

SERIES 4 EXAMINATION 2006

COST ACCOUNTING

LEVEL 3

(Code No: 3016)

FRIDAY 10 NOVEMBER

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) *Presentation is important.*
 - (g) *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.*
 - (h) *It is recommended that candidates show essential workings.*
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QUESTION 1

Triple Products uses a two stage processing system to jointly produce its three main products, Products P, Q and R. By-product B is also produced during the process.

Product P is complete at the end of stage 1 and Products Q, R and By-product S emerge at the end of stage 2.

Information regarding the joint process for the last period is as follows:

Input

Process stage 1

Raw material A	20,000 kg at £2.00 per kg.
Raw material B	24,000 kg at £2.50 per kg
Direct labour	6,400 hrs at £8.00 per hour

Process stage 2

Raw material C	10,000 kg at £1.50 per kg
Direct labour	1,800 hrs at £9.00 per hour

Factory overheads in each process stage are absorbed at £12.00 per direct labour hour

Output

Process stage 1

	Quantity	Selling price per kg
Product P	8,000 kg	£10.00
Material transfer to stage 2	32,000 kg	-

Process stage 2

Product Q	17,000 kg	£15.00
Product R	22,000 kg	£12.50
By- Product S	2,000 kg	£4.00

Process losses from stage 1 are disposed of at a cost of £0.50 per kg. The losses that occurred in stage 1, in the last period, were normal. No losses are expected in stage 2.

There was no work in progress at the beginning or at the end of the period in either process stage.

Joint processing costs are apportioned on the basis of relative weight of output.

REQUIRED

(a) For the last period prepare the process accounts for:

(i) Process stage 1

(6 marks)

(ii) Process stage 2

(6 marks)

(b) Assuming that all production was sold prepare a profit statement for the last period.

(4 Marks)

(c) Explain the meaning of:

(i) Joint products

(ii) By-products

(4 Marks)

(Total 20 marks)

QUESTION 2

A company has budgeted to use 12,000 units of component RM10 in its production department during the forthcoming year. Production will be distributed uniformly throughout the year.

The following information is available regarding component RM10:

Cost of component	£12.50 each (before discount)
Ordering costs	£250 per order
Stock holding costs	12% of the component cost per annum

The component can be purchased in order sizes of 1,000, 2,000, 4,000, 6,000 or 12,000 and it can be assumed that the company carries no buffer (safety) stock.

REQUIRED

- (a) Produce a table showing the total annual ordering costs and the total annual stock holding costs of the component for each order size assuming no discount is received from the basic price. Identify the optimum order size. (7 Marks)
- (b) Use the EOQ formula to verify your answer. (5 Marks)

Assume that the supplier has offered the following quantity discounts:

Order size	Discount from the basic £12.50 unit price
0 - 3,999	No discount
4,000 - 11,999	4% discount
12,000 and over	6% discount

REQUIRED

- (c) Advise the company on the order size that minimises the total annual cost if the quantity discounts are available. Support your advice with calculations. (8 Marks)
- (Total 20 marks)**

QUESTION 3

A company manufactures and sells a single product. The following information is available for the period December year 1 to May year 2.

Sales:

The budgeted sales, in units, are as follows:

December	January	February	March	April	May
480	520	540	560	560	540

The standard selling price is £25 per unit. 40% of the sales are expected to be cash sales with the remaining customers allowed one months credit. It is estimated that 5% of credit customers will be bad debts.

Production:

The company manufactures 75% of the budgeted sales during the month before sale and the remaining 25% in the month of sale.

Costs:

- (1) Direct materials will be £10 per unit of finished product. Materials will be purchased in the month prior to their use in production, and paid for in the month following purchase.
- (2) Direct labour will be paid at a rate of £4 per unit of finished product, payable in the month of production. A bonus payment of £2.00 per unit will be paid on all additional monthly production in excess of 500 units, paid in the month following production.
- (3) Fixed production overheads of £20,000, including depreciation of £6,800, are budgeted for the year ahead. These are budgeted to be the same each month and, apart from depreciation, are payable in the month they are incurred.
- (4) Variable selling expenses are expected to be £1.50 per unit payable in the month of sale
- (5) Fixed administration overheads of £6,000 for the year ahead are budgeted to be the same per month and payable in the month they are incurred.

Cash:

The company expect to have a bank overdraft balance of £2,500 at the start of January year 2

REQUIRED

Prepare the following budgets for each of months January to March.

- | | |
|------------------------------|-------------------------|
| (a) Production (units) | (3 marks) |
| (b) Material purchases (£'s) | (2 marks) |
| (c) Labour cost | (3 marks) |
| (d) Cash | (12 marks) |
| | (Total 20 marks) |

QUESTION 4

A company, which manufactures a single product, has prepared the following budgeted information for the next period:

Production/sales units	20,000
	£
Selling price per unit	28
Direct material per unit	8
Direct labour per unit	5
Production overheads	110,000
Selling and distribution overheads	50,000
Administration overheads	20,000

The following points have been revealed concerning the budget:

- (1) The budget is based on 80% utilisation of maximum capacity.
- (2) Production overheads are absorbed on a cost per unit basis based on the maximum capacity and a total cost of £120,000 at maximum capacity.
- (3) Selling and distribution overheads include a fixed element of £30,000.
- (4) Administration overheads are fixed.

REQUIRED

- (a) Calculate for the next period
- (i) The fixed overhead costs (5 marks)
 - (ii) The breakeven point (in units) (2 marks)
 - (iii) The margin of safety as a % of the sales (1 mark)
 - (iv) Profit at 80% capacity utilisation. (1 mark)

The company is considering reducing its selling price to £26 per unit. Market research suggests that this price reduction will generate the additional sales for the company to operate at maximum capacity.

REQUIRED

- (b) Assuming a selling price of £26 per unit and maximum capacity utilisation, calculate for the next period:
- (i) The breakeven point (in units) (1 mark)
 - (ii) The margin of safety as a % of sales (1 mark)
 - (iii) Profit at 100% capacity. (1 mark)
- (c) Using the graph paper provided draw on a single profit-volume chart a separate profit line for each of the following:
- (i) £28 per unit selling price (up to 80% capacity utilisation)
 - (ii) £26 per unit selling price (up to 100% capacity utilisation)

Clearly show on the chart the breakeven point for each selling price and margin of safety for each resulting output.

(8 Marks)

(Total 20 marks)

QUESTION 5

A company manufactures and sells a range of products, including Product D12. 5,400 units of Product D12 are sold each year. The company is proposing a change to the manufacturing method for this product.

The following information is available.

Each unit of product D12 is made with 8kg of material costing £5.00 per kg
A machine operation reduces the weight of each unit to 5kg
Recovered scrap material is sold for £2.50 per kg
All completed products are inspected and rejected units sold for £10.00 per unit

Present manufacturing method.

The product is machined in cost centre A
Machine time per unit 1.50 hours.
All scrap material is recovered
Product rejection rate at final inspection 10%
Conversion cost rate is £11 per machine hour, of which 40% is variable.
Cost centre A produces a variety of products

Proposed manufacturing method.

The product to be machined in cost centre B
Machine time per unit will be reduced to 1.25 hours.
Only 50% of scrap material will be recovered
Product rejection rate at final inspection reduced to 4%
Conversion cost rate is £18.00 per machine hour, of which 30% is variable.
Cost centre B produces a variety of products

REQUIRED

- (a) Calculate for the present manufacturing method
- (i) The total time taken each year to machine product D12 (2 marks)
 - (ii) The variable production cost of Product D12 (net of scrap material and reject sales) both in total per annum and per unit of finished product. (7 marks)
- (b) Advise the company on whether or not to change the manufacture of product D12 from Cost centre A to Cost centre B. Your answer should include suitable calculations. (11 Marks)

(Total 20 marks)

QUESTION 6

A company produces a single product and uses a standard absorption costing system. The production department budgets include the following for month 3:

Production output	10,000 units
Direct labour per unit	4 hours @ £8 per hour
Direct material per unit	5kg @ £3 per kg
Fixed overheads	£324,000

Fixed production overheads are absorbed on the basis of standard direct labour hours.

The actual results for the period were as follows:

Production output	9,800 units
Direct labour	38,200 hours, at a total cost of £309,600
Direct materials	50,000kg at a total cost of £148,000
Fixed overheads	£312,000

REQUIRED

- (a) Calculate for the period the following production ratios:
- (i) Efficiency (2 marks)
 - (ii) Capacity (2 marks)
- (b) Calculate for the period the following variances:
- (i) Direct labour rate (2 marks)
 - (ii) Direct labour efficiency (2 marks)
 - (iii) Direct material price (2 marks)
 - (iv) Direct material usage (2 marks)
 - (v) Fixed production overhead expenditure (2 marks)
 - (vi) Fixed production overhead volume. (2 marks)
- (c) Describe the possible reasons for the following variances:
- (i) Direct labour (2 marks)
 - (ii) Direct material (2 marks)

(Total 20 marks)