



**SERIES 2 EXAMINATION 2001**

**MANAGEMENT ACCOUNTING**

**THIRD LEVEL**

(Code No: 3023)

MONDAY 9 APRIL

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***Instructions to Candidates***

- (a) *The time allowed for this examination is 3 hours.*
- (b) *Answer 5 questions.*
- (c) *All questions carry equal marks.*
- (d) *All answers must be clearly and correctly numbered but need not be in numerical order.*
- (e) *Your answers should be written in blue or black ink/ballpoint. Pencil may be used only for graphs, charts, diagrams, etc.*
- (f) *Candidates may use calculators provided the calculators give no printout, have no word display facilities, are silent and cordless. The provision of batteries and responsibility for their condition must rest with the candidate.*
- (g) *All workings must be shown.*

### 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

Two divisions of a company have the following balance sheets at the end of a period:

|                                      | <b>Division A</b><br><b>£000</b> | <b>Division B</b><br><b>£000</b> |
|--------------------------------------|----------------------------------|----------------------------------|
| Long term capital at start of period | 1,075                            | 3,210                            |
| Profit before interest for period    | <u>182</u>                       | <u>458</u>                       |
| Long term capital at end of period   | <u>1,257</u>                     | <u>3,668</u>                     |
| Fixed assets (net book value)        | 832                              | 2,689                            |
| Current assets:                      |                                  |                                  |
| Stock                                | 241                              | 512                              |
| Debtors                              | 276                              | 582                              |
| Bank                                 | <u>24</u>                        | <u>79</u>                        |
|                                      | 541                              | 1,173                            |
| Current liabilities:                 |                                  |                                  |
| Creditors                            | <u>116</u>                       | <u>194</u>                       |
| Net current assets                   | <u>425</u>                       | <u>979</u>                       |
| Net assets                           | <u>1,257</u>                     | <u>3,668</u>                     |

Additional information for the period:

|                       |            |             |
|-----------------------|------------|-------------|
| Sales (all on credit) | £2,685,000 | £10,634,000 |
| Gross profit margin   | 36%        | 28%         |

### REQUIRED

- (a) Calculate the return on average capital employed and the residual income for each of the divisions. The cost of capital of each division is 12% per annum. (6 marks)
- (b) Calculate two other ratios to provide further analysis of the profitability of the two divisions. (6 marks)
- (c) Calculate two ratios to provide analysis of the divisions' management of working capital. (6 marks)
- (d) Using the ratios calculated in (c) above, contrast the two divisions' management of working capital. (2 marks)

**(Total 20 marks)**

### QUESTION 3

The standard direct material cost details per 1,000 litres input to a process are as follows:

|            |                                      |
|------------|--------------------------------------|
| Material A | 700 litres at £1.20 per litre        |
| Material B | 150 litres at £5.00 per litre        |
| Material C | <u>150</u> litres at £6.00 per litre |
|            | 1,000 litres                         |

Standard wastage 5%

Actual input to the process during a month:

|            |                            |
|------------|----------------------------|
| Material A | 29,400 litres cost £35,400 |
| Material B | 6,250 litres cost £35,000  |
| Material C | 6,350 litres cost £35,900  |

Output for the month was 40,000 litres.

#### REQUIRED

(a) Calculate the following variances for the month:

- |   |           |
|---|-----------|
| (i) total direct material cost                            | (2 marks) |
| (ii) direct material price for each material and in total | (4 marks) |
| (iii) total direct material usage                         | (2 marks) |
| (iv) total direct material mix                            | (4 marks) |
| (v) total direct material yield.                          | (4 marks) |

(b) Construct a diagram that demonstrates (in both words and £ value) relationships between **each** of the above total variances.

(4 marks)

**(Total 20 marks)**

#### QUESTION 4

A company manufactures a standard product which currently fully utilises the available production capacity of 6,000 machine hours per period.

The company has been approached by a potential customer with a view to the placement of an order for 3,000 units of the product at a price of £30 per unit. The product would need to be modified to the customer's own specification, resulting in additional operating costs being incurred. Details of operating costs, both for the standard product and for the modified version, are as follows:

|                      | <b>Standard product<br/>£/unit</b> | <b>Modified product<br/>£/unit</b> |
|----------------------|------------------------------------|------------------------------------|
| Direct materials     | 7.40                               | 9.00                               |
| Direct labour        | 7.50                               | 7.95                               |
| Production overheads | 6.00 (0.4 machine hrs)             | 9.00 (0.6 machine hrs)             |

Other information:

- (1) Fixed production overheads are currently £67,500 per period
- (2) The selling price of the standard product is £23 per unit
- (3) Further to the costs set out above, investment of £4,500 would be required in specialised equipment in order to be able to manufacture the modified product

#### REQUIRED

- (a) Advise the company whether accepting the new order would be worthwhile. Support your advice with appropriate calculations based on the above figures. (16 marks)
- (b) State other factors that may influence the decision. (4 marks)

**(Total 20 marks)**

## QUESTION 5

A company manufactures and sells a single product which has the following standard selling price and standard costs:

|                               | <b>£ per unit</b> |
|-------------------------------|-------------------|
| Selling price                 | 43.00             |
| Costs:                        |                   |
| Direct materials              | 12.50             |
| Direct labour                 | 13.20             |
| Variable production overheads | 3.30              |
| Fixed production overheads    | 10.00             |

Variable production overheads are absorbed at a rate of £1.50 per direct labour hour. Fixed production overheads are absorbed at a rate of £10.00 per unit. Budgeted production and sales is 9,800 units per period.

### REQUIRED

- (a) Calculate the budgeted direct labour hours. (3 marks)
- (b) Calculate the sales volume profit variance in a period when actual sales are 9,200 units. (4 marks)
- (c) Prepare an absorption costing profit statement for the period when actual sales are 9,200 units, if selling price and costs in the period are as per flexible budget and production is 9,600 units. Administration and selling overheads in the period total £17,500. (9 marks)
- (d) Calculate the difference in profit for the same period if a marginal costing system was used instead. State whether the profit would be greater or less than that reported in (c) above. (4 marks)

**(Total 20 marks)**

## QUESTION 6

Two investment projects, with the following cash flows, are being considered by a company:

| Year | Project A<br>£000 | Project B<br>£000 |
|------|-------------------|-------------------|
| 0    | (650)             | (700)             |
| 1    | 250               | 200               |
| 2    | 250               | 250               |
| 3    | 250               | 250               |
| 4    | 200               | 300               |

The company's long term funding requirements are satisfied as follows:

|        | % of value | cost per annum |
|--------|------------|----------------|
| Equity | 80         | 14%            |
| Loans  | 20         | 9%             |

Discount factors:

|        | 10%   | 20%   |
|--------|-------|-------|
| Year 1 | 0.909 | 0.833 |
| Year 2 | 0.826 | 0.694 |
| Year 3 | 0.751 | 0.579 |
| Year 4 | 0.683 | 0.482 |

### REQUIRED

- (a) Without carrying out any project valuation calculations, state which project is the more profitable and explain why. (5 marks)
- (b) Calculate the discounted cash flow internal rate of return of Project A. (6 marks)
- (c) Calculate the weighted average cost of capital percentage per annum. (3 marks)
- (d) Determine whether **each** of the projects is worthwhile. (6 marks)

**(Total 20 marks)**

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