

Series 2 Examination 2010

COST ACCOUNTING

Level 3

Friday 9 April

Subject Code: 3017

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 answers must be correctly numbered but need not be in numerical order.
- Workings must be shown.
- Presentation is important.
- 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 its single product in batch sizes of 50 units. The customer requirement for period 3 is 4,500 units.

Each unit of the product contains two materials (material A and material B) which are cleaned and then processed together in a weight ratio of 4:1 respectively.

Prior to processing, each material is subject to a cleaning operation, which results in a weight loss of 20% for material A. No other losses occur during the manufacturing process.

The following further information is available:

- (1) Finished weight of completed unit 5kg
- (2) Material A costs £5 per kg
- (3) Material B costs £10 per kg
- (4) Product inspection rejection rate 10%
- (5) Direct labour £400 per batch
- (6) Fixed production overheads for the period are £50,000
- (7) Material A waste, due to the cleaning process, can be sold back to the supplier at £4 per kg
- (8) Rejected products can also be sold back to the supplier at £20 per reject
- (9) No stocks of finished products are kept
- (10) Stock of Material A at start of period 3 is expected to be 5,000kg
- (11) Stock of Material B at start of period 3 is expected to be 1,000kg
- (12) At the end of period 3 the company intend to reduce the material stock levels by 20%

REQUIRED

Calculate for period 3, the:

- (a) total number of product batches to be manufactured and the total weight of material A and B of material (before cleaning) to be introduced into the manufacturing process. (5 marks)
- (b) total weight of material A and of material B to be purchased from the supplier. (5 marks)
- (c) total revenue received from the supplier for:
 - (i) product inspection rejects
 - (ii) material waste. (4 marks)
- (d) total manufacturing profit, if all rejects and material waste is sold back to the supplier, and the selling price of the finished product is £60 per unit. (6 marks)

(Total 20 marks)

QUESTION 2

Triple Products Ltd uses a process system to jointly produce its three main products, (Product A, B and C). By-product D is also produced during the process.

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

Output

Product	Quantity	Selling price per kg
Product A	8,000 kg	£22.50
Product B	6,000 kg	£20.00
Product C	5,000 kg	£16.00
By-product D	2,000 kg	£4.00

Process losses (scrap), which are as expected, are disposed of at a cost of £2.00 per kg.

Input

Raw material X	10,000 kg at £4 per kg
Raw material Y	12,000 kg at £5 per kg
Direct labour	4,000 hours at £8 per hour
Overheads are absorbed at	£12 per direct labour hour

Further processing:

Product B requires an additional 0.25 direct labour hours per kg of output for finishing.

Product C is packed in containers which hold 5 kg of the product and cost £1 each.

20 containers can be filled in one direct labour hour.

Products A and D can be sold without any further operations.

There was no work in progress or finished goods stock at the beginning or the end of the period.

Joint processing costs are apportioned on the basis of net sales value.

REQUIRED

- (a) Prepare the joint process account for the last period. (10 marks)
- (b) Prepare the profit statement for the last period. (6 marks)
- (c) Explain the meaning of:
- (i) joint products
 - (ii) by-product. (4 marks)

(Total 20 marks)

QUESTION 3

Makit Ltd plans to sell 120,000 units of its single product in a period at a selling price of £15 per unit. Fixed overheads and net profit are expected to be £420,000 and £300,000 respectively for the period using the existing production process.

The company is considering a change to its production process, which would increase the fixed overheads to £560,000 in the period and reduce the variable costs to £8 per unit. The selling price will be the same regardless of production process.

REQUIRED

- (a) Calculate, for each production processes, the break-even point (in units) and the margin of safety (as a percentage of the sales). (4 marks)
- (b) Advise management, using supporting calculations, whether the changed production process is more profitable than the existing process at the planned output. (4 marks)
- (c) Calculate the number of units that need to be sold for the profits from both the existing process and the changed process to be equal. (4 marks)
- (d) Draw a profit/volume chart for the period, showing the profit arising both from the existing and the changed production processes, for sales up to 200,000 units. Clearly indicate on the chart the break-even point and the margin of safety for each production processes. (8 marks)

(Total 20 marks)

QUESTION 4

Sole Products Ltd, which manufactures a single product, is budgeted to produce and sell 12,000 units in month 3. The standard selling price and standard production costs for month 3 are as follows:

Selling Price	£17.50 per unit
Direct material	1.5 kg @ £5 per kg
Direct labour	0.5 hours @ £8 per hour
Fixed production overheads	£2.00 per unit

The actual results recorded in month 3 were as follows:

Production	10,000 units
Sales	10,500 units
Selling Price	£18.50 per unit
Direct material purchased and used	£88,200 @ £6 per kg
Direct labour	£44,000 @ £8 per hour
Fixed production overheads	£18,000

Finished goods stock of 1,000 units at the start of month 3 was valued at the standard production cost per unit. No stock of direct material was carried forward from month 2.

REQUIRED

- (a) Calculate for month 3:
- (i) the standard gross profit on actual sales
 - (ii) the actual gross profit.
- (4 marks)
- (b) Calculate the following variances for month 3:
- (i) sales volume profit
 - (ii) sales price
 - (iii) total direct material
 - (iv) total direct labour
 - (v) total fixed production overhead.
- (9 marks)
- (c) Calculate the following production ratios for month 3:
- (i) activity (production volume)
 - (ii) efficiency.
- (4 marks)
- (d) Explain the meaning of the term standard hour.
- (3 marks)

(Total 20 marks)

QUESTION 5

Singular Ltd, which manufactures a single product, has prepared the following budget for the next period:

Production /sales units	10,800	
	£	£
Sales revenue		172,800
Direct materials	43,200	
Labour	39,000	
Production overheads	44,500	
Selling and distribution overhead	8,500	
Administration overheads	<u>10,000</u>	
Total costs		<u>145,200</u>
Profit		<u>27,600</u>

The following points have been revealed concerning the budget:

- (1) The budget is based on 90% utilisation of maximum capacity.
- (2) Direct material costs vary directly with output.
- (3) Labour includes a fixed and a variable cost. The variable cost is £2.50 per unit.
- (4) Production overheads include a fixed and variable cost. The variable cost varies directly with output and the total overhead cost, at maximum capacity, is £46,900
- (5) Selling and distribution overheads include a fixed and variable cost. The variable cost varies direct with output and the fixed element is £3,100.
- (6) Administration overheads are fixed.

REQUIRED

(a) Prepare flexed budgets for the period at:

- (i) 100% utilisation of maximum capacity
- (ii) 80% utilisation of maximum capacity.

(15 marks)

(b) Calculate for each of the three levels of output (i.e. 80%, 90% and 100% utilisation of maximum capacity):

- (i) variable cost per unit
- (ii) total cost per unit.

(5 marks)

(Total 20 marks)