

Series 2 Examination 2008

CERTIFICATE IN MANAGEMENT ACCOUNTING

Level 3

Monday 7 April

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.
- Begin your answer to each question on a new page.
- 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) Sketch a total cost-volume graph, to demonstrate the general relationship between total cost and volume of activity for a period, for **each** of the following:
- (i) telephone expenses comprising a fixed charge per period plus a cost per call
 - (ii) raw material cost where a trade discount is given by the supplier for additional purchases above a level representing 50% of normal volume.
- (6 marks)
- (b) Discuss the limitations of break-even analysis.
- (7 marks)
- (c) Define the following terms used in process costing and explain the implications for the establishment of product costs:
- (i) equivalent units
 - (ii) joint products.
- (7 marks)

(Total 20 marks)

QUESTION 2

The following information relates to the production of a product for the period just ended. The information has been extracted from a company's marginal costing system.

	£	
Direct materials used (actual cost)	85,146	
Opening stock of finished goods (standard cost)	60,400	
Closing stock of finished goods (standard cost)	73,040	
Variable production cost of sales (standard cost)	134,960	
Direct materials price variance	1,265	Adverse

The standard variable production costs of the product (per unit) are:

Direct materials, 2 kg at £2.30 per kg
Direct labour, 0.7 hours at £3.00 per hour
Variable overhead, £1.30 per unit.

REQUIRED

- (a) Calculate for the period just ended:
- (i) the actual price per kg of direct materials used (6 marks)
 - (ii) the production of the product (units) (6 marks)
 - (iii) the direct materials usage variance (£). (4 marks)
- (b) Suggest possible causes of the direct materials usage variance calculated in a(iii) above. (4 marks)

(Total 20 marks)

QUESTION 3

A company sells three products. The following information relates to the three products:

	Products		
	A	B	C
Sales (units per period)	2,460	8,742	5,554
Contribution (£ per unit)	1.63	1.90	3.15
Contribution to Sales ratio (%)	35	42	46

Fixed costs are £31,500 per period.

REQUIRED

(a) Calculate, based upon the above sales mix:

- (i) the overall contribution to sales ratio (7 marks)
- (ii) the break-even point, in terms of sales revenue, in each period (3 marks)
- (iii) the sales revenue required in order to achieve a profit of £10,000 per period. (3 marks)

It is anticipated that the availability of skilled labour, used in the manufacture of the three products, may be restricted in the near future. The following quantities of the three products are manufactured per hundred hours of skilled labour:

Product A, 700 units
Product B, 640 units
Product C, 300 units.

REQUIRED

- (b) (i) determine the order of priority for the manufacture of the three products, if skilled labour is in short supply and if the objective is to maximise the profit contribution in each period (5 marks)
- (ii) explain the basis for your ranking in (i) above. (2 marks)

(Total 20 marks)

QUESTION 4

A company is considering the introduction of a new product which would require an investment of £100,000 in new manufacturing equipment. The product would have a selling price of £60 per unit and a contribution margin of 42%. No changes in either selling prices or variable cost prices are anticipated over the five year life of the investment.

Market research indicates the following probabilities relating to demand for the new product in the first year:

Sales units	Probability
7,000	10%
8,000	30%
9,000	45%
10,000	15%

Sales volume would be expected to grow at a rate of 10% per annum.

Incremental fixed costs resulting from the investment are estimated at £225,000 per annum, increasing to £250,000 per annum in years 4 and 5. The investment would be expected to have a terminal value of £5,000 at the end of its five year life. The cost of capital is 10% per annum. Discount factors at 10% are:

Year 1	0.909
Year 2	0.826
Year 3	0.751
Year 4	0.683
Year 5	0.621

REQUIRED

- (a) Calculate the expected sales value of the new product for each of the five years. (5 marks)
- (b) Calculate the expected net present value of the new product investment opportunity. (10 marks)
- (c) Calculate an approximate internal rate of return for the investment (to the nearest percentage) using the net present values at 0% (ie undiscounted) and 10%. (5 marks)

(Total 20 marks)

QUESTION 5

Divisions A and B are investment centres within the AB Group. Division A manufactures a component especially for Division B. The anticipated requirements for, and costs and transfer price of, this component for the year ahead are as follows:

Production	112,500 units
Variable cost	£5.70 per unit
Fixed cost	£2.40 per unit
Transfer price	£8.50 per unit

Company C, which is not part of the AB Group, has offered to supply the component to Division B for £7.50 per unit.

REQUIRED

- (a) Explain fully the term 'investment centre'.
(4 marks)
- (b) Contrast an investment centre with a profit centre.
(3 marks)
- (c) Outline the objectives of transfer pricing.
(3 marks)
- (d) Establish, on the basis of the figures supplied above, whether it is worthwhile for the AB Group to continue to manufacture the component.
(4 marks)
- (e) Determine whether Division A would benefit if the component were to be purchased from Company C.
(4 marks)
- (f) Determine whether Division B would benefit if the component were to be purchased from Company C.
(2 marks)

(Total 20 marks)

QUESTION 6

A company will commence operations in September with £150,000 cash at bank, raised from an issue of share capital. A stock of goods costing £45,000 will be purchased in August, with further purchases in the following three months sufficient to increase stock by £5,000 each month. Goods are purchased on one month's credit.

Sales are to be made on credit at a mark-up of 40% on cost. Sales in the first three months of operations, at a selling price of £14 per unit, are expected to be:

September	1,500 units
October	4,500 units
November	5,000 units

50% of customers are expected to pay in the month following sale and the remaining 50% one month later.

Variable overheads are forecast at 5% of sales, payable in the month in which they are incurred. Fixed overheads, excluding depreciation, are expected to be £11,800 per month starting in September. Fixed overheads are payable one month after they are incurred. Depreciation of fixed assets will be £2,000 per month on the capital expenditure of £120,000 that will take place in August. Payment will be made in September.

Interest is payable monthly, at a rate of 12% per annum, on any opening overdraft balances.

REQUIRED

- (a) Prepare a cash budget for **each** of the three months, September to November, showing clearly any overdraft required and the associated interest costs. (13 marks)
- (b) Calculate the number of units in stock at the end of November. (3 marks)
- (c) Calculate the profit after interest in November if a marginal costing system is used. (4 marks)

(Total 20 marks)