

# Knowledge Checks: Multiple Choice and Extended Response Questions and Solutions

## STRATEGIC MANAGEMENT ACCOUNTING



# Multiple Choice Questions and Solutions



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# Questions

## Module 1

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### Question 1.1

Which **one** of the following tasks is **least likely** to be a strategic management accounting task?

- A evaluating a proposal to outsource printing
- B calculating the loss on sale of plant and equipment
- C providing accounting data for the organisation's strategic plan
- D advising the managing director on whether the organisation should introduce product-based profit centres

(SMA ID 1.1)

### Question 1.2

Which **one** of the following **best** describes the major difference between traditional and strategic management accounting?

	<b>Traditional management accounting:</b>	<b>Strategic management accounting:</b>
A	focuses on the manufacturing environment	focuses on the public sector and service organisations
B	focuses on planning, evaluating and controlling	focuses solely on strategic-level issues
C	focuses on product costing	incorporates both financial and non-financial performance measures
D	provides useful information to support managers	broadens the role to focus on value creation for all significant stakeholders

(SMA ID 1.2)

### Question 1.3

Which **one** of the following statements **best** describes customer value?

- A creating and delivering products, services, outcomes or outputs that consumers are willing to pay for
- B aligning the activities within an organisation to make sure the final product is made effectively and efficiently
- C the ability to generate superior returns on shareholder funds (or taxpayer funds in the case of public sector organisations)
- D using customer account profitability analysis to ensure the organisation focuses on the customers that provide it with the greatest levels of profit

(SMA ID 1.3)

### Question 1.4

Which **one** of the following is a form of strategic management accounting support for the operational management task of planning?

- A** measuring individual, departmental, team and organisational performance
- B** preparing budgets and forecasts, using costing systems and providing historical data
- C** using budgets to coordinate various departments and communicate organisational priorities to employees
- D** identifying causes of variance, establishing performance incentives and criteria, reconciliations and internal controls

(SMA ID 1.4)

### Question 1.5

Printer's Delight Pty Ltd (Printer's Delight) sells a variety of printers and scanners for use with personal computers. Last month, a staff member in charge of purchasing, Jim Smith, completed a requisition for 10 laser printers. He then created a purchase order for 10 laser printers and sent it to one of the company's suppliers. The purchase order included instructions to deliver the printers to 100 Sandleford St (Jim Smith's home address).

The supplier shipped the printers to Sandleford St and sent a sales invoice to Printer's Delight. When the invoice arrived, a staff member in the accounting department carefully complied with company policy and compared the invoice to the purchase order copy. Being satisfied that the invoice agreed with the quantity, price and model numbers of the printers ordered, the staff member recorded the transaction in the accounting records and authorised payment of the invoice.

Identify the main internal control weakness discovered by Jim Smith that enabled him to commit this theft.

- A** lack of separation of duties
- B** inadequate control of cash receipts
- C** failure to ensure adequate security of the printers
- D** ineffective document design and handling, allowing the delivery instructions to be altered

(SMA ID 1.5)

### Question 1.6

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The expected revenue for the first quarter of 20X9 is

- A \$1 242 000.
- B \$1 292 000.
- C \$1 400 000.
- D \$4 760 000.

### Question 1.7

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The estimated total cash receipts collected in the month of March 20X9 are

- A \$385 000.
- B \$1 750 000.
- C \$1 767 500.
- D \$1 851 500.

### Question 1.8

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The estimated production requirements for March 20X9 are

- A** 25 900 units.
- B** 26 000 units.
- C** 26 100 units.
- D** 28 700 units.

### Question 1.9

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The amount of raw materials that needs to be purchased in March 20X9 is

- A 13 050 kilograms.
- B 13 170 kilograms.
- C 13 200 kilograms.
- D 26 340 kilograms.

### Question 1.10

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The cost of raw materials purchases in April 20X9 is

- A \$12 730.
- B \$152 760.
- C \$154 800.
- D \$158 040.

### Question 1.11

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The estimated direct labour cost for March 20X9 is

- A \$39 150.
- B \$574 200.
- C \$858 000.
- D \$861 300.



### Question 1.12

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

The contribution margin per unit is

- A \$19.
- B \$26.
- C \$31.
- D \$51.

### Question 1.13

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

Based on half a year of fixed costs and ignoring any bad debts, the number of units that must be sold before this product will break even is

- A 2 632 units.
- B 3 922 units.
- C 5 264 units.
- D 10 527 units.

### Question 1.14

Bramhall Pty Ltd has the following 20X9 estimates for its product.

Fixed costs are \$200 000 per annum.

Sales price per unit is \$70.

Raw materials cost is \$12 per kilogram.

Raw materials required per unit is 0.5 kilograms.

Raw materials inventory required at the end of each month is 40 per cent of next month's raw materials usage.

Finished goods inventory required at the end of each month is 10 per cent of the next month's expected sales.

Labour cost is \$22 per hour.

1.5 hours of labour are required for each unit. 25 per cent of sales are on credit.

- Cash from 30 per cent of **the credit sales** is collected in the same month as the sale.
- Cash from 60 per cent of **the credit sales** is collected in the month after the sale.
- Cash from 5 per cent of **the credit sales** is collected in the second month after the sale.

Variable selling costs are \$3 per unit.

Variable administration costs are \$4 per unit.

Variable manufacturing overhead is \$5 per unit.

Expected sales units	
January	20 000
February	22 000
March	26 000
April	27 000
May	24 000
June	20 000

Ignoring bad debts, the estimated profit for the period from January to June 20X9 is closest to

- A \$2 441 000.
- B \$2 541 000.
- C \$2 641 000.
- D \$9 730 000.

### Question 1.15

Which **one** of the following is **not** a benefit for an organisation in using budgets?

- A providing forecasts of future operating activity
- B providing targets for assessing the performance of individuals
- C establishing a control mechanism for the allocation of resources
- D providing information on the performance of organisational units

(SMA ID 1.15)

### Question 1.16

Which **one** of the following statements relating to organisational factors that influence the management accountant's work is correct?

- A Small organisations do not require a management accountant.
- B Not-for-profit organisations have less need of management accountants than profit-oriented organisations.
- C Service organisations (e.g. banks) have no inventory, so have no need of a management accounting function.
- D Measures of efficiency used by management accountants in the manufacturing sector are generally transferable to public sector organisations.

(SMA ID 1.16)

### Question 1.17

Management accounting has changed over time.

Which **one** of the following lists shows the development of management accounting techniques in their correct chronological order?

- A value analysis, efficiency analysis, cost accounting, responsibility accounting
- B responsibility accounting, cost accounting, efficiency analysis, value analysis
- C cost accounting, responsibility accounting, efficiency analysis, value analysis
- D efficiency analysis, cost accounting, value analysis, responsibility accounting

(SMA ID 1.17)

### Question 1.18

Management accounting has evolved in response to changes in the business environment.

Which **one** of the following is **not** one of the changes affecting management accounting?

- A Globalisation has led to an increase in the predictability of future events.
- B The service sector has become increasingly important while manufacturing has declined.
- C New technology allows faster and cheaper production, but accelerates product life cycles.
- D Notions of Corporate Social Responsibility have created a demand for greater accountability.

(SMA ID 1.18)

### Question 1.19

The role of the management accountant has evolved to a more strategic focus.

Which **one** of the following activities are **not** appropriate to the role of the strategically oriented management accountant?

- A designing information systems that enable users to access information for themselves
- B designing control systems that promote ethical behaviour and corporate social responsibility
- C acting as a business partner and consultant to management with a focus on improving results and creating value
- D acting as the overseer of management, and avoiding any involvement in activities that might create a conflict of interest

(SMA ID 1.19)

### Question 1.20

Environmental management accounting systems should provide information about which **one** of the following elements?

- A cost of spoilage
- B tonnes of pollutants released
- C number of days lost due to accidents
- D ethical behaviour of suppliers and subcontractors regarding adequate wages

(SMA ID 1.20)

## Module 2

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### Question 2.1

Which **one** of the following **best** describes that part of the strategic management process within an organisation that examines its competitive position in relation to products, production facilities, non-current assets, people, organisational structures and current operating results?

- A SWOT analysis
- B internal analysis
- C external analysis
- D stakeholder analysis

(SMA ID 2.1)

### Question 2.2

Which **one** of the following is **not** one of Porter's competitive forces in an industry?

- A the threat from substitute products
- B rivalry between organisations in an industry
- C the convergence of an organisation's technology
- D the bargaining strength of an organisation's customers

(SMA ID 2.2)

### Question 2.3

Porter (1985) argues that competitive organisations are able to successfully execute one of three generic strategies.

Which **one** of the following lists shows the three generic strategies identified by Porter (1985)?

- A defender, differentiation, focus
- B focus, differentiation, cost leadership
- C market domination, cost leadership, focus
- D cost leadership, prospector, differentiation

(SMA ID 2.3)

### Question 2.4

A company that manufactures sportswear produces two lines of clothing: winter sportswear and summer tennis wear. The clothing is produced to a high standard of design and manufacture and it is sold under a widely recognised and prestigious label.

The strategy that the company is seeking to use in the highly competitive clothing market is referred to as a

- A cost-focus strategy.
- B cost leadership strategy.
- C differentiation strategy.
- D differentiation-focus strategy.

(SMA ID 2.4)

### Question 2.5

Aussie Ware Enterprises (AWE), a small Australian clothing manufacturing company, markets its distinctively outback-influenced, recreational clothing through specialised mail-order distributors and select clothing stores in major shopping centres throughout the eastern states. From a small base 10 years ago, AWE has grown to achieve \$25 million in annual sales. Part of the appeal of AWE's products is its product quality and the low environmental impact of production and packaging (e.g. using solar-powered manufacturing equipment, packaging products in recycled materials and minimising waste).

According to Porter (1985), the business strategy of AWE would be categorised as a

- A focus strategy.
- B differentiation strategy.
- C market domination strategy.
- D 'stuck in the middle' strategy.

(SMA ID 2.5)

## Question 2.6

Which **one** of the following statements does **not** correctly describe an organisation's value chain?

- A** the primary and support activities from which the organisation can derive a competitive advantage
- B** a series of linked and strategically relevant activities that deliver products or services that the organisation's customers value
- C** a set of interrelated activities that provide opportunities for optimising the collective value derived from the interdependencies
- D** an aggregation of independent and strategically relevant activities that collectively contribute to the economic value generated by the organisation

(SMA ID 2.6)

## Question 2.7

The automobile industry has become increasingly fragmented as the major companies narrow the scope of their activities to those tasks or functions where they have a competitive advantage. For example, many automotive companies specialise in the design of new cars and outsource the manufacture of parts and components used in the assembly of new vehicles.

In designing a vehicle, assume the six major development activities that can be performed by an automotive maker are as follows.

### Development activities

- I **Product engineering**—designing parts and components.
- II **Basic engineering**—developing the basic technological features of the product.
- III **Concept generation**—conducting market research to identify future market needs, and combining these needs with the technical possibilities of existing and future technology to develop a product concept.
- IV **Pilot run**—testing the performance of the manufacturing process prior to entering full-scale production.
- V **Product planning**—developing the product concept into a product design, including styling and target costs.
- VI **Process design**—designing manufacturing processes for the new product.

Taking a value chain perspective, what is the sequential order in which the six development activities should be performed by the automotive maker?

- A** activities III, V, II, I, VI and IV
- B** activities V, III, I, II, VI and IV
- C** activities III, II, V, I, VI and IV
- D** activities I, III, V, II, VI and IV

(SMA ID 2.7)

### Question 2.8

Which **one** of the following statements **best** describes the purpose of product life cycle analysis?

- A to increase the probability that new products will become 'stars'
- B to determine the market share and growth potential of an organisation's products
- C to identify and manage the risks associated with an organisation's product offerings
- D to understand and plan for the cash flow required by an organisation's product offerings

(SMA ID 2.15)

### Question 2.9

Retrop Pty Ltd (Retrop) plans to purchase a business that specialises in manufacturing a component used extensively in its product range. Retrop is concerned about the prices it currently pays for parts and components it uses in its manufacturing process.

The form of business combination contemplated by Retrop would be **best** described as an example of

- A vertical integration.
- B horizontal integration.
- C a competitive alliance.
- D a collaborative alliance.

(SMA ID 2.9)

### Question 2.10

In a manufacturing environment, which **one** of the following is a non-value-added activity?

- A machining a metal casting
- B painting an assembled unit prior to shipment
- C moving partly finished production to a work-in-process storage area
- D packing finished production into containers for shipment to customers

(SMA ID 2.10)

### Question 2.11

Which **one** of the following activities would be part of the performance element of corporate governance?

- A establishing an audit committee
- B monitoring the internal control system
- C responding to changes in the business environment
- D designing and implementing a corporate code of conduct

(SMA ID 2.11)



### Question 2.12

Which **one** of the following is the **best** reason for an organisation to act in a socially responsible way?

- A Responsible behaviour is more cost effective.
- B It is important to manage stakeholder impressions.
- C It increases the range of potential customers and investors.
- D Perceptions of unethical corporate behaviour can lead to increased regulation.

(SMA ID 2.12)

### Question 2.13

An organisation is conducting a value analysis as part of its strategic management process. Management plans to construct both the organisation's value chain and the value chain for its industry.

Which **one** of the following statements about industry value chains is correct?  
The industry value chain

- A can be either vertical or horizontal.
- B is a sequence or network of activities.
- C is a sequence or network of business roles.
- D is used to support activity-based management.

(SMA ID 2.13)

### Question 2.14

A software manufacturer is experiencing a high level of customer complaints. Customers say that the software products are unreliable and do not meet their needs. The organisation has decided to establish a relationship with two major customers (who are both computer manufacturers) to ensure that the software meets their requirements.

Which **one** of the following statements is correct? The manufacturer

- A is using collaboration as the value driver in its value chain.
- B should focus on products that are popular with its customers.
- C is improving customer value by creating upstream linkages in the value chain.
- D is experiencing internal failures and needs to provide better training to its software developers.

(SMA ID 2.14)

## Module 3

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### Question 3.1

With which **one** of the following is management control primarily concerned?

- A policies and procedures
- B ensuring that goals are achieved
- C achieving budget targets and the accuracy of financial reports
- D non-financial performance measurement such as a balanced scorecard

(SMA ID 3.1)

### Question 3.2

Signalling primarily provides information to which **one** of the following?

- A managers, to support their decision-making
- B the audit committee, to support its role in risk management
- C the board of directors, to support performance measurement
- D investors and others outside the organisation, to influence their decisions

(SMA ID 3.2)

### Question 3.3

Which **one** of the following outlines the fundamental principles in APES 110 *Code of Ethics for Professional Accountants* that are applicable to CPA Australia members?

- A truth, justice and honesty
- B doing unto others as you would have them do unto you
- C self-interest, self-review, advocacy, familiarity, intimidation
- D integrity, objectivity, professional competence and due care, confidentiality, professional behaviour

(SMA ID 3.3)

### Question 3.4

Which **one** of the following is concerned with product life cycles, supply chains and maintaining or increasing market share through competitive strategy?

- A strategic performance
- B the balanced scorecard
- C management accounting
- D operational performance

(SMA ID 3.4)

### Question 3.5

Which **one** of the following lists of performance measures used by companies is the **best** example of a typical balanced scorecard?

- A** profit before interest, tax, depreciation and amortisation (PBITDA); return on capital employed (ROCE); investment in training; employee satisfaction; investment in R&D; new capital expenditure; product quality
- B** earnings before interest and tax (EBIT); price–earnings (P/E) ratio; wastage; customer satisfaction; employee retention; on-time delivery; product quality; investment in training
- C** customer retention; sales growth by customer; on-time delivery; investment in maintenance; product quality; ROCE; earnings per share; market share
- D** product quality; productivity; wastage; EBIT; PBITDA; return on investment (ROI); ROCE; P/E ratio

(SMA ID 3.5)

### Question 3.6

A company finds out from a market research survey that its average customer satisfaction rating is 75 per cent.

This is an example of which type of measure?

- A** equity
- B** efficiency
- C** experience
- D** effectiveness

(SMA ID 3.6)

### Question 3.7

ABC Ltd uses year-on-year sales revenue growth to assess product quality.

This is an example of poor

- A** clarity.
- B** validity.
- C** reliability.
- D** controllability.

(SMA ID 3.7)

### Question 3.8

Rewards are powerful motivators of behaviour and should be designed so that

- A** targets are 'stretch' targets set by top management.
- B** short-term financial results compared to budget are always achieved.
- C** the needs for short-, medium- and long-term performance are in balance.
- D** the reward for successful performance is delayed until performance is sustained in the following year.

(SMA ID 3.8)

### Question 3.9

Earnings per share is an example of which kind of measure?

- A lagging and financial
- B leading and financial
- C lagging and non-financial
- D leading and non-financial

(SMA ID 3.9)

### Question 3.10

In a balanced scorecard, what is it that should be 'balanced'?

- A valid and reliable information
- B historical and forecast information
- C financial and non-financial information
- D performance and conformance information

(SMA ID 3.10)

### Question 3.11

An organisation has adopted the balanced scorecard (BSC) as its primary management planning and control system. Each manager at every level has their own BSC. Individual BSCs show performance targets for the manager, and link that manager's performance to lower and higher levels in the organisational hierarchy.

Which statement below about this BSC-based performance management system is **not** correct?

- A Cascading is the key to organisational alignment around strategy.
- B Individual scorecards link day-to-day work with corporate strategy.
- C The scorecard system provides for upstream or downstream integration.
- D Accountability follows the organisation's strategic objectives, because ownership is defined at each level.

(SMA ID 3.11)

## Module 4

---

### Question 4.1

Orbettal Engineering Pty Ltd (OBEL) produces fuel systems for the car industry. OBEL uses activity-based costing (ABC) for its standard costing system. Current standard costs for Model XYZ are shown in the table below.

#### Standard costs Model XYZ

##### Raw material

1.5 kilograms at \$80.00 per kilogram	\$120.00
---------------------------------------	----------

##### Direct labour

3 hours at \$25.00 per hour	\$75.00
-----------------------------	---------

##### Variable manufacturing overhead

###### Set-up time

20 minutes at \$60.00 per set-up hour	\$20.00
---------------------------------------	---------

###### Machine running time

2 hours and 30 minutes at \$30.00 per machine hour	\$75.00
--	---------

###### Inspection time

10 minutes at \$30.00 per inspection hour	\$5.00
---	--------

#### Total

**\$295.00**

Recent continuous-improvement initiatives resulted in the following outcomes:

- Raw material cost was reduced to \$75.00 per kilogram.
- Raw material quantity per unit was reduced to 1.40 kilograms.
- The direct-labour rate increased to \$30.00 per hour.
- The direct-labour time per unit was reduced to 2.50 hours.
- Set-up time was reduced to 15 minutes.
- Machine running time was reduced to two hours and 10 minutes.
- Inspection time was reduced to 2 minutes.

Calculate the **revised** ABC standard cost of variable manufacturing overhead for Model XYZ.

- A \$81.00
- B \$100.00
- C \$156.00
- D \$261.00

## Question 4.2

Roberts Pty Ltd (Roberts) has decided to adopt the target-costing approach for all new products. The following data for a new product has been made available by the company's design department:

Forecast annual sales volume	100 000
Target selling price per unit	\$300.00
Desired profit margin per unit as a percentage of selling price	20%
Expected standard cost per unit prior to value engineering initiatives	\$260.00

For Roberts to achieve the desired profit margin per unit, what reduction in per unit cost will the design department need to achieve through the value engineering process?

- A \$20.00
- B \$30.00
- C \$35.00
- D \$52.00

(SMA ID 4.2)

## Question 4.3

Smooth Pty Ltd (Smooth) is considering whether to implement target costing, activity-based costing, kaizen costing, customer-profitability analysis, business-process management and continuous-improvement systems. Management at Smooth should be aware that these concepts generally go together in pairs.

The two pairs that would **most likely** go together would be:

Pair 1	Pair 2
A business-process management and kaizen costing	continuous-improvement programs and target costing
B business-process management and target costing	continuous-improvement programs and kaizen costing
C customer-profitability analysis and kaizen costing	continuous-improvement programs and target costing
D business-process management and kaizen costing	customer-profitability analysis and activity-based costing

(SMA ID 4.3)

### Question 4.4

Which **one** of the following statements about the undertaking of customer-profitability analysis is the **most accurate**?

- A The best measure of customer profitability is customer revenue less the activity-based manufacturing cost of the products purchased.
- B Using activity-based costing to allocate marketing and sales administration costs to customers will provide a useful measure of customer profitability.
- C Despite activity-based costing being used, the allocation of customer-related costs to each individual customer as the final cost object is still problematic.
- D Customer-profitability analysis based on gross margins provides the basis for the development and implementation of strategies tailored to improving the profitability of individual customers.

(SMA ID 4.4)

### Question 4.5

Hewlett Apel Pty Ltd (HA) owns Compu-serve, an information technology (IT) company that provides various levels of data-processing services and computer hardware to business units within the HA group of companies. To facilitate the provision of timely IT services throughout the group, HA has introduced service-level agreements between Compu-serve and other business units.

What is the main objective of establishing the service-level agreements?

- A To establish the fixed fee that each business unit will pay for the services provided by Compu-serve.
- B To establish a mechanism for resolving disputes between Compu-serve and HA business units over specific IT problems.
- C To set clear and unambiguous performance measures that Compu-serve is expected to achieve in the IT services it provides to HA business units.
- D To place the terms and conditions of the service to be provided by Compu-serve to HA business units into a legal contractual document.

(SMA ID 4.5)

### Question 4.6

Which **one** of the following is **not** a key feature of time-driven activity-based costing?

- A time equations
- B practical capacity
- C cost per unit of activity
- D cost per time unit of capacity

(SMA ID 4.6)

### Question 4.7

TGC Pty Ltd (TGC) manufactures air-cooling fan components for the Australasian personal computer assembly market. TGC is about to establish a total quality improvement program and has analysed its operating and accounting records for the year ending 30 June 20X0 and established that the following quality-related costs have been incurred:

<b>Expense item</b>	<b>Total expense</b>
Legal fees defending allegation of defective products	\$20 000
Down-time due to avoidable machine breakdowns	\$50 000
Incoming-materials testing	\$120 000
Employee training	\$180 000
Rework for slightly defective units	\$30 000
Warranty costs	\$50 000
Design engineering	\$210 000
Product-liability insurance premium	\$10 000
Depreciation of production-line testing equipment	\$40 000
Scrapped units	\$70 000
Product specification database	\$30 000
Recalls of defective products	\$20 000
Preventative maintenance on production-line equipment	\$60 000
Production-line inspection	<u>\$70 000</u>
Total quality costs	\$960 000

If TGC prepared a quality cost report for the year, what would be the total prevention costs?

- A \$450 000
- B \$480 000
- C \$590 000
- D \$600 000

(SMA ID 4.7)



### Question 4.8

TGC Pty Ltd (TGC) manufactures air-cooling fan components for the Australasian personal computer assembly market. TGC is about to establish a total quality improvement program and has analysed its operating and accounting records for the year ending 30 June 20X0 and established that the following quality-related costs have been incurred:

<b>Expense item</b>	<b>Total expense</b>
Legal fees defending allegation of defective products	\$20 000
Down-time due to avoidable machine breakdowns	\$50 000
Incoming-materials testing	\$120 000
Employee training	\$180 000
Rework for slightly defective units	\$30 000
Warranty costs	\$50 000
Design engineering	\$210 000
Product-liability insurance premium	\$10 000
Depreciation of production-line testing equipment	\$40 000
Scrapped units	\$70 000
Product specification database	\$30 000
Recalls of defective products	\$20 000
Preventative maintenance on production-line equipment	\$60 000
Production-line inspection	<u>\$70 000</u>
Total quality costs	\$960 000

If TGC prepared a quality cost report for the year, what would be the total appraisal costs?

- A** \$110 000
- B** \$190 000
- C** \$230 000
- D** \$290 000

(SMA ID 4.8)

### Question 4.9

TGC Pty Ltd (TGC) manufactures air-cooling fan components for the Australasian personal computer assembly market. TGC is about to establish a total quality improvement program and has analysed its operating and accounting records for the year ending 30 June 20X0 and established that the following quality-related costs have been incurred:

<b>Expense item</b>	<b>Total expense</b>
Legal fees defending allegation of defective products	\$20 000
Down-time due to avoidable machine breakdowns	\$50 000
Incoming-materials testing	\$120 000
Employee training	\$180 000
Rework for slightly defective units	\$30 000
Warranty costs	\$50 000
Design engineering	\$210 000
Product-liability insurance premium	\$10 000
Depreciation of production-line testing equipment	\$40 000
Scrapped units	\$70 000
Product specification database	\$30 000
Recalls of defective products	\$20 000
Preventative maintenance on production-line equipment	\$60 000
Production-line inspection	<u>\$70 000</u>
Total quality costs	\$960 000

If TGC prepared a quality cost report for the year, what would be the total internal failure costs?

- A** \$150 000
- B** \$170 000
- C** \$210 000
- D** \$260 000

(SMA ID 4.9)

### Question 4.10

TGC Pty Ltd (TGC) manufactures air-cooling fan components for the Australasian personal computer assembly market. TGC is about to establish a total quality improvement program and has analysed its operating and accounting records for the year ending 30 June 20X0 and established that the following quality-related costs have been incurred:

Expense item	Total expense
Legal fees defending allegation of defective products	\$20 000
Down-time due to avoidable machine breakdowns	\$50 000
Incoming-materials testing	\$120 000
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Warranty costs	\$50 000
Design engineering	\$210 000
Product-liability insurance premium	\$10 000
Depreciation of production-line testing equipment	\$40 000
Scrapped units	\$70 000
Product specification database	\$30 000
Recalls of defective products	\$20 000
Preventative maintenance on production-line equipment	\$60 000
Production-line inspection	<u>\$70 000</u>
Total quality costs	\$960 000

If TGC prepared a quality cost report for the year, what would be the total external failure costs?

- A \$50 000
- B \$80 000
- C \$90 000
- D \$100 000

(SMA ID 4.10)

### Question 4.11

The following data come from a time-driven activity-based costing system designed for a customer service department. Total practical time available to department personnel is 600 000 minutes and the departmental budget for the period is \$450 000.

Activity	Quantity	Unit time (min)	Total time allocated (min)
Process orders	9 000	30	270 000
Address customer complaints	150	300	45 000
Warranty claims	600	200	120 000

What is the unit cost for the 'address customer complaints' activity?

- A \$22.50
- B \$225.00
- C \$310.00
- D \$3000.00

(SMA ID 4.11)

### Question 4.12

The following data come from a time-driven activity-based costing system designed for a customer service department. Total practical time available to department personnel is 600 000 minutes and the departmental budget for the period is \$450 000.

Activity	Quantity	Unit time (min)	Total time allocated (min)
Process orders	9 000	30	270 000
Address customer complaints	150	300	45 000
Warranty claims	600	200	120 000

Customer X submitted 100 orders, made four complaints and submitted 10 warranty claims. What is the cost of servicing customer X?

- A \$86
- B \$4650
- C \$6200
- D \$6414

(SMA ID 4.12)

### Question 4.13

The following data come from a time-driven activity-based costing system designed for a customer service department. Total practical time available to department personnel is 600 000 minutes and the departmental budget for the period is \$450 000.

Activity	Quantity	Unit time (min)	Total time allocated (min)	Unit cost \$	Total cost assigned \$
Process orders	9 000	30	270 000	22.50	202 500
Address customer complaints	150	300	45 000	225.00	33 750
Warranty claims	600	200	120 000	150.00	90 000

What is the cost of unused capacity?

- A \$112 500
- B \$123 750
- C \$165 000
- D \$326 250

(SMA ID 4.13)

### Question 4.14

Rennie Fashions Ltd has recently completed the process of identifying a suitable supplier for its new winter product range. One of the key raw materials is to be sourced from overseas. The costs associated with two potential suppliers are provided below.

	<b>Supplier X</b>	<b>Supplier Y</b>
Total supplier-related costs	\$350 000	\$160 000
Invoice cost of raw materials	<u>\$1 500 000</u>	<u>\$1 800 000</u>
Total procurement costs	<u>\$1 850 000</u>	<u>\$1 960 000</u>
Anticipated volume	200 000	200 000

Which **one** of the following combinations shows the supplier cost performance ratio for each of the suppliers?

	<b>Supplier X</b>	<b>Supplier Y</b>
<b>A</b>	18.9%	8.16%
<b>B</b>	23.3%	8.9%
<b>C</b>	\$1.75 per unit	\$0.80 per unit
<b>D</b>	23.3%	8.16%

(SMA ID 4.14)

### Question 4.15

A manufacturer is experiencing significant external failure costs. The management accountant uses a quality cost framework to analyse the situation.

Which **one** of the following strategies would lead to the greatest likely reduction in overall quality costs?

- A** increased spending on appraisal costs and decreased spending on external failure costs
- B** decreased spending on appraisal costs and increased spending on internal failure costs
- C** increased spending on prevention costs and decreased spending on external failure costs
- D** increased spending on internal failure costs and decreased spending on external failure costs

(SMA ID 4.15)

**Question 4.16**

Alphabet Pty Ltd manufactures two products, X and Y, through the same manufacturing process. Production data is:

	<b>X</b>	<b>Y</b>
Quantity produced per period	20 000	10 000
Material cost per unit	\$5.00	\$20.00
Direct labour hours per unit	0.5 hours	0.5 hours
Direct labour costs per direct labour hour	\$18.00	\$18.00
Machine hours per unit	2 hours	4 hours
Set-ups per period	30	70
Orders handled per period	40	160

<b>Manufacturing overhead costs</b>	<b>Amount</b>
Relating to machine activity	\$300 000
Relating to production run set-ups	\$50 000
Relating to order handling activity	<u>\$70 000</u>
	<u>\$420 000</u>

Using a traditional absorption costing model with direct-labour hours as the base for allocating overheads to production, what is the full production cost per unit of Product X?

- A** \$23.00
- B** \$28.00
- C** \$37.00
- D** \$42.00

### Question 4.17

Alphabet Pty Ltd manufactures two products, X and Y, through the same manufacturing process. Production data is:

	<b>X</b>	<b>Y</b>
Quantity produced per period	20 000	10 000
Material cost per unit	\$5.00	\$20.00
Direct labour hours per unit	0.5 hours	0.5 hours
Direct labour costs per direct labour hour	\$18.00	\$18.00
Machine hours per unit	2 hours	4 hours
Set-ups per period	30	70
Orders handled per period	40	160

<b>Manufacturing overhead costs</b>	<b>Amount</b>
Relating to machine activity	\$300 000
Relating to production run set-ups	\$50 000
Relating to order handling activity	<u>\$70 000</u>
	<u>\$420 000</u>

Using activity-based costing, what is the full production cost per unit of Product X?

- A \$8.95
- B \$22.95
- C \$28.00
- D \$38.10

(SMA ID 4.17)

### Question 4.18

AirPorts Ltd (AP) runs an airport and has three airline customers (Panther Air, Lion Air and Leopard Air). Airlines pay a \$10 fee to AP for each traveller who passes through the airport. However, the cost of servicing customers is only partly related to the volume of travellers. Current data for AP is:

<b>Account</b>	<b>Amount \$000s</b>	<b>Driver</b>	<b>Cost driver data</b>		
			<b>Panther</b>	<b>Lion</b>	<b>Leopard</b>
Revenue	19 000	No. of travellers	1 000 000	300 000	600 000
Baggage cost	4 000	kg	100 000	20 000	80 000
Runway cost	8 000	No. of landings	5 000	2 000	3 000
Terminal cost	<u>1 200</u>	No. of service desks	50	10	20
Total cost	<u>13 200</u>				

Adopting an activity-based costing approach, calculate the allocation rate for terminal costs.

- A \$120
- B \$15 000
- C \$24 000
- D \$165 000

(SMA ID 4.18)

### Question 4.19

AirPorts Ltd (AP) runs an airport and has three airline customers (Panther Air, Lion Air and Leopard Air). Airlines pay a \$10 fee to AP for each traveller who passes through the airport. However, the cost of servicing customers is only partly related to the volume of travellers. Current data for AP is:

Account	Amount \$000s	Driver	Cost driver data		
			Panther	Lion	Leopard
Revenue	19 000	No. of travellers	1 000 000	300 000	600 000
Baggage cost	4 000	kg	100 000	20 000	80 000
Runway cost	8 000	No. of landings	5 000	2 000	3 000
Terminal cost	<u>1 200</u>	No. of service desks	50	10	20
Total cost	<u>13 200</u>				

Adopting an activity-based costing approach, determine the **total** cost attributable to Panther.

- A \$4 300 000
- B \$6 000 000
- C \$6 750 000
- D \$6 947 000

(SMA ID 4.19)

### Question 4.20

AirPorts Ltd (AP) runs an airport and has three airline customers (Panther Air, Lion Air and Leopard Air). Airlines pay a \$10 fee to AP for each traveller who passes through the airport. However, the cost of servicing customers is only partly related to the volume of travellers. Current data for AP is:

Account	Amount \$000s	Driver	Cost driver data		
			Panther	Lion	Leopard
Revenue	19 000	No. of travellers	1 000 000	300 000	600 000
Baggage cost	4 000	kg	100 000	20 000	80 000
Runway cost	8 000	No. of landings	5 000	2 000	3 000
Terminal cost	<u>1 200</u>	No. of service desks	50	10	20
Total cost	<u>13 200</u>				

What is the margin earned per traveller by AP?

- A \$6.95
- B \$9.31
- C 30.5 per cent
- D 69.5 per cent

(SMA ID 4.20)



### Question 4.21

AirPorts Ltd (AP) runs an airport and has three airline customers (Panther Air, Lion Air and Leopard Air). Airlines pay a \$10 fee to AP for each traveller who passes through the airport. However, the cost of servicing customers is only partly related to the volume of travellers. Current data for AP is:

Account	Amount \$000s	Driver	Cost driver data		
			Panther	Lion	Leopard
Revenue	19 000	No. of travellers	1 000 000	300 000	600 000
Baggage cost	4 000	kg	100 000	20 000	80 000
Runway cost	8 000	No. of landings	5 000	2 000	3 000
Terminal cost	<u>1 200</u>	No. of service desks	50	10	20
Total cost	<u>13 200</u>				

Adopting an activity-based costing approach to customer profitability analysis, what is the profit margin of the **most profitable** customer?

- A 28.3 per cent
- B 30.5 per cent
- C 32.5 per cent
- D 35.2 per cent

(SMA ID 4.21)

### Question 4.22

AirPorts Ltd (AP) runs an airport and has three airline customers (Panther Air, Lion Air and Leopard Air). Airlines pay a \$10 fee to AP for each traveller who passes through the airport. However, the cost of servicing customers is only partly related to the volume of travellers. Current data for AP is:

Account	Amount \$000s	Driver	Cost driver data		
			Panther	Lion	Leopard
Revenue	19 000	No. of travellers	1 000 000	300 000	600 000
Baggage cost	4 000	kg	100 000	20 000	80 000
Runway cost	8 000	No. of landings	5 000	2 000	3 000
Terminal cost	<u>1 200</u>	No. of service desks	50	10	20
Total cost	<u>13 200</u>				

AP is interested in outsourcing its services and has approached a major freight company, Haul Ltd (Haul), about providing baggage-handling services. Haul has offered a three-year contract with an annual fee of \$2 000 000, plus \$10 per kg of baggage.

What is the **best** option for AP if AP expects long-term growth in passenger numbers?

- A accept Haul’s offer because the large fixed cost in the contract will reduce risk
- B decline Haul’s offer because there is no benefit compared to the current situation
- C decline Haul’s offer because AP has no expertise in the management of outsourcing contracts
- D accept Haul’s offer because cost savings will result if the market size expands as expected and baggage weight increases

(SMA ID 4.22)

### Question 4.23

BuyGadgetsCo is a retailer of consumer-oriented electronic devices (e.g. mobile phones, tablets and music players). The industry is characterised by short product life cycles. BuyGadgetsCo has recently adopted activity-based management (ABM). As a first step in ABM, it has identified all the key activities in its value chains, along with the inputs, outputs and value drivers of each activity.

Which **one** of the following value drivers is likely to be the **most strategically relevant** to BuyGadgetsCo?

- A scope
- B channels
- C complexity
- D technology

(SMA ID 4.23)

### Question 4.24

As part of an activity-based management project, an organisation is analysing its activities to identify those that can be classified as non-value adding. The organisation intends to eliminate these activities from its value chain, and so improve overall stakeholder value. One activity that has been identified as non-value adding is 'reconciliation'. This is a costly accounting control. It provides no value to any external stakeholder, and the CFO, who has been carrying out reconciliations of the accounts for three years, has never discovered any problems.

Should this activity be eliminated?

- A Yes, because its elimination will decrease costs.
- B Yes, because it provides no value to stakeholders.
- C No, because it contributes to sound business practice.
- D No, because accounting controls are required by regulation.

(SMA ID 4.24)

### Question 4.25

Which **one** of the following is an activity-based management related technique?

- A industry value analysis
- B output/input ratio analysis
- C activity-based cost analysis
- D customer profitability analysis

(SMA ID 4.25)

### Question 4.26

A manufacturer of children's car seats is considering introducing a new product, the 'Sports Seat'. The new product is structurally identical to existing products, but it is made from premium quality materials and has a distinctive and high-quality appearance. Market research indicates that the product can be sold for \$250. The company budgets for a 45 per cent profit margin. Materials are expected to be 75 per cent of total cost. A supplier has offered to provide the materials for \$110.

What price reduction must be negotiated to meet the target cost?

- A \$2.50
- B \$6.87
- C \$27.50
- D No cost reduction is required to meet the target.

(SMA ID 4.26)

## Module 5

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### Question 5.1

Which **one** of the following **best** describes project management?

- A solving customer problems
- B managing complex organisational relationships
- C managing multiple activities within a specified time period
- D addressing the challenges of a highly uncertain environment

(SMA ID 5.1)

### Question 5.2

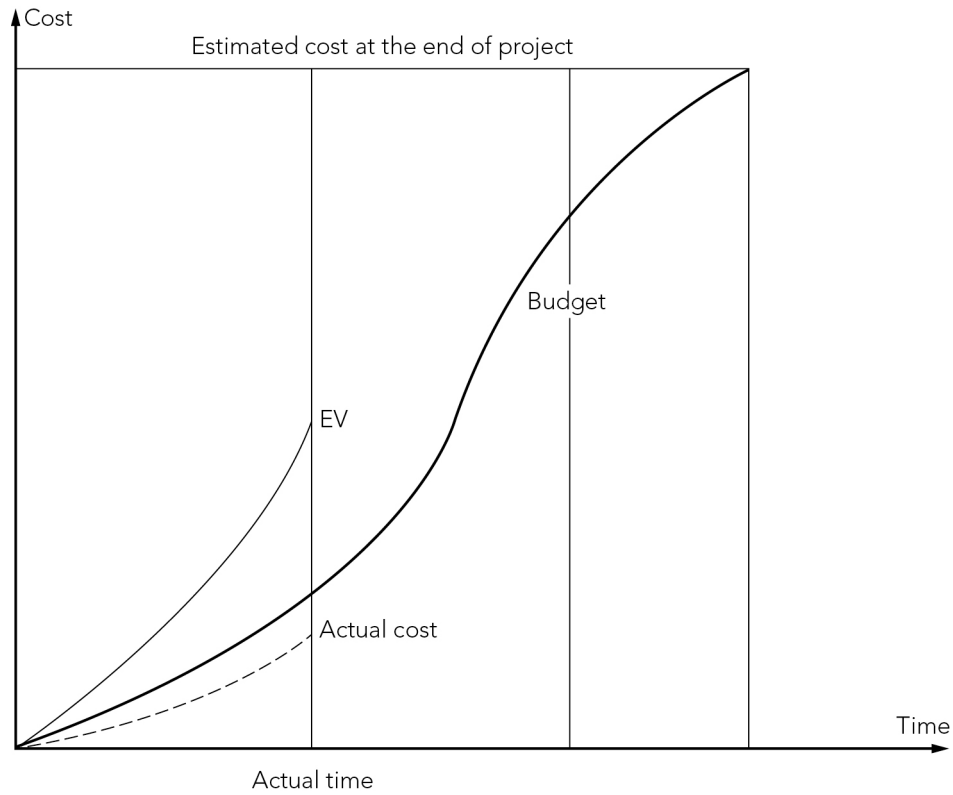
Assume that a project manager has inherited a project that has not been planned properly or sufficiently resourced.

Which **one** of the following skills of the project manager is going to be **most useful** in correcting this situation?

- A the ability to negotiate
- B the ability to deal with uncertainty
- C strong budgetary and variance analysis skills
- D the ability to quickly establish which information is relevant in this situation

(SMA ID 5.2)

### Question 5.3



The above Earned Value (EV) chart indicates that the project is running

- A** late and over budget.
- B** late and under budget.
- C** ahead of schedule and over budget.
- D** ahead of schedule and under budget.

(SMA ID 5.3)

### Question 5.4

Consider a project that consists of nine activities (A to I). The precedence relationships and activity times are shown below.

Activity	Precedence	Duration (days)
A		16
B		40
C		22
D	A	15
E	C	15
F	C	10
G	E	2
H	E	16
I	D, F, G	10

What is the critical path for the completion of the project?

- A B
- B A → D → I
- C C → E → H
- D C → E → G → I

(SMA ID 5.4)

### Question 5.5

What, more than anything else, makes international projects different from local projects?

- A the need for good planning
- B the complexity of the project
- C the need for good implementation
- D a joint venture (JV) organisational structure

(SMA ID 5.5)

### Question 5.6

You are the management accountant for a large research and development project working on the development of a new drug for a pharmaceutical company.

Which **one** of the following is **not** part of the risk management strategy?

- A monitoring for unexpected results in the clinical trials
- B making sure the project has the right skills within the team of scientists
- C making sure appropriate funding and key resources are available for the project
- D assessing how the project team is performing against your key risk indicators (KRIs)

(SMA ID 5.6)

### Question 5.7

Which **one** of the following describes the process of making an assessment of the probability and financial impact of a risk and then comparing this against the cost of managing the risk?

- A financial analysis
- B risk identification
- C risk classification
- D the risk–return trade-off

(SMA ID 5.7)

### Question 5.8

Your organisation is about to undertake an IT software project that will help managers to assess the performance of frontline staff. You have been asked to identify who the stakeholders are, and any likely effects of the project running behind schedule and over budget.

Which **one** of the following **best** describes the process you are to undertake?

- A risk assessment
- B risk management
- C resource requirements
- D stakeholder management

(SMA ID 5.8)

### Question 5.9

A government construction authority is planning the construction of a new airport at a tourist destination. Estimates of times and costs for completing this project are as show in the table below.

<b>Activity</b>	<b>Description</b>	<b>Time (weeks)</b>	<b>Cost (\$)</b>
A	Preparation of engineering plans	16	200 000
B	Tender documents	8	30 000
C	Construction of new access road	14	150 000
D	Construction of perimeter fence	4	50 000
E	Site preparation	12	90 000
F	Preparation of runway base	8	100 000
G	Pouring of concrete on runways	8	200 000
H	Construction of control tower	10	300 000
I	Painting runway markings	1	6 000
J	Installation of electronic systems	6	20 000
K	Testing electronic systems	<u>1</u>	<u>5 000</u>
		88	1 151 000

Activity A must be completed before any other activity can begin. Activities C, D and E can start as soon as B is completed. Activity E must be completed before F, which must be completed before G can be started. Activity I can only begin when G is complete. H can begin when E is complete, and must be completed before J can start. K can only start when J is complete.

**(Hint:** Four activities converge at the end node of the project. One of them is a dummy.)

How long will it take to complete the airport?

- A** 28 weeks
- B** 38 weeks
- C** 47 weeks
- D** 53 weeks

(SMA ID 5.9)

## Question 5.10

A government construction authority is planning the construction of a new airport at a tourist destination. PERT analysis has been carried out, and it has been determined that there are two critical paths: ABIEFGI and ABIEwHJK, which each have a time to completion of 53 weeks.

It has been established that the airport project time could be reduced by crashing one or more of three project activities.

Activity	Cost reduction per week (\$)	Maximum time reduction (weeks)
A	10 000	4
C	5 000	4
F	2 000	2

By how **many** weeks can the project time be reduced and at what cost?

- A 4 weeks at a cost of \$40 000
- B 5 weeks at a cost of \$19 000
- C 6 weeks at a cost of \$24 000
- D 10 weeks at a cost of \$64 000

(SMA ID 5.10)

## Question 5.11

Which **one** of the following is the **best** explanation for why successful projects need good planning?

- A to achieve cost control and minimise project duration
- B because project teams are unable to function without detailed project plans
- C because legislation might include detailed planning guidelines for projects
- D so that a comparison can be made with the original plans when the project is completed

(SMA ID 5.11)

## Question 5.12

Which **one** of the following does the project sponsor have responsibility for?

- A organising the team for the project
- B communicating with the project customer
- C helping to solve day-to-day problems with the project
- D delivering the project specifications on schedule and on budget

(SMA ID 5.12)



### Question 5.13

Which **one** of the following is a **key** reason for closing the cost records at the end of a project?

- A It allows for more effective resource dispersion.
- B This is required for specification satisfaction consensus.
- C Project workers may continue to bill hours to the project.
- D The end of financial period accounts need to be finalised.

(SMA ID 5.13)

### Question 5.14

Which **one** of the following combinations provides the **best** examples of sensitivity and scenario analysis?

- | <b>Sensitivity analysis</b>   | <b>Scenario analysis</b>   |
|---|--|
| A The effect of an increase in wages is examined against project returns. | An analysis of the effect of an increase in interest rates on the viability of a project.                      |
| B The effect of an industry downturn is examined against project returns. | An analysis of the effect of an increase in wages on the viability of a project.                               |
| C The effect of an increase in wages is examined against project returns. | An analysis of the effect of an industry downturn versus strong industry growth on the viability of a project. |
| D The effect of economic downturn is examined against project returns.    | An analysis of the effect of an increase in wages on the viability of a project.                               |

(SMA ID 5.14)

### Question 5.15

Which of the following is **not** a fundamental principle of probity as outlined by the Independent Commission Against Corruption (ICAC)?

- A It is important that resources are used effectively, and responsibility is taken for performance.
- B The purchase of inputs needs to be done in an open and competitive environment where price is balanced against the other characteristics such as quality and risk.
- C Personal and business relationships may remain confidential, providing that suppliers are dealt with impartially in negotiations.
- D Individuals and organisations should expect impartial treatment in their involvement with a project (e.g. when an organisation submits a tender for a contract).

(SMA ID 5.15)

### Question 5.16

A project has an initial cost of \$25 000 and ongoing costs of \$5000 per annum. It is expected to generate revenues of \$16 000 per annum for three years. What is the project's net present value if the cost of capital for the project is 20 per cent per annum?

- A (\$1 829)
- B \$8 000
- C \$23 171
- D \$48 171

(SMA ID 5.16)

# Solutions

## Module 1

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### Question 1.1

Correct answer: B

The correct answer is Option B. While the loss on sale of plant and equipment may be useful information, its calculation would be based on book value and results would be required for the financial statements.

Options A, C and D are incorrect because they all relate to providing information or advice to support internal management decision-making (which is a strategic management accounting task).

*You can review this topic area in Module 1 in the section titled 'Useful information for decision-making'—Figure 1.3.*

### Question 1.2

Correct answer: D

Option D is correct because it emphasises the key importance of value creation for all significant stakeholders (both internal and external) in strategic management accounting.

Option A is incorrect because traditional management accounting originated in manufacturing environments, but broadened its focus as the economy changed. Strategic management accounting still supports manufacturing companies.

Option B is incorrect because strategic management accounting does more than focus solely on strategic issues. In addition, strategic issues require planning, evaluating and controlling.

Option C is incorrect because traditional management accounting covers more than just product costing. Two major topics are budgeting and variance analysis.

*You can review this topic area in Module 1 in the section titled 'The role of management accountants', specifically 'Table 1.6: Traditional management accounting compared to strategic management accounting'.*

### Question 1.3

Correct answer: A

Option A is correct because it focuses on the customer, and the clear evidence of customer value—revenue.

Option B is incorrect because even if the final product is produced efficiently and effectively, there is no guarantee that customers will be willing to pay for it.

Option C is incorrect because it focuses on shareholder value, rather than customer value. The creation of customer value leads to the creation of shareholder value.

Option D is incorrect because the focus of customer value is not on evaluating, which customers give an organisation the most profit. This is customer profitability analysis.

*You can review this topic area in Module 1 in the sections entitled 'Value' and 'What managers do—creating and managing value'.*

### Question 1.4

Correct answer: B

The correct answer is Option B. Budgeting is a tool used by management accountants to support operational management in creating and enhancing value. Budgeting is strategic when it is focused on value creation.

Options A, C and D are incorrect because they refer to other aspects of operational management other than planning: A—evaluating; C—coordinating and communicating and D—controlling.

*You can review this topic area in Module 1 in the section titled 'Strategic management accounting—supporting managers', specifically Table 1.8.*

### Question 1.5

Correct answer: A

The correct answer is Option A. Allowing the same person to initiate the purchase of assets (requisition), as well as create the purchase order and receive the goods without anyone else involved or double-checking, leaves an organisation vulnerable to fraud or mistakes.

Option B is incorrect because it refers to cash receipts. The issue is, however, the cash payments system. No cash payment should be made without the accounts clerk sighting a receiving report, and matching this with the invoice and purchase order.

Options C and D are incorrect because they are valid issues within the company, but are not the fundamental internal control problem.

*You can review this topic area in Module 1 in the section titled 'Internal controls'.*

## Question 1.6

Correct answer: D

The correct answer is Option D.

$68\,000 \text{ units} \times \$70 \text{ per unit} = 4\,760\,000$ .

The unit sales for the quarter are 68 000 (January 20 000 + February 22 000 + March 26 000).

Option A is incorrect because it is the expected profit figure (\$1 292 000 contribution margin – \$50 000 fixed costs).

Option B is incorrect because it is the contribution margin (\$19 per unit  $\times$  68 000 units).

Option C is incorrect because it is the expected January sales figure (20 000 units  $\times$  \$70).

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting'.*

## Question 1.7

Correct answer: B

The correct answer is Option B.

March cash sales	\$1 365 000	(26 000 $\times$ \$70 $\times$ 0.75)
January credit sales	\$17 500	(20 000 $\times$ \$70 $\times$ 0.25 $\times$ 0.05)
February credit sales	\$231 000	(22 000 $\times$ \$70 $\times$ 0.25 $\times$ 0.60)
March credit sales	\$136 500	(26 000 $\times$ \$70 $\times$ 0.25 $\times$ 0.30)
Total	\$1 750 000	

Option A is incorrect because this number leaves out the March cash sales.

Option C is incorrect because this number includes the 5 per cent of January credit sales that are never collected. Another way to look at it is that the calculation of cash receipts from January sales has incorrectly used 10 per cent (\$35 000) rather than 5 per cent (\$17 500).

Option D is incorrect because this number is the cash receipts in April 20X9.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting' (Cash budgets).*

### Question 1.8

Correct answer: C

The correct answer is Option C.

	<b>March</b>
Sales	26 000
+ Ending finished goods inventory required (10 per cent of next month's sales)	<u>2 700</u>
	28 700
– Beginning finished goods inventory (10 per cent of this month's sales)	<u>2 600</u>
Production requirements (units)	<u>26 100</u>

Option A is incorrect because it has subtracted the ending finished goods inventory instead of adding it; it has also added the beginning finished goods inventory instead of subtracting it.

Option B is incorrect because it is the sales figure not adjusted for the finished goods inventory.

Option D is incorrect because it includes the ending finished goods requirements, but does not consider the beginning finished goods that already exist.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting' (Planning activity and resources).*

## Question 1.9

Correct answer: B

The correct answer is Option B. During the month of March, we need to purchase enough raw materials (RM) to cover production in March, and to ensure there is enough RM on hand at the end of March.

The case study for this question provides details of the starting RM balance for March (i.e. 40% of March RM usage), and the finishing RM balance for March (i.e. 40% of April RM usage). From the previous question, we also know the production requirements for March (26 100 units).

We use this information to calculate how much RM needs to be purchased in March (some of which will be used in March and some of which will be used in April).

The raw materials usage for the month of March is calculated as follows:

March production requirements (26 100) × 0.5 kg/unit = 13 050 RM usage in March

The case study states that RM inventory required at the end of the month (i.e. February) is 40 per cent of the next month's (i.e. March) RM usage. So, at the start of March, the beginning RM inventory should be  $13\,050 \times 40\% = 5\,220$ . The April calculation follows, and then a summary.

	<b>April</b>
Sales	27 000
+ Ending finished goods inventory required (10% of next month's sales)	<u>2 400</u>
	29 400
– Beginning finished goods inventory required (10% of this month's sales)	<u>2 700</u>
Production requirements	<u>26 700</u>
	<b>March</b>
Production required (units)	26 100
× Volume	<u>0.5kg</u>
	13 050
+ Ending RM inventory (26 700 × 0.5 = 13 350 × 0.4 (40%))	<u>5 340</u>
	18 390
– Beginning RM inventory (13 050 × 0.4 (40%))	<u>5 220</u>
Total kilograms	13 170

Option A is incorrect because this is the production requirement not adjusted for inventory requirements.

Option C is incorrect because this figure has calculated the raw materials requirements for March sales, when it should have been based on March production requirements.

Option D is incorrect because this figure is double the requirement, as each unit only requires 0.5 kilograms.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting'.*

### Question 1.10

Correct answer: B

The correct answer is Option B.

	<b>April</b>
Production ((Sales + EI – BI) 27 000 + 2400 = 29 400 – 2700)	26 700
× Volume	<u>0.5kg</u>
	13 350
+ Ending RM inventory (23 600 <sup>†</sup> × 0.5 = 11 800 × 0.4)	<u>4 720</u>
	18 070
– Starting RM inventory (13 350 × 0.4)	<u>5 340</u>
Total kilograms	<u>12 730</u>
× Price per kilogram	\$12
 Total RM purchases	 \$152 760

<sup>†</sup> 23 600 is the May production requirement (24 000 sales – opening finished goods of 2400 + closing finished goods of 2000).

Option A is incorrect because this figure is the number of kilograms required for April, and has not been multiplied by the \$12 per kilogram price.

Option C is incorrect because this figure has calculated the raw materials purchasing requirements for April sales, when it should have been based on April production requirements.

Option D is incorrect because this figure is for March 20X9.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting'.*

### Question 1.11

Correct answer: D

The correct answer is Option D.

	<b>March</b>
Production requirements <sup>†</sup>	26 100
× Hours per unit	<u>1.5hrs</u>
Total hours	39 150
× Cost per hour	<u>\$22</u>
Direct labour cost	<u>\$861 300</u>

<sup>†</sup> See Question 1.8

Option A is incorrect because this figure ignores the \$22 cost per hour, and only multiplies the units of production by the 1.5 hours per unit.

Option B is incorrect because this figure ignores the 1.5 hours required to produce each unit, and therefore only charges each unit \$22, instead of \$33.

Option C is incorrect because this figure has calculated the labour cost based on March sales figures instead of March production requirements.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting'.*

## Question 1.12

Correct answer: A

The correct answer is Option A.

Contribution margin = Selling price (\$70) – Variable costs (\$51) = \$19

Variable costs = \$3 (selling) + \$4 (administration) + \$5 Variable overhead + \$33 Direct labour (1.5 hours × \$22 per hour) + \$6 Direct material (\$12 per kg × 0.5 kg) = \$51

Option B is incorrect because it has not incorporated the selling and administrative expenses into the variable cost.

Option C is incorrect because it has only included direct labour and direct materials as variable costs and ignored all of the other variable costs.

Option D is incorrect because it is the variable cost per unit.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Cost-volume-profit analysis'.*

## Question 1.13

Correct answer: C

The correct answer is Option C.

Break-even point in units = Fixed costs of \$100 000 / \$19 contribution margin per unit = 5264 units

**Note:** We always round up as we cannot produce part of a unit.

Option A is incorrect because this figure only uses one-quarter of the total fixed costs.

Option B is incorrect because this figure uses variable cost in the equation rather than the contribution margin per unit.

Option D is incorrect because this is the break-even point for the full year based on the full year fixed cost of \$200 000.

Please note that these questions specifically advise you to ignore bad debts. If bad debts were included, they would be added to costs or subtracted from revenues, thereby reducing estimated profit and increasing the breakeven point.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Cost-volume-profit analysis'.*



## Question 1.14

Correct answer: B

The correct answer is Option B.

Contribution margin towards fixed costs and profit.

Total units to be sold (January to June sales in units)  $139\,000 \times$  Contribution margin per unit of \$19 = \$2 641 000.

Fixed costs for the six month period = \$100 000 (50 per cent of the \$200 000 per annum).  
Total profit = \$2 541 000.

Option A is incorrect because this figure subtracted fixed costs (\$200 000) from the contribution margin, instead of decreasing the fixed costs by 50 per cent.

Option C is incorrect because this is the total contribution margin, not the profit; fixed costs need to be subtracted.

Option D is incorrect because this figure is the total revenue figure for the six-month period. Please note that these questions specifically advise you to ignore bad debts. If bad debts were included, they would effectively be added to costs or subtracted from revenues, thereby reducing estimated profit and increasing the breakeven point.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Cost-volume-profit analysis'.*

## Question 1.15

Correct answer: D

Option D is not a benefit of budgeting. The provision of operating results is a separate activity from budgeting.

Option A is incorrect because it is a benefit of budgeting. Forecasts are useful for planning resource needs.

Option B is incorrect because it is a benefit of budgeting. Budgets provide targets for assessing the performance of individuals with budgetary responsibility.

Option C is incorrect because it is a benefit of budgeting. Budgets provide a framework for control through variance analyses.

*You can review this topic area in Module 1, Appendix 1.1, under the section titled 'Budgeting'.*

## Question 1.16

Correct answer: D

The correct answer is Option D. The obvious example is the labour efficiency variance, which is relevant in any organisation employing labour.

Options A, B and C are all incorrect because there is no reason to think that management accounting tools such as budgets will not be useful to:

- A: small organisations;
- B: not-for-profit organisations; and
- C: service organisations.

The study materials state that creating value is the focus of organisations rather than purely making a profit. Value is a much broader concept than profit. Management accountants support managers with information to help them create value independent of an organisation's size or sector.

*You can review this topic area in the study guide throughout Module 1 in the sections titled 'Value', 'Strategic management accounting—supporting managers', 'Strategic management accounting and the public sector' and the suggested answer to Question 1.1.*

## Question 1.17

Correct answer: C

The correct answer is Option C. Management accounting first arose in the form of cost accounting for manufacturing organisations. Responsibility accounting for cost/revenue/profit/investment centres followed. Next was a focus on improving the efficiency of internal operations. Finally, the strategic phase of management accounting arose with a focus on creating value for internal and external stakeholders.

Options A, B and D are incorrect because they list the techniques in the incorrect order.

*You can review this topic area in Module 1 in the section titled 'Changes to the management accounting role'.*

## Question 1.18

Correct answer: A

Option A is the correct answer because globalisation has not increased, but decreased, predictability.

Option B is incorrect because it is a change that has been influential in changing the role of the management accountant. Management accounting was originally developed in the manufacturing environment and has been extended into the service sector as many economies have shifted in this direction. This has meant a decline in the emphasis on inventory accounting.

Option C is incorrect because it is a change that has been influential in changing the role of the management accountant. Acceleration of product life cycles has shifted costs, and the emphasis of costing systems, from the manufacturing phase of the life cycle to the upstream and downstream phases.

Option D is incorrect because it is a change that has been influential in changing the role of the management accountant. Increased accountability for social and environmental performance has been influenced by a broader range of stakeholders.

*You can review this topic area in Module 1 in the section titled 'Causes of change in the business environment'.*

## Question 1.19

Correct answer: D

The correct answer is Option D. While the study guide points to some controversy in this area, it is quite clear that the management accountant's role is that of a business partner, with a focus on enhancing performance. Option D is an important consideration for accountants, but this is a control function, and as such, applicable to an accountant's conformance responsibilities rather than their strategic role. The conformance role is often assigned to financial accountants rather than management accountants. These matters are discussed further in the section of Module 2 on governance.

Option A is incorrect because it is important to management performance and effective decision-making as it ensures that users have timely access to information, and are familiar with the information systems relevant to their role.

Option B is incorrect because it is strategically important as it has a strong external stakeholder focus.

Option C is incorrect because it is the overriding consideration for guiding strategic management accounting activities.

*You can review this topic area in Module 1 in the section titled 'The role of management accountants'.*

## Question 1.20

Correct answer: B

The correct answer is Option B. Tonnes of pollutants specifically relates to environmental matters. Environmental management accounting systems would measure current activity, set targets and track performance against these targets.

Option A is incorrect because the cost of spoilage is determined as a normal part of a process costing system. It is an indication of the costs of products that do not meet specification. It is a quality issue, but may not involve environmental impacts.

Options C and D are incorrect because they are associated with the social responsibilities of organisations rather than environmental matters.

*You can review this topic area in Module 1 in the section titled 'Environmental management accounting systems'.*

## Module 2

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### Question 2.1

Correct answer: B

The correct answer is Option B. All of the issues identified in this question (products, production facilities, etc.) are mainly internal concerns and so internal analysis is the best answer. Much of the management accountant's role is to help the organisation identify and create a sustainable competitive advantage. So, while the word 'competitive' may intrinsically have an external focus, the organisation still needs to look internally to maximise its strengths and improve its competitive position.

Option A is incorrect. While SWOT might have a partly internal focus, it is not the best answer because it also has a 50 per cent external focus.

Option C is incorrect because the issues are mainly internal.

Option D is incorrect because no specific mention is made of stakeholders.

*You can review this topic area in Module 2 in the section titled 'Internal analysis'.*

## Question 2.2

Correct answer: C

The correct answer is Option C. Convergence of an organisation's technology is not one of Porter's five forces. Convergence may provide opportunities to the organisation, but it is not in Porter's five forces.

Options A, B and D are incorrect because they are three of Porter's five forces.

The remaining two forces are the threat of new organisations entering the industry, and the bargaining power of the organisation's suppliers.

*You can review this topic area in Module 2 in the section titled 'External analysis'.*

## Question 2.3

Correct answer: B

The correct answer is Option B. Focus, differentiation and cost leadership are three generic strategies identified by Porter (1985).

Porter suggests that a cost leadership strategy involves bulk production at low cost for sale to the entire market in an attempt to win the largest market share.

Differentiation strategy refers to the introduction of unique product features that will enable the organisation to sell its product to the entire market at a higher price.

A focus strategy engages with a small market segment rather than the entire market. The segment can be defined by demographics (e.g. teenagers), location (e.g. Hong Kong), or other criteria. A focus organisation will compete on the basis of cost or differentiation using a cost-focus or a differentiation-focus strategy.

Option A is incorrect because it includes 'defender'.

Option C is incorrect because it includes 'market domination'.

Option D is incorrect because it includes 'prospector'.

Note that defender, market domination and prospector are strategies suggested by authors other than Porter.

*You can review this topic area in Module 2 in the section entitled 'Cost leadership, differentiation or focus?'.*

## Question 2.4

Correct answer: D

As this company manufactures only two ranges of clothing, winter sportswear and summer tennis wear, produced to a high standard of design and manufacture and sold under a widely recognised and prestigious label, the company is pursuing a differentiation-focus strategy. Thus, the correct response is Option D.

In this question, the company is focusing or restricting its activities to a particular niche in the market. Instead of the overall clothing market, the company is focusing on winter sportswear and summer tennis wear, hence the focus aspect. Next, the company is selling the product under a recognised and prestigious brand, so while the product is not strictly unique, the competitive strategy is differentiation.

Both Options A and B are incorrect because they refer to a cost-based strategy.

Option C is incorrect because it refers to differentiation strategy, which is a broad rather than a focused strategy.

***You can review this topic area in Module 2 in the section titled 'Cost leadership, differentiation or focus?'***

## Question 2.5

Correct answer: A

The correct answer is Option A. AWE differentiates its products within a segment of the Australian recreational clothing market by emphasising the quality and environmental friendliness of its products, and this would suggest that it is following a focus strategy (specifically, differentiation-focus).

Option B is incorrect because AWE cannot be viewed as competing on an industry-wide basis where it might be said to be seeking to dominate the recreational clothing market and competing with global brands like Nike or Adidas. Thus, AWE is not pursuing a differentiation strategy.

Options C and D are incorrect because they are not strategy choices identified by Porter. Porter does discuss 'stuck in the middle' businesses, but these are businesses with no meaningful strategy.

***You can review this topic area in Module 2 in the section titled 'Cost leadership, differentiation or focus?'***

## Question 2.6

Correct answer: D

The correct answer is Option D. The value chain comprises primary and secondary (or support) activities that are **interrelated** and deliver products or services that the organisation's customers value. Thus, an organisation's value chain cannot be an aggregation of **independent**, yet strategically relevant, activities collectively contributing to the economic value generated by the organisation.

Options A, B and C are incorrect because they provide valid descriptions of value chains, as noted above.

*You can review this topic area in Module 2 in the section titled 'Organisation value chain'.*

## Question 2.7

Correct answer: A

The correct answer is Option A. In taking a value chain perspective, the sequential order in which the six major development activities for designing a vehicle would be performed by the automotive maker is activities III, V, II, I, VI and IV.

Sequence	Activity	Description of development activity
1	III	Concept generation—conducting market research to identify future market needs, and combining these needs with the technical possibilities of existing and future technology to develop a product concept.
2	V	Product planning—developing the product concept into product design, including styling and target costs.
3	II	Basic engineering—developing the basic technological features of the product
4	I	Product engineering—designing parts and components.
5	VI	Process design—developing manufacturing processes for a new product.
6	IV	Pilot run—testing the performance of the product and the manufacturing process prior to entering full-scale production.

Options B, C and D are incorrect because they list the development activities in the incorrect order.

*You can review this topic area in Module 2 in the section titled 'Organisation value chain'.*

## Question 2.8

Correct answer: C

Option C is correct because the main purpose of product life cycle analysis is similar to that of portfolio analysis—to reduce risk. As such, product life cycle analysis is an important part of the strategic analysis for an organisation. Understanding risk is critical to strategic planning.

Option A is incorrect as a 'star' is a product classification associated with the BCG matrix, not product life cycle analysis.

Option B is incorrect as market share and growth measures are associated with the BCG matrix, not product life cycle analysis.

Option D is incorrect as cash flow management is just one aspect of the risk management process associated with understanding an organisation's product portfolio.

*You can review this topic area in Module 2, in the section titled 'Internal Analysis' (Portfolio theory and product life cycles).*

## Question 2.9

Correct answer: A

The correct answer is Option A. The contemplated acquisition of an upstream value chain member (i.e. a supplier) by Retrop Pty Ltd is an example of upstream vertical integration.

Option B is incorrect because horizontal integration entails the acquisition of a rival company to Retrop Pty Ltd with the aim of expanding market share.

As the company is contemplating an acquisition, both Options C and D are incorrect. An alliance is an association that does not involve ownership or property rights.

Alliances are collaborative. However, there are certain types of alliances where competitors join forces to engage in a new product or new market. These are termed 'competitive alliances', and while the parties may compete with each other outside the alliance, they are not competing against each other within the alliance.

*You can review this topic area in Module 2 in the section titled 'Industry value chain'.*

## Question 2.10

Correct answer: C

The correct answer is Option C. Option C is not essential because it does not change or transform the physical characteristics of the product. Moving could be eliminated by reorganising the manufacturing process.

Options A, B and D are incorrect because they are all essential activities in creating a final product.

*You can review this topic area in Module 2 in the section titled 'Organisation value chain'.*



## Question 2.11

Correct answer: C

The correct answer is Option C. The **performance** element of corporate governance is future oriented and concerned with helping the board make strategic decisions. Responding to changes in the business environment is fundamental to achieving organisation performance.

Options A, B and D are incorrect because they are central aspects of the **conformance** element of corporate governance, which is primarily concerned with following corporate policy and outside regulations.

*You can review this topic area in Module 2 in the section titled 'Corporate governance'.*

## Question 2.12

Correct answer: C

The correct answer is Option C. Organisations with a reputation for socially responsible behaviour can attract customers and investors. This can lead to increased revenue and a lower cost of capital.

Option A is incorrect. Some environmental initiatives can result in cost savings, but we cannot generalise about the cost effectiveness of corporate social responsibility (CSR) activities. For example, providing a 'living wage' may increase costs.

Option B is not incorrect, but impressions that management make do not necessarily involve the truth or responsible behaviour. Stakeholders quickly discount management information that is seen as superficial or dishonest.

Option D is correct, but is not the best answer. In some instances, socially irresponsible behaviour has led to increased environmental and workplace legislation, but this will not necessarily cause a problem for organisations as long as other organisations in the same industry face the same regulatory regime.

*You can review this topic area in Module 2 in the section titled 'Corporate governance'.*

## Question 2.13

Correct answer: C

The correct answer is Option C. The industry value chain is a sequence, or in more complex applications, a network of business roles. Upstream business roles are concerned with resources and raw materials, downstream roles include wholesaling and retailing.

Option A is incorrect because it makes reference to the main strategic purpose of industry value analysis—creating the organisation's role in the industry through strategies of vertical or horizontal integration.

Option B is incorrect because activities are the basis for organisational value chains, not industry value chains. This is a common source of confusion for candidates.

Option D is incorrect. Activity-based management focuses on organisational value chains because these are composed of activities.

*You can review this topic area in Module 2 in the section titled 'Industry value chain'.*

## Question 2.14

Correct answer: A

The correct answer is Option A. Collaboration is one of the main sources of value. The other main categories of value drivers are innovation, efficiency and market awareness.

Option B is incorrect. While a focus on popular products may be effective, this is only true when these products are profitable and have some growth potential.

Option C is incorrect because the customer is a downstream industry participant.

Option D is incorrect because the manufacturer is experiencing external failures, not internal. Also, the training of software developers may not be the issue, it is more likely that the company has a poor understanding of its customers' needs.

*You can review this topic area in Module 2, in the section titled 'Value drivers'.*

## Module 3

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### Question 3.1

Correct answer: B

The correct answer is Option B. Management controls exist primarily to ensure that organisational goals are achieved.

Option A is incorrect because policies and procedures relate to planning rather than outcomes.

Option C is incorrect because it refers to just two organisational goals, profit and accurate financial reporting.

Option D is incorrect because performance measurement is just part of the control process.

*You can review this topic area in Module 3 in the section titled 'Governance, risk management and performance', and in 'Part B: Strategy, management control and performance measurement'.*

### Question 3.2

Correct answer: D

The correct answer is Option D. While performance measures can be used internally in organisations to support claims by managers for additional resources for their business units, signalling is primarily aimed at trying to influence the decisions of those outside the organisation.

Options A, B and C are incorrect because it is performance measurement (rather than signalling) that is fundamental to helping the management, the board and the audit committee exercise their function of governance by monitoring performance information in terms of goal achievement, assessing risks and the effectiveness of management controls.

*You can review this topic area in Module 3 in the section titled 'Signalling'.*

### Question 3.3

Correct answer: D

The correct answer is Option D. The five fundamental principles identified in APES 110 are integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

Options A and B are incorrect because while they are principles that may enable individuals to operate in an ethical manner, they are not the fundamental principles described in APES 110.

Option C is incorrect because these are threats to these principles, also identified in APES 110.

*You can review this topic area in Module 3 in the section titled 'Ethics and performance measurement'.*

### Question 3.4

Correct answer: A

The correct answer is Option A. Strategic performance is concerned with sustainable performance over time at the whole organisational level, over multiple future time periods, taking into account strategic goals, economic conditions and the competitive environment.

Option B is incorrect because the balanced scorecard is a tool of management accounting. It may or may not include information about life cycles, supply chains and market share.

Option C is incorrect because the tools of management accounting (as opposed to strategic management accounting) are particularly focused on the annual accounting cycle for a single organisation. They are not specifically concerned with life cycles, supply chains or market share.

Option D is incorrect because operational performance is concerned with short-term management control.

*You can review this topic area in Module 3, in the section titled 'Operational and strategic performance'.*

### Question 3.5

Correct answer: B

The correct answer is Option B. This is the only option representing a typical balanced scorecard. All the others have unbalanced scorecards that put too much weight on one or two of the balanced scorecard perspectives. In this balanced scorecard, the measures are

- financial—EBIT and P/E ratio;
- customer—customer satisfaction and on-time delivery;
- process—wastage and product quality; and
- innovation and learning—employee retention and investment in training.

Option A is incorrect because this option has a focus only on the financial, and innovation and learning perspectives.

Option C is incorrect because this option has no innovation and learning measures.

Option D is incorrect because this option has no customer measures.

*You can review this topic area in Module 3 in the section titled 'The balanced scorecard'.*

### Question 3.6

Correct answer: D

The correct answer is Option D. Customer satisfaction is an effectiveness measure. It is the result of customer perceptions of price, quality, delivery, and so on. It determines the likelihood of customers being retained by the business and increasing their sales orders.

Option A is incorrect because equity is concerned with equality and fair treatment (e.g. Should all customers or employees be treated equally?).

Option B is incorrect because efficiency is concerned with the conversion of inputs or resources (physical, human and financial) into outputs (products/services).

Option C is incorrect because experience is not a type of performance measure.

*You can review this topic in Module 3 in the section titled 'Measuring efficiency, effectiveness and equity'.*

### Question 3.7

Correct answer: B

The correct answer is Option B. Sales revenue growth is an example of a measure that is highly reliable, but is invalid for assessing product quality. Validity—or accuracy—refers to how well a measure captures the variable being measured.

Sales revenue growth is not a valid indicator of product quality, because many factors may influence sales growth independent of product quality (e.g. failure of a competitor or low pricing by ABC). Customers may accept low quality because of low prices or the absence of alternatives.

Option A is incorrect because a clear measure is one that is easy to understand with little or no ambiguity. Sales revenue growth is a clear measure.

Option C is incorrect because reliability is concerned with consistency, or the extent to which the reported performance is the same over repeated measurement attempts. Sales revenue growth can be measured reliably through accounting records.

Option D is incorrect because controllability is the ability to influence the quantity or value of the measure through action. Sales revenue can be controlled through pricing and through an effective credit policy.

Validity, reliability, clarity and controllability are examples of the characteristics of effective performance measurement.

*You can review this topic area in Module 3 in the section titled 'Characteristics of performance measures and targets'.*

### Question 3.8

Correct answer: C

The correct answer is Option C. Rewards should be designed so that the needs for short-, medium- and long-term performance are in balance.

Option A is incorrect because targets may be stretch but top-down targets can lead to unintended consequences. One way to avoid gaming is to have employees participate in the setting of targets to be achieved.

Option B is incorrect because if targets are always achieved, they lose their motivational power.

Option D is incorrect because in order to reinforce the relationship between performance and reward, the reward for performance needs to be timely.

*You can review this topic area in Module 3 in the section titled 'Reward systems'.*

### Question 3.9

Correct answer: A

The correct answer is Option A. Earnings per share (EPS) is a lagging and financial measure. It is lagging because it tells the organisation and shareholders the end result of the organisation's financial, customer, business process, and innovation and learning performance. It is a financial measure because it is measured in dollars per share (e.g. \$5 per share).

Option B is incorrect because earnings per share is the result of the many activities in the innovation and learning, the business process and the customer perspectives. Measures of activities in the early part of the value chain like employee training are normally considered leading measures, and those measures such as EPS that are relevant to the later stages of the value chain are considered lagging measures. Most financial measures are lagging measures.

Options C and D are incorrect because EPS is a financial measure.

*You can review this topic area in Module 3 in the section titled 'Leading and lagging measures'.*

### Question 3.10

Correct answer: C

The correct answer is Option C. A balanced scorecard should balance financial and non-financial information. This is because financial information is often late (lagging), while non-financial information is available at an earlier stage in the value chain (leading).

Option A is incorrect because validity and reliability are desirable characteristics of all information. Both should be maximised rather than balanced.

Option B is incorrect. While actual results will be compared with targets in the BSC, the BSC is a forward-looking strategic management tool.

Option D is incorrect because the BSC is a strategic management tool. Conformance is not a strategic issue, but one of compliance with regulation and policy.

*You can review this topic area in Module 3 in the section titled 'Designing a balanced scorecard'.*

### Question 3.11

Correct answer: C

The correct answer is Option C. This statement is incorrect because it makes reference to upstream and downstream (vertical) integration as discussed in the section on industry value chain analysis. Concepts of upstream and downstream integration are not relevant to the BSC.

Options A, B and D are incorrect because they are all true statements about a system of cascading scorecards. Each statement makes essentially the same point, that a system of cascading scorecards aligns the organisation with its strategy because it communicates strategically relevant goals and objectives to all managers in a way that relates to their specific responsibilities.

*You can review this topic area in Module 3 in the section titled 'Cascading performance measures'.*

## Module 4

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### Question 4.1

Correct answer: A

The correct answer is Option A. The revised total variable overhead related standard cost per unit for XYZ is calculated as follows.

#### Variable manufacturing overhead

<i>Set-up time</i>		
15 minutes at \$60.00 per set-up hour		\$15.00
<i>Machine running time</i>		
2 hours and 10 minutes at \$30.00 per machine hour		\$65.00
<i>Inspection time</i>		
2 minutes at \$30.00 per inspection hour		<u>\$ 1.00</u>
Total variable standard manufacturing overhead cost		<u>\$81.00</u>

Option B is incorrect because this is the original variable overhead cost ( $20 + 75 + 5 = 100$ ).

Option C is incorrect because it is the sum of the new variable overhead and the new labour cost ( $81 + 75 = 156$ ).

Option D is incorrect because it is the new total cost ( $105 + 75 + 81 = 261$ ).

*You can review this topic area in Module 4 in the section titled 'Activity-based management and continuous improvement'.*

### Question 4.2

Correct answer: A

For Roberts Pty Ltd to achieve the desired profit margin per unit, its value engineering exercise will need to reduce the expected standard cost per unit by \$20.00.

Target selling price per unit	\$300.00
Desired profit margin ( $20\% \times \$300.00$ )	<u>(\$60.00)</u>
Target standard cost	\$240.00
Expected standard cost per unit prior to value engineering initiatives	<u>\$260.00</u>
Reduction in per unit cost to be achieved through value engineering	(\$20.00)

*You can review this topic area in Module 4 in the section titled 'Life cycle, target and kaizen costing'.*

### Question 4.3

Correct answer: B

The correct answer is Option B. The most likely pairings are:

Pair 1: Business process management and target costing

Pair 2: Continuous-improvement programs and kaizen costing

Target costing is generally more effectively deployed when new products are being developed. As approximately 85 to 90 per cent of a new product's cost is committed during the pre-production stage (where planning, design and development activities are undertaken), strategic opportunities for improving the future cost performance of the new product are best made through a comprehensive analysis of the organisation's processes before production actually commences. Therefore, business process management, which typically involves major changes in order to eliminate non-value adding activities and processes, is best paired with target costing. Once a product enters the production stage, opportunities for improving the future cost performance of the product are more limited.

During the production phase, cost-reduction targets are best achieved through continuous-improvement programs. Since kaizen costing is also directed at achieving small improvements in product cost, it complements continuous-improvement programs.

Options A, C and D are incorrect because they inappropriately pair management systems appropriate to different stages (pre-production vs production).

*You can review this topic area in Module 4 in the section titled 'Life cycle, target and kaizen costing', particularly Figure 4.6.*

### Question 4.4

Correct answer: B

Customer profitability is best evaluated by calculating the customer net margin. ABC is particularly useful in this because sales and admin costs are often driven by non-volume related cost drivers.

Options A and D are incorrect because they use gross margins, which provide limited and, at times, misleading data for evaluating customer profitability, and while ABC can improve the accuracy of the gross margin calculation, it cannot correct the fundamental problem of validity.

Option C is incorrect because all cost systems, and all allocations, involve estimation. Further, for some costs (e.g. facility level costs), it is difficult to determine a meaningful cost driver. There is no such thing as an absolutely accurate cost and all cost systems are in this sense problematic. So Option C is incorrect, because it is irrelevant.

*You can review this topic area in Module 4 in the section titled 'Downstream activities: Customer profitability analysis'.*



## Question 4.5

Correct answer: C

The correct answer is Option C. HA will expect that the main purpose of the service-level agreements between Compu-serve and other HA business units is to set clear and unambiguous performance measures in terms of the IT services Compu-serve has agreed to deliver to its internal clients.

Option A is incorrect, given that the fees are likely to vary with changes in the type and quantum of the service provided.

Option B is incorrect. While the service level agreement may outline a dispute resolution process, this purpose is only necessary where there is a significant departure in actual IT service provision from that agreed to. Thus, Option B could be viewed as being secondary to the main objective of setting clear and unambiguous performance measures for the IT services that Compu-serve is to deliver to its internal clients.

Option D is incorrect. As the service level agreement is an internal document for HA, it is unlikely to have any legal contractual status.

*You can review this topic area in Module 4 in the section titled 'Outsourcing and offshoring'.*

## Question 4.6

Correct answer: C

The correct answer is Option C. Cost per unit of activity is more a feature of conventional ABC.

Options A, B and D are incorrect because they are part of time-driven activity-based costing (TDABC). Time equations may be used in more complex TDABC applications. Practical capacity is often estimated at around 80 per cent of theoretical capacity and is used as the allocation base. Cost per time unit of activity is a central calculation in TDABC.

*You can review this topic area in Module 4 in the section titled 'Time-driven activity-based costing'.*

## Question 4.7

Correct answer: B

The correct answer is Option B. See the 20X0 Quality cost report below.

Option A is incorrect because it excludes some prevention costs.

Options C and D are incorrect because they include costs appropriate to other quality cost categories.

### 20X0 Quality cost report

Expense item	Total expense \$	Prevention \$	Appraisal \$	Internal failure \$	External failure \$
Legal fees defending allegation of defective products	20 000				20 000
Downtime due to avoidable machine breakdowns	50 000			50 000	
Incoming materials testing	120 000		120 000		
Employee training	180 000	180 000			
Rework for slightly defective units	30 000			30 000	
Warranty costs	50 000				50 000
Design engineering	210 000	210 000			
Product-liability insurance premium	10 000				10 000
Depreciation of production-line testing equipment	40 000		40 000		
Scrapped units	70 000			70 000	
Product specification database	30 000	30 000			
Recalls of defective products	20 000				20 000
Preventative maintenance on production-line equipment	60 000	60 000			
Production-line inspection	70 000		70 000		
Total	960 000	480 000	230 000	150 000	100 000

The product-liability insurance contract protects the organisation from a financial perspective, but it does not prevent the products from being defective. Claims against the insurance policy will arise from external failures.

***You can review this topic area in Module 4 in the sections titled 'Upstream activities: Supplier management' and 'Total quality management'.***

### Question 4.8

Correct answer: C

The correct answer is Option C. See the 20X0 Quality cost report below.

Options A and B are incorrect because they exclude some appraisal costs.

Option D is incorrect because it includes costs appropriate to other quality cost categories.

#### 20X0 Quality cost report

Expense item	Total expense \$	Prevention \$	Appraisal \$	Internal failure \$	External failure \$
Legal fees defending allegation of defective products	20 000				20 000
Downtime due to avoidable machine breakdowns	50 000			50 000	
Incoming materials testing	120 000		120 000		
Employee training	180 000	180 000			
Rework for slightly defective units	30 000			30 000	
Warranty costs	50 000				50 000
Design engineering	210 000	210 000			
Product-liability insurance premium	10 000				10 000
Depreciation of production-line testing equipment	40 000		40 000		
Scrapped units	70 000			70 000	
Product specification database	30 000	30 000			
Recalls of defective products	20 000				20 000
Preventative maintenance on production-line equipment	60 000	60 000			
Production-line inspection	70 000		70 000		
<b>Total</b>	<b>960 000</b>	<b>480 000</b>	<b>230 000</b>	<b>150 000</b>	<b>100 000</b>

The product-liability insurance contract protects the organisation from a financial perspective, but it does not prevent the products from being defective. Claims against the insurance policy will arise from external failures.

***You can review this topic area in Module 4 in the sections titled 'Upstream activities: Supplier management' and 'Total quality management'.***

## Question 4.9

Correct answer: A

See the 20X0 Quality cost report below.

Options B, C and D are incorrect because they all include costs appropriate to other quality cost categories.

### 20X0 Quality cost report

Expense item	Total expense \$	Prevention \$	Appraisal \$	Internal failure \$	External failure \$
Legal fees defending allegation of defective products	20 000				20 000
Downtime due to avoidable machine breakdowns	50 000			50 000	
Incoming materials testing	120 000		120 000		
Employee training	180 000	180 000			
Rework for slightly defective units	30 000			30 000	
Warranty costs	50 000				50 000
Design engineering	210 000	210 000			
Product-liability insurance premium	10 000				10 000
Depreciation of production-line testing equipment	40 000		40 000		
Scrapped units	70 000			70 000	
Product specification database	30 000	30 000			
Recalls of defective products	20 000				20 000
Preventative maintenance on production-line equipment	60 000	60 000			
Production-line inspection	70 000		70 000		
Total	960 000	480 000	230 000	150 000	100 000

The product-liability insurance contract protects the organisation from a financial perspective, but it does not prevent the products from being defective. Claims against the insurance policy will arise from external failures.

*You can review this topic area in Module 4 in the sections titled 'Upstream activities: Supplier management' and 'Total quality management'.*

### Question 4.10

Correct answer: D

The correct answer is Option D. See the 20X0 Quality cost report below.

Options A, B and C are incorrect because they all exclude some external failure costs.

#### 20X0 Quality cost report

Expense item	Total expense \$	Prevention \$	Appraisal \$	Internal failure \$	External failure \$
Legal fees defending allegation of defective products	20 000				20 000
Downtime due to avoidable machine breakdowns	50 000			50 000	
Incoming materials testing	120 000		120 000		
Employee training	180 000	180 000			
Rework for slightly defective units	30 000			30 000	
Warranty costs	50 000				50 000
Design engineering	210 000	210 000			
Product-liability insurance premium	10 000				10 000
Depreciation of production-line testing equipment	40 000		40 000		
Scrapped units	70 000			70 000	
Product specification database	30 000	30 000			
Recalls of defective products	20 000				20 000
Preventative maintenance on production-line equipment	60 000	60 000			
Production-line inspection	70 000		70 000		
<b>Total</b>	<b>960 000</b>	<b>480 000</b>	<b>230 000</b>	<b>150 000</b>	<b>100 000</b>

The product-liability insurance contract protects the organisation from a financial perspective, but it does not prevent the products from being defective. Claims against the insurance policy will arise from external failures.

*You can review this topic area in Module 4 in the sections titled 'Upstream activities: Supplier management' and 'Total quality management'.*

## Question 4.11

Correct answer: B

The correct answer is Option B.

$$300 \text{ min} \times (\$450\,000 / 600\,000 \text{ min}) = \$225$$

Option A is incorrect because the decimal is misplaced.

Option C is incorrect because it is based on the total time allocated:

$$270\,000 + 45 + 120 = 435\,000 \text{ min}$$

$$300 \text{ min} \times (\$450\,000 / 435\,000 \text{ min}) = \$310$$

Option D is incorrect because it is based on just the total time allocated to 'address customer complaints':

$$300 \text{ min} \times (\$450\,000 / 45\,000 \text{ min}) = \$3000$$

*You can review this topic area in Module 4 in the section titled 'Time-driven activity-based costing'.*

## Question 4.12

Correct answer: B

The correct answer is Option B. See table below.

Activity	Quantity	Unit time (min)	Total time allocated (min)	Unit cost \$	Customer X	Total cost assigned \$
Process orders	9 000	30	270 000	22.50	100	2 250
Address customer complaints	150	300	45 000	225.00	4	900
Warranty claims	600	200	120 000	150.00	10	1 500
Total			435 000			4 650

Option A is incorrect as it is based on total cost drivers relating to customer X  $(100 + 4 + 10) \times \$450\,000 / 600\,000 \text{ min} = \$86$ .

Option C is incorrect as it represents the total minutes required to service customer X  $(100 \times 30 \text{ min} + 4 \times 300 \text{ min} + 10 \times 200 \text{ min} = 6200 \text{ min})$

Option D is incorrect as it is based on 6200 minutes as shown above, multiplied by the overall rate based on time used rather than time available  $(6200 \times \$450\,000 / 435\,000 \text{ min} = \$6414)$ .

*You can review this topic area in Module 4 in the section titled 'Time-driven activity-based costing'.*

### Question 4.13

Correct answer: B

$$\begin{aligned} \text{Unused capacity cost} &= (\text{practical capacity} - \text{time allocated}) \times \text{allocation rate} \\ &= (600\,000 \text{ min} - 435\,000 \text{ min}) \times \$450\,000 / 600\,000 \text{ min} \\ &= \$123\,750 \end{aligned}$$

$$\begin{aligned} \text{Alternative calculation: Unused capacity cost} &= \text{total cost} - \text{cost assigned} \\ &= \$450\,000 - (202\,500 + 33\,750 + 90\,000) \\ &= 123\,750 \end{aligned}$$

$$\begin{aligned} \text{Option A is incorrect because it is the budgeted rather than the actual unused capacity:} \\ &= (600\,000 \text{ min} - 450\,000 \text{ min}) \times \$450\,000 / 600\,000 \text{ min} \\ &= \$112\,500 \end{aligned}$$

Option C is incorrect because it is the number of unused minutes (600 000 min – 435 000 min = 165 000).

Option D is incorrect because it is the cost of the capacity used rather than unused (202 500 + 33 750 + 90 000 = 326 250).

*You can review this topic area in Module 4 in the section titled 'Time-driven activity-based costing'.*

### Question 4.14

Correct answer: B

The correct answer is Option B.

The supplier cost-performance ratio = supplier-related costs / invoice cost.

$$\text{For supplier X: } \$350\,000 / \$1\,500\,000 = 23.3\%$$

$$\text{For supplier Y: } \$160\,000 / \$1\,800\,000 = 8.9\%$$

Options A and D are incorrect because for each option, at least one of the cost performance ratios are calculated based on supplier cost / total cost rather than invoice cost as shown above (8.16% and 18.9%).

Options C is incorrect because it is calculated as supplier cost / volume.

*You can review this area in Module 4 in the section titled 'Case study 4.9: Evaluating supplier-related costs'.*

## Question 4.15

Correct answer: C

The correct answer is Option C. As the manufacturer is experiencing significant external failures, it can be concluded that the products are being shipped in apparently good condition, and that product flaws are being detected by users. It is likely that the fault is in product design, product manufacture or component manufacture. An investment in prevention is likely to be most beneficial. Activities include design engineering, process design, the selection of new quality suppliers and worker training.

Option A is incorrect because appraisal can only be effective where adequate product, process and workforce quality measures are in place. Appraisal complements prevention, but is not a substitute for it. It would be appropriate to spend more on appraisal where the appraisal process had identified specific problems, but again, this additional information would be used to carry out a continuous improvement program focused on prevention.

Option B is incorrect because the quality cost framework is based on the idea that increased spending on prevention **and** appraisal reduces failure.

Option D is incorrect because it is never appropriate to increase the cost of failure. Consistent with total quality management, all resources should be directed towards prevention and appraisal.

*You can review this area in Module 4 in the section titled 'Total quality management'.*



### Question 4.16

Correct answer: B

The correct answer is Option B. See table below.

**Manufacturing overhead costs**

Relating to machine activity	\$300 000
Relating to production run set-ups	\$50 000
Relating to order handling activity	<u>\$70 000</u>
	\$420 000

**Total direct labour hours**

Product X (20 000 units)(0.50 labour hours)	10 000
Product Y (10 000 units)(0.50 labour hours)	<u>5 000</u>
	15 000
Overhead cost per direct labour hour (\$420 000 / 15 000)	<u>\$28.00</u>

**Full cost of Product X**

Direct materials	\$5.00
Direct labour (0.50)(\$18.00)	\$9.00
Factory overhead (0.50)(\$28.00)	<u>\$14.00</u>
Total cost per unit	<u>\$28.00</u>

Option A is incorrect because it fails to include materials (\$5) in the unit cost.

Option C is incorrect because it includes a full hour of labour (\$18) rather than a half hour (\$9).

Option D is incorrect because the overhead included is based on a full hour of labour (\$28) rather than a half hour (\$14).

*You can review this topic area in Module 4 in the section titled 'Case study 4.1: Traditional approach to allocating indirect costs'.*

**Question 4.17**

Correct answer: B

The correct answer is Option B. See table below.

<b>Activity</b>	<b>Machine hours</b>	<b>Set-up</b>	<b>Order-handling</b>
Overhead costs	\$300 000	\$50 000	\$70 000
Number of activities			
Product X	(20 000u × 2h) = 40 000 h	30	40
Product Y	(10 000u × 4h) = 40 000 h	70	160
Total activities	<u>80 000</u>	<u>100</u>	<u>200</u>
Cost per unit of activity	<u>\$3.75</u>	<u>\$500.00</u>	<u>\$350.00</u>
Overhead allocated to Product X	<u>\$150 000</u>	<u>\$15 000</u>	<u>\$14 000</u>
Total overhead allocated to Product X			\$179 000
Number of units produced			<u>20 000</u>
Overhead cost per unit of Product X			\$8.95
Direct materials			\$5.00
Direct labour (0.50)(\$18.00)			<u>\$9.00</u>
Total cost per unit			<u>\$22.95</u>

Option A is incorrect because this is the overhead allocated by ABC to X. It does not include the direct costs.

Option C is incorrect. It is the cost as determined by a traditional labour hour based allocation of overhead cost.

Direct materials	\$5.00
Direct labour (0.50)(\$18.00)	\$9.00
Factory overhead (0.50)(\$28.00)	<u>\$14.00</u>
Total cost per unit	\$28.00

Option D is incorrect because it is based on the overhead allocated to product Y.

$$(\$420\,000 - 179\,000) / 10\,000 = \$24.10$$

$$\text{Total cost } \$5 + \$9 + \$24.10 = \$38.10$$

*You can review this topic area in Module 4 in the section titled 'Activity-based costing'.*

### Question 4.18

Correct answer: B

The correct answer is Option B. Correct answer:

$$\$1\,200\,000 / 80 \text{ desks} = \$15\,000 \text{ per desk}$$

Option A is incorrect because this calculation is based on number of landings:

$$\$1.2\text{m} / 10\,000 \text{ landings} = \$120$$

Option C is incorrect because this calculation is based on just Panther's desks:

$$\$1.2\text{m} / 50 \text{ desks} = \$24\,000$$

Option D is incorrect because this calculation is based on the total cost:

$$\$13.2\text{m} / 80 \text{ desks} = \$165\,000$$

*You can review this topic area in Module 4 in the section titled 'Activity-based costing'.*

### Question 4.19

Correct answer: C

The correct answer is Option C:  $\$20 \times 100\,000 \text{ kg} + \$800 \times 5000 \text{ landings} + \$15\,000 \times 50 \text{ desks} = \$6\,750\,000$ .

Account	Allocation rate	Panther		Leopard	
	\$	Driver	\$	Driver	\$
Revenue		1 000 000	10 000 000		
Baggage cost	20 per kg	100 000	2 000 000	80 000	1 600 000
Runway cost	800 per landing	5 000	4 000 000	3 000	2 400 000
Terminal cost	15 000 per desk	50	750 000	20	300 000
<b>Total cost</b>			<b>6 750 000</b>		<b>4 300 000</b>

Option A is incorrect because it is the cost of Leopard. See table above.

Option B is incorrect because it neglects the terminal cost:

$$\$6\,750\,000 - \$750\,000 = \$6\text{m}$$

Option D is incorrect because it is an allocation based on passenger numbers:

$$\$13.2\text{m} \times 1\text{m} / 1.9\text{m} = \$6.947\text{m}$$

*You can review this topic area in Module 4 in the section titled 'Activity-based costing'.*

## Question 4.20

Correct answer: C

The correct answer is Option C. Revenue of \$19m represents  $\$19\text{m} / \$10 = 1.9\text{m}$  travellers.

Total costs are  $\$4\text{m} + \$8\text{m} + \$1.2\text{m} = \$13.2\text{m}$ .

Cost per traveller is  $\$13.2\text{m} / 1.9\text{m} = \$6.95$ .

The margin per traveller is  $\$10 - \$6.95 = \$3.05$  or  $\$3.05 / \$10 = 30.5\%$ .

Option A is incorrect because this is the cost per traveller.

Option B is incorrect because it is the revenue per traveller less the cost per traveller, but 'cost per traveller' has the decimal in the wrong place: 0.695 instead of 6.95. ( $\$10 - \$0.695 = \$9.31$ ).

Option D is incorrect because it is the cost per traveller expressed as a percentage of revenue.

*You can review this topic area in Module 4 in the section titled 'Downstream activities: Customer profitability analysis'.*

## Question 4.21

Correct answer: C

The correct answer is Option C, Panther Air:  $[\$10\text{m} - \$6.75\text{m}] / \$10\text{m} = 32.5\%$  (see table following).

Option A is incorrect because this is the profit margin of both Lion and Leopard (see table below).

Option B is incorrect because this is the overall profit margin  $(\$10 - \$6.95) / 10 = 30.5\%$ .

Option D is incorrect because it is the correct answer, but with the two final digits reversed.

Account	Panther		Lion		Leopard	
	Driver	\$	Driver	\$	Driver	\$
Revenue	<u>1 000 000</u>	<u>10 000 000</u>	<u>300 000</u>	<u>3 000 000</u>	<u>600 000</u>	<u>6 000 000</u>
Baggage cost	100 000	2 000 000	20 000	400 000	80 000	1 600 000
Runway cost	5 000	4 000 000	2 000	1 600 000	3 000	2 400 000
Terminal cost	50	<u>750 000</u>	10	<u>150 000</u>	20	<u>300 000</u>
Total cost		<u>6 750 000</u>		<u>2 150 000</u>		<u>4 300 000</u>
Profit		<u>3 250 000</u>		<u>850 000</u>		<u>1 700 000</u>
Profit margin		<b>32.5%</b>		28.3%		28.3%

*You can review this topic area in Module 4 in the section titled 'Activity-based costing'.*

## Question 4.22

Correct answer: D

Option D is the best option. If the volume of baggage increases as expected, then the total baggage cost will increase at a slower rate than is currently the case (variable cost of \$10 compared to \$20 currently) and cost savings will result.

Option A is incorrect because fixed costs increase risk. If travel volume decreases, the baggage cost will not.

Option B is incorrect because it is not the best answer even though it is correct for the present. The cost of the contract based on current data is  $\$2\,000\,000 + (\$10 \times 200\,000 \text{ kg}) = \$4\,000\,000$ . This is the same as the current baggage-handling cost. However, B does not take into account the expected market growth, and this outsourcing decision concerns the future operations of AP.

Option C is incorrect. Management of the outsourcing contract is an issue for consideration, but not a sufficient reason to avoid outsourcing altogether.

*You can review this topic area in Module 4 in the section titled 'Outsourcing and offshoring'.*

## Question 4.23

Correct answer: B

The correct answer is Option B. Channels are of key importance to retailers. Some, like Amazon, have been successful online, while others, like Apple, have been successful with stores in upmarket shopping malls.

Option A is incorrect because BuyGadgetsCo is a retailer, and as such has a low level of scope (vertical integration).

Option C is incorrect because the value of retail operations is not driven by complexity.

Option D is incorrect. This may be the key to the success of the manufacturer of hi-tech devices, but it is unlikely to be critical to a retailer. Obviously, online stores require some technology, but this technology is widely available and relatively inexpensive. It is not a source of competitive advantage.

*You can review this topic area in Module 4 in the section titled 'Activity-based management'.*

## Question 4.24

Correct answer: C

The correct answer is Option C. Many accounting controls operate as a deterrent. The fact that no irregularity has been discovered in the past is not evidence that the control is ineffective. The control may have prevented fraud.

Option A is incorrect because cost saving is only one of the criteria relevant to the removal of a non-value adding activity.

Option B is incorrect because it is not possible to measure the value of preventative controls.

Option D is incorrect. While control systems are recommended by stock exchanges and other regulators, they are not required. Additionally, a control system may include or exclude specific controls as long as the overall control objectives are satisfied.

*You can review this topic area in Module 4 in the section titled 'Activity value analysis'.*

## Question 4.25

Correct answer: B

The correct answer is Option B. This is one of the main approaches to ABM: improving activities by focusing on their inputs and outputs using productivity or efficiency ratios. Other ABM techniques include identification and elimination of non-value adding activities and replacement of existing activities with new activities that are more efficient.

Option A is incorrect because industry value analysis is facilitated by industry value chains, as discussed in Module 2. Industry value chains are made up of business roles rather than activities.

Options C and D are incorrect because both are techniques for calculating costs: C at the manufacturing level and D at the customer/sales/distribution level. They do not use activities as a way of managing value.

*You can review this topic area in Module 4 in the section titled 'Activity-based management and continuous improvement'.*

## Question 4.26

Correct answer: B

The correct answer is Option B.

Selling price	\$250.00
Profit margin (45%)	\$112.50
Total cost	\$137.50
Materials (75%)	\$103.13
Supplier offer	\$110.00
Cost reduction required	\$6.87

Option A is incorrect because the calculation is based on profit margin rather than materials cost ( $\$112.50 - \$110.00 = \$2.50$ ).

Option C is incorrect because the calculation is based on total cost rather than materials cost ( $\$137.50 - \$110.00 = \$27.50$ ).

Option D is incorrect because a cost reduction is required.

*You can review this topic area in Module 4 in the section titled 'Target costing'.*

## Module 5

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### Question 5.1

Correct answer: C

The best description is Option C because multiple activities and a specified time period are key characteristics of projects.

Options A, B and D are incorrect. While they may all be part of project management, they are not central to it. Projects may or may not have a customer; some are internal. Similarly, some projects may be concerned with complex organisational relationships, others may be more simple. Some projects face high levels of uncertainty, while others may not.

*You can review this topic area in Module 5 in the section titled 'What is a project?'.*

## Question 5.2

Correct answer: A

The correct answer is Option A. The ability to negotiate for the resources required is the key skill required to correct the situation.

Option B is incorrect. The ability to deal with uncertainty would help the manager to lead the project where the project was poorly planned. However, it may not help to 'correct the situation' and provide the further planning and resources noted in the question.

Option C is incorrect because the project was poorly planned. Accordingly, the budget will be unreliable, and variance calculations will reflect this weakness.

Option D is incorrect. While identifying relevant information is useful, the key to rescuing the project is planning and resource acquisition.

***You can review this topic area in Module 5 in the section titled 'Project manager'. See also 'Table 5.2: Skills required by project managers'.***

## Question 5.3

Correct answer: D

The correct answer is Option D. The EV line is based on work actually completed in a given length of time. EV above budget means that more work has been accomplished than was budgeted for, so the project is ahead of schedule. As actual costs are below EV, the project is running under budget. The budgeted cost line is based on estimated time (i.e. the x-axis) and is prepared before the project starts.

Option A is incorrect because its graph would show an actual cost over budget and an EV below budget.

Option B is incorrect because its graph would show actual cost under budget and EV below budget.

Option C is incorrect because its graph would show actual cost over budget and EV over budget.

***You can review this topic area in Module 5 in the section titled 'The earned value method: Time versus cost'.***



### Question 5.4

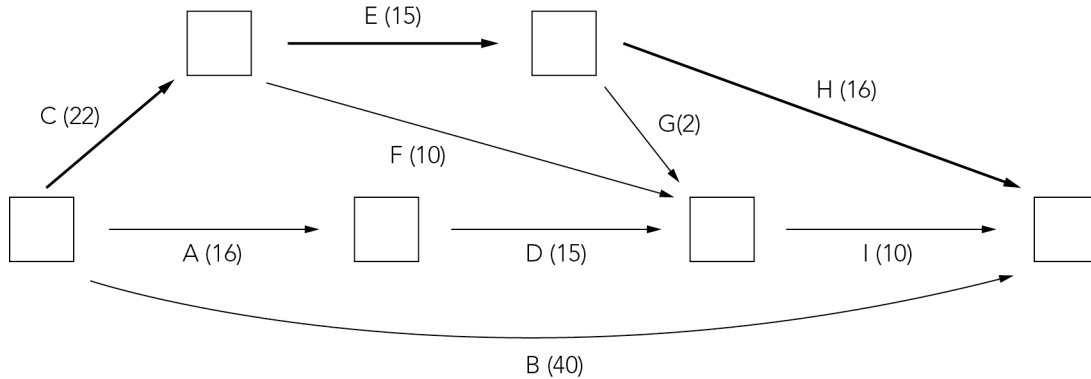
Correct answer: C

The correct answer is Option C. C-E-H is the critical path as this path takes the longest to complete. The total completion time for the project cannot be less than 53 days.

Option A is incorrect because this path is only 40 days long.

Option B is incorrect because it is a shorter path taking 41 days.

Option D is incorrect because it is a shorter path taking 49 days.



Activities A, B and C have no preceding activity and so all three activities can begin from the start node. No other activity is reliant upon Activity B, so this activity goes straight to the project completion node.

Activity D can only start once Activity A is finished, so this begins from Activity A’s end node. Activities E and F can only start once Activity C is finished, so these begin from Activity C’s end node.

Activities G and H can only start once Activity E is finished, so these begin from Activity E’s end node. No other activity is reliant upon Activity H, so this activity goes straight to the project completion node.

Activity I can only start once Activities D, F and G are all finished. As such, we link these three activities to the same end node. Activity I then starts from this end node. No other activity is reliant upon Activity I, so this activity goes straight to the project completion node.

***You can review this topic area in Module 5 in the section titled ‘PERT: Project evaluation and review technique’.***

## Question 5.5

Correct answer: B

The correct answer is Option B. More than anything else, complexity typifies international projects. To illustrate, if the same project is carried out both locally and internationally, the international implementation will be more complex.

Options A and C are incorrect because these are needed in all projects.

Option D is incorrect because a joint venture structure may be used for both local and international projects.

*You can review this topic area in Module 5 in the section titled 'Managing international projects'.*

## Question 5.6

Correct answer: C

The correct answer is Option C. This is risk assessment rather than risk management. Ensuring availability of key resources, including appropriate funding, is undertaken prior to commencement of the project.

Options A (monitoring), B (monitoring) and D (control and evaluation) are incorrect because they are all part of risk management, which is focused on completing the project rather than assessing risks prior to undertaking the project.

Note that Option B is specifically discussed in the subsection titled 'Having the right project team'.

*You can review this topic area in Module 5 in the section titled 'Risk management'.*

## Question 5.7

Correct answer: D

The correct answer is Option D. A risk–return trade-off is assessed when the cost of monitoring and managing a risk is compared with its potential outcome. For example, if a risk has a financial impact of \$100 000 and a probability of occurrence of 5 per cent, the weighted cost of that risk is \$5000. It would not be worth spending \$10 000 to monitor/manage the risk.

Option A is incorrect because financial analysis is a general approach to analysis and is not necessarily specific to risk.

Option B is incorrect because risk identification is where the risks are established.

Option C is incorrect because risk classification is when the impact and probability of risk are analysed.

*You can review this topic area in Module 5 in the section titled 'Risk management' (The risk return trade-off).*

## Question 5.8

Correct answer: A

The correct answer is Option A. This is risk assessment that is undertaken prior to commencement of a project and involves identification of stakeholders (i.e. 'who'), the impact of missing deadlines (i.e. 'when'), and potential cost over-runs (i.e. 'how much').

Option B is incorrect because risk management happens when the project commences.

Option C is incorrect because establishing resource requirements is not what you have been asked to do.

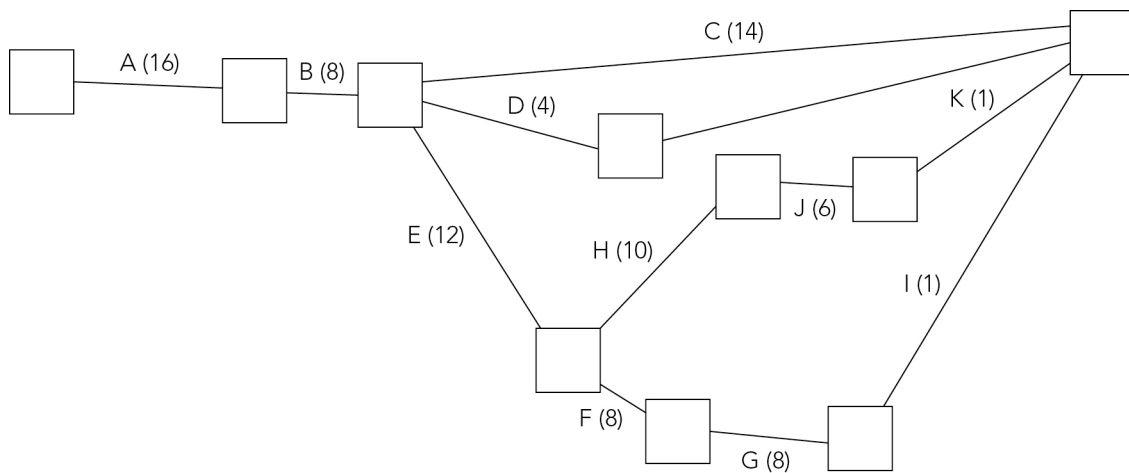
Option D is incorrect because stakeholder management is the ongoing process of managing the expectations and influence of stakeholders on a project.

*You can review this topic area in Module 5 in the section titled 'Risk assessment'.*

## Question 5.9

Correct answer: D

The correct answer is Option D.



Path	Time (weeks)	Calculation
ABC	38	$16 + 8 + 14$
ABD	28	$16 + 8 + 4$
ABEHJK	53	$16 + 8 + 12 + 10 + 6 + 1$
ABEFGI	53	$16 + 8 + 12 + 8 + 8 + 1$

There are two critical paths: ABEFGI and ABEHJK, which each have a time to completion of 53 weeks.

Options A (28) and B (38) are incorrect because these paths are shorter than the critical path. The critical path is the longest path through the PERT diagram.

Option C (47) is incorrect because no path in the correct PERT diagram has a length of 47.

Note that because Activities C and D start from the same node and are not precedent activities, they can be directed towards the end node. However, because PERT does not permit two activities to start and finish from the same nodes, we need to add a dummy activity, in this case from Activity D's end node to the project end node. The dummy activity could equally well have been placed at Activity C's end node.

***You can review this topic area in Module 5 in the section titled 'PERT: Project evaluation and review technique'.***

## Question 5.10

Correct answer: A

The correct answer is Option A. The only activity of A, C or F that should be crashed is activity A because it appears on both critical paths.

Options B, C and D are incorrect because they assume that crashing activities C and F can reduce the completion time. C is not on either critical path, and F is on just one critical path, so crashing either C or F will be ineffective.

The costs for each option are calculated as follows.

Option A – A (4 weeks × \$10 000) = 4 weeks at a cost of \$40 000

Option B – C (3 weeks × 5000) + F (2 weeks × \$2000) = 5 weeks at a cost of \$19 000

Option C – C (4 weeks × \$5000) + F (2 weeks and \$2000) = 6 weeks at a cost of \$24 000

Option D – A (4 weeks × \$10 000) + C (4 weeks × \$5000) + F (2 weeks × \$2000) = 10 weeks at a cost of \$64 000

***You can review this topic area in Module 5 in the section titled 'PERT: Project evaluation and review technique'.***

## Question 5.11

Correct answer: A

The correct answer is Option A. This is true for all projects. Without planning, there is little chance of optimising cost or schedule.

Option B is incorrect because detailed plans may not be required in all cases, and, in general, project teams will be able to function to some more or less satisfactory degree.

Option C is generally incorrect, but may be true in some cases and for some stakeholders, for example, where environmental planning approval is required for new coal mines.

Option D is not the best answer even though it is correct. It is not the main motivation for effective planning. Variance analysis at the end of the project provides useful information for future projects.

***You can review this topic area in Module 5 in the section titled 'The management accountant's role in project planning'.***

## Question 5.12

Correct answer: B

The correct answer is Option B. If a project has an outside customer as one of the stakeholders, the project sponsor may be the key intermediary for negotiating the contract and ensuring continuing communication over the life of the project.

Options A, C and D are incorrect because all of these responsibilities are specifically assigned to the project manager.

*You can review this topic area in Module 5 in the sections titled 'Project sponsor' and 'Project manager'.*

## Question 5.13

Correct answer: C

The correct answer is Option C. The main issue is that if the cost records are not closed, expenditure can continue to be billed against the project. This will result in cost overruns, or provide an opportunity for fraud.

Option A is incorrect because the proceeds from resource dispersion (e.g. the sale of unused materials) should be credited to the project.

Option B is incorrect because the project specifications are independent of the project cost.

Option D is incorrect because the financial accounts will be finalised regardless of the status of the project accounts. Closing the project cost records may facilitate this, but it is not necessary.

*You can review this topic area in Module 5 in the section titled 'Financial closure'.*

## Question 5.14

Correct answer: C

The correct answer is Option C. Sensitivity analysis considers how changes in a key project variable like wages, interest rates, inflation, GDP, etc. will affect project outcomes. In Option C, the variable in question is wages.

Scenario analysis considers how changing a group of related variables (a scenario) affects project outcomes. Normally the 'groups' of variables considered relate to negative, most likely and positive scenarios. In Option C, two scenarios are noted: strong growth and a downturn.

Option A is incorrect because the scenario analysis refers to interest rates. The interest rate is a single variable rather than a scenario.

Option B is incorrect because the sensitivity analysis refers to an industry downturn. This is not a variable but a scenario that would affect a number of related variables.

Option D is incorrect because the sensitivity analysis refers to an economic downturn. This is not a variable but a scenario that would affect a number of related variables.

*You can review this topic area in Module 5 in the section titled 'Sensitivity and scenario analysis'.*

### Question 5.15

Correct answer: C

The correct answer is Option C. If a family member supplies inputs to a project, this constitutes a conflict of interest that needs to be disclosed and managed. While intellectual property may need to be kept confidential, the supplier of it cannot expect the same level of confidentiality, especially where there is a conflict of interest issue. All individuals involved in projects should be treated impartially.

Options A, B and D are incorrect because they are all fundamental principles outlined by the Independent Commission Against Corruption (ICAC).

*You can review this topic area in Module 5 in the section titled 'The importance of probity in projects'.*

### Question 5.16

Correct answer: A

The correct answer is Option A.

Year	0	1	2	3
	\$	\$	\$	\$
Initial cost	-25 000			
Cash inflow		16 000	16 000	16 000
Cash outflow		5 000	5 000	5 000
Net cash flow		11 000	11 000	11 000
Discount rate		$1/1.20 = 0.8333$	$1/(1.20)^2 = .6944$	$1/(1.20)^3 = .5787$
PV	(25 000)	9 167	7 639	6 365
NPV ( $\Sigma$ PV)	(\$1 829)			

Option B is incorrect because the cash flows are not discounted ( $\$11\,000 \times 3 - \$25\,000 = \$8000$ ).

Option C is incorrect because the initial cost is not deducted ( $\$9167 + \$7639 + \$6365 = \$23\,171$ ).

Option D is incorrect because the initial cost is added (instead of deducted)  $\$23\,171$  (as above) +  $\$25\,000 = \$48\,171$ .

*You can review this topic area in Module 5 in the section titled 'Net present value'.*





# Extended Response Questions and Solutions



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# Extended Response Questions

## Case Study—WattleJet: Stakeholder analysis and strategic objectives

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The introduction to the WattleJet case indicates that the company lacks a formal approach to strategic management. At monthly management meetings, strategic issues are discussed in an ad-hoc manner, and the company reacts to changes in the marketplace spontaneously. There is no formal strategic plan, no strategic goals and objectives, nor is there any formal approach to strategic analysis.

To address this problem, WattleJet's management accountant has undertaken a strategic analysis of the company's strengths, weaknesses, opportunities and threats (SWOT). She now plans to follow up with other aspects of the strategic planning process. The current intention is to focus on WattleJet's stakeholders; to identify:

- significant stakeholders;
- the value each stakeholder brings to, and requires from, the company;
- strategic objectives related to providing stakeholder value; and
- strategies to achieve the strategic objectives.









# Case Study— WattleJet ADS-B navigation system

You will recall from reading the study guide that government regulations require WattleJet to install new air traffic control technology (the ADS-B system) by the end of 2018. WattleJet has the option of early adoption, and has prepared an evaluation of the project including a risk analysis and a net present value (NPV) analysis (see Task 6 in the case study).

### Project analysis

WattleJet wishes to extend their risk analysis of the ADS-B project to include an estimate of the project’s payback time.

Additionally, because of recent reductions in interest rates intended to stimulate the economy, WattleJet wishes to determine the sensitivity of the project’s NPV to a 1 per cent decrease in the company’s finance cost (the company’s weighted average cost of capital—WACC).

### Project cash flows

The estimated up-front costs for implementing ADS-B were \$235 000. Additional ongoing training, testing and implementation costs of \$75 000 were to be incurred during the first year of the project. Table 1 reveals a probability analysis of the estimated fuel and other efficiency savings from an early upgrade to ADS-B, compared to waiting until 2018.

**Table 1: Estimated fuel and other efficiency savings from an early upgrade to ADS-B**

	Year 1	Year 2	Year 3
Probability	\$	\$	\$
30%	45 300	111 800	145 300
50%	86 800	152 000	178 000
20%	114 000	165 000	190 000

**Table 2: Calculations for weighted averages**

Year 1	Year 2		Year 3		
30% × \$45 300	\$13 590	30% × \$111 800	\$33 540	30% × \$145 300	\$43 590
50% × \$86 800	\$43 400	50% × \$152 000	\$76 000	50% × 178 000	\$89 000
20% × \$114 000	\$22 800	20% × \$165 000	\$33 000	20% × \$190 000	\$38 000
Weighted average:	\$79 790	Weighted average:	\$142 540	Weighted average:	\$170 590

### Project implementation

WattleJet decided to proceed with the ADS-B project. At the end of Year 1 (12 months), the project accountant completed an earned value analysis of the project as part of their budget and schedule monitoring activity. The accountant noted that the project was 60 per cent complete, and that \$200 000 had been spent in the year. The project was originally scheduled for completion in 16 months.









# Extended Response Solutions

## Case Study—WattleJet: Stakeholder analysis and strategic objectives

### Question 1(a)

You could have identified any **six** of the following:

Stakeholder	Resource provided	Value received or desired
Shareholder	Equity	Dividends and growth in share value
Financier	Loan	Interest and capital return
Suppliers	Airplanes and parts; airport services; fuel	Payment; repeat business
Government	Infrastructure—roads and airports; regulation	Taxes; transport infrastructure; jobs
Customer—leisure travel; business travel	Revenue	Travel; safety; economy; comfort; refreshments; luggage service; simple ticketing; on-time service; frequent service
Freight shipment		Economical and timely movement of freight
Management	Time and skill; support activities	Career opportunity; experience; wages
Workers—aircrew and ground crew	Time and skill; primary activities	Wages; job security; training; safety
Environment; community	Workers; air	Corporate social (and environmental) responsibility; reduced emissions

### Question 1(b)

According to the case:

WattleJet’s mission focused on providing safe, reliable and cost-effective commuting for workers employed on remote mining sites, with low overheads. Overarching goals include profitability, growth and safety.

The table below builds on this statement of mission and goals.

Stakeholder	Value	Strategic objective
Shareholder	Dividends and growth in share value	Create cash flow from operations through profitable growth in the business segment.
		Improve operational capability by acquisition of efficient and appropriate planes; to reduce fuel cost and improve load factor.
Financier	Interest and capital return	As above
Supplier	Payment; repeat business	Create cash flow from revenues and revenue growth through expansion into the WA tourism market.
Government	Taxes; transport infrastructure; jobs	As above with regard to both revenue and profit.
		Improve capabilities of employees to support growth.
		Seek partnership with state and local government to promote remote area tourism.
Customer—leisure travel; business travel; freight shipment	Transport; safety; economy; comfort; refreshments; luggage service; simple ticketing; on-time service; frequent service	Enhance IT and HR support services to improve booking, check in, baggage/freight service and improve logistics.
	Economical and timely movement of freight	Seek international partnership to provide flow through bookings.
Management	Career opportunity; experience; wages	Create cash flow from revenues and revenue growth to provide salary increase and career opportunities for managers.
Workers—aircrew and ground crew	Wages; job security; training; safety	Improve capabilities of employees to enhance their value to WattleJet.
		Create cash flow from revenues and revenue growth.
Environment; community	Corporate social (and environmental) responsibility; reduced emissions	Initiate quality prevention and appraisal activities to reduce emissions and improve safety.

### Question 1(c)

Strategy choice should be based on a strategic analysis like SWOT. The WattleJet case notes that little strategic analysis is carried out at WattleJet:

... the company does not have a formal approach to strategic management in terms of strategic plan, specific goals, objectives, timelines or data collection and analysis.

Later in the case however, a brief SWOT analysis is provided. This information is used to inform WattleJet's strategy. The SWOT analysis is reproduced below.

**Table SA5: WattleJet's SWOT analysis (abridged)**

<b>Strength</b>	<b>Weakness</b>
On-time operational efficiency.	Inability to influence some significant costs, including fuel expenses.
Relationships with companies involved in the mining industry.	Inability to maintain seat factor, with planes flying without enough passengers.
<b>Opportunities</b>	<b>Threats</b>
Economic growth and leisure travel in regional areas indicates growth opportunities for both current and new flight routes.	Decline in mining activity and profits will hurt regional air travel, especially in the business segment.
There has been an increase in passenger traffic between major capital cities in recent years.	A slowdown in the general economy will also reduce the number of leisure travellers going to regional destinations.

Porter's cost leadership, differentiation and focus strategy framework has been employed to create the strategies below. Given that the market is dominated by large, well-resourced companies like Qantas, a focus strategy is appropriate for WattleJet. Further, due to its unique business model—its remote area and WA location—a focus-differentiation strategy is indicated.



In the table below, strategies have been suggested for each of the strategic objectives identified in Question 1(b). Note that some strategies address multiple objectives. The relationship between objectives and strategies is, in reality, more complex than the implied linear relationship.

Strategic objective	Strategy
Create cash flow from operations through profitable growth in the business segment.	Promote tailored service to businesses operating in remote areas.
Improve operational capability by acquisition of efficient and appropriate planes; to reduce fuel cost and improve load factor.	<p>Seek partnerships with major remote area businesses to plan fleet requirements and flight logistics.</p> <p>Collaborate with aircraft manufacturers to acquire suitable planes likely to maximise the 'seat factor'.</p>
Create cash flow from revenue and revenue growth through selective expansion into the WA remote areas tourism market.	Promote WA tourism in collaboration with state government and tourism operators.
Seek partnership with state and local government to promote remote area tourism.	<p>Create 'special offers'.</p> <p>Introduce a zero-carbon ticketing option.</p>
Seek international partnership to provide flow through bookings.	<p>Promote eco-tourism packages in collaboration with remote area operators.</p> <p>Collaborate with overseas airlines like Japan Air to promote inbound tourism to remote WA, and share booking and other IT systems.</p>
Enhance IT and HR support services to improve booking, check in, baggage/freight service and improve logistics.	<p>Training in customer service for all staff.</p> <p>Aircrew training in the operation of aircraft systems.</p>
Improve capabilities of employees to enhance their value to WattleJet and to support growth.	<p>Ground crew training in the operation of airport systems.</p> <p>Improve efficiency and usability of IT systems.</p>
Create cash flow from revenues and revenue growth to provide salary increase and career opportunities for managers.	Introduce new business initiatives (as described above) to provide experiential and financial growth opportunities for managers.
Initiate quality prevention and appraisal activities to reduce emissions and improve safety	<p>Introduce the new ADS-B navigation system.</p> <p>Provide training in OHS and IT systems.</p>

## Case Study— WattleJet ADS-B navigation system

### Question 1(a)

Referring to Table SA9 in the WattleJet case, the total project investment outlay is \$235 000 + \$75 000 = \$310 000. This investment will be paid back from savings in Years 1, 2 and 3.

Table 1 shows fuel and other savings associated with an early upgrade to the ADS-B navigation system. Note that probabilities are provided in this table. These probabilities are associated with different levels of fuel cost, low levels of savings being associated with high future fuel costs and vice versa. Table 2 shows the calculation of the probability weighted cost saving.

As shown in the table below, the project pays back in Year 3. More accurately, the project pays back in the middle of Year 3 and the payback period is  $2 \text{ years} + 87670 / 170590 = 2.5 \text{ years}$ .

Payback calculation	Cash flows	Net cash flow
Original investment	-\$310 000	-\$310 000
Savings Year 1	79 790	-230 210
Savings Year 2	142 540	-87 670
Savings Year 3	170 590	82 920

### Question 1(b)

A payback period of 2.5 years is very long in relation to a project life of three years. This means that the project has only 0.5 years at the end of the project when it will be cash positive. This is a significant risk.

Note that a discounted payback, one that reflects the time value of money, can also be calculated for projects. However, because the net present value (NPV) of the ADS-B project is  $< 0$ , the project will never pay back in present value terms. This fact is important in evaluating the risk of the project. When a project fails to payback in present value terms, this is an indication (as is a negative NPV) that the project is likely to reduce rather than increase the value of WattleJet.

## Question 2

The table below updates the NPV calculation found in Table SA9 in the case study.

Year	0	1	2	3
Net cash flow	-235 000	4 790	142 540	170 590
Discount factor	1	1.13	$1.13^2 = 1.277$	$1.13^3 = 1.443$
Present value	-235 000	4 239	111 621	118 219
NPV	-921			

As can be seen, the new NPV (13%) is  $-\$921$ , so the sensitivity of the NPV to a 1 per cent decrease in the discount rate is:

$$\text{NPV (13\%)} - \text{NPV (14\%)} = -921 - -5791 = \$4870$$

**Comment on risk:** While the project is sensitive to WattleJet's WACC, and to interest rates in the broader economy, a sensitivity of \$4870 on a project investment of \$310 000 is quite small, only 1.6 per cent of project cost:

$$4870 / 310\,000 = 1.6\%$$

### Question 3

Earned value analysis requires the assumption that project costs are incurred evenly over the life of a project. For the ADS-B project, this is not unreasonable given the 16-month project schedule.

Earned value variance calculations are shown in the table below.

Earned value	Estimated completion × budgeted cost	60% × 310 000	\$186 000
Spending variance	Earned value—actual cost	186 000 – 200 000	–\$14 000
Schedule variance	Earned value—budget <sup>†</sup> cost	186 000 – 232 500	–\$46 500

<sup>†</sup> Budget cost =  $12 / 16 \times \$310\,000 = \$232\,500$ .

#### Comment:

The spending variance is unfavourable (–) and small. The project is 4.5 per cent ( $\$14\,000 / \$310\,000$ ) over budget.

The schedule variance is unfavourable (–) and large. The project is significantly behind schedule. The project is currently 60 per cent complete, but the original schedule anticipated that the project would be 12 / 16 or 75 per cent complete by the end of Year 1.