question 4:

1E1-LS29

What is the role of the PCAOB in providing guidance on the auditing of internal controls?

A. The PCAOB is responsible for the setting of standards for audits of governmental organizations.
B. The PCAOB is responsible for the setting of standards for audits of publicly held corporations.
C. The PCAOB is responsible for the setting of standards for audits of both publicly held and privately held corporations.
D. The PCAOB is responsible for the setting of standards for audits of privately held corporations.

The Public Company Accounting Oversight Board (PCAOB) is a private sector, nonprofit corporation, created by the Sarbanes-Oxley Act of 2002, to oversee the auditors of (public) companies in order to protect the interests of investors and further the public interest in the preparation of informative, fair and independent audit reports. The Act required that auditors of U.S. companies be subject to external and independent
oversight for the first time in history. Previously, the profession was self-regulated.

Question 5:
A company's management is concerned about computer data eavesdropping and wants to maintain the confidentiality of its information as it is transmitted. The company should utilize:

A. data encryption.
B. password codes.
C. dial back systems.
D. message acknowledgment procedures.

Data encryption, which uses secret codes, ensures that data transmissions are protected from unauthorized tampering or electronic eavesdropping.

Question 6:
Which of the following are responsibilities of management?
I. Aid in the choice of accounting methods and policies.
II. Document internal control procedures.
III. Sign quarterly and annual financial reports.
IV. Choose the auditor and approve auditor compensation.
V. Review the auditor's suggestions for improved internal controls.

A. I, II, III, and V only.
B. I, III, IV, and V only.
C. I, II, III, IV, and V.
D. I and IV only.

Management must document internal control procedures and provide a written assessment within 90 days prior to the publication of annual reports on the effectiveness of the internal control structure and procedures. In addition, management must sign quarterly and annual financial reports, and the chief executive officer must sign tax returns. The audit committee of the board of directors, not management, chooses the auditor and approves auditor compensation.

Question 7:
Which of the following is an example of a completeness control?

A. Pre-numbered forms that allow for reconciliation of form numbers against shipping reports.
B. Facilities utilization reports.

C. Thorough training on proper accounting classes to which transactions should be posted.

D. Employees time sheets that must be completed before employees can receive their paychecks.

Completeness controls are measures taken to account for all transactions. Poor control over blank forms, blank checks, or unnumbered forms can provide access to assets and allow transfers to unauthorized personnel.

Question 8:

The Sarbanes-Oxley Act of 2002 increased management's responsibility for accurate financial reporting. Which of the following is not a requirement of Section 404 of the Sarbanes-Oxley Act?

A. Document management's assessment of the effectiveness of the internal control structure and procedures.

B. Document management's responsibility for establishing adequate internal control policies.

C. Document management's responsibility to refuse to accept contracts or business through the payment of bribes.

D. Document management's responsibility for maintaining adequate internal control policies.

The 1977 Foreign Corrupt Practices Act forbids companies from accepting contracts or business through the payment of bribes to foreign governments. The other answers are all requirements of SOX Section 404.

Question 9:

The Sarbanes-Oxley Act has multiple sections that outline management's responsibility regarding:

A. required education for chief financial officers.

B. the purchase of securities.

C. long-term strategic planning.

D. internal controls and external reporting.

Section 404 of the 2002 Sarbanes-Oxley Act requires management to establish and document internal control procedures and to provide a written assessment within 90 days prior to publication of annual reports of the effectiveness of the internal control structure and procedures. Section 906 of the act requires management certification of the financial statements.
Question 10:
Which of the following has the most effect on the control environment?

A. Whether controls are changed on a regular basis.

**B. Management philosophy and operating style.**

C. Organizational structure.

D. Size of the company.

Management's philosophy and operating style send signals to employees about the importance of establishing and following internal controls. The size of the company, the frequency with which controls are changed, and the organizational structure by themselves do not impact the control environment as much as management's philosophy.

Question 11:
The Internal Control Integrated Framework from 1992 comprises five mutually-reinforcing components. An organization's ongoing management activities, evaluations, and internal audits are a part of:

A. monitoring.

B. information and communication.

C. control environment.

D. risk assessment.

Monitoring is accomplished through ongoing management activities, separate evaluations, or both. Internal auditors, the audit committee, and the disclosure committee, as well as management, may all be involved in monitoring controls.

Question 12:
Which of the following is true of control risk?

A. Control risk is an assessment of the likelihood that misstatements exceeding an acceptable level will not be detected or prevented by internal controls.

B. Control risk is measured in combination with safeguarding risk to determine overall risk.

C. Control risk is an assessment of the likelihood that misstatements exceeding an acceptable level will not be detected by an internal audit.

D. Control risk is dependent on detection risk.
Control risk is an assessment of the effectiveness of a firm's internal controls in preventing or detecting misstatements.

**Question 13:**
The Internal Control Integrated Framework from 1992 comprises five mutually-reinforcing components. An organization's management philosophy and ethical values is a part of the:

A. control environment.
B. risk assessment.
C. Monitoring.
D. information and communication.

The control environment refers to the organization's management philosophy and appetite for risk, and includes integrity, ethical values, and the environment in which an organization operates.

**Question 14:**
In designing systems of internal control, which of the following types of controls are the best to include in the design in order to be fully effective?

A. systems development, operations, and access controls.
B. management, personnel, and administrative controls.
C. preventative, detective, and corrective controls.
D. edit, input verification, and output controls.

There are five types of internal controls. They are preventive, detective, corrective, directive, and compensating. The first three are the ones designed into the system.

**Question 15:**
Which of the following statements is true?

A. Control procedures can completely make up for careless employees.
B. Control procedures are ineffective if employees are not all highly educated and trained.
C. Hiring, promoting, and training competent personnel are integral to an efficient control environment.
D. Higher-paid employees tend to follow control procedures more carefully and consistently.
Hiring, promoting, and training competent personnel are integral to an efficient control environment. However, control procedures will not be ineffective without this, and adherence to control procedures does not necessarily follow with higher levels of education or pay.

**Question 16:**

The principal impetus for the enactment of the Foreign Corrupt Act by the U.S. Congress was to:

* Source: Retired ICMA CMA Exam Questions.

A. discourage unethical behavior by foreigners employed by U.S. firms.

B. promote the mandates issued by the United Nations with regard to global trade between its member nations.

C. prevent the bribery of foreign officials by U.S. firms seeking to do business overseas.

D. require mandatory documentation of the evaluation of internal controls by the independent auditors.

The enactment of the Foreign Corrupt Act by the U.S. Congress was implemented to prevent the bribery of foreign officials by U.S. firms seeking to do business overseas.

**Question 17:**

Which of the following is true regarding the board of directors?

A. The board of directors must act in the best interest of management.

B. The board of directors must establish an audit committee to oversee all internal controls.

C. The board of directors must act in the best interest of the employees.

D. The board of directors must act in the best interest of the shareholders.

The board of directors' primary responsibility is to act in the best interest of the shareholders. It is not required to establish an audit committee.

**Question 18:**

When assessing a company's internal control structure policies and procedures, the primary consideration is whether they:

* Source: Retired ICMA CMA Exam Questions.

A. affect the financial statement assertions.

B. reflect management's philosophy and operating style.
C. prevent management override.
D. relate to the control environment.

The primary consideration when assessing a company's internal control structure policies and procedures is whether they affect the financial statement assertions.

Question 19:
The Sarbanes-Oxley Act of 2002 (SOX) established increased requirements for audit committees. These requirements include all of the following except:

A. the audit committee is responsible for selecting the external auditor.
B. the audit committee must consist of independent directors.
C. the audit committee must have at least one financial expert.
D. the CEO of the company can be a member of the audit committee.

Audit committees need independent directors with sophisticated financial backgrounds. SOX requires that the audit committee consist entirely of directors who are independent of the issuer, meaning that they cannot accept any consulting, advisory, or other compensatory fee from the issuer or be affiliated with the issuer or any of its subsidiaries. At least one of the audit committee members should qualify as a "financial expert."

Question 20:
Internal controls are designed to provide reasonable assurance of achieving a corporation's control objectives. Several factors may present inherent limitations to otherwise well-designed policies and procedures. Which one of the following is not a factor that limits the effectiveness of internal controls?

A. Management override.
B. Segregation of duties.
C. Carelessness.
D. Collusion.

Certain human factors or exceptions may present inherent limitations to otherwise well-designed and well-supported control policies and procedures. The major ones are management override of controls and collusion between employees and between employees and outsiders. Other inherent weaknesses are carelessness, misunderstandings, and the cost/benefit nature of controls.
Question 21:
Which of the following are provisions of the Sarbanes-Oxley Act?
I. The board of directors of an issuer must appoint an audit committee.
II. Management must certify financial statements.
III. Management must provide a written report on the effectiveness of internal control procedures within 90 days of the publication of the annual report.
IV. A public accounting firm may not audit the books of an issuer of public securities if any officer or director of the issuer was employed by the public accounting firm and participated in any audit activity with the issuer within one year.

A. I, II, and IV only.

B. I, II, III, and IV.

C. II and IV only.

D. IV only.

All of the listed requirements are provisions of the Sarbanes-Oxley Act.

Question 22:
Which one of the following functions performed in an organization is a violation of internal control?

A. The General Ledger clerk compares the summary journal entry, received from the Cashier for cash receipts applicable to outstanding accounts, with the batch total for posting to the Subsidiary Ledger by the Accounts Receivable clerk.

B. A mail clerk opening the mail compares the check received with the source document accompanying the payment, noting the amount paid, then forwards the checks daily (along with a listing of the cash receipts) to the Cashier for deposit.

C. A mail clerk opening the mail compares the check received with the source document accompanying the payment, noting the amount paid, then forwards the source documents that accompany the payments (along with a listing of the cash receipts) to Accounts Receivable, on a daily basis, for posting to the subsidiary ledger.

D. At the end of the week the Cashier prepares a deposit slip for all of the cash receipts received during the week.

Internal controls should have effective separation of duties to prevent fraudulent activities to occur. From the examples provided, a cashier
preparing a deposit slip for all of the cash receipts received during the week is a clear violation of internal control.

**Question 23:**

Which of the following are responsibilities of the audit committee?

I. Aid in the choice of accounting methods and policies.
II. Document internal control procedures.
III. Sign quarterly and annual financial reports.
IV. Choose the auditor and approve auditor compensation.
V. Review the auditor's suggestions for improved internal control.

A. I, III, IV, and V only.
B. I, II, III, IV, and V.
C. I, II, and III only.
D. I, IV, and V only.

The audit committee performs the following tasks:

- Reviews the company's internal control structure
- Aids in the choice of accounting methods and policies
- Reviews quarterly reports
- Chooses the auditor and approves auditor compensation
- Reviews the audit plan
- Reviews the auditor's suggestions for improved internal control
- Reviews the audit report and the audited annual report.

**Question 24:**

A public corporation that must meet the provisions of the Foreign Corrupt Practices Act of 1977 should have a compliance program that includes all of the following steps except:

* Source: Retired ICMA CMA Exam Questions.

A. a cost/benefit analysis of the controls and the risks that are being minimized.
B. an authorized and properly signed agreement that it will abide by the Act.
C. a system of quality checks to evaluate the internal accounting control system.
D. documentation of the corporation's existing internal accounting control systems.
A compliance program to meet the provisions provided in the Foreign Corrupt Practices Act of 1977 include documentation of the corporation's existing internal accounting control systems, a cost/benefit analysis of the controls and the risks that are being minimized, and a system of quality checks to evaluate the internal accounting control system.

Question 25:

The Internal Control Integrated Framework from 1992 comprises five mutually-reinforcing components including control activities. Control activities include all of the following except:

A. Adequate separation of duties.
B. Risk Management.
C. Independent verifications.
D. Adequate documentation and records.

Control activities are policies and procedures established and implemented to help ensure that the risk responses are effectively carried out. The Internal Control Integrated Framework from 1992 model lists six control activities:

1. The assignment of authority and responsibility (job descriptions)
2. A system of transaction authorizations
3. Adequate documentation and records
4. Security of assets
5. Independent verifications
6. Adequate separation of duties

Question 26:

Which statement is not a requirement of PCAOB Auditing Standard No. 5?

A. Requires auditors to follow a rules-based approach to determine the extent of audit testing.
B. Requires auditors to follow a risk-based approach to the development of auditing procedures.
C. Requires the auditors to follow prescribed approaches to perform the audit.
D. Requires auditors to scale the audit to the size of the organization.

PCAOB Auditing Standard No. 5 requires auditors to follow a risk-based approach to the development of auditing procedures and performing a Section 404 audit. It also requires the auditor to scale the audit to the size
of the organization under audit, and to follow a principles-based approach to determine when and to what extent he or she can rely on the work of others.

**Question 27:**

A firm is constructing a risk analysis to quantify the exposure of its data center to various types of threats. Which one of the following situations would represent the highest annual loss exposure after adjustment for insurance proceeds?

A. Frequency of occurrence: 100 years, Loss Amount: $400,000, Insurance coverage: 50%.

B. Frequency of occurrence: 8 years, Loss Amount: $75,000, Insurance coverage: 80%.

C. Frequency of occurrence: 20 years, Loss Amount: $200,000, Insurance coverage: 80%.

D. Frequency of occurrence: 1 year, Loss Amount: $15,000, Insurance coverage: 85%.

The exposure is the same as the expected loss, which is calculated by taking the "Frequency of Occurrence," multiplying it by the loss amount, and then multiplying that by one minus the "Insurance % coverage" rate.

Expected loss = (frequency of occurrence) (loss amount) (1 — % insurance coverage)

For the 1 year frequency: the expected loss = (1/1)($15,000)(1 — 0.85) = $2,250.

For the 8 year frequency: the expected loss = (1/8)($75,000)(1 — 0.8) = $1,875.

For the 20 year frequency: the expected loss = (1/20)($200,000)(1 — 0.8) = $2,000.

For the 100 year frequency: the expected loss = (1/100)($400,000)(1 — 0.5) = $2,000.

$2,250 represents the highest annual loss exposure after adjusting for insurance proceeds.

**Question 28:**

Which of the following is not an internal control?

A. Pre-numbered forms.

B. Requirements for accurate recording of vacations.

C. Employee pay records.

D. Required dress code.
All of the choices except required dress code are internal controls.

**Question 29:**

PCAOB Auditing Standard No. 5 requires auditors to follow a top-down, risk assessment (TDRA) approach to auditing financial statements and internal controls. Which item is not one of the steps in TDRA?

A. Identifying insignificant accounts or disclosures.
B. Identifying material misstatement risks within these accounts or disclosures.
C. Determining which transaction-based controls compensate for possible entity-level control failures.
D. Determining which entity-level controls sufficiently address the risks.

TDRA is a hierarchical approach that applies specific risk factors to determine the scope of work and evidence required in the assessment of internal controls. The steps in TDRA are:

1. Identifying significant accounts or disclosures.
2. Identifying material misstatement risks within these accounts or disclosures.
3. Determining which entity-level controls sufficiently address the risks.
4. Determining which transaction-based controls compensate for possible entity-level control failures.
5. Determining the nature, extent, and timing of evidence gathering tests needed to complete the assessment of the internal controls.

**Question 30:**

Which of the following are objectives of internal controls?

I. Reliability of financial reports
II. Guarantees against fraud
III. Effectiveness of operations
IV. Efficiency of operations
V. Compliance with applicable laws and regulations

A. I, II, III, IV, and V.
B. I, III, IV, and V only.
C. I, III, and V only.
D. I, II, and IV only.
Internal controls cannot guarantee that fraud will not be perpetrated.

**Question 31:**
Which one of the following is an example of monitoring controls?

I. Internal audits  
II. Audit committee reviews  
III. Management reviews

A. I only.  
B. III only.  
C. II only  
D. I, II, and III.

The purpose of monitoring controls is to ascertain whether the control system is functioning as designed. Its functioning is monitored by management, the audit committee, and the internal auditors.

**Question 32:**
Locked doors, security systems, ID badges, passwords, and similar controls are designed to:

A. safeguard the firm's assets.  
B. lower production costs.  
C. protect the firm's reputation.  
D. ensure that internal controls are followed.

The most visible safeguarding controls are designed and implemented to protect an organization's assets.

**Question 33:**
Which one of the following methods, for the distribution of employees' paychecks, would provide the best internal control for the organization?

A. Distribution of paychecks directly to each employee by a representative of the Human Resource department.  
B. Direct deposit in each employee's personal bank account.
C. Delivery of the paychecks to each department supervisor, who in turn would distribute paychecks directly to the employees in his/her department.

D. Distribution of paychecks directly to each employee by the payroll manager.

The best internal control procedure for the distribution of employee paychecks would be the direct deposit of the paychecks into each employee's personal bank account. This would allow the organization to maintain control of the payroll processing function.

**Question 34:**
Which of the following is **not** a requirement regarding a company's system of internal control under the Foreign Corrupt Practices Act of 1977?

A. The recorded accountability for assets is compared with the existing assets at reasonable intervals, and appropriate action is taken with respect to any differences.

B. Management must annually assess the effectiveness of its system of internal control.

C. Transactions are executed in accordance with management's general or specific authorization.

D. Transactions are recorded as necessary (1) to permit preparation of financial statements in conformity with GAAP or any other criteria applicable to such statements, and (2) to maintain accountability for assets.

Management's annual assessment of internal control is not a requirement of the Foreign Corrupt Practices Act. It became a requirement with the passage of the 2002 Sarbanes-Oxley Act.

**Question 35:**
Segregation of duties controls are examples of:

A. compensating controls.

B. **preventive controls.**

C. detective controls.

D. administrative controls.

Proper segregation of duties is a control designed to prevent threats, errors and irregularities by separating the incompatible functions of authorization, execution, recording, and custody of assets between four people.
Question 36:
Segregation of duties is a fundamental concept in an effective system of internal control. Nevertheless, the internal auditor must be aware that this safeguard can be compromised through:

A. absence of internal auditing.
B. collusion among employees.
C. irregular employee reviews.
D. lack of training of employees.

Effective segregation of duties means that no single employee has control over authorization, recording and custody. If two or more employees are in collusion, these controls can be overridden.

Question 37:
Which one of the following would be most effective in deterring the commission of fraud?

* Source: Retired ICMA CMA Exam Questions.

A. Hiring ethical employees, employee training, and segregation of duties.
B. Policies of strong internal control and punishments for unethical behavior.
C. Employee training, segregation of duties, and punishment for unethical behavior.
D. Policies of strong internal control, segregation of duties, and requiring employees to take vacations.

The most effective policy to deter the commission of fraud is to provide policies of strong internal control, segregation of duties, and requiring employees to take vacations.

Question 38:
Under the Sarbanes-Oxley Act of 2002, companies are now required to implement anti-fraud programs and controls that they evaluate on an annual basis as part of their integrated audit. A common component of such anti-fraud programs and controls is the effective design and implementation of codes of ethics and conduct. Which one of the following is not a characteristic of the operating effectiveness of a code of conduct?

A. The existence of a plan to communicate the code of conduct to all (or covered) employees of the company.
B. Audit committee involvement and oversight of non-compliance with the company's code of conduct.

C. Lack of employee training in the company's code of conduct upon hiring and periodically thereafter.

D. The existence of an appropriate "hot-line" or whistle blowing to report any violations with the company's code of conduct.

Lack of employee training in the company's code of conduct upon hiring and periodically thereafter is not a characteristic of operating effectiveness of a code of conduct.

Question 39:
In order to properly segregate duties, which function within the computer department should be responsible for reprocessing the errors detected during the processing of data?

* Source: Retired ICMA CMA Exam Questions.

A. Computer programmer.

B. Systems analyst.

C. Department manager.

D. Data control group.

To properly segregate duties, the data control group should be responsible for reprocessing the errors detecting during the processing of data within the computer department.

Question 40:
Preventive controls are:

A. found only in general accounting controls.

B. usually more costly to use than detective controls.

C. usually more cost beneficial than detective controls.

D. found only in accounting transaction controls.

The three types of controls designed into information systems are preventive, detective, and corrective. Preventive controls are designed to prevent threats, errors, and irregularities from occurring. They are more cost beneficial than detecting and correcting the problems that threats, errors and irregularities can cause.
Question 41:
The Sarbanes-Oxley Act has multiple sections that outline management's responsibility regarding:

A. required education for chief financial officers.
B. internal controls and external reporting.
C. long-term strategic planning.
D. the purchase of securities.

The Sarbanes-Oxley Act concentrates on management's responsibility in maintaining internal controls so that external reports become more reliable.

Question 42:
When management of the sales department has the opportunity to override the system of internal controls of the accounting department, a weakness exists in:

A. information and communication.
B. monitoring.
C. risk management.
D. the control environment.

The control environment includes the attitude of management toward the concept of controls.

Question 43:
Detection risk is the risk:

A. that an internal audit will not uncover incidents where controls have not been followed.
B. that the business will naturally experience, regardless of internal controls.
C. that internal controls will not be followed.
D. that measures the effectiveness of a firm's internal controls.

Detection risk can also be planned detection risk and is a measure of the risk that audit evidence will fail to detect misstatements exceeding an acceptable audit risk.

Question 44:
Which of the following are required under the Foreign Corrupt Practices Act (FCPA)?

I. A firm must design internal control procedures.
II. A firm must have an internal audit department.
III. Transactions must be executed with management's authorization.
IV. Access to assets must be authorized.

A. I, II, III, and IV.
B. I, III, and IV only.
C. I and III only.
D. I and II only.

The FCPA does not require a firm to have an internal audit department.

Question 45:
Which of the following statements is false?

A. Internal controls can be most effective if they are supported by word and example of management.
B. Thorough and well documented internal controls can guarantee that fraud cannot be committed.
C. Thorough and well-documented internal controls can result in fewer misstatements of information.
D. The auditor will examine internal controls to determine control risk.

Internal controls are **not** a guarantee against fraud.

Question 46:
The basic concepts implicit in internal accounting controls include the following:

- The cost of the system should not exceed benefits expected to be attained.
- The overall impact of the control procedure should not hinder operating efficiency.

Which one of the following recognizes these two factors?

* Source: Retired ICMA CMA Exam Questions.
C. Management responsibility.
D. Methods of data processing.

Reasonable assurance recognizes that the cost of the system should not exceed the benefits expected to be attained, and the overall impact of the control procedure should not hinder operating efficiency.

Question 47:
What is management's responsibility under Section 302 of the Sarbanes-Oxley Act of 2002?

A. Management must provide an anonymous hotline for employees to report ethics violations.
B. Management must document their assessment of the effectiveness of the internal control structure and procedures.
C. Management must require employees to sign a code of conduct.

D. A corporation's management must design and implement internal controls to ensure the preparation of reliable financial reports.

Section 302 of the Sarbanes-Oxley Act of 2002 requires that a publicly held corporation's CEO and CFO verify the corporation's quarterly and annual financial reports and requires the corporation's management to design and implement internal controls to ensure the preparation of reliable financial reports. Documenting the assessment of the effectiveness of the internal control structure and procedures is a requirement of SOX Section 404, not section 302.

Question 48:
Which of the following is a reason for independent checks?

A. To assess an employee and determine whether he or she is following control procedures
B. To ensure that management appears compliant with external audit standards
C. To detect and correct errors and misappropriation of assets
D. To ensure that mistakes can be corrected within the fiscal year they are made

The correct answer is: To detect and correct errors and misappropriation of assets.

Independent checks are a preventive measure. They try to catch mistakes before they become integrated into the financial system, thus providing a higher level of assurance of financial integrity.
E2: Internal Auditing

Question 1:
Managing and mitigating organization-wide risks finally rests with which of the following management concepts?

A. Chain of authority.
B. Chain of accountability.
C. Chain of responsibility.
D. Chain of delegation.

The chain of accountability refers to the level of ownership over an organization. It states that the ultimate accountability in an organization rests at the top level of the management hierarchy. This means that top-level management is in a better position to manage and mitigate organization-wide risks. The chain of accountability is much stronger than the chains of authority, responsibility, and delegation because individuals are made strictly accountable for their actions and inactions.

Question 2:
All of the following are examples of nonsampling work except:

A. Probabilities.
B. Observations.
C. Inquiries.
D. Inspections.

Standard statistical methods use sampling techniques that are based on probabilities for selecting samples. Statistical sampling methods use probability concepts and mathematical equations. Nonsampling work does not use such concepts and equations.

Question 3:
Which of the following gives the final approval of the internal audit charter document?

A. Board of directors.
B. Chief executive officer.
C. Executive committee.
The board of directors gives the final approval of the internal audit charter document to establish its official status in the organization.

Question 4:
Which of the following is the most important risk factor to consider when internal auditors are performing a detailed risk assessment of auditable activities in an organization?

A. Quality of the internal control system.
B. Competence of management.
C. Integrity of management.
D. Competence of customers.

The quality of the internal control system is the most important risk factor to consider when internal auditors are performing a detailed risk assessment of auditable activities in an organization. This is because the internal control system forms a nucleus and guides all the activities of an organization where the former affects the latter.

Question 5:
Which of the following is an example of an administrative reporting item between the chief audit executive (CAE) and his or her superior?

A. CAE compensation.
B. CAE removal.
C. Audit staff’s compensation.
D. Audit’s scope limitations.

Compensation of the Internal audit staff is an example of an administrative reporting item between the CAE and his or her superior (chief executive officer).

Question 6:
The real success of an internal audit engagement depends on which of the following?

A. Audit evidence.
B. Audit scope.
C. Audit working papers.
Establishing an audit scope is a make-or-break point because the entire audit work is based on the audit scope. Scope is a guiding light to a specific audit work. An audit will be successful when the audit scope is complete; otherwise, it will fail.

**Question 7:**

Which of the following is **not** a hard skill?

A. Technical skill.
B. Functional skill.
C. Problem-solving skill.
D. Leadership skill.

Leadership skill is an example of a soft skill.

**Question 8:**

Regarding lines of defenses available in managing and mitigating risks to internal audit function, which of the following represents the last line of defense?

A. Less costly, more effective, appropriate timing, and best results.
B. Less costly, medium effective, appropriate timing, and medium results.
C. More costly, less effective, inappropriate timing, and worst results.
D. Average cost, average effective, appropriate timing, and average results.

This represents the last line of defense available either to an internal audit function or to any other function. A first line of defense is always preferred over the second or the last defense. The last line of defense can be more costly, less effective, timed inappropriately, and offer worst results.

**Question 9:**

Which of the following is **not** a tool to evaluate hard controls?

A. Flowcharts.
B. Self-assessments.
C. System narratives.
D. Testing.

Self-assessments are examples of tools to evaluate soft controls, which are informal, intangible, and subjective in nature.
Question 10:

Which of the following is not an example of feed-forward controls?

A. Performance plans.
B. Performance metrics.
C. Performance scorecards.
D. Performance dashboards.

Performance dashboards are examples of feedback controls. Dashboards are visual diagrams showing performance results through reports on an after-the-fact basis.

Question 11:

Which of the following statements is incorrect?

A. Feed-forward control = Proactive control.
B. Post-control = Reactive control.
C. Current control = Legacy control.
D. Pre-control = Proactive control.

One cannot say or assume that all current controls are legacy controls, although some current controls could be legacy controls. If never revisited for improvement, legacy controls could be ineffective, inefficient, or simply outdated. Hence, legacy controls need to be improved for better controls.

Question 12:

Which of the following is the common item causing overall risks to the internal audit function?

A. Management gap.
B. Competency gap.
C. Compliance gap.
D. Expectation gap.

A gap is the difference between what is expected and what is real. A competency gap is the common item causing audit failures, audit's false assurances, and audit's loss of reputation, the three broad categories of overall risks to the internal audit function. A competency gap is the difference between expected competencies in terms of knowledge, skills, and abilities (KSAs) and the actual KSAs. The audit director needs to
reduce the competency gap in the audit staff, audit supervisors, and audit managers, including him- or herself, by acquiring the needed KSAs.

**Question 13:**

Which of the following is not fully accountable for managing and mitigating risks throughout the organization?

A. Board of directors.

B. Internal audit management.

C. Executive management.

D. Functional management.

Internal audit management is fully responsible for reviewing and reporting risks to an organization's management but is not accountable in the same way as the other types of management.

**Question 14:**

What is the effect of combining a compliance audit, an operational audit, and a financial audit into one big assurance audit?

A. Additive effect.

B. Dilution effect.

C. Multiplicative effect.

D. Synergistic effect.

Assurance audits result when compliance audits, operational audits, and financial audits are combined into one big audit, yielding reduced audit results due to summarized audit scope; this is called the dilution effect (2+2 = 3). Combined audits may not achieve the same audit results as separate audits, because separate audits have detailed scope.

**Question 15:**

Internal audit's scope gap can be minimized or reduced in which of the following phases of an audit process?

A. Audit program.

B. Audit fieldwork.

C. Audit preliminary survey.

D. Audit reporting.

A scope gap is the difference between the expected scope and the actual scope. The audit scope and audit objectives are developed during the
preliminary survey phase, which is the first phase of the audit process. Potential risks and exposures, goals, and standards for the audited area are also identified and gathered during the preliminary survey phase. The audit scope should indicate what is included in and what is excluded from the audit work, thus minimizing and reducing the scope gap.

Question 16:
Which of the following risk protection concepts of internal audit deal with layered protections going horizontally?

A. Defense in depth.
B. Defense in breadth.
C. Defense in technology.
D. Defense in time.

Defense in breadth means providing layered protections going horizontally. In regard to internal audit's work, it refers to collecting audit evidence from related and affected departments of an organization (i.e., departments in the same level of horizontal hierarchy) in the same rigor as the department being audited. This approach provides a stronger defense for the audit function in the eyes of auditees and others.

Question 17:
All of the following are examples of hard controls except:

A. Management philosophy.
B. Budgets.
C. Dual controls.
D. Written approvals.

Management philosophy is an example of a soft control.

Question 18:
All of the following are examples of soft controls except:

A. Ethical climate.
B. Integrity.
C. Segregation of duties.
D. Culture.

Segregation of duties is an example of a hard control.
Question 19:
Which of the following is not an example of feedback controls?

A. Employee exit interviews.
B. Employee performance appraisal reporting.
C. Direct supervision.
D. Customer surveys.

Direct supervision is an example of a current control, not a feedback control, because supervision is provided directly and readily as things are happening.

Question 20:
Which of the following represents the extreme level of risk resulting from internal control breakdowns in an organization?

A. Lack of employee disciplinary procedures.
B. Lack of social community involvement.
C. Lack of competitive advantage.
D. Lack of management's interest.

Lack or loss of competitive advantage represents the extreme level of risk resulting from internal control breakdowns in an organization because it could result in decreased sales, decreased market share, and increased quality problems in products and services.

Question 21:
Management overrides can be loosely interpreted as which of the following?

A. Management interventions.
B. Management representations.
C. Management assertions.
D. Management assurances.

Management interventions can be loosely interpreted as management overrides, but they are different. Management interventions represent management's action to depart from prescribed policies or procedures for legitimate purposes. Both management overrides and management interventions bypass controls; the former is done for illegitimate purposes, and the latter is done for legitimate purposes.
Question 22:
Regarding roles and responsibilities, which of the following is different between the management accounting function and the internal auditing function?

A. Internal controls.
B. Staff roles.
C. Accounting controls.
D. Independence and objectivity.

Independence and objectivity factors are what differentiate the management accounting function from the internal auditing function. The internal audit activity must be independent and the internal auditors must be objective in performing their work. Independence allows internal auditors to carry out their work freely and objectively. Independence is achieved through organizational status and objectivity.

Question 23:
The internal audit charter does not include which of the following?

A. Audit purpose.
B. Audit engagement.
C. Audit authority.
D. Audit responsibility.

Managing an individual audit engagement is one of the routine responsibilities of the chief audit executive (CAE) and would not be included in the audit charter because the charter is a formal and permanent document for the audit function. The audit charter is a high-level document whereas the audit engagement is a low-level document.

Question 24:
Which of the following is required when the collected internal audit evidence does not meet the standards of evidence?

A. Sufficiency evidence.
B. Competence evidence.
C. Corroborative evidence.
D. Relevance evidence.
When the collected audit evidence does not meet the standards of evidence, additional (corroborative) evidence is required before expressing an audit opinion.

**Question 25:**

All of the following are examples of soft controls **except**:

- A. Tone at the top.
- B. Vision.
- C. Verification.
- D. Communication.

Verification of some activity or document is an example of a hard control.

**Question 26:**

Selecting high-impact and high-visibility auditable activities to audit requires which of the following approaches?

- A. Risk based.
- B. Process based.
- C. Knowledge based.
- D. Experience based.

Audits and controls reduce risks and protect assets. By definition, high-impact and high-visibility activities are high risk due to their nature. Hence, they require a risk-based review approach to ensure that all potential and possible risks are managed properly.

**Question 27:**

Which of the following is the acceptable reporting relationship of the chief audit executive (CAE) in a publicly held corporation?

- A. Single reporting.
- B. **Dual reporting.**
- C. Pseudo-reporting.
- D. Shadow reporting

A dual-reporting relationship occurs when the CAE reports functionally to the board of directors and administratively to the organization’s chief executive officer. This type of relationship facilitates organizational independence of the internal audit function. Due to its unique mission and vision, the internal audit function is very different from that of the other
functions in a company. Note that dual reporting violates the unity of command principle, meaning that one subordinate should report to only one superior. Dual reporting is also called matrix reporting, as found in a project management environment, where a team member administratively reports to the project manager and functionally reports to the functional department manager.

**Question 28:**

Internal control primarily is a:

A. Policy issue.
B. Procedure issue.
C. People issue.
D. Technical issue.

Internal control primarily is a people issue because it is people who install and deinstall the internal controls.

**Question 29:**

Which of the following is **not** a tool to evaluate soft controls?

A. Counting.
B. Questionnaires.
C. Interviews.
D. Workshops.

Counting, whether manual counting or system counting, is an example of a tool to evaluate hard controls, which are formal, tangible, and objective in nature.

**Question 30:**

The best way to develop the scope of a specific internal audit engagement is through a:

A. Standard design.
B. Custom design.
C. General design.
D. Detail design.

The scope of internal auditing is flexible in that it can be custom designed to fit the specific needs of a company’s management.
Question 31:
The chief audit executive (CAE) is required to confirm annually the organizational independence of the internal audit activity. Which of the following receives that confirmation?

A. Governance committee.
B. Chief executive officer.
C. Finance committee.
D. Board of directors.

The CAE is required to confirm annually to the full board of directors about the organizational independence of the internal audit activity from other parts of the organization for objectivity and independence reasons.

Question 32:
Which of the following represents an unacceptable reporting relationship of the chief audit executive (CAE) in a publicly held corporation?

A. The chief accounting officer.
B. The chief operating officer.
C. The chief administrative officer.
D. All of the above.

The CAE should report to a management position at the highest level of the management hierarchy to obtain an independence status from the rest of the organization (i.e., CEO). The chief accounting officer, the chief operating officer, and the chief administrative officer positions are not at the highest level in the management hierarchy.

Question 33:
A fully approved internal audit plan for the current year is already in place for a large internal auditing department. Which of the following offers a final approval of the specific scope of an internal audit engagement?

A. Audit director.
B. Senior auditor.
C. Audit supervisor.
D. Audit manager.

The audit manager can approve the scope of a specific audit engagement because he or she might be managing the audit supervisor, senior auditor,
and audit staff assigned to the specific audit. The audit manager is responsible and accountable for the successful completion of the specific audit engagement work.

**Question 34:**

Management controls are also known as which of the following?

- A. Accounting controls.
- B. Financial controls.
- C. Administrative controls.
- D. Internal controls.

Management controls are also known as internal controls due to their broader perspective and to their effect on the entire organization.

**Question 35:**

When an internal auditor with education and experience in law works with the human resource department of a company about employee lawsuits, the auditor is conducting a(n):

- A. Compliance audit.
- B. Operational audit.
- C. Financial audit.
- D. Consulting audit.

A consulting audit is advisory in nature and is generally performed at the specific request of an engagement client. When an internal auditor with education and experience in law works with the human resource department of a company about employee lawsuits, the auditor is conducting a consulting audit in the form of counseling services to the human resource department.

**Question 36:**

Regarding fraud, internal auditors **cannot** guarantee which of the following?

- A. That they can prevent fraud.
- B. That they can detect fraud.
- C. That they can correct fraud.
- D. All of the above.
It is true that internal auditors cannot guarantee that they can prevent, detect, or correct fraud in their organization, because management is fully responsible for doing such things. The main reason is that internal auditors test internal controls through sampling tests, compliance tests, and substantive tests, not examining every transaction in full detail, which would be cost prohibitive, ineffective, inefficient, and unnecessary. Usually fraud occurs when internal controls fail or failed to detect. It is difficult to detect, especially when management disguises it.

**Question 37:**

All of the following are contributing factors to a false assurance coming from an internal audit to others **except**:

A. Measurement gap.
B. Communication gap.
C. Expectation gap.
D. Competency gap.

False assurance is a level of confidence or assurance based on perceptions or assumptions rather than on facts. False assurance has nothing to do with the measurement gap, where it identifies problems in measuring something of importance (e.g., production counts, inventory counts, and claims counts).

**Question 38:**

Due diligence reviews can be performed during which of the following audits?

A. Compliance and consulting audits.
B. Financial and compliance audits.
C. Operational and financial audits.
D. Consulting and operational audits.

Due diligence reviews provide a safety valve to management that is planning to acquire, merge, or consolidate with other businesses (i.e., consulting audit). These reviews can also be applied, for example, when starting a new joint venture, when complying with laws and regulations, when purchasing land, or when selling a business in full or in part (i.e., compliance audit). The goal is to assure the company’s senior management and the board of directors that all applicable laws and regulations are met (e.g., employment and environmental laws and regulations) and that all potential risks and exposures are addressed and
minimized. Hence, due diligence reviews are performed during compliance and consulting audits.

**Question 39:**
Which of the following is **not** a contributing factor leading to internal audit failures?

A. Management gap.
B. Data gap.
C. Competency gap.
D. Communication gap.

A gap is the difference between expected outcomes and actual outcomes. Data gaps identify problems in data-quality attributes, such as accuracy, completeness, availability, timeliness, and usefulness of data. As such, data gaps cannot contribute to internal audit failures.

**Question 40:**
Internal auditors should **not** assume which of the following roles?

A. Control facilitators.
B. Control developers.
C. Control advisors.
D. Control reviewers.

Internal auditors should not become control developers because it is management's responsibility to design, develop, and maintain controls in the organization. By developing controls, internal auditors can lose their independence and objectivity.

**Question 41:**
The internal audit charter does **not** include which of the following?

A. Audit's role and position.
B. Chief audit executive's reporting relationship.
C. Coordination with external auditors.
D. Access to organization's records.

Coordinating the external auditors and other auditors (e.g., regulatory auditors) with the internal auditors is a routine responsibility of the chief audit executive. As such, it would not be included in the internal audit charter.
Question 42:
Which of the following is not a functional reporting item between the chief audit executive (CAE) and his or her superior?

A. Approving the audit charter.
B. Approving the audit manual.
C. Approving the audit risk assessment program.
D. Approving the audit plan.

The audit manual is a routine, low-level document. As such, it should be approved by the CAE's administrative superior, not by the board of directors. The audit manual is updated periodically for the audit staff's use. This is an administrative reporting item.

Question 43:
Which of the following is not a leading practice to protect the reputation risk of an internal audit function?

A. Performing a risk assessment exercise.
B. Implementing a quality assurance program.
C. Protecting the internal audit brand.
D. Establishing management review of audit findings.

Establishing an effective management review of audit findings is a leading practice in mitigating risks of audit failures and does not itself protect the reputation risk. This leading practice should make a company management to review, accept, and own the audit findings.

Question 44:
Which of the following is common between feed-forward controls and feedback controls?

A. Budgets.
B. Employee training programs.
C. Final quality inspection.
D. Inventory forecasting.

Budgets are a common item between feed-forward controls and feedback controls because budgets work as proactive controls and reactive controls.
Which of the following will not help in identifying the overall risks to the internal audit function?

A. Barrier analysis.
B. Root-cause analysis.
C. Assurance maps.
D. Risk maps.

Barrier analysis, as it relates to the business activity of organizational change, identifies key determinants of (barriers to) human behavioral change in employees to help focus on their behaviors that have not changed, despite repeated management’s efforts to change. The four key determinants of human behavior are self-efficacy, social norms, positive consequences, and negative consequences. Hence, barrier analysis will not help in identifying the overall risks to the internal audit function.

Question 46:
Which of following is not a standard statistical method?

A. Random sampling.
B. Judgment sampling.
C. Attribute sampling.
D. Variable sampling.

Although internal auditors use the judgment sampling method during their audit work when other methods are not applicable, judgment sampling does not lend itself to quantitative analysis by standard statistical methods. Judgment sampling is a qualitative sampling method, not a quantitative sampling method.

Question 47:
Internal auditors can design, develop, implement, and maintain which of the following?

A. Control systems.
B. Computer systems.
C. Audit systems.
D. Audit trail systems.

Audit systems (e.g., generalized audit software and test data generator software) are planned, designed, developed, implemented, maintained, and owned by the internal audit department for its own use by the audit staff to
perform their audit work. However, internal auditors should not be involved in the planning, designing, developing, implementing, and maintaining of control systems, computer systems, and audit trail systems because internal auditors do not own those systems.

**Question 48:**
Which of the following is an example of an administrative reporting item between the chief audit executive (CAE) and his or her superior?

A. Audit's budgetary limitations.
B. Audit's annual budget plans.
C. Audit activity's independence.
D. Audit's failure reasons.

Annual budget plans of internal audit are administrative reporting items between the CAE and his or her superior (chief executive officer) to obtain the latter's approval.

**Question 49:**
Budget controls are not usually reviewed during which of the following audits?

A. Compliance audit.
B. Operational audit.
C. Financial audit.
D. Consulting audit.

Consulting audits are advisory in nature and specific to meet the needs of customers and clients. Hence, budget controls, which are financial in nature, are not reviewed in consulting audits.

**Question 50:**
Internal auditors can add a greater value to their organizations by doing more:

A. Compliance audits.
B. Operational audits.
C. Financial audits.
D. Consulting audits.
More of consulting audits add greater value to their organizations because those audit results will improve an organization's governance, risk management, and control processes.

E3 : Systems Controls and Security

Question 1:
In entering the billing address for a new client in Emil Company's computerized database, a clerk erroneously entered a nonexistent zip code. As a result, the first month's bill mailed to the new client was returned to Emil Company. Which one of the following would most likely have led to discovery of the error at the time of entry into Emil Company's computerized database?

A. Limit test.

B. Validity text.

C. Parity test.

D. Record count test.

A validity test compares data against a master file for accuracy. Data that cannot possibly be correct (e.g., a nonexistent zip code) would be discovered at that time.

Question 2:
Increasing complexity of the information technology systems often blurs the boundaries that separate the authorization, record keeping, and custody functions performed by the information technology (IT) department and the system users. For example, when a sales agent enters a customer's order online, the computer plays a significant role in authorizing the sales transaction based on its comparison of pre-set customer credit limits in the master file and consequently posting all approved sales transactions in the sales journals and related sub-ledgers. In this scenario, what would be an example of the control that would best minimize the lack of segregation of duties on the part of the computer system?

A. Responsibility for designing and controlling accounting software programs that contain the sales authorization and posting controls should be under the authority of the credit approval department; and the ability to update all the information in the master file of customer credit limits should be under the authority of the IT department.
B. In such situations, it is best to outsource such tasks to eliminate risking the lack of segregation of duties.

C. Since the transaction is processed in an automated fashion, it really does not matter which department performs a particular function.

D. Responsibility for designing and controlling accounting software programs that contain the sales authorization and posting controls should be under the authority of the IT department; and the ability to update all the information in the master file of customer credit limits should be under the authority of the credit approval department.

Proper segregation of duties requires that the IT be entirely separated from users of IT. The IT function is responsible for recording transactions, only. The authorization for and execution of transactions as well as the custody of assets related to the transactions belongs to the user.

Question 3:
Audit procedures may include a variety of computerized programs and accuracy tests to confirm that the data processed by computer applications post to the correct general ledger accounts. These procedures are referred to as:

A. Input controls.
B. Processing controls.
C. Output controls.
D. Security controls.

Computerized programs and accuracy tests to confirm that data is processed by computer applications correctly are called processing controls.

Question 4:
Online access controls are critical for the successful operation of today's computer systems. To assist in maintaining control over such access, many systems use tests that are maintained through an internal access control matrix which consists of:

A. a list of controls in the online system and a list of those individuals authorized to change and adjust these controls along with a complete list of files in the system.

B. authorized user code numbers, passwords, lists of all files and programs, and a record of the type of access each user is entitled to have to each file and program.
An access control mechanism defines object and action privileges for a user. Object privileges define the resources the user may access. Action privileges define what the user may do with a resource. Access controls often employ user ID codes and passwords.

Question 5:
Consider the following types of controls.

I. Preventive
II. Corrective
III. Feedback
IV. Feedforward
V. Detective

Which one of the following groups of controls are generally considered the most cost-effective controls?

* Source: Retired ICMA CMA Exam Questions.

A. I, II, and III.
B. I, II, and V.
C. I, III, and V.
D. III, IV, and V.

The most cost-effective controls to implement in an accounting information system is preventative, corrective, and detective controls.

Question 6:
Alex is an unhappy employee, and he writes a line of code into the company's software system that will erase every tenth transaction entered into the system. Which of the following is this called?

A. Trojan horse.
B. Virus.
C. Revenge line.
D. Saboteur.
A Trojan horse is a computer program containing an intentional line of code created by a programmer for personal gain (transferring funds without the company knowing) or revenge.

**Question 7:**
A variety of controls can be implemented to limit unauthorized access to an accounting information system by external users. All of the following are acceptable access controls except:

A. encryption of data.

B. user IDs and profiles.

C. segregation of duties.

D. passwords.

Companies must use a variety of controls to protect their systems and data from unauthorized access, beginning, at the most basic, with passwords. Software-based access controls such as user ID's and profiles allow the system administrators to manage access privileges. An additional step many firms take is to encrypt data so that unauthorized users who have been able to bypass first-level controls are not able to read, change, add to, or remove the data.

**Question 8:**
There are many ways that realtime accounts receivable systems differ from batch accounts receivable systems. Which one of the following is not correct?

A. Realtime systems: Processing is done on demand; Batch systems: Processing is done during scheduled computer runs.

B. Realtime systems: Must use direct-access files; Batch systems: Can use simple sequential files.

C. Realtime systems: Processing choices are menu-driven; Batch systems: Processing is interactive.

D. Realtime systems: Invoicing is performed as goods are shipped; Batch systems: Invoicing is performed through scheduled billing runs.

Real-time processing is menu driven, but the batch system processing is not interactive. Batch processing is the aggregation of several transactions over a period of time with the subsequent processing of these data as a group. The system feedback in batch processing can be received only after such processing with a substantial delay.

**Question 9:**
When attempting to restore computing facilities at an alternate site following a disaster, which one of the following should be restored first?

*A. Online system.*

*B. Batch system.*

*C. Decision support system.*

**D. Operating system.**

The first step in restoring computing facilities at an alternative site following a disaster should be restoring the operating system. The operating system will allow all other computing operations to be restored subsequently.

**Question 10:**

All of the following are examples of encryption techniques used for computer security except:

*A. private key.*

*B. authentication key.*

*C. public key.*

**D. primary key.**

Encryption techniques include a public key, a private key, and an authentication key.

**Question 11:**

Processing controls provide reasonable assurance that only approved data are processed. Which of the following controls is not a processing control?

*A. Run-to-run totals.*

*B. Sequence checks.*

*C. Completeness checks.*

**D. Error report.**

Completeness checks, sequence checks, and run-to-totals are all processing controls. Error reports are an output control.

**Question 12:**
Which of the following are potential threats to an information system?
I. Trojan horses
II. Manipulation of input data
III. Computer viruses
IV. Data theft

A. I, II, III, and IV
B. III and IV only.
C. I, II, and III only.
D. I and II only.

There are many threats to information systems, including input manipulation, program alteration, data theft, sabotage, viruses, Trojan horses, and theft.

Question 13:
Which of the following is a risk of using the Internet to transmit data?

A. Encrypted files cannot be sent via the Internet.
B. Data is easily intercepted and can be stolen or altered when being sent on an unsecured line.
C. Telecommunication lines connecting a wide area network (WAN) may corrupt data due to the long distances between computers.
D. Data wires connecting a local area network (LAN) can easily be breached by hackers.

Data transmitted via the Internet generally is considered to have a low level of integrity due to the possibility of interception or data scrambling. Encrypted files can be sent via the Internet and are better protected from interception. Wired LANs and WANs do not rely on Internet technology to connect computers and are therefore not open to the same risks for data transmission.

Question 14:
Systems security controls:

A. are not required in a small company.
B. require only that the computer is in a climate-controlled room and behind a locked door.
C. are not necessary if proper software controls are maintained.
D. include blocking physical access to computers, protecting computer systems from environmental effects (cold, floods), and logical controls that block unauthorized access.

Systems security controls encompass both the physical access to the hardware and the logical (ability to use) access to the hardware.

**Question 15:**

Edit checks in a computerized accounting system:

A. are easier to install after a system is operational.

B. should be performed immediately prior to output distribution.

C. should be performed on transactions prior to updating a master file.

D. are preventive controls.

Edit checks are executed upon data entry. Their purpose is to detect and correct problems in data input. They are performed upon data entry prior to updating a file to assure accuracy of the update. The edit checks prevent the phenomenon of "garbage in, garbage out."

**Question 16:**

Ellen is processing a group of transactions and indicates as she begins running the program that there are 15 transactions in the batch, totaling $150,000 in orders. This batch control is related to all of the following except:

A. a processing control.

B. an output control.

C. an input control.

D. a program access control.

Processing controls are often interdependent with input and output controls. Processing controls are checks that are run by the computer program while it processes the data to verify that the information is accurate. In this example, the computer system will re-verify that the batch was inputted properly. The output controls would tie the batch back to the input.

**Question 17:**

A critical aspect of a disaster recovery plan is to be able to regain operational capability as soon as possible. In order to accomplish this, an organization can have an arrangement with its computer hardware vendor
to have a fully operational facility available that is configured to the user's specific needs. This is best known as a(n):

A. hot site.
B. uninterruptible power system.
C. parallel system.
D. cold site.

A hot site is a back-up site in another location, that has the company's hardware and software and is ready to run on a moment's notice.

**Question 18:**
Which one of the following represents a lack of internal control in a computer-based system?

A. Any and all changes in applications programs have the authorization and approval of management.
B. The design and implementation is performed in accordance with management's specific authorization.
C. Provisions exist to protect data files from unauthorized access, modification, or destruction.
D. Programmers have access to change programs and data files when an error is detected.

The information technology (IT) function should be separate from the other functional areas in the organization. In addition, within IT, there should be a separation between programmers/analysts, operations, and technical support. Change programs and data files belong to IT operations. Error correction and reentry belongs to the system user.

**Question 19:**
Which of the following is true?

A. A firewall system guarantees that unauthorized users will not be able to access the backup data.
B. Data backups should be regularly stored off site for recovery in the event of the loss of the facility in which the data resides.
C. Disaster recovery will be effective only for firms with subsidiaries in a different region.
D. Automated backup systems are often ineffective; backups should be instituted every day by an authorized computer manager.

Data backup tapes should be regularly transferred to off-site storage so that recovery procedures can be instituted in case a disaster destroys the data center. Automated backup systems work fine. Nothing guarantees that hackers will not be able to access the system. Disaster recovery can be effective for many types and sizes of businesses.

Question 20:  
Data encryption:

A. converts data from easily read local language into a secret code and helps prevent unauthorized usage of sensitive information.

B. converts graphics into binary code that can be more easily transmitted over the Internet.

C. is less necessary over the Internet than on a local area network (LAN) or wide area network (WAN) because e-mail and FTP cannot be intercepted.

D. is not necessary unless a business is working on government defense contracts.

Data encryption helps prevent unauthorized access to sensitive information and can be used on data transmissions over the Internet and on a LAN/WAN as well as on files stored on the LAN/WAN.

Question 21:  
Data processed by a computer system are usually transferred to some form of output medium for storage. However, the presence of computerized output does not, in and of itself, ensure the output's accuracy, completeness, or authenticity. For this assurance, various controls are needed. The major types of controls for this area include:

A. input controls, tape and disk output controls, and printed output controls.

B. hash totals, tape and disk output controls, and printed output controls.

C. tape and disk output controls and printed output controls.

D. transaction controls, general controls, and printout controls.

Controls necessary to assure the accuracy of system output are called application controls. Application controls consist of controls over input, processing, and output.

Question 22:  

Which of the following are examples of systems development controls?

I. Each systems programmer is responsible for only a portion of the total program code.
II. The systems development manager runs a program that checks for unauthorized lines of code, such as Trojan horses.
III. The computer tracks how long each person is on the Internet.
IV. A pilot review is run when the system is completed, tracking data results against results from the previous version of the system.

A. II and IV only.
B. I, II, III, and IV.
C. I and II only.
D. I, II, and IV only.

Tracking how long an employee is on the Internet is not an example of systems development controls. It may be an example of internal controls to promote efficiency.

Question 23:
All of the following are included in the systems implementation process except:

A. training.
B. systems design.
C. conversion.
D. testing.

The steps in systems development are analysis, design, implementation, follow-up, operations, and maintenance. Implementation consist of training, testing, conversion, and documentation.

Question 24:
Procedures to limit the physical access to information systems hardware include all of the following except:

A. requiring swipe card assess to restricted areas.
B. requiring dual control of valuable assets
C. employing security guards
D. sending confirmations to satellite offices.
Internal controls designed to protect the firm's physical assets are often the most visible safeguarding controls. Such controls include door locks, security systems, computer passwords, and requirements for dual control of valuable assets.

**Question 25:**

An inherent risk specifically related to conducting business over the internet includes:

A. website denial of service attack.
B. exposure to viruses.
C. unauthorized access by hackers, exposure to viruses, and website denial of service attacks.
D. unauthorized access by hackers.

The Internet has introduced risks to computer systems that do not exist on private networks. Among the threats is a greatly increased risk of unauthorized access, as hackers have grown both numerous and more sophisticated in their attacks. Internet presence also exposes systems to "malware"—including viruses, worms, spyware, spam, and Trojan horses.

**Question 26:**

Which one of the following would most compromise the use of the grandfather-father-son principle of file retention as protection against loss or damage of master files?

A. Inadequate ventilation.
B. Failure to encrypt data.
C. Storing of all files in one location.
D. Use of magnetic tape.

Storing all files in one location undermines the concept of multiple backups inherent in the grandfather-father-son principle.

**Question 27:**

In situations where it is crucial that data be entered correctly into an accounting information system, the best method of data control would be to use:

A. compatibility tests.

* Source: Retired ICMA CMA Exam Questions.*
B. limit checks.
C. reasonableness tests.
D. key verification.

The best method of data control in situations where it is crucial that data be entered correctly into an accounting information system is through the use of key verification.

Question 28:
Disaster recovery policies and procedures are designed to enable a company to carry on business in the event of an unplanned disaster where the business would not be able to function normally. A company's disaster recovery plan should include all of the following except:

A. specify backup sites for alternate computer processing.
B. define the roles of all members of the disaster recovery team.
C. document all processing and output controls.
D. appoint a primary leader for the process.

Disaster recovery policies and procedures—also called business continuity plans—are designed to enable the firm to carry on business in the event that an emergency, such as a natural disaster, disrupts normal function. A company's disaster recovery plan should define the roles of all members of the disaster recovery team, appointing both a primary leader and an alternate leader for the process. The plan should specify backup sites for alternate computer processing.

Question 29:
Effective controls designed to catch errors and improve the accuracy of data processing in batches before new information is written to the master file includes all of the following except:

A. A control total.
B. A hash total.
C. A check digit.
D. A record count.

A check digit is an input control used during the data entry process of an individual record. The other three items are all examples of batch input controls.

Question 30:
Sam needs to send a check to a contract worker. The check number is on the check, and the computer program adds a second number while printing the check to aid in tracking the transaction. This is an example of:

A. an input control.
B. a processing control.
C. a program access control.
D. an output control.

Output controls ensure accuracy and validation of information. They include controls for validating processing results such as activity reports. Output controls regulate the distribution and disposal of printed output, including pre-numbered checks.

Question 31:

The objective of a disaster recovery plan is to:

A. set forth procedures to follow if the building needs to be evacuated in the event of a disaster.
B. provide protection against losses during times of severe recession.
C. provide for continuing business in the event of an emergency that results in the inability to use the facility or the data center.
D. provide a plan in the event of a union strike when there are no operators for the data and processing systems.

The objective of a disaster recovery plan is to provide for continuing business in the event of an emergency that results in the inability to use the facility or the data center.

Question 32:

Which of the following provides protection from unauthorized use of databases?

A. Storing the data center in a secured area.
B. **Data encryption.**
C. Input entry screens with validity checks.
D. File transfer protocol.

Data encryption protects data while it is stored and while it is being transmitted. Locating the data center in a secured area protects hardware, not access to programs and data. File transfer protocol is a standard method of transferring files over the Internet, and it does not protect data.
from unauthorized use unless transmitted data is encrypted. Input entry screens with validity checks are effective controls for accuracy of input but do not protect programs or the system from unauthorized use.

Question 33:
Output controls provide assurance that processing is complete and accurate. Which of the following controls is not an output control?

A. Password protection of document.
B. Reasonableness check.
C. Error listing.
D. Audit trail.

A reasonableness check is an input control. The other three items are examples of output controls.

Question 34:
Which of the following are controls that would limit access to physical hardware?

I. The data center is placed in a location away from easy public access.
II. An alarm system is set up in the computer room, including motion detectors.
III. The data center is located on the third floor of the office building.
IV. All computer equipment is attached to surge protectors.

A. II, III, and IV only.
B. I and II only.
C. I and III only.
D. I, II, III, and IV.

Locating the data center on the third floor of the building does not necessarily limit access to physical hardware. However, it does protect the system in case of a flood. Also, surge protectors protect computer equipment but do not limit physical access to the hardware.

Question 35:
A data backup:

A. helps recover data after data loss due to viruses, natural disasters, and hardware failures and should be run on a daily basis.
B. should be run every day but is not helpful in the event of a data loss due to a computer virus.

C. helps prevent hacking and should be run on a daily basis.

D. helps recover data after data losses but is done only if a company has a very large database of information to recover.

A data backup should be run on a daily basis. It is necessary for any business with stored data and helps with recovery regardless of how data is lost. A data backup does not prevent hacking.

**Question 36:**

Sandy opens an e-mail that she doesn't realize contains a line of code that enters the company local area network (LAN) via her computer. Three days later, all the data files on the LAN and everybody's computers are erased. This is an example of:

A. a computer spam.

B. a computer virus.

C. a Trojan horse.

D. a prototype.

A computer virus can move through a network deleting or altering files before it is even detected. Computer viruses have become a concern to companies.

**Question 37:**

Which one of the following statements about an accounting information system (AIS) is incorrect?

A. The information produced by AIS is made available to all levels of management for use in planning and controlling an organization's activities.

B. AIS is a subsystem of the management information system.

C. AIS supports day-to-day operations by collecting and sorting data about an organization's transactions.

D. AIS is best suited to solve problems where there is great uncertainty and ill-defined reporting requirements.

A decision support system, not an AIS, is best suited to solve problems where there is great uncertainty and ill-defined reporting requirements.

**Question 38:**
The data entry staff of National Manufacturing Inc. has responsibility for converting all of the plant's shipping information to computerized records. The information flow begins when the shipping department sends a copy of a shipping order to the data entry staff. A data entry operator scans the shipping order information onto a hand-held data storage device. Verification clerks then check the computerized record with the original shipping orders. When a given batch of files has been reviewed and corrected, as necessary, the information is uploaded to the company’s mainframe system at the home office.

The most effective way to visualize and understand this set of activities would be through the use of a

* Source: Retired ICMA CMA Exam Questions.

A. program flowchart.
B. Gantt chart.
C. decision table.
D. document flowchart.

The most effective way to visualize and understand a set of activities or process is through the use of a document flowchart.

**Question 39:**

Flowcharts of activities are used to:

A. help detect intrusion past the firewall into the network.
B. **visually inspect, observe, and document a process in order to assess effectiveness of control procedures.**
C. help ensure that data transmitted over the Internet is not intercepted by unauthorized personnel.
D. ensure that data can be recovered if it is lost.

A flowchart is used by the internal auditor to review the information system and related control procedures for adequacy as well as efficiency of operations.

**Question 40:**

Confidential data can be securely transmitted over the internet by using:

* Source: Retired ICMA CMA Exam Questions.

A. firewalls.
B. single-use passwords.

C. encryption.

D. digital signatures.

Encryption allows confidential data to be transmitted securely over the internet.

Question 41:
1E3-LS32
In securing the client/server environment of an information system, a principal disadvantage of using a single level sign-on password is the danger of creating a(n):

A. single point of failure.
B. trap door entry point.
C. lock-out of valid users.
D. administrative bottleneck.

Advantages of a securing a client/server environment of an information system using a single level sign-on password is a trap door entry point, administrative bottleneck and lock-out of valid users. A disadvantage of using such a system is a single-point of failure.

Question 42:
1E3-LS16
Company ABC has installed a software/hardware system that restricts access by outsiders to the firm’s network. This is called:

A. a firewall.
B. data encryption.
C. a disaster recovery procedure.
D. an intrusion detection system.

A firewall restricts access to a network from outside the company but does not guarantee security. An intrusion detection system alerts the system administrator to unusual activity or attempts at breaking past the firewall. Data encryption can minimize the risk of unauthorized access to data but does not restrict access to a network. A disaster recovery procedure is instituted when the network has been destroyed due to a natural disaster or purposeful destruction.

Question 43:
1E3-LS09
Lynn is entering a transaction on the screen and receives an error message telling her the account number does not match the customer name. This is an example of:

A. a program access control.
B. an output control.
C. an input control.
D. a processing control.

This is an example of an input control, which processes validity checks to help avoid input of transactions with inaccurate information.

**Question 44:**
Which controls provide reasonable assurance that data is complete, accurate, and authorized?

A. Output controls.
B. Input controls.
C. Physical controls.
D. Processing controls.

Input controls help to provide reasonable assurance that data is complete, accurate, and authorized.

**Question 45:**
Many organizations participating in e-commerce have serious concerns about security, therefore a new subdiscipline, internet assurance services, has evolved. Its main objective is to:

A. provide assurances that web sites are reliable and transaction security is reasonable.
B. insure against fraud and hackers by charging a fee per transmitted transaction.
C. provide assurance that electronic data transmissions reach their destinations and on time.
D. provide value to data being transmitted by making it secure.

Internet assurance is a service of providing a limited assurance to users of the vendor's Web site that the site is reliable and event data security is reasonable.

**Question 46:**
Accounting controls are concerned with the safeguarding of assets and the reliability of financial records. Consequently, these controls are designed to provide reasonable assurance that all of the following take place except:

A. comparing recorded assets with existing assets at periodic intervals and taking appropriate action with respect to differences.

B. recording transactions as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and maintaining accountability for assets.

C. executing transactions in accordance with management's general or specific authorization.

D. compliance with methods and procedures ensuring operational efficiency and adherence to managerial policies.

An internal control system is concerned with safeguarding assets, accuracy and reliability of records, operational efficiency, adherence to policy, and compliance with laws and regulations. The first two are called accounting controls. The latter three are referred to as administrative controls.

Question 47:
A computer virus is different from a "Trojan Horse" because the virus can:

* Source: Retired ICMA CMA Exam Questions.

A. replicate itself.

B. erase executable files.

C. alter programming instructions.

D. corrupt data.

A virus is different from a "Trojan Horse" in the way it can replicate itself.

Question 48:
In the organization of the information systems function, the most important separation of duties is:

A. using different programming personnel to maintain utility programs from those who maintain the application programs.

B. having a separate department that prepares the transactions for processing and verifies the correct entry of the transactions.

C. assuring that those responsible for programming the system do not have access to data processing operations.
D. not allowing the data librarian to assist in data processing operations.

The information technology (IT) function should be separate from the other functional areas in the organization. In addition, within IT, there should be a separation between programmers/analysts, operations, and technical support.

Question 49:
1E3-LS31
The most appropriate control to verify that a user is authorized to execute a particular online transaction is a:

* Source: Retired ICMA CMA Exam Questions.

A. password.
B. challenge/response system.
C. closed-loop verification.

D. **compatibility check**.

The most appropriate control to verify that a user is authorized to execute a particular online transaction is through the use of a compatibility check.

Question 50:
1E3-LS33
Which one of the following represents a weakness in the internal control system of an electronic data processing system?

* Source: Retired ICMA CMA Exam Questions.

A. The systems analyst designs new systems and supervises testing of the system.

B. The accounts receivable clerk prepares and enters data into the computer system and reviews the output for errors.

C. The data control group reviews and tests procedures and handles the reprocessing of errors detected by the computer.

D. **The computer operator executes programs according to operating instructions and maintains custody of programs and data files.**

A weakness in the internal control system of an electronic data processing system is a computer operator executing programs according to operating instructions and maintains custody of programs and data files.

Question 51:
1E3-AT08
The **most** critical aspect of the separation of duties within a mainframe information systems environment is between:
A. programmers and users.
B. programmers and project leaders.
C. programmers and systems analysts.
D. programmers and computer operators.

The information technology (IT) function should be separate from the other functional areas in the organization. In addition, within IT, there should be a separation between programmers/analysts, operations, and technical support. Separation of programmers from computer operators is critical.

Question 52:
In order to prevent, detect, and correct errors and unauthorized tampering, a payroll system should have adequate controls. The best set of controls for a payroll system includes:

A. passwords and user codes, batch totals, employee supervision, and record counts of each run.
B. batch and hash totals, record counts of each run, proper separation of duties, passwords and user codes, and backup copies of activity and master files.
C. employee supervision, batch totals, record counts of each run, and payments by check.
D. batch totals, record counts, user codes, proper separation of duties, and online edit checks.

Transaction processing systems need controls to assure authorization, completeness, accuracy, and timeliness. The four objectives, in processing payroll, are accomplished by using batch and hash totals, record counts of each run, proper separation of duties, passwords and user codes, and backup copies of activity and master files.

Question 53:
Which input control would be most effective to mitigate risks related to paying large dollar invoices without management approval?

A. Check digit.
B. Control total.
C. Passwords.
D. A limit check.
A limit check can be set to restrict the maximum dollar amount of an invoice that can be processed without specific authorization of management.