

**Series 2 Examination 2012**

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**CERTIFICATE IN MANAGEMENT ACCOUNTING**

**Level 3**

**Wednesday 11 April**

Subject Code: 3024

Time allowed: **3 hours**

**INSTRUCTIONS FOR CANDIDATES**

- Answer all **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

Alpha Limited has the following data for the maintenance of its plant for the past four operating periods:

	Period 3	Period 4	Period 5	Period 6
Plant operation (hours)	8,500	7,750	10,250	9,800
Total plant maintenance costs	£131,560	£127,050	£163,680	£160,440
Average price-level index	115	121	132	140

#### REQUIRED

- (a) Use the high-low method to:
- (i) analyse the total plant maintenance costs into a variable cost per hour and total fixed costs per period at the Period 3 average price-level index. (5 marks)
  - (ii) estimate the total plant maintenance costs in Period 7, if the plant is operated for 10,500 hours and the average price-level index is 148. (3 marks)

Beta Limited manufactures and sells three products. The budgeted data for the next period are:

	Product X	Product Y	Product Z
Sales volume (units)	10,000	6,000	4,000
Selling price per unit	£40.00	£30.00	£25.00
Variable costs per unit	£31.60	£19.50	£15.00

Fixed costs for the period are budgeted to be £83,160.

#### REQUIRED

- (b) Calculate the contribution/sales ratios for **each** of the three products. (3 marks)
- (c) Based upon the above sales mix (units), calculate the:
- (i) overall contribution/sales ratio (to one decimal place of %) (2 marks)
  - (ii) break-even point (sales revenue) (2 marks)
- (d) Calculate the break-even point (sales revenue) if budgeted fixed costs increase to £94,300 in the period, and the sales mix is revised as follows:
- Product X 30% of total sales revenue
  - Product Y 30% of total sales revenue
  - Product Z 40% of total sales revenue

(5 marks)

**(Total 20 marks)**

## QUESTION 2

A company manufactures a single product, which is sold for £65 per unit. The company is operating at 75% of its available capacity of 3,200 units in the current period.

The total production costs per period are £275,200, of which 60% are variable costs.

The company has received an enquiry about a one-off order for 500 units at £62.00 per unit.

### REQUIRED

- (a) Advise the company, using appropriate workings, whether it should accept the one-off order.

(6 marks)

Delta Limited manufactures and sells three products which all use the same direct materials and the same type of direct labour. The following details are available:

	<b>Product A</b> £ per unit	<b>Product B</b> £ per unit	<b>Product C</b> £ per unit
Selling price	156	96	140
Direct materials (£18 per kilo)	54	36	45
Direct labour (£10 per hour)	30	15	25
Overhead costs	60	30	50

The overhead costs are estimated to be 40% variable and 60% fixed. The fixed element of overhead costs is charged to products on the basis of the total direct labour hours required to satisfy the demand per period for each product as follows:

Product A	1,500 units
Product B	3,600 units
Product C	4,200 units

There is a shortage of direct labour hours and only 18,000 hours are available for production in the coming period.

No stock of finished goods is held.

### REQUIRED

- (b) Prepare a production schedule that will maximise profit for the coming period and calculate the amount of the profit.

(14 marks)

**(Total 20 marks)**

### QUESTION 3

The following information is extracted from a retail company's financial records for the last year:

	Start of year £000	End of year £000
Trade debtors	184	136
Stock	138	174
Trade creditors	130	112

Additional information:

- (1) cost of sales during the year was £1,260,000 and a gross profit of 30% was earned on sales
- (2) 40% of all sales were for cash and the remainder were credit sales.

Assume 1 year = 365 days

#### REQUIRED

- (a) Calculate the company's working capital cycle (rounded to whole days), using the average of opening and closing balances for trade debtors, stock and trade creditors. (8 marks)
- (b) Define working capital and explain why its management is important in the day-to-day operation of a business. (6 marks)

A company's budgeted profit statement, based on the sale of 12,000 units of its single product for a period is given below:

	£000	£000
Sales		450
Cost of sales:		
Direct materials	180	
Direct labour	120	
Variable overhead	50	
Fixed overhead	<u>90</u>	<u>440</u>
Budgeted net profit		<u>10</u>

The company is considering changing the specification of direct materials in order to reduce their cost per unit by 15%. In addition, a modification of the production process is expected to reduce the direct labour cost per unit by 10%. The selling price per unit will be reduced by 5% because of the reduction in product quality and the sales volume would decrease by 8%.

#### REQUIRED

- (c) Prepare a revised budgeted profit statement for the period. (6 marks)

**(Total 20 marks)**

#### QUESTION 4

A company had budgeted to manufacture and sell 2,500 units of its single product for a period. The budgeted and standard cost data per unit are as follows:

Direct material	4 kilos @ £21.20 per kilo
Direct labour	1.5 hours @ £16.00 per hour

Fixed production overhead is absorbed at 80% of direct labour cost.

A mark up of 25% is applied to the standard production cost per unit to determine the standard selling price.

Actual results for the period were as follows:

Production and sales	2,850 units
Sales revenue	£435,480
Direct materials used	10,540 kilos @ £11.50 per kilo
Direct labour	4,760 hours @ £17.75 per hour
Fixed production overhead	£51,120

#### REQUIRED

- (a) Calculate the standard selling price of the product. (3 marks)
- (b) Calculate the following variances for the period:
- (i) sales price (2 marks)
  - (ii) sales volume profit (2 marks)
  - (iii) direct material usage (2 marks)
  - (iv) direct labour rate (2 marks)
  - (v) fixed production overhead expenditure (2 marks)
  - (vi) fixed production overhead volume efficiency (2 marks)
  - (vii) fixed production overhead volume capacity. (2 marks)
- (c) Using variances calculated in part (b) above as appropriate, provide **two** illustrations of possible links between variances. (3 marks)

**(Total 20 marks)**

### QUESTION 5

A company is considering an investment project requiring an expenditure of £1,450,000 on new equipment. The equipment is expected to have a useful life of five years, with a residual value of £150,000, and would be depreciated on a straight-line basis.

Estimates of cost savings (net of depreciation of the new equipment) arising from the investment are as follows:

Year	£000
1	80
2	100
3 to 5	180 per annum

The company's cost of capital is 15% per annum.

Discount factors:	Year	5%	10%	15%	20%
	1	0.952	0.909	0.870	0.833
	2	0.907	0.826	0.756	0.694
	3	0.864	0.751	0.658	0.579
	4	0.823	0.683	0.572	0.482
	5	0.784	0.621	0.497	0.402

### REQUIRED

- (a) In relation to the investment in new equipment, calculate the:
- (i) accounting rate of return (using the average investment value) (3 marks)
  - (ii) net present value (7 marks)
  - (iii) internal rate of return. (3 marks)
- (b) Advise the company on whether the investment in the new equipment is worthwhile, on the basis the net present value and internal rate of return calculated in part (a). (3 marks)
- (c) State the limitations of the accounting rate of return as a method of evaluating investment projects. (4 marks)

**(Total 20 marks)**