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# ACCA – Paper F5 Performance Management December 2015 Revision Mock

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## Marking Report

### Notice to Markers

- 1 When commenting about the script performance, please ensure on individual questions and on overall assessment your comments cover areas of examination technique including:

<ul style="list-style-type: none"><li>• Time management</li></ul>	<ul style="list-style-type: none"><li>• Handwriting</li></ul>	<ul style="list-style-type: none"><li>• Presentation and layout</li></ul>	<ul style="list-style-type: none"><li>• Use of English</li></ul>
<ul style="list-style-type: none"><li>• Points clearly and concisely made</li></ul>	<ul style="list-style-type: none"><li>• Relevance of answers to question</li></ul>	<ul style="list-style-type: none"><li>• Coverage and depth of answer</li></ul>	<ul style="list-style-type: none"><li>• Accuracy of calculations</li></ul>
<ul style="list-style-type: none"><li>• Calculations cross-referenced to workings</li></ul>	<ul style="list-style-type: none"><li>• All parts of the requirement attempted</li></ul>	<ul style="list-style-type: none"><li>• Length of answers equates to marks available</li></ul>	<ul style="list-style-type: none"><li>• Read the question carefully</li></ul>

- 2 For each question, please provide suitable constructive comments

Question Number	General Comments	Exam Technique Comments

ACCA REVISION MOCK

# Performance Management

December 2015

Time allowed Reading time: **15 minutes**

Writing time: **3 hours**

**Answer ALL questions**

**Do not open this paper until instructed by the supervisor**

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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

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

$x$  = The cumulative number of units produced

$b$  = learning 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 is relevant for a production process for the January 2015 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 2015, 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 2015 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 statements have been made about shadow prices:

- (1) Non-critical constraints will have zero shadow prices, as slack exists already.
- (2) The shadow price of a resource can be found by calculating the increase in value which would be created by having obtained one additional unit of a limiting resource at its original cost.

**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** 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

**5** 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

- 6 The following statements have been made in relation to activity-based costing:
- (1) Traditional absorption costing tends to over-estimate overhead costs for high-volume products.
  - (2) Cost pools are factors which cause a change in the cost of an activity.

**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 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)
- 8 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)



9 GG Co Ltd produces a range of products. The details for product X are shown below.

The following is the standard material input for 100 kg of output:

<i>Material</i>	<i>Volume</i> kg	<i>Standard cost/kg</i> \$	<i>Standard cost</i> \$
A	50	10.00	500
B	25	8.00	200
C	10	7.00	70
D	40	15.00	600
	125		1,370

During October, GG Co. Ltd produced 8,000 kg of product X using the following materials:

<i>Material</i>	<i>Volume</i> kg	<i>Actual cost/kg</i> \$
A	4,200	10.50
B	2,200	8.20
C	820	7.30
D	3,180	14.30

**What is the total materials yield variance for October?**

- A \$944 (F)
- B \$944 (A)
- C \$4,384 (F)
- D \$4,384 (A)

10 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)

**11** 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.

**12** 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)

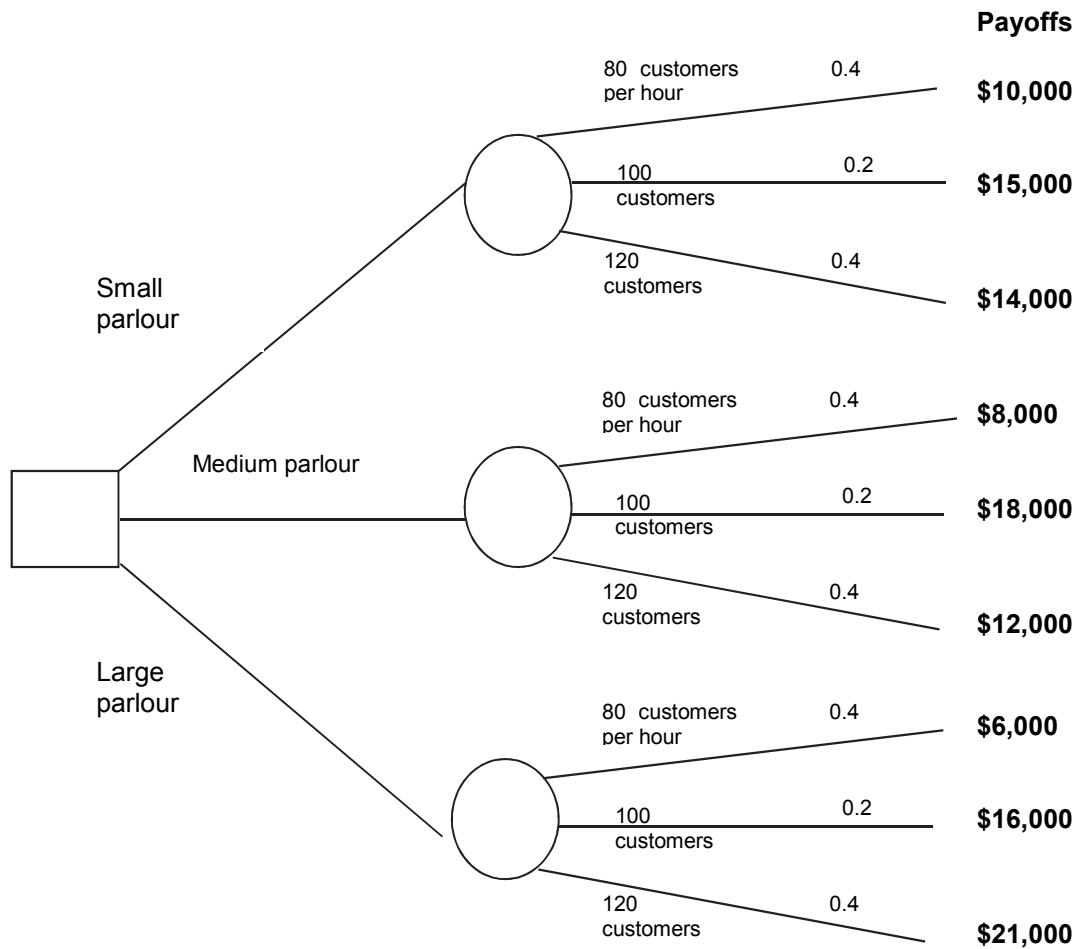
**13** The following statements have been made about variances:

- (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)

- 14 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
- 15 S Company has been investigating the time taken to produce one of its products, and found that a 90% learning curve appears to be applicable. The time taken for the first unit is 7 hours.

What is the total time taken in hours for units 5 to 8 only?

- A 17.078 hours
- B 18.144 hours
- C 19.590 hours
- D 20.142 hours

- 16** A division of a company has capital employed of \$2m and its return on capital is 12%. It is considering a new project requiring capital of \$500,000 and is expected to yield profits of \$90,000 per annum. The company's interest rate is 10%.

**If the new project is accepted, what will the residual income of the division?**

- A \$40,000
- B \$80,000
- C \$30,000
- D \$330,000

- 17** The following statements have been made 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)

- 18** 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

- 19** 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)

- 20** 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 FIVE questions are compulsory and MUST be attempted.**

- 1** Anderson Ltd has a single production process for which the following costs have been estimated for the period ending 31 December 2014:

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 2014:

	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 <sup>2</sup>	4 m <sup>2</sup>	6 m <sup>2</sup>	3m <sup>2</sup>
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.

**Required:**

- (a) Prepare a summary which shows the budgeted product cost per unit for each of the products X, Y and Z for the period ending 31 December 2014, using the existing method for the absorption of overhead costs. (2 marks)
- (b) Prepare a summary which shows the budgeted product cost per unit for each of the products X, Y and Z for the period ending 31 December 2014, using an approach which recognises the cost drivers revealed in the activity based costing investigation. (6 marks)
- (c) Briefly discuss the implications of Anderson making the decision to switch to ABC. (2 marks)

**(Total: 10 marks)**

- 2 Salem Ltd manufactures and sells brake and suspension components used in the car industry. Some components are sold through garages to the public, but the bulk are sold direct to car manufacturers. In particular, Salem has provided components for many years to Proctor Motors, its largest client, who takes 40% of Salem’s output. Pricing has always been based on full production cost plus 25%.

Intense competition within the car industry has seen Salem’s market share decline, and last year it only operated at 70% capacity. Salem’s clients have not been immune to industry pressure either and recently Proctor Motors was bought out by a multinational manufacturer. The new owners have decided that the component contract would now be put out to tender each year and have made it clear that price, while not the only consideration, would be a major factor in deciding on the preferred supplier.

The management accountant of Salem has put together the following cost schedule for the Proctor contract for the next year:

		\$000
Materials	Note 1	5,000
Labour	Note 2	2,000
Variable overheads		1,000
Fixed overheads	Note 3	2,000
		<b>10,000</b>

**Note 1:** There is currently \$500,000 of materials inventory, which was bought for \$650,000 a year ago. If not used on Proctor Motor components, this would be sold to a third party, but incur a net loss (after delivery charges are taken into account) of \$100,000. The rest of the material needed can be bought on the market without any difficulty.

**Note 2:** Proctor Motors components are highly specialised. If the contract was lost, then all of the current staff making Proctor components would have to be made redundant. Currently, this direct labour is employed full time with no spare capacity at a total cost of \$2,000,000 per annum. Redundancy costs are estimated to be \$500,000 now, or \$600,000 in one year’s time.

**Note 3:** Fixed overheads consist of unavoidable companywide apportioned costs and depreciation. If the contract is lost, then machinery would be sold for \$600,000 now, or \$450,000 in one year.

**Required:**

**Prepare, on a relevant cost basis, the lowest cost estimate which could be used as the basis for the quotation to complete the Proctor contract for another year, and suggest a minimum tender price. Explain briefly your reasons for including or excluding each of the costs in your estimate.**

**(Total: 10 marks)**

- 3** 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

**Required:**

- (a) Prepare a summary payoff table that shows the forecast value of profits or losses earned by Rebecca for each possible outcome on the retail market. (4 marks)
- (b) Advise Rebecca on the number of cases she should supply:
- (i) On the basis of maximising expected value
  - (ii) On the basis of using the maximin criteria
  - (iii) On the basis of using the maximax criteria. (3 marks)
- (c) Use minimax regret to advise Rebecca. (3 marks)
- (Total: 10 marks)**

- 4** 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 = \$ 36.0

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. (10 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 April. (5 marks)

(Total: 15 marks)

5 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 nonfinancial 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)**

<b>Customer perspective</b>	<b>Current year</b>	<b>Previous year</b>
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%
<b>Internal perspective</b>	<b>Current year</b>	<b>Previous year</b>
Number of new software products launched	2	0
% of tenders for new business won	38%	24%
<b>Learning and growth perspective</b>	<b>Current year</b>	<b>Previous year</b>
Average annual number of lines of code written by each programmer	4,800	4,200
Average number of bugs per 1,000 lines of code	64	48
%age of staff who have completed a software development course	10%	18%
Employee retention rate	75%	90%

**Required:**

- (a) Using the information in Appendix 1 only, comment on the financial performance of the company (briefly consider growth, profitability, gearing and credit management). (7 marks)
- (b) Using the data from Appendix 2 comment on 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. (8 marks)

(Total: 15 marks)