

**ACCA INTERIM ASSESSMENT**

**Performance  
Management  
December 2014**

**Time allowed**

Reading and planning: 15 minutes

Writing: 3 hours

This paper is divided into two sections:

Section A ALL TWENTY questions are compulsory and MUST be attempted.

Section B ALL FIVE questions are compulsory and MUST be attempted.

**The formulae are on page 3.**

**Do NOT open this paper until instructed by the supervisor.**

**During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.**

**This question paper must not be removed from the examination hall.**

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**Paper F5**

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## FORMULAE

### Learning curve

$$Y = ax^b$$

Where  $y$  = cumulative average time per unit to produce  $x$  units

$a$  = the time taken for the first unit of output

$x$  = the cumulative number of units produced

$b$  = the index of learning ( $\log LR/\log 2$ )

$LR$  = the learning rate as a decimal

### Demand curve

$$P = a - bQ$$

$$b = \frac{\text{Change in price}}{\text{Change in quantity}}$$

$a$  = price when  $Q = 0$

$$MR = a - 2bQ$$

## SECTION A

**ALL TWENTY questions are compulsory and must be attempted**

**Each question is worth 2 marks**

**1 The following statements have been made about Activity Based Costing:**

- (1) ABC provides much better insight into what drives overhead costs
- (2) All overheads can be allocated to specific activities
- (3) ABC can only be applied to production overheads

Which of the above statements is/are true?

- A (1) only
- B (2) only
- C Both (1) and (2)
- D All of the above

**2 P company manufactures several products and uses the principles of target costing. In a recent analysis it has been identified that product Z shows a gap between the target cost and the current expected cost.**

Which of the following would NOT help to close this cost gap?

- A Contact suppliers to renegotiate bulk discounts on raw materials
- B Employ less skilled labour at lower rates
- C Close the company canteen
- D Switch to a different type of raw material available at a lower price

**3 The following statements have been made about Throughput Accounting:**

- (1) Throughput accounting assumes both raw materials and direct labour are fully variable in the short term
- (2) Throughput accounting is usually applied to a JIT environment

Which of the above statements is/are true?

- A (1) only
- B (2) only
- C Neither (1) nor (2)
- D Both (1) and (2)

**4 Company C uses a throughput accounting system. The following information relates to product Z:**

- Selling price \$100
- Material cost \$32
- Conversion costs \$40
- Time on bottleneck resource 16 minutes

The return per hour for product Z is

- A \$105
- B \$225
- C \$255
- D \$375

**5 What is defined as 'an activity within an organisation which has a lower capacity than preceding or subsequent activities thereby reducing throughput'?**

- A Constraint
- B Limiting factor
- C Bottleneck
- D Restriction

**6 The following statements have been made about overheads:**

- (1) For long term variable overhead costs, the cost driver will be the volume of activity
- (2) A cost driver is any factor that causes a change in the cost of an activity
- (3) Traditional absorption costing tends to under-allocate overhead costs to low volume products

Which of the above statements is/are true?

- A (1) only
- B (3) only
- C None of the above
- D All of the above

**7 The following are types of cash flow involved in running a factory:**

- (i) Contribution from making and selling products
- (ii) Factory premises rent
- (iii) Head office premises rent allocated to this factory

Which of the above are relevant costs in the decision to close this factory?

- A (i) only
- B (i) and (ii) only
- C (i), (ii) and (iii) only
- D All of the above

**8 The following statements have been made about Cost-Volume-Profit analysis:**

- (1) CVP analysis allows for fluctuating selling prices
- (2) CVP analysis assumes productivity remains unchanged
- (3) CVP analysis assumes that the only factor affecting cost is volume

Which of the above statements is/are true?

- A (1) only
- B (2) only
- C (1), (2) and (3)
- D (2) and (3) only

**9 BBC Ltd sells three products. The budgeted fixed cost per period is \$475,000. The budgeted contribution to sales ratio (C/S ratio) and sales mix are as follows:**

<i>Product</i>	<i>C/S ratio</i>	<i>Sales mix</i>
X	24%	40%
Y	32%	37%
Z	48%	23%

What is the breakeven sales revenue?

- A \$1,462,438
- B \$154,280
- C \$1,283,783
- D \$228,000

**10 J company manufactures and sells a single product, XY for \$56 per unit. In March, budgeted volume was 7200 units, the margin of safety was 26.2%. The budgeted contribution to sales ratio is 21%.**

What are the budgeted fixed costs for March?

- A \$106,856
- B \$62,493
- C \$84,672
- D \$105,638

- 11 Blooms Co is using linear programming to decide how many units of each of its two products to make each week. Weekly production will be  $x$  units of Product X, and  $y$  units of Product Y. At least 50 units of X must be produced each week, and at least twice as many units of Y as of X must be produced each week. Each unit of X requires 30 minutes of labour, and each unit of Y requires two hours of labour. There are 5,000 hours of labour available each week.**

Which of the following is the correct set of constraints?

- A  $0.5x + 2y \leq 5,000$   
 $x \geq 50$   
 $y \leq 2x$
- B  $x + 4y \leq 5,000$   
 $x \geq 50$   
 $y \geq 2x$
- C  $0.5x + 2y \leq 5,000$   
 $x \geq 50$   
 $y \geq 100$
- D  $0.5x + 2y \leq 5,000$   
 $x \geq 50$   
 $y \geq 2x$

- 12 B Ltd makes three products X, Y and Z. The following information is available:**

	X	Y	Z
	\$	\$	\$
Direct materials	15	18	13
Direct wages (\$9/hr)	18	13.5	27
Variable o'heads	6	4.5	9
Selling price	52	49	56
Demand (units)	2,000	1,500	600

Labour is limited to 6000 hours.

How will these products be ranked in order to determine the optimum production plan?

- A Y,X,Z  
 B Y,Z,X  
 C X,Y,Z  
 D Z,X,Y
- 13 Fill in the blank in the following paragraph:**

The shadow price of a scarce resource indicates the amount by which contribution would .....if a business were deprived of one unit of the resource.

- 14** The maximum demand for a company's product M is 100,000 units per annum. The demand will be reduced by 40 units for every increase of \$1 in the selling price. The company has determined that profit is maximised at a sales volume of 42,000 units per annum.

The profit maximising selling price for product M is

- 15** ABC plc is about to launch a new product. Facilities will allow the company to produce up to 20 units per week. The marketing department has estimated that at a price of \$8,000 no units will be sold, but for each \$150 reduction in price one additional unit per week will be sold.

Fixed costs associated with manufacture are expected to be \$12,000 per week.

Variable costs are expected to be \$4,000 per unit for each of the first 10 units; thereafter each additional unit will cost \$400 more than the preceding one. The most profitable level of output per week for the new product is:

- A 10 units
  - B 11 units
  - C 13 units
  - D 14 units
- 16** The following statements have been made about price skimming:
- (1) Price skimming is most effective when selling goods which are considered necessities
  - (2) Price skimming can help a company to achieve a large market share in a short space of time
- Which of the above statements is/are true?
- A (1) only
  - B (2) only
  - C Neither (1) nor (2)
  - D Both (1) and (2)
- 17** A skincare range is being marketed. The more basic products such as cleanser and moisturiser are priced relatively low but enhanced products such as eye cream and serum are priced much higher.

What is this an example of?

- A Complementary product pricing
- B Product line pricing
- C Price skimming
- D Price discrimination



**18 Which expression is missing in the following sentence?**

'A joint product should be processed further past the split-off point if sales value minus post-separation (further processing) costs is ..... sales value at split-off point.'

- A 'greater than'
- B 'lower than'
- C 'equal to'
- D 'different from'

**19 The following are types of decision making technique useful when dealing with risk:**

- (i) Expected values
- (ii) Maximin
- (iii) Minimax regret

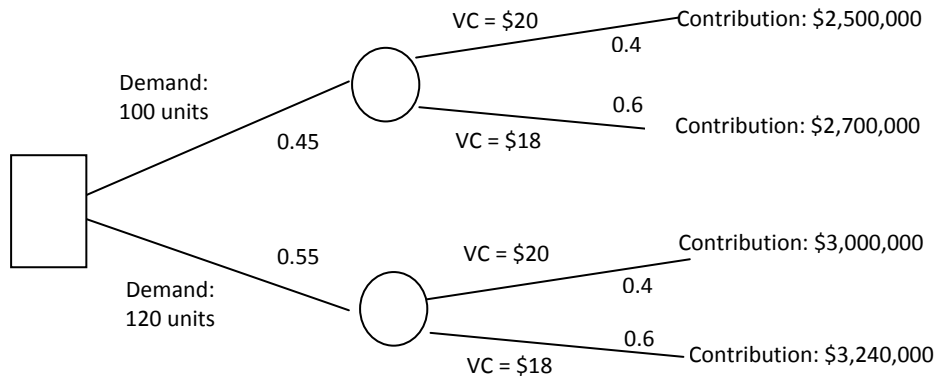
Which of the above are appropriate to use where the decision maker is risk neutral?

- A (i) only
- B (i) and (ii) only
- C (i) and (iii) only
- D All of the above

**20** Rose Ltd currently sells 90,000 units of a product called 'Amber Queen' every year. At this level of sales and output, the selling price and variable cost per unit are \$50, and \$21 respectively. There are no inventories. The annual fixed costs are \$1,200,000. The management team is considering lowering the selling price per unit to \$45.

At the new price of \$45, there is 45% chance that demand will reach 100,000 units and 55% chance that sales will reach 120,000 units. For both these sales/production levels, the variable cost per unit is forecast to reach \$18 (60% probability) or \$20 (40% probability.)

The management accountant has **correctly** drawn the following decision tree:



**What is the probability that lowering the selling price to \$45 per unit would increase profit?**

- A 0
- B 0.55
- C 0.82
- D 1

## SECTION B

### ALL FIVE questions are compulsory and MUST be attempted

- 1 Linacre Co operates an activity-based costing system and has forecast the following information for next year.

<i>Cost pool</i>	<i>Cost</i>	<i>Cost driver</i>	<i>Number of drivers</i>
Production set-ups	\$105,000	Set-ups	300
Product testing	\$300,000	Tests	1,500
Component supply and storage	\$25,000	Component orders	500
Customer orders and delivery	\$112,500	Customer orders	1,000

General fixed overheads such as lighting and heating, which cannot be linked to any specific activity, are expected to be \$900,000 and these overheads are absorbed on a direct labour hour basis. Total direct labour hours for next year are expected to be 300,000 hours.

Linacre Co expects orders for Product ZT3 next year to be 100 orders of 60 units per order and 60 orders of 50 units per order. The company holds no inventories of Product ZT3 and will need to produce the order requirement in production runs of 900 units. One order for components is placed prior to each production run. Four tests are made during each production run to ensure that quality standards are maintained. The following additional cost and profit information relates to product ZT3:

Component cost:	\$1.00 per unit
Direct labour:	10 minutes per unit at \$7.80 per hour
Profit mark up:	40% of total unit cost

**Required:**

- (a) Calculate the activity-based overhead absorption rates for each cost pool. (4 marks)
- (b) Calculate the total unit cost and selling price of Product ZT3. (6 marks)

(Total: 10 marks)

- 2** Pharaoh Ltd manufactures and sells three products with the following selling prices and variable costs:

<i>Sphinx</i>	<i>Pyramid</i>	<i>Mummy</i>	
	\$/unit	\$/unit	\$/unit
Selling price	3.00	2.45	4.00
Variable cost	1.20	1.67	2.60

The company is considering expenditure on advertising and promotion of the Sphinx. It is hoped that such expenditure, together with a reduction in the selling price of the product, would increase sales. Existing annual sales volume of the three products is:

Sphinx	460,000 units
Pyramid	1,000,000 units
Mummy	380,000 units

If \$60,000 per annum was to be invested in advertising and sales promotion, sales of Sphinx at reduced selling prices would be expected to be:

590,000 units at \$2.75 per unit

or 650,000 units at \$2.55 per unit

Annual fixed costs are currently \$1,710,000 per annum.

**Required:**

- (a) Calculate the current breakeven sales revenue of the business. (3 marks)**
- (b) Draw a multi-product profit/volume graph, assuming that the advertising and sales promotion does not go ahead. (7 marks)**

**(Total: 10 marks)**

- 3** MOC makes and sells two types of executive games, 'Metropolis' and 'Hedge Your Bets'. The company currently has a monopoly for both games. This factor combined with the high quality of the games and the luxury brand image has resulted in MOC being able to charge high prices for each of the games.

The management accountant is considering increasing the price for the Metropolis game and has produced the following information:

At the current selling price of \$55 per game, weekly sales of the Metropolis are 900 units.

If the price is increased to \$70 per game, weekly demand for the Metropolis will fall to 750 units.

The Hedge Your Bets game is sold in two distinct markets. The management accountant believes that there should be price discrimination. The price is currently \$80 per game in either market.

**Required:**

- (a) Explain the term 'price-discrimination'. (1 mark)
- (b) Find the linear relationship between price (P) and quantity demanded (Q) for the Metropolis game. (3 marks)
- (c) Calculate the price elasticity of demand (PED) for the Metropolis and comment on whether the revenue will increase or decrease if the price is increased from \$55 to \$70 per game. (2 marks)
- (d) Explain how the pricing strategy may change if new competitors enter the market. (4 marks)

(Total: 10 marks)



- (6) When not being used by the company, the printing press is hired to outside companies for \$6.00 per hour. This earns a contribution of \$3.00 per hour. There is unlimited demand for this facility.
- (7) Fixed production costs are those incurred by and absorbed into production, using an hourly rate based on budgeted activity.
- (8) The cost of the estimating department represents time spent in discussions with the village fair committee concerning the printing of its programme.

**Required:**

**Prepare a revised cost estimate using a relevant cash flow approach, showing clearly the minimum price that the company should accept for the order. Give reasons for each resource valuation in your cost estimate.**

**(15 marks)**

- 5** HPS is a UK company that is considering investing in a project named Quidditch Flyover ('QF') in 2015. The QF is a theme park consisting of a sports pitch and outdoors broom rides (fun rides).

HPS is considering two sites for the QF park: a location near London, or Edinburgh. The cost of acquiring the land and installing the equipment is expected to be \$10 million around London, and \$9 million for the Edinburgh site. The average cost of servicing each visitor (that is, providing rides, merchandise and food and drink) at both sites is estimated to be \$10.

In the United Kingdom, theme parks visitor numbers are always linked to the strength of the economy. Current forecasts for 2015 show a 0.4 chance of a strong economy, a 0.3 chance of a stable economy (i.e. at current 2014 levels) and a 0.3 chance of a weak economy.

Based on the above economic forecasts, market research survey shows that if HPS were to be situated in or around London, a strong demand would draw 1.2 million visitors a year, a stable demand would draw 1 million visitors and weak demand only 0.8 million visitors a year. Each visitor in London (where competition with other parks and attractions is fierce) is expected to spend \$23 on average: this comprises a \$9 entrance fee which includes access to fun rides, \$10 on souvenir merchandise and \$4 on food and drink.

If the park were to be located in Edinburgh, associated visitor numbers would however differ slightly from London levels: a strong economy would draw 1.5 million visitors, a stable economy 1.1 million visitors, and a weak economy would see 0.5 million visitors. Each visitor in Edinburgh is expected to spend \$25 on average: this comprises a \$10 entrance fee which includes access to fun rides, \$10 on souvenir merchandise and \$5 on food and drink.

**Required:**

- (a)** Using the criterion of Expected Values, prepare and fully label a decision tree that shows the two options available to HPS. Recommend the decision that HPS should make. You should clearly show the contribution gained from each investment in each economic state. **(12 marks)**
- (b)** A market research company has recently been in touch with the managers of HPS, and claimed it can guarantee perfect information about the economy and the associated levels of demand from QF visitors. Briefly explain the difference between 'perfect information' and 'imperfect information'. **(3 marks)**

**(Total: 15 marks)**