

**Series 3 Examination 2007**

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## **MANAGEMENT ACCOUNTING**

**Level 3**

**Tuesday 12 June**

Subject Code: 3023

Time allowed: **3 hours**

### **INSTRUCTIONS FOR CANDIDATES**

- Answer **5** questions.
- All questions carry equal marks.
- Write your answers in blue or black ink/ballpoint. Pencil may be used only for graphs, charts, diagrams, etc.
- All workings must be shown.
- All answers must be correctly numbered but need not be in numerical order.
- You may use a calculator provided the calculator gives no printout, has no word display facilities, is silent and cordless. The provision of batteries and their condition is your responsibility.

## QUESTION 1

(a) Different types of standard may be set in a standard costing system.

### REQUIRED

Explain the meaning and usefulness of:

- (i) attainable standards (3 marks)
- (ii) ideal standards. (3 marks)

(b) The behaviour of participants in a budgetary planning and control system will be an important factor influencing the effectiveness of the system.

### REQUIRED

Discuss the human behavioural problems that may arise in the operation of a budgetary planning and control system.

(8 marks)

(c) Identification of the principal budget factor is an important element in the budgeting process.

### REQUIRED

- (i) Define the term 'principal budget factor' and give an example (3 marks)
- (ii) Explain the importance of the principal budget factor. (3 marks)

**(Total 20 marks)**

## QUESTION 2

A company manufactures and sells a single product. The budgeted profit statement for the first trading period is set out below.

<b>Budgeted Profit Statement</b>		
	<b>£</b>	<b>£</b>
Sales		120,000
Production cost of sales:		
Cost of production	86,700	
Closing stock	<u>(1,700)</u>	<u>85,000</u>
Gross profit		35,000
Non-production overheads		<u>21,000</u>
Net profit		<u>14,000</u>

Notes:

- (i) Budgeted sales and production are 10,000 units and 10,200 units respectively
- (ii) It is estimated that the cost of production would total £83,060 if 9,500 units were produced
- (iii) Non-production overheads are fixed costs.

### REQUIRED

- (a) Applying the high-low method to the above estimates of production costs, calculate:
- (i) the variable production cost per unit (3 marks)
  - (ii) the total fixed production cost in the period. (2 marks)
- (b) Prepare a revised budgeted profit statement for the period using marginal costing. (8 marks)
- (c) Explain fully, supported by appropriate calculations, how and why the net profit in the statement set out in the question above differs from that calculated in answer to part (b). (7 marks)

**(Total 20 marks)**

### QUESTION 3

A company has three products (Product A, Product B and Product C). Selling price and variable costs of the products are as follows:

	<b>Product A</b> <b>£ per unit</b>	<b>Product B</b> <b>£ per unit</b>	<b>Product C</b> <b>£ per unit</b>
Selling price	6.00	9.00	4.60
Direct materials:			
Material X	1.20	2.40	0.48
Other materials	0.60	1.00	0.52
Direct labour	1.50	2.40	1.20

Maximum available supplies of Material X (costing £6.40 per kg) and hours of direct labour (paid at £8.00 per hour) are expected to be 4,500 kg and 3,780 hours respectively in the following period. Other materials are freely available.

Sales demand in the following period is expected to be:

- Product A 8,000 units
- Product B 6,000 units
- Product C 5,400 units

### REQUIRED

For the following period:

- (a) Determine the limiting factor. Show calculations clearly and fully justify your conclusion. (7 marks)
- (b) Prepare a production schedule with the objective of maximising profit. (9 marks)
- (c) Calculate the contribution of each product, and the total contribution, if the production schedule in your answer to part (b) above is followed. (4 marks)

**(Total 20 marks)**

#### QUESTION 4

The following incomplete information is available for two periods:

	<b>Period 1</b>	<b>Period 2</b>
<b>Budget:</b>		
Sales and production units	15,600	18,000
Sales revenue (£)	187,200	219,600
Variable cost of sales (£)	106,080	127,800
<b>Actual:</b>		
Sales and production units	16,220	
Sales revenue (£)		214,865
Variable cost of sales (£)	111,438	
<b>Variances:</b>		
Sales volume contribution variance (£)		2,346 A
Selling price variance (£)	2,433 F	

A = Adverse

F = Favourable

#### REQUIRED

(a) Calculate, for **Period 1**, the:

- (i) Budgeted selling price per unit (1 mark)
- (ii) Budgeted contribution per unit (2 marks)
- (iii) Actual selling price per unit (3 marks)
- (iv) Sales volume contribution variance (3 marks)
- (v) Variable cost variance. (3 marks)

(b) Calculate, for **Period 2**, the:

- (i) Actual sales units (4 marks)
- (ii) Selling price variance. (4 marks)

**(Total 20 marks)**

## QUESTION 5

A company is considering a capital investment in order to increase profits over an expected project life of 5 years. The project would require an initial investment of £440,000 followed by expected incremental profits for the 5 years as follows:

Year 1	£20,000
Year 2	£40,000
Year 3	£70,000
Year 4	£55,000
Year 5	£30,000

The above profit figures, which are all in 'current' £ prices, are net of straight-line depreciation of the investment assuming a residual value at the end of Year 5 of £65,000 (in 'current' £ prices).

Price inflation of 5% per annum is anticipated and the company's cost of capital, in 'money' (as opposed to 'real') terms is 15% per annum.

Discount factors:

	<b>10%</b>	<b>15%</b>	<b>20%</b>
Year 1	0.909	0.870	0.833
Year 2	0.826	0.756	0.694
Year 3	0.751	0.658	0.579
Year 4	0.683	0.572	0.482
Year 5	0.621	0.497	0.402

## REQUIRED

(a) Calculate, for the capital investment project, the:

- (i) accounting rate of return (on average investment) (3 marks)
- (ii) undiscounted payback period (4 marks)
- (iii) net present value (5 marks)
- (iv) internal rate of return. (4 marks)

(b) State whether, and explain why, the capital investment project is, or is not, worthwhile:

- (i) on the basis of net present value (2 marks)
- (ii) on the basis of internal rate of return. (2 marks)

**(Total 20 marks)**

## QUESTION 6

A company has two divisions, Division DA and Division DB. Division DA manufactures a component (Component C3) which is used by Division DB in the manufacture of one of its products (Product P9).

14,000 units of Component C3 are used by Division DB per period. One unit of Component C3 is required for each unit of Product P9. Variable costs are as follows:

	<b>Component C3</b>	<b>Product P9</b>
Division DA	£15.20 per unit	-----
Division DB (excluding Component C3)	-----	£24.70 per unit

Fixed costs of Division DA apportioned to Component C3 per period are £154,000. The transfer price is established as total cost + 30%.

The selling price of Product P9 is £90.00 per unit.

### REQUIRED

(a) Calculate:

- (i) the transfer price of Component C3 (2 marks)
  - (ii) the contribution per unit of:
    - Component C3 to Division DA
    - Product P9 to Division DB
    - Product P9 to the company (6 marks)
- (b) Determine the effect on the contribution per unit of Product P9 to the company in each of the following circumstances:
- (i) if the basis for the transfer price is changed to total cost + 40% (2 marks)
  - (ii) if the volume per period increases to 15,000 units (2 marks)
  - (iii) if the fixed costs of Division DA apportioned to Component C3 reduced to £147,000 per period. (2 marks)

Component C3 is also available to Division DB from an outside supplier for £30.00 per unit.

### REQUIRED

- (c) Calculate the effect on the total profit per period, of each division and of the company, if:
- Division DB was to purchase Component C3 from the outside supplier, **and**
  - volume is 14,000 units per period, **and**
  - fixed costs of Division DA are unchanged, **and**
  - the basis for the transfer price would have been total cost + 30%, **and**
  - Division DA would be unable to replace the sales. (6 marks)

**(Total 20 marks)**