

SERIES 3 EXAMINATION 2006

MANAGEMENT ACCOUNTING

LEVEL 3

(Code No: 3023)

TUESDAY 13 JUNE

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

REQUIRED

(a) Define the following terms:

(i) Responsibility centre

(ii) Cost centre

(iii) Profit centre

(iv) Investment centre

(6 marks)

(b) Give **2** examples of performance measures that may be used in **each** of the following:

(i) Cost centre

(3 marks)

(ii) Profit centre

(3 marks)

Return on capital employed (ROCE) and residual income (RI) are performance measures used in investment centres.

(c) (i) Describe each measure

(ii) Assess the strengths and weaknesses of each measure

(8 marks)

(Total 20 marks)

QUESTION 2

The standard production costs of a company's single product are:

	£ per unit
Direct materials: 4.0 kg @ £3.20/kg	12.80
Direct labour: 1.2 hours @ £8.00/hour	9.60
Variable overhead: 1.2 direct labour hours @ £2.30/hr	2.76
Fixed overhead: 1.2 direct labour hours @ £10.80/hour	<u>12.96</u>
	<u>38.12</u>

The standard selling price of the product is £59.00 per unit.

Budgeted production and sales for a period are 2,600 units.

Raw material and finished goods stocks are valued at standard cost.

Actual results for the period:

Sales: 2,560 units; £151,420
Production: 2,640 units
Production costs:
Direct material purchased: 10,640 kg; £34,048
Direct materials used: 10,190 kg
Direct labour: 3,086 hours; £25,058
Variable overheads: £7,126
Fixed overheads: £33,604

REQUIRED

(a) Calculate the following variances for the period:

- (i) Sales volume profit
- (ii) Selling price
- (iii) Direct material usage
- (iv) Direct labour rate
- (v) Total production overhead expenditure

13 marks)

(b) Calculate the efficiency ratio for the period.

(3 marks)

(c) Using variances calculated in (a) above as appropriate, provide 2 illustrations of possible links between variances.

(4 marks)

(Total 20 marks)

QUESTION 3

The following information is to be used in the preparation of a flexible budget for production overheads:

- (1) 100% capacity usage
13,600 direct labour hours @ £8.00 per hour
£104,000 direct materials
- (2) Variable production overheads:
Utilities: 10% of direct wages
Consumables: 6% of direct materials
- (3) Fixed production overheads:
Depreciation: £18,620
Maintenance: £8,220
Insurance: £7,300
- (4) Semi-variable overheads (variable component closely related to direct labour hours):
£39,110 @ 12,900 direct labour hours
£35,880 @ 11,200 direct labour hours

REQUIRED

- (a) Prepare a flexible production overhead budget at each of the following capacity usage levels:
 - (i) 80%
 - (ii) 90%
 - (iii) 100% (13 marks)
- (b) Calculate a production overhead absorption rate, based on direct labour hours, at 90% capacity usage **(to 2 decimal places of £)**. (3 marks)
- (c) Explain the difference between **flexible budgets** and **fixed budgets**. (4 marks)

(Total 20 marks)

QUESTION 4

A company manufactures and sells a single product with the following selling price and variable costs:

	£ per unit
Selling price	55.00
Variable costs:	
Direct material	20.86
Direct labour	8.94 (£7.45 per hour)
Overhead	4.47

In the next period, the direct labour force will be fully utilised on existing customer orders. No further work can be undertaken without restricting the manufacture of existing orders which would lead directly to lost sales.

The company has now been approached to supply a special order in the next period. The direct material cost of the special order would be £24,200 and 1,560 direct labour hours would be required. Variable overheads are assumed to vary with direct labour. The customer would be prepared to pay £63,000 for the special order.

REQUIRED

- (a) On the basis of the above information:
- (i) Calculate whether the special order is worthwhile
 - (ii) Calculate the minimum selling price required to justify accepting the special order (14 marks)
- (b) Describe 3 other factors that might influence the decision. (6 marks)

(Total 20 marks)

QUESTION 5

You are provided with the following details relating to a capital investment project:

- (i) Investment of £1,100,000 in new fixed assets would be required at the outset (Year 0).
- (ii) Incremental sales revenues (cash inflows) and operating costs (cash outflows) would occur over the life of the investment project as follows:

Year	Sales revenue	Operating costs
	<i>£000</i>	<i>£000</i>
1	560	410
2	940	640
3	1,260	810
4	1,530	930
5	1,200	800

- (iii) Additional working capital of £120,000 would be required at the outset of the project, increasing by £10,000 per annum for 4 years from Year 1 onwards. The total working capital would be released at the end of the project (Year 5). The fixed assets would have no residual value after 5 years.
- (iv) The cost of capital used to evaluate capital investment projects is 12% per annum.
- (v) The following discount factors are provided:

Year	At 10%	At 20%
1	0.909	0.833
2	0.826	0.694
3	0.751	0.579
4	0.683	0.482
5	0.621	0.402

REQUIRED

- (a) Calculate, in relation to the capital investment project, the:
 - (i) Accounting rate of return (ARR), based on the capital employed in Year 0; (7 marks)
 - (ii) Internal rate of return (IRR). (8 marks)
- (b) Evaluate the investment appraisal techniques applied in part (a) and recommend, with reasons, whether the investment is financially worthwhile. (5 marks)

(Total 20 marks)

QUESTION 6

- (a) A company produces and sells a range of products. Activity-based costing is applied to the control and apportionment of production overhead costs.

Information regarding production activities and associated budgeted costs for the next year is as follows:

Activity	Cost driver	Cost driver volume	Overhead expenditure
Materials handling	Weight of materials	240,000 kg	£76,800
Machining	Items handled	112,000 items	£197,120
Assembly	Direct labour hours	90,000 hours	£94,500
Product testing	Units tested	74,000 units	£153,920

REQUIRED

Determine a budgeted production overhead absorption rate for each activity for next year.

(4 marks)

- (b) The following estimates for the year have been made for Product X, an addition to the range, that is to be launched at the beginning of the year:

Weight of materials	7,800 kg
Items handled	3,100 items
Direct labour hours	2,700 hours
Units tested	4,400 units
Units produced	11,000 units

REQUIRED

Calculate the budgeted production overhead cost per unit of Product X (to 2 decimal places of £).

(6 marks)

- (c) 10,000 units of Product X are expected to be sold in the first year. Thereafter, sales are expected to be 1,200 units per month at a selling price of £9.60 per unit. All sales are on credit on 45-day payment terms.

Production costs of Product X are expected to be £6.20 per unit, including raw materials of £2.85 per unit purchased on one month's credit. Finished goods stock equivalent to 5 weeks forward sales of the product will be held. Raw material stock sufficient for 2 weeks production will also be held. There will not be any work-in-progress.

Assume that there are 50 weeks and 350 days in a year.

REQUIRED

Calculate the total amount of working capital that will be required to fund the new product in the second year.

(10 marks)

(Total 20 marks)