

**Series 4 Examination 2007**

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## **COST ACCOUNTING**

**Level 3**

**Thursday 8 November**

Subject Code: 3016

Time allowed: **3 hours**

### **INSTRUCTIONS FOR CANDIDATES**

- Answer **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

The Tower Hotel, which has 50 bedrooms, has organised its operations into four responsibility centres (Accommodation, Restaurant, Kitchen and Administration). The budgeted fixed overhead costs for Month 9 were as follows.

	£
Bedroom repairs	2,880
Electricity	
- accommodation	570
- restaurant	275
- kitchen	700
- administration	150
Rent	9,000
Kitchen repairs	1,025
Staff labour costs:	
- accommodation	4,800
- restaurant	6,200
- kitchen	3,000
- administration	6,000
Other property overheads	4,000

In addition, the following information relating to the responsibility centres is available:

Responsibility Centre	Floor Area Occupied (Sq metres)	Administration overhead costs apportioned on the following basis
Accommodation	600	60%
Restaurant	100	25%
Kitchen	60	15%
Administration	40	

During month 9 the hotel is to open for 30 days with a budgeted bedroom occupancy of 80%. A total of 5,600 meals is expected to be prepared and served in the kitchen and restaurant.

Actual results for month 9 were:

Cost Centre	Bedroom occupancy	Number of meals served / prepared	Actual overheads (Allocated and apportioned)
Accommodation	85%		£22,660
Restaurant		5700	£9,575
Kitchen		5700	£7,140

## QUESTION 1 CONTINUED

### REQUIRED

For month 9:

- (a) Produce a budgeted overhead distribution table, showing the allocated and apportioned costs for the four responsibility centres. (Include in the table the basis for any apportionment). (5 marks)
- (b) Re-apportion the budgeted Administration costs to the other three responsibility centres. (2 marks)
- (c) Calculate a suitable overhead absorption rate for each responsibility centre. (3 marks)
- (d) Calculate the over/under absorbed overhead for each responsibility centre. (6 marks)
- (e) (i) Explain the meaning of both over-absorption and under-absorption of fixed overheads.  
(ii) State two reasons for over/under absorption of fixed overheads. (4 marks)
- (Total 20 marks)**

## QUESTION 2

A company, with fixed costs of £80,000 for a period, has a break-even point of £200,000 sales revenue and current sales of £400,000 for the same period.

### REQUIRED

- (a) Calculate the total variable cost at the break-even point and at the current sales level. (2 marks)
- (b) Calculate the contribution to sales ratio. (2 marks)
- (c) Draw a traditional breakeven chart with sales of up to £500,000 in the period. Indicate clearly on the chart the break-even point and the margin of safety at the current sales level. (9 marks)

Assume that the contribution to sales ratio changes to 45% and the fixed costs per period increase by £1,000.

### REQUIRED

- (d) Calculate the revised break-even point (sales revenue). (2 marks)
- (e) Calculate the margin of safety as a percentage of the current level of sales. (2 marks)
- (f) Calculate whether profit would increase or decrease at the current sales level. (3 marks)
- (Total 20 marks)**

### QUESTION 3

A company, which produces a single product and uses a standard costing system, has prepared the following budgeted information for month 1

Sales volume	400 units
Selling price	£75 per unit
Production	410 units
Direct material cost per unit	£5 per unit
Direct labour cost per unit	£6 per unit
Variable production overhead cost per unit	£2 per unit
Fixed production overhead cost per unit	£25 per unit

Fixed and variable overheads are absorbed at a predetermined rate based on production unit output. No stocks existed at the start of month 1

Actual sales, production and costs relating to the period were as follows:

Sales volume	380 units
Revenue from sales	£30,400
Production	420 units
Direct material, purchased and used.	£2,310
Direct labour	£2,100
Variable production overhead	£1,050
Fixed production overhead	£10,920

### REQUIRED

(a) Calculate for month 1:

- (i) The budgeted gross profit
- (ii) The actual gross profit.

(6 marks)

(b) Calculate the following variances:

- (i) sales price
- (ii) sales volume profit
- (iii) total direct material
- (iv) total direct labour
- (v) total variable production overhead
- (vi) fixed production overhead expenditure
- (vii) fixed production overhead volume

(11 marks)

(c) Reconcile the budgeted gross profit with the actual gross profit using the variances calculated in part (b).

(3 marks)

**(Total 20 marks)**

#### QUESTION 4

A company manufactures and sells two products, Product P and Product Q. The following information is available for periods 9 to 13 in year 2.

##### Sales:

The budgeted sales, in units, are as follows:

Period	9	10	11	12	13
Product P	800	960	1,200	1,200	1,000
Product Q	200	240	320	400	440

##### Raw Materials:

Two raw materials are used in the manufacture of each product.

Raw material (finished product weight)	Product P	Product Q
RM1	4kg per unit	6kg per unit
RM2	3kg per unit	4kg per unit

During manufacture, material RM1 is subject to a material input loss of 20%.

The budgeted purchase prices are £1.50 per kg for raw material RM1 and £2.00 per kg for raw material RM2. An order placed in any one period will be delivered at the start of the next period.

##### Stock Holding

###### Finished Product

A stock level for each finished product will be maintained at the end of each period equivalent to half the estimated sales for the following period. Stock level at the beginning of period 9 is expected to be 400 units for product P and 100 units for product Q.

###### Raw Material RM1

This material is subject to a supplier's order quantity of 12,000 kg. The company policy is to only place orders for the material when requirements for the next period's production cannot be met from stock. Stock level, at the end of period 8 is expected to be 2,450 kg. A delivery of 12,000 kg, ordered the previous period, is expected at the start of period 9.

###### Raw Material RM2

A stock level of 2,000 kg to be maintained at the end of each period. No minimum order quantity applies to this material. Stock level at the end of period 8 is expected to be 2,000 kg

##### REQUIRED

- (a) Prepare the production budgets for both Product P and Product Q for periods 9 to 12. (4 marks)
- (b) Prepare the material purchases budgets (kg) for both Material RM1 and Material RM2 for each of periods 9 to 11. (10 marks)
- (c) Calculate the total budgeted value (£) of the purchases of each material over the three periods 9 to 11. (2 marks)
- (d) Define the term 'principal budget factor' and explain its influence on the budget setting process. (4 marks)

**(Total 20 marks)**

### QUESTION 5

A company manufactures and sells four products, A,B,C and D. Due to a limit on the labour capacity of 1,700 direct hours in the next period the company considers it will not be able to meet its anticipated sales demand and is therefore considering buying in some units from an outside supplier to make up any shortfall. There is no finished goods stock.

The following budgeted information has been provided for the next period.

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Sales demand (units)	400	200	250	150
Selling price per unit	£45	£60	£50	£80
Direct material (per unit)	£6	£7	£8	£10
Direct labour hours (per unit)	2	3	2	4

Direct labour is budgeted at £10 per direct labour hour.

Variable overheads are budgeted at £2 per direct labour hour.

Fixed production overheads absorbed at a rate of £10.00 per unit produced are expected to be £10,000.

An outside supplier has quoted £40, £55, £44 and £76 respectively for products A,B,C and D.

(a) Advise the company on which products, and how many, it should buy in order to achieve the budgeted output at minimum cost. Support your advice with calculations. (14 marks)

(b) Produce a budgeted manufacturing and trading account for the period. (6 marks)

**(Total 20 marks)**

## QUESTION 6

A manufacturing company operates a non-integrated accounting system. At the end of Month 1 of the financial year the following reconciliation statement was prepared.

	£	£
Profit as per cost accounts		32,000
<b>Add:</b>		
Finished goods closing stock difference	1,600	
Finished goods opening stock difference	2,500	
Work-in-progress closing stock difference	800	
Selling and distribution overheads over absorbed	1,000	
Notional rent charge	<u>7,500</u>	13,400
<b>Deduct:</b>		
Raw material closing stock difference	1,200	
Raw material opening stock difference	900	
Work-in-progress opening stock difference	500	
Production overheads under absorbed	2,000	
Administration overheads under absorbed	<u>1,500</u>	<u>6,100</u>
Profit as per financial accounts.		<u>39,300</u>

In the cost ledger, overheads are absorbed as follows:

Production overheads	£14.00 per direct labour hour
Administration overheads	8% of sales
Selling and distribution overheads	4% of sales

Any over/under absorbed overhead balance at the end of a month is carried forward to the following month in the cost ledger. Any balance remaining at the end of a financial year is transferred to the Profit and Loss Account.

Sales in Month 1 were £400,000 and 8,000 direct labour hours were worked.

In the financial ledger the following stocks relate to Month 1:

	Opening stock £	Closing stock £
Raw materials	40,000	50,000
Work-in-progress	20,000	25,000
Finished goods	150,000	120,000

## REQUIRED

- (a) Calculate for Month 1:
- (i) The opening and closing stock values in the cost ledger for each of the raw material, work-in-progress and finished goods. (9 marks)
  - (ii) The actual overhead expenditure for production, administration and selling and distribution. (6 marks)
- (b) Suggest a reason why the cost and financial accounting valuations for raw material stock are different. (3 marks)
- (c) Explain what the item 'Notional rent charge' means. (2 marks)

**(Total 20 marks)**