

**Series 3 Examination 2011**

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**CERTIFICATE IN MANAGEMENT ACCOUNTING**

**Level 3**

**Wednesday 8 June**

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

A company manufactures and sells two products using the same direct material and direct labour. The following details are available for the coming period:

	<b>Product A</b>	<b>Product B</b>
	£ per unit	£ per unit
Selling price	228	186
Direct material costs (£26 per kg)	104	52
Direct labour costs (£16 per hour)	48	80
Other variable costs	36	24

The availability of direct materials and direct labour will be limited to 10,200 kg and 15,000 hours respectively, for the coming period. The company is also contracted to supply 600 units of Product B to one of its major customers.

### REQUIRED

- (a) Formulate the problem presented above as a linear programme, given that the company's objective is to maximise total contribution in the period. (6 marks)
- (b) Draw a graph for the linear programming problem formulated in part (a), clearly indicating the binding constraints and the feasible area for a solution. (8 marks)
- (c) Reading from the graph drawn in part (b), list all the production plans in units of Product A and Product B that are attainable at the corner points of the feasible area of solution. (4 marks)
- (d) Determine which one of the production plans listed in part (c) will maximise the company's contribution for the coming period and calculate the total amount of this contribution. (2 marks)

**(Total 20 marks)**

## QUESTION 2

A company's budget for the manufacture and sale of its single product for a recent period was 7,500 units at a selling price of £380.00 each. The standard for direct labour for each unit was set at 5 hours, payable at the hourly rate of £16.20. Fixed production overheads were absorbed at the rate of £87.50 per unit based on direct labour hours.

The actual results for the period were as follows:

Production and sales	7,860 units
Sales revenue	£2,937,650
Direct labour costs (40,850 hours)	£649,240

### REQUIRED

(a) Calculate the following variances for the period:

- (i) sales price (2 marks)
- (ii) direct labour rate (2 marks)
- (iii) direct labour efficiency (2 marks)
- (iv) fixed production overhead volume (2 marks)
- (v) fixed production overhead capacity (2 marks)
- (vi) fixed production overhead efficiency. (2 marks)

When the management of the company reviewed the actual results for the period, it concluded that the original standard selling price should have been set at £365.00 per unit, given the prevailing conditions in the marketplace. Furthermore, the standard for direct labour should have been set at 5.25 hours per unit for the period, due to a revision of the level of efficiency of the workers being trained for the manufacture of the product.

### REQUIRED

(b) Using ex-post standards, calculate the following variances for the period:

- (i) sales price planning (2 marks)
- (ii) sales price operational (2 marks)
- (iii) direct labour efficiency planning (2 marks)
- (iv) direct labour efficiency operational. (2 marks)

**(Total 20 marks)**

### QUESTION 3

The following information is extracted from a recent year's financial records of a company which makes a single product:

	£
Sales	486,500
Production cost of sales	328,450
Purchase of raw materials	256,250
Stocks: raw materials	49,150
work-in-progress	23,400
finished goods	58,500
Trade debtors	106,640
Trade creditors	35,120
Bank overdraft	21,960

All sales and purchases were made on credit. Assume that 1 year = 365 days.

#### REQUIRED

- (a) Calculate for the year, the:
- (i) current and acid-test (quick) ratios (each rounded to 1 decimal place) (3 marks)
  - (ii) working capital cycle (rounded to whole days). (5 marks)
- (b) Advise the company on what steps may be taken to reduce its working capital cycle. (6 marks)

The company is considering reducing the average debtors collection period to 60 days in the coming year and believes that this would result in a 10% reduction in sales. The cost of sales, average stocks and trade creditors are all expected to vary with the volume of sales.

#### REQUIRED

- (c) Calculate the expected working capital requirement if the average debtors collection period is reduced to 60 days in the coming year. (6 marks)

**(Total 20 marks)**

#### QUESTION 4

- (a) Describe **three** strengths and **three** weaknesses of the internal rate of return as a method of evaluating investment projects.

(6 marks)

A company is considering introducing a product which requires investment of £720,000 in new equipment. The equipment will have a 4 year lifespan with a residual value of £80,000 at end of Year 4 prices.

5,000 units of the product are expected to be manufactured and sold per annum. The selling price would be £75.00 per unit for the first year, but would be increased by 6% per annum in each future year.

In the first year of manufacture, the product will have variable costs of £24.00 per unit and incremental fixed costs (exclusive of depreciation of new equipment) of £40,000, both at current prices. The annual inflation rates for costs are estimated as follows:

Variable costs	10%
Fixed costs	5%

It is to be assumed that net cash flows occur at the end of the years to which they relate.

The company's cost of capital, in money terms, is 12% per annum.

Discount factors for 12%:

Year 1	0.893
2	0.797
3	0.712
4	0.636

#### REQUIRED

- (b) Calculate the net present value of the investment in the new equipment.

(12 marks)

- (c) Advise the company on whether the investment is worthwhile, giving reasons for your decision.

(2 marks)

**(Total 20 marks)**

### QUESTION 5

A division of a company has the following summary information for the year just ended:

	<b>£000</b>
Net profit	320
Fixed assets (net book value)	1,800
Net current assets	760

The company's cost of capital is 10% per annum.

#### REQUIRED

- (a) Calculate the return on capital employed (ROCE) and the residual income (RI) of the division for the year. (5 marks)

The division is considering undertaking a new investment project which will cost £740,000 and result in a constant net profit (after deducting depreciation) of £76,000 per annum.

#### REQUIRED

- (b) Calculate the ROCE and the RI of the division if it undertakes the new investment project in the next year. (6 marks)
- (c) Comment on whether the divisional manager would be willing to undertake the new investment project on the basis of the calculations of the ROCE and the RI in part (b). (3 marks)

A company is comprised of two divisions, J and K. Division J's budgeted production of its single product for a period is 4,000 units at a total cost of £60 per unit. Division J transfers 30% of its production to Division K at a transfer price of cost plus 25%, and sells the remainder to external customers for £80 per unit.

Division K incurs additional costs of £15 per unit in converting the transferred units from Division J into a single product which is sold to external customers for £120 per unit.

#### REQUIRED

- (d) Prepare a budgeted profit statement for each division for the period. (6 marks)

**(Total 20 marks)**