

ACCA REVISION MOCK B

Performance Management

December 2017

Time allowed: **3 hours 15 minutes**

Answer **ALL** questions

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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 = 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 15 questions are compulsory and MUST be attempted****Each question is worth 2 marks**

- 1** The following is relevant for a production process for the January 2016 period:

Direct material costs	\$12,000
Direct labour costs	\$5,000
Overheads	\$3,000
Total costs	\$20,000

The process produces joint products 'A' and 'B', which are then sold at \$3.00 for an 'A' and \$4.00 for a 'B'. In January 2016, all units produced were sold, i.e. 3,000 units of 'A' and 9,000 units of 'B'.

What was the cost of sales for Product 'B' for the January 2016 period, assuming joint costs are apportioned by market value?

- A \$4,000
B \$5,000
C \$15,000
D \$16,000
- 2** Company B uses a throughput accounting system. The details of product X per unit are as follows:

Selling price	\$50
Material cost	\$20
Conversion costs	\$20
Time on bottleneck resource	8 minutes

What is the return per hour for product X?

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

3 The following are types of management accounting techniques:

- (i) Flow cost accounting
- (ii) Throughput accounting
- (iii) Input/output analysis
- (iv) Activity-based costing

Which of the above techniques could be used by a company to account for its environmental costs?

- A (i) only
- B (i) and (ii) only
- C (i), (iii) and (iv) only
- D (i), (ii) and (iii) only

4 A company knows that for every \$10 they increase the price of their product by, demand falls by 20 units. Currently, the company is selling 1,000 units at a price of \$200 each. The variable cost of production is \$140 per unit.

What is the selling price that will maximise profit?

- A \$410
- B \$420
- C \$430
- D \$440

5 Artemis Ltd makes and sells a single product. Details for the month of April are that it planned to sell 1,000 units at a unit price of \$200 which would give a contribution to sales ratio of 30%.

Actual sales were 1,100 units at a selling price of \$190. The actual contribution to sales ratio was 25%.

What is the sales volume contribution variance (to the nearest \$1)?

- A \$11,000 (A)
- B \$6,000 (A)
- C \$6,000 (F)
- D \$11,000 (F)

6 The following statements have been made in relation to activity-based costing:

- (1) ABC is most useful where production overheads are high relative to direct costs.
- (2) ABC is especially useful where there is considerable diversity of overhead resource input to products.

Which of the above statements is/are true?

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

7 The following statements have been made about the Building Block Model as proposed by Fitzgerald and Moon:

- (1) Its determinants include quality, innovation, flexibility and resource utilisation.
- (2) Its standards for performance measurement systems are ownership, achievability, and equity.

Which of the above statements is/are true?

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

8 Division C has the following financial performance:

Operating profit	\$40,000
Total assets	\$150,000
Cost of borrowing	10%

Which ONE of the following statements is true?

- A The manager of Division C will accept a new possible investment costing \$10,000 which would earn a profit of \$2,000 if evaluation is on the basis of the Return On Investment.
- B The manager of Division C will accept a new possible investment costing \$10,000 which would earn a profit of \$2,000 if evaluation is on the basis of the Residual income.
- C The manager of Division C will always accept a new possible investment costing \$10,000 which would earn a profit of \$2,000, regardless of the evaluation basis.
- D The manager of Division C will never accept a new possible investment costing \$10,000 which would earn a profit of \$2,000, regardless of the evaluation basis.

- 9** The following statements have been made about target costing:
- (1) It is a method not well suited for service businesses where most of the costs are fixed.
 - (2) It is a costing method that ensures that new product R&D costs are recovered in the target price for the product.

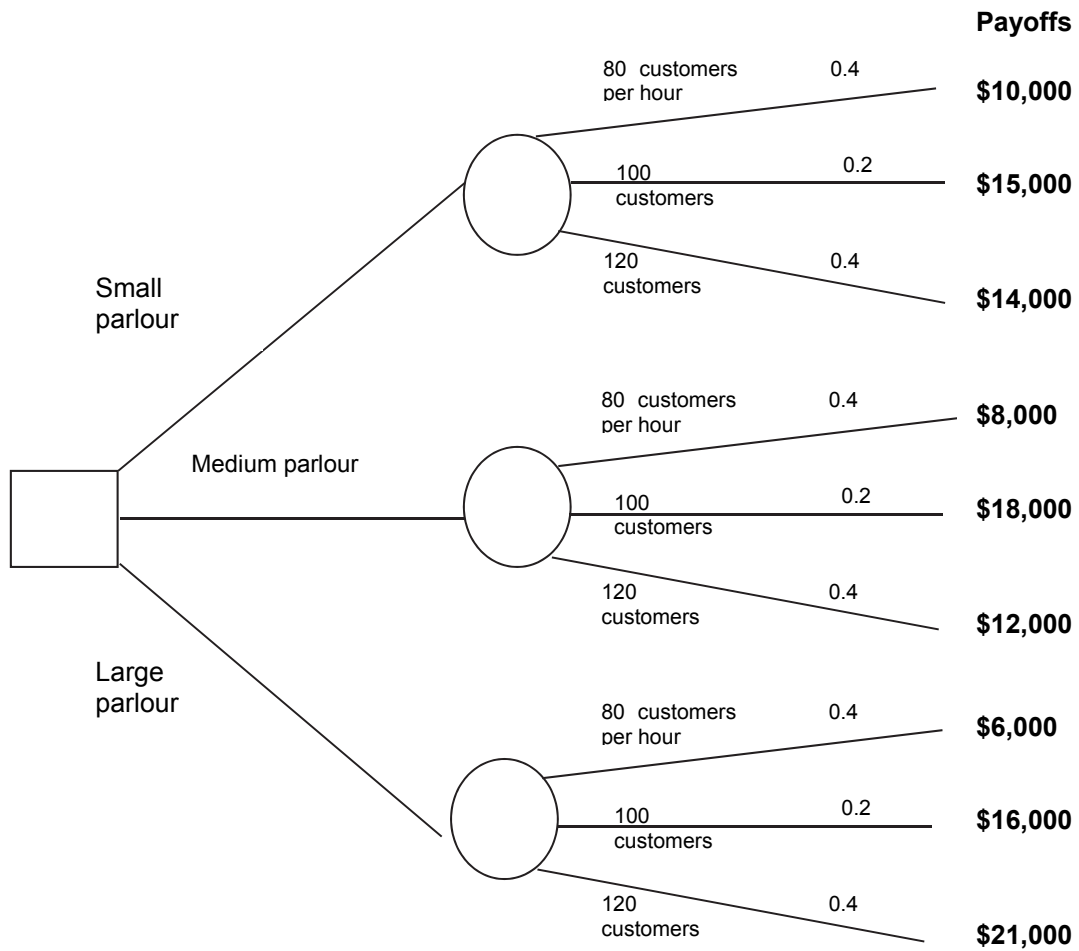
Which of the above statements is/are true?

- A (1) only
 - B (2) only
 - C Neither (1) nor (2)
 - D Both (1) and (2)
- 10** The following statements have been made about variances:
- (1) Favourable variances are always good for an organisation.
 - (2) Variance reporting is the comparison of actual results with the original budget.

Which of the above statements is/are true?

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

11 The following decision tree has correctly been drawn for Mr Angelo, who is contemplating opening a new ice cream parlour in Central London, but has to decide on its size:



Which of the following restaurant sizes should be chosen, based on the expected values of the payoffs?

- A Small parlour
- B Medium parlour
- C Large parlour
- D Cannot be determined without more information

12 The following statements have been made about management control reports:

- (1) Reports should not include information about uncontrollable items.
- (2) Only encryption can be used to ensure the security of highly confidential information.

Which of the above statements is/are true?

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

- 13** A company has budgeted sales revenue of \$500,000 for January 2015, with an associated contribution of \$275,000. Fixed production costs are \$137,500, and fixed selling costs amount to \$27,500.

What is the breakeven sales revenue?

- A \$165,000
- B \$250,000
- C \$300,000
- D \$366,667

- 14** The following statements have been made about the variances in JIT/TQM environments:

- (1) JIT and TQM environments limit the value of variance analysis, because price variations are only one component of total cost.
- (2) JIT and TQM environments limit the value of variance analysis, because variances emphasise the benefits of following standard work instructions, rather than encouraging employees to adopt an innovative approach.

Which of the above statements is/are true?

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

- 15** A government is looking at assessing state schools by reference to a range of both financial and non-financial factors, one of which is average class sizes.

Which of the three E's best describes the above measure?

- A Economy
- B Effectiveness
- C Efficiency
- D Externality

SECTION B

All 15 questions are compulsory and **MUST** be attempted.

Each question is worth 2 marks.

The following scenario relates to questions 16–20

Anderson Ltd has a single production process for which the following costs have been estimated for the period ending 31 December 2015:

Material receipt and inspection cost: \$15,600

Power cost: \$19,500

Material handling cost \$13,650

Three products X, Y and Z are produced by workers who perform a number of operations on material blanks using hand held electrically powered drills. The workers have a wage rate of \$9 per hour.

The following budgeted information has been obtained for the period ending 31 December 2015:

	Product X	Product Y	Product Z
Production quantity (units)	2,000	1,500	800
Batches of material	10	5	16
Direct material per unit, in m ²	4 m ²	6 m ²	3m ²
Direct material per unit, in \$	\$5	\$3	\$6
Direct labour, in minutes	24	40	60
Number of power drill operations per unit	6	3	2

Overhead costs for material receipt and inspection, process power and material handling are presently each absorbed by product units using rates per direct labour hour. An activity based costing investigation has revealed that the cost drivers for the overhead costs are as follows:

- Material receipt and inspection: number of batches of material.
- Process power: number of power drill operations.
- Material handling: quantity of material (sq. metres) handled.

16 Using the existing method for the absorption of overhead costs, what is the budgeted product cost per unit for product X?

- A \$7.50
- B \$12.50
- C \$16.10
- D \$18.00

- 17 Using an activity-based costing (ABC) method for the absorption of overhead costs, what is the budgeted product cost per unit for product X?**
- A \$8.56
 - B \$16.10
 - C \$18.12
 - D \$20.40
- 18 The following statements have been made regarding the use of ABC in Anderson Ltd:**
- (1) With ABC, pricing in Anderson Ltd can be based on more realistic data.
 - (2) With ABC, decision-making in Anderson Ltd will be improved.
 - (3) With ABC, performance management in Anderson Ltd will be improved.
- Which of the above statements is/are true?**
- A (1) only
 - B (1) and (3) only
 - C All statements are correct
 - D No statements are correct
- 19 Which of the following statements about ABC are correct?**
- (1) ABC can only be applied to production overheads.
 - (2) ABC provides a more accurate cost per unit, and as a result pricing should be improved.
 - (3) ABC recognises that overhead costs are not all related to production and sales volume.
 - (4) ABC will be of limited benefit if the overhead costs are primarily volume related, or if the overheads represent a small proportion of the overall cost.
- A (1) and (2)
 - B (1) and (4)
 - C (2), (3) and (4)
 - D (1), (2), (3) and (4)
- 20 Which TWO of the following statements about ABC are correct?**
- (1) ABC can only be used to analyse the past, not to make decisions about the future.
 - (2) The benefits of ABC will always outweigh the costs of implementing the system.
 - (3) ABC can be used within both service and manufacturing industries.
 - (4) ABC is of less benefit if the majority of the costs suffered by an organisation are variable costs.
- A (1) and (2)
 - B (1) and (4)
 - C (2) and (3)
 - D (3) and (4)

The following scenario relates to questions 21–25

Product 'Hale' is a highly perishable commodity which can be sold on the retail market for \$20 per case or for animal food at \$1 per case. 'Hale' costs \$10 per case from the wholesale market and is only suitable for sale at the retail market for up to 24 hours after purchase. Orders for 'Hale' must be placed in advance each day.

Rebecca, a market stall owner, has kept the following records of sales of the 'Hale' over the past 50 days:

Daily sales	Days sold
10 units	15
20 units	25
30 units	10

The following summary payoff table has been correctly drawn:

		<i>Supply of cases</i>			
		<i>Probability</i>	<i>10 cases</i>	<i>20 cases</i>	<i>30 cases</i>
Daily demand					
10 cases	0.3	\$100	\$10	(\$80)	
20 cases	0.5	\$100	\$200	\$110	
30 cases	0.2	\$100	\$200	\$300	

21 How many cases should Rebecca supply if she uses the expected value criteria as a decision rule?

- A 10 cases
- B 15 cases
- C 20 cases
- D 30 cases

22 How many cases should Rebecca supply if she uses the maximin decision rule?

- A 10 cases
- B 15 cases
- C 20 cases
- D 30 cases

23 How many cases should Rebecca supply if she uses the maximax decision rule?

- A 10 cases
- B 15 cases
- C 20 cases
- D 30 cases

- 24 How many cases should Rebecca supply if she uses the minimax regret decision rule?**
- A 10 cases
 - B 15 cases
 - C 20 cases
 - D 30 cases
- 25 The following statements have been made regarding the use of expected values in decision making:**
- (1) The expected value may not be a possible outcome.
 - (2) The expected value is an average value that may not be useful for a one off project.
 - (3) With expected values, the spread of possible outcomes (i.e. the risk) is not shown.
- Which of the above statements is/are true?**
- A (1) only
 - B (1) and (3) only
 - C All statements are correct
 - D No statements are correct

The following scenario relates to questions 26–30

Company A has just completed the first three months of producing Product Z, and is considering performing some labour variance analysis. The standard cost per Z for labour (@\$5/ hour) is \$200.

- 26 Which of the following sentences about labour variance analysis are true?**
- (1) Costs are not a factor to consider when deciding whether a variance should be investigated.
 - (2) All labour variances should be investigated.
 - (3) Implementing a Just in Time system will affect the labour efficiency variance.
 - (4) Reliability of figures is a factor to consider when deciding whether a variance should be investigated.
- A (1), (2) and (3)
 - B (1) and (4)
 - C (2) and (4)
 - D (3) and (4)

27 The following data is available for the first month of production:

Actual hours worked: 400

Number of units made: 200

The standard cost per hour was set without considering the 90% learning curve rate.

What is the planning variance to the nearest \$?

- A \$4,425 F
- B \$4,425 A
- C \$22,125 F
- D \$22,125 A

28 The company is analysing the data for month 3. The 90% learning curve arose only for the first 400 units and in month 3, when a steady state is then achieved. When units 401–650 were produced, each unit took the same amount of time as the 400th unit.

How long did it take to produce units 401 to 650?

- A 3,412.50 hours.
- B 6,422.65 hours
- C 6,435.50 hours
- D 7,218.22 hours

29 When units 401–650 were produced in month 3, the company paid for 5,250 hours and the work force worked 4,500 hours. The company had expected 1,050 hours of idle time for Month 3.

What was the idle time variance to the nearest \$?

- A \$0
- B \$1,500 A
- C \$1,500 F
- D \$4,500 A

The management of Company A are uncertain as to the benefit of calculating planning and operational variances.

30 Which TWO of the following statements are correct?

- (1) Planning variances are of more use in a changing industry.
 - (2) Planning variances will not result in managers changing the assumptions in future budgets.
 - (3) Standard costing is less suited to organisations that produce non-homogenous products or where the level of human intervention is high.
 - (4) Planning variances do not need to be investigated.
- A (1) and (3)
 - B (1) and (2)
 - C (2) and (4)
 - D (3) and (4)

SECTION C

Both questions are compulsory and MUST be attempted

- 31** Paint Mixers Inc manufactures and sells a range of paints, including a high performance green paint that will attach to any surface without flaking or peeling.

The purchasing manager is responsible for buying the three ingredients (blue paint, yellow paint and a specialist bonding agent) that are used to make green paint whilst the production manager is responsible for mixing the paints and the volume and quality of green paint that is produced. Both the purchasing manager and the production manager joined the company on January 1st in the current year.

The standard ingredients of the green paint mix are as follows:

2 litres blue paint @ \$2.5 per litre = \$5.00

7 litres yellow paint @ \$3.0 per litre = \$21.00

1 litre bonding agent @ \$10.0 per litre = \$10.00

Total cost to produce 9 litres of green paint = \$36.00

Standard cost of one litre of green paint = \$4.00

The Managing Director wishes to compare the performance of the purchasing manager and the production manager during their first three months at the company. The Sales Director has commented that sales are significantly up and appear to be on a rising trend, customers being very happy with the quality of the paint they have purchased in the first quarter of the year.

The Finance Director has produced the table below showing the variance results for the first three months of the year.

	January	February	March
Material Price variance	\$3,000 (A)	\$2,000 (A)	\$1,000 (A)
Material Mix variance	\$2,000 (A)	\$750 (A)	\$100 (F)
Material Yield variance	\$4,000 (A)	\$2,000 (A)	\$50 (F)
Total variance	\$9,000 (A)	\$4,750 (A)	\$850 (A)

Production activity levels throughout the period varied little and the standard monthly material total cost was approximately \$20,000.

Required:

- (a) Compare the performance of the purchasing manager and the production manager taking into account the cost variance results and the comments of the Sales Director. (11 marks)

- (b) The Finance Director has provided the following data in relation to April's production of 5,000 litres of green paint.

1000 litres blue paint @ \$2.6 per litre = \$2,600

4000 litres yellow paint @ \$3.1 per litre = \$12,400

500 litres bonding agent @ \$9.9 per litre = \$4,950

5500 litres = \$19,950

Calculate the material price, mix and yield variances for the month of April.

(9 marks)

(Total: 20 marks)

- 32** The following information relates to Success Services Co, a provider of productivity-improving software to small and medium sized businesses.

The company was founded by and is wholly owned by David Speed. David Speed was MD of the business until the end of last year, when he handed over control to his son, Michael Speed. Michael has an MBA and at the start of the current year introduced a number of initiatives aimed at giving greater authority and incentives to middle management.

You have been provided with financial information relating to the company in Appendix 1. In Appendix 2 you have been provided with non-financial information which is based on the balanced scorecard format.

Appendix 1: Financial information

	Current year	Previous year
Turnover (\$000)	4,900	3,400
Net profit	987	850
Interest cover	3 times	5 times
Average trade receivables days (industry average 40 days)	42	30

Appendix 2: Balanced Scorecard (extract)

Customer perspective	Current year	Previous year
Number of customers	910	620
% of sales from new software products	24%	15%
% on time installation of software products	47%	65%
Average value of software sales	4,180	5,300
% customers who complained	4.5%	1.5%
Internal perspective	Current year	Previous year
% of tenders for new business won	38%	24%
Average number of bugs per 1,000 lines of code	64	48
Average annual number of lines of code written by each programmer	4,800	4,200
Learning and growth perspective	Current year	Previous year
%age of staff who have completed a software development course	10%	18%
Employee retention rate	75%	90%
Number of new software products launched	2	0

Required:

- (a) Using the information in Appendix 1 only, assess the financial performance of the company (briefly consider growth, profitability, gearing and credit management) and provide a concluding comment on the overall performance of the business.

(10 marks)

- (b) Using the data from Appendix 2 assess the performance of the business. Include separate comments on the three perspectives, customer, internal and learning and growth, and provide a concluding comment on the overall performance of the business.

(10 marks)

(Total: 20 marks)