EXAMINATIONS BOARD

Cost Accounting

3

Level 3

Series 2 2004

(Code 3016)

Model Answers

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Cost Accounting Level 3
Series 2 2004

How to use this booklet

Model Answers have been developed by LCCIEB to offer additional information and guidance to Centres, teachers and candidates as they prepare for LCCIEB examinations. The contents of this booklet are divided into 3 elements:

(1)	Questions	– reproduced from the printed examination paper
(2)	Model Answers	– summary of the main points that the Chief Examiner expected to see in the answers to each question in the examination paper, plus a fully worked example or sample answer (where applicable)
(3)	Helpful Hints	– where appropriate, additional guidance relating to individual questions or to examination technique

Teachers and candidates should find this booklet an invaluable teaching tool and an aid to success.

The London Chamber of Commerce and Industry Examinations Board provides Model Answers to help candidates gain a general understanding of the standard required. The Board accepts that candidates may offer other answers that could be equally valid.

Cost Accounting Level 3
Series 2 2004

QUESTION 1

Roadmix Ltd uses a raw material B12 for its construction business. On 1 January year 4, 170 tonnes of B12 were in stock. This material had been purchased in December year 3 at a price of £9.20 per tonne and was the only delivery in this month. The stock at the end of December was valued at this figure. During the three month period ending March year 4 the following quantities of raw material B12 were received into, and issued out of, stock.

	Receipts		**Issues**
Date	(Tonnes)	Purchase Cost (£)	(Tonnes)
6 Jan	800	8,590	710
18 Jan			
20 Jan	300	3,510	
8 Feb	450	4,680	
23 Feb	100	1,300	
24 Feb			625
28 Feb	220	3,260	
16 March	400	4,800	
22 March			440
23 March	180	2,450	

The material pricing policy, adopted by Roadmix for stock item B12, is that the issues in each month are priced at the weighted average price of the previous month's purchases.

At the end of each three-month period the closing stock is adjusted to the weighted average price of the purchases of the last month of the period.

REQUIRED

(a) Calculate the value of material B12 issued for each of the three months of year 4.
(A full stock account is not required)

(8 marks)

(b) Calculate the stock adjustment required at the end of March year 4.

(8 marks)

(c) Prepare the journal entry, with account descriptions, to show how the stock adjustment would be dealt with. **(No narrative is required).**

(4 marks)

(Total 20 marks)

Model Answer to Question 1

(a) **Weighted average purchase price for each month.**

December	Given	£9.20
January	(8,590 + 3,510) / (800 + 300)	£11.00
February	(4,680 + 1,300 + 3,260) / (450 + 100 + 220)	£12.00

Material issued

January	(710 x 9.20)	6,532
February	(625 x 11)	6,875
March	(440 x 12)	5,280

(b) Total purchases for the three month period
= 2,450 tonnes at a total cost of £28,590
Weighted average price of purchases for March
(4,800 + 2,450) / (400 + 180) £12.50

Stock adjustment at the end of March

	Tonnes	**£**
Opening stock	170	1,564
Purchases	2,450	28,590
	2,620	30,154
Issues	1,775	18,687
Closing stock	845	11,467
Closing stock at £12.50		10,563
Stock adjustment		904

Issues for the three month period
= 6,532 + 6,875 + 5,280 18,687

(c) **Journal entry**

	£ Debit	**£ Credit**
Stock adjustment/Profit & Loss Account	904	
Stock Account		904

QUESTION 2

Macket Ltd manufactures and distributes a single product. The variable costs per unit of the product are as follows:

Direct materials	£35.00
Direct labour	£8.00
Variable overheads	£5.00

The product sells for £80.00 and the company expects total sales revenue in this current year of £1,200,000. Fixed overheads are forecast at £128,000 for the year.

REQUIRED

(a) Calculate for the current year the:

(i) break-even point in units

(ii) contribution/sales ratio

(iii) expected profit.

(8 marks)

The following changes in cost are expected in the following year:

(1) Direct wage rate to increase by 5%
(2) Raw material prices to rise by 6%
(3) Variable overheads to rise by 10% per unit of product
(4) Fixed overheads to rise by 10%

REQUIRED

(b) Calculate for the following year:

(i) A new selling price that maintains the current year's contribution/sales ratio.

(ii) The expected profit if both the sales volume and the contribution/sales ratio for the current year are maintained.

(iii) The sales volume required to maintain the current year's profit if the selling price remains at £80.

(12 marks)

(Total 20 marks)

Model Answer to Question 2

(a)

	£/unit	£/unit
Selling price		80.00
Direct materials	35.00	
Direct labour	8.00	
Variable o/heads	5.00	
		48.00
Contribution		32.00

(i) Break-even = Fixed overheads / unit contribution
= 128,000 / 32
= 4,000 units

(ii) Contribution sales ratio = 32 / 80 x 100%
= 40%

(iii) Expected profit for year = Total contribution – fixed o/h
= 40% x 1,200,000 – 128,000
= £352,000

(b) (i) New selling price:
Variable costs for the following year:

	£
Direct material	37.10
Direct labour	8.40
Variable o/heads	5.50
	51.00

Contribution / sales ratio = $\frac{\text{Selling price – unit variable cost}}{\text{Selling price}}$

$0.40 = \frac{SP - 51.00}{SP}$

(0.4 x SP) – SP = –51
SP(0.4 – 1) = –51
SP(1 – 0.4) = 51
SP = 51 ÷ 0.6
Selling price = £85.00

(ii) Expected profit:
Present sales volume = 1,200,000 / 80
= 15,000 units
Profit = Total contribution – fixed o/h
= 15,000 x (85 – 51) – 140,800
= £369,200

(iii) Sales volume required
Unit contribution if selling price remains at £80.00
= 80 – 51 = £29.00

Total contribution required = Profit + fixed o/h
= 352,000 + 140,800
= £492,800

Sales volume required = 492,800 / 29
= 16,993 units

QUESTION 3

Printers Ltd manufactures and sells a single product. Due to a fall in sales demand the company has been operating some way below maximum capacity. The company has prepared the following report, for the year just ended, which indicates that demand is now increasing. Management of the company however are concerned that the report also indicates a large adverse cost variance.

	Budget	**Actual**	**Variance**
Production/sales (units)	18,000	20,000	2,000F
Sales revenue (£)	216,000	238,000	22,000F
Direct materials (£)	90,000	95,000	5,000A
Direct labour (£)	45,000	55,000	10,000A
Production overheads (£)	36,000	38,000	2,000A
Selling and distribution costs (£)	8,000	8,300	300A
Administration costs (£)	10,000	10,100	100A
Total costs (£)	189,000	206,400	17,400A
Profit (£)	27,000	31,600	4,600F

The following points have been revealed concerning the budget.

(1) Production overheads, at a maximum annual capacity of 24,000 units, are budgeted at a total cost of £45,000.
(2) Selling and distribution costs include a fixed element of £3,500.
(3) Administration costs are fixed.

REQUIRED

(a) Briefly explain the main difference between flexible and fixed budgets. (4 marks)

(b) Prepare a revised report for the year just ended, in the above format, using a flexed budget.

(8 marks)

In the year just started the company anticipates a 10% increase in demand for its product over last year's output, with the average selling price remaining the same. A 5% increase in the unit cost of direct labour and direct material is also anticipated together with an increase of 10% on all fixed costs. All other variable costs, per unit, are estimated to remain the same as actually recorded in the previous year. The previous year's fixed element cost for the production overheads and selling/distribution costs was as budgeted.

REQUIRED

(c) Prepare the budget for the year just started. (8 marks)

(Total 20 marks)

Model Answer to Question 3

(a) A fixed budget is normally set prior to the start of an accounting period and used for planning purposes. It is based on one level of activity.

A flexible budget, used for control purposes, changes in response to changes in activity by recognising different cost behaviour patterns.

(b)

	Flexed budget	Actual	Variance
Production/sales (units)	20,000	20,000	0
	£	**£**	**£**
Sales revenue	240,000	238,000	2,000A
Direct materials	100,000	95,000	5,000F
Direct labour	50,000	55,000	5,000A
Production overheads	39,000	38,000	1,000F
Sales and distribution costs	8,500	8,300	200F
Administration costs	10,000	10,100	100A
Total costs	207,500	206,400	1,100F
Profit	32,500	31,600	900A

Workings:

Production overheads:

Total o/h	=	Fixed o/h + (unit variable o/h x units)
45,000	=	Fo/h + (Vo/h x 24,000)
36,000	=	Fo/h + (Vo/h x 18,000)
9,000	=	Vo/h x 6,000
Variable o/h	=	£1.50 per unit
Fixed o/h	=	45,000 – (1.50 x 24,000)
	=	£9,000
Flexed budget	=	9,000 + (20,000 x 1.50)
	=	£39,000

Selling and distribution costs:

Variable cost at 18,000 units	=	8,000 – 3,500
	=	4,500 (0.25 per unit)
Flexed budget at 20,000 units	=	3,500 + (20,000 x 0.25)
	=	£8,500

(c)

	Budget
Production/sales (units)	22,000
	£
Sales revenue	261,800
Direct materials	109,725
Direct labour	63,525
Production overheads	41,800
Sales and distribution costs	9,130
Administration costs	11,110
Total costs	235,290
Profit	26,510

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Model answer to Question 3 continued

Workings:

Sales revenue:		
	22,000 x 238,000 / 20,000	£261,800
	or 238,000 x 1.1	
Material:		
	95,000 / 20,000 x 1.05	£109,725
	or 95,000 x 1.1 x 1.05	
Labour:		
	55,000 / 20,000 x 22,000 x 1.05	£63,525
	or 55,000 x 1.1 x 1.05	
Production o/h:		
	Fixed element: 9,000 x 1.10	£9,900
	Variable element:	
	(38,000 – 9,000)/20,000 x 22,000	
	or (38,000 – 9,000) x 1.1)	£31,900
		£41,800
	or 38,000 x 1.1	£41,800
Sales and distribution:		
	Fixed element: 3,500 x 1.10	£3,850
	Variable element:	
	(8,300 – 3,500)/20,000 x 22,000	
	or (8,300 – 3,500) x 1.1	£5,280
		£9,130
	or 8,300 x 1.1	£9,130
Administration:		
	10,100 x 1.10	£11,110

QUESTION 4

Growmore Ltd manufactures and sells three ranges of products (Range X, Y and Z). The company comprises of three sales departments (one for each of its range of products), a refreshment area for customer use, a manufacturing department and a rented warehouse for storage purposes.

The following department budgets have been prepared for the next period:

	Dept X (£)	Dept Y (£)	Dept Z (£)	Refreshments (£)
Sales	99,000	72,000	54,000	15,000
Sales staff wages	8,000	5,000	4,000	2,000
Refreshment costs	–	–	–	8,000
Manufacturing wages	9,000	8,000	7,000	
Material purchases	57,000	41,000	29,000	

The following information is also available for the next period:

(1) The company's policy, for each of its products, is to add 80% to the cost of materials to establish selling price.

(2) Warehouse rent £6,000, to be apportioned to the three product ranges on the basis of sales revenue.

(3) Fixed overheads £40,000 (not including warehouse rent), to be apportioned on the basis of the following floor areas:

Dept X	Dept Y	Dept Z	Refreshments	Manufacturing
50 sq m	50 sq m	20 sq m	20 sq m	60 sq m

(4) Fixed overheads apportioned to the manufacturing department to be reallocated to the four other departments on the basis of sales revenue.

(5) The value of raw material in the warehouse at the start of the period is expected to be:

Product range	X	Y	Z
Valuation	£2,000	£1,000	£4,000

(6) No stocks of WIP or finished goods are kept.

REQUIRED

(a) Calculate the budgeted closing stock value of raw material, for each product range, at the end of the next period. (5 marks)

(b) Prepare budget profit statements, in marginal costing format, for the next period for each of the sales departments and for the refreshment area. (10 marks)

The company is considering terminating its rent contract for the warehouse, closing the refreshment area and using the space, released by this closure, for storage purposes.

REQUIRED

(c) Advise the company on this proposal. (Support your advice with relevant calculations). (5 marks)

(Total 20 marks)

Model Answer to Question 4

(a)

		Dept X	Dept Y	Dept Z
		£	£	£
Cost of material used				
(Sales/1.80)		99,000/1.8	72,000/1.8	54,000/1.8
	=	55,000	40,000	30,000
Closing stock				
Opening stock of raw material		2,000	1,000	4,000
Add material purchased		57,000	41,000	29,000
Less cost of material used		55,000	40,000	30,000
Closing stock of raw material		4,000	2,000	3,000

(b)

	Dept X	Dept Y	Dept Z	Ref/ments
	£	£	£	£
Sales	99,000	72,000	54,000	15,000
Less direct materials	55,000	40,000	30,000	
Less manufacturing wages	9,000	8,000	7,000	
Less cost of refreshments				8,000
Contribution	35,000	24,000	17,000	7,000
Less warehouse rent	2,640	1,920	1,440	
Less fixed overheads	14,950	13,600	6,700	4,750
Less sales staff wages	8,000	5,000	4,000	2,000
Net Profit	9,410	3,480	4,860	250

Workings:

Warehouse rent:

Dept X	6,000 x 99,000 / 225,000	=	£2,640
Dept Y	6,000 x 72,000 / 225,000	=	£1,920
Dept Z	6,000 x 54,000 / 225,000	=	£1,440

Fixed overheads

Dept X	40,000 x 50 / 200	=	£10,000
Dept Y	40,000 x 50 / 200	=	£10,000
Dept Z	40,000 x 20 / 200	=	£4,000
Ref dept	40,000 x 20 / 200	=	£4,000
Man dept	40,000 x 60 / 200	=	£12,000

Add reallocation of Manufacturing dept apportionment

Dept X	10,000 + (12,000 x 99,000 / 240,000)	£14,950
Dept Y	10,000 + (12,000 x 72,000 / 240,000)	£13,600
Dept Z	4,000 + (12,000 x 54,000 / 240,000)	£6,700
Ref dept	4,000 + (12,000 x 15,000 / 240,000)	£4,750
Man dept	12,000 + (12,000)	£0

(c) Proposals:

		£
Terminating warehouse rent	(increase profits by)	6,000
Closing refreshments dept		
Loss of contribution	(decrease profits by)	7,000
Savings on labour	(increase profits by)	2,000
Net results of proposal	**(increase profits by)**	**1,000**

Advise the company to take up the proposal.

QUESTION 5

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

		£
Direct material	8 kg @ £4 per kg	32.00
Direct labour	2 hrs @ £8 per hour	16.00
Variable overheads	£2.50 per direct labour hour	5.00
Fixed overheads	£12.00 per direct labour hour	24.00
		77.00

Budgeted production and sales for the month ended April year 4 were 400 units. The budgeted selling price was £100 per unit.

Actual sales and costs relating to this period were as follows:

Sales	420 units
Revenue from sales	£39,900
Direct material	3,400 kg used at a total cost of £14,880
Direct labour	850 hrs worked at a total cost of £6,600
Variable production overheads incurred	£2,200
Fixed production overheads incurred	£10,200

All production was sold during the period and there was no opening stock at 1 April.

REQUIRED

For the month of April year 4:

(a) Calculate the:

(i) budgeted gross profit

(ii) actual gross profit. (4 marks)

(b) Calculate the following variances:

(i) Selling price and sales volume profit

(ii) Material price and usage

(iii) Labour rate and efficiency

(iv) Variable overhead expenditure and efficiency

(v) Fixed overhead expenditure and volume. (12 marks)

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

(4 marks)

(Total 20 marks)

Model Answer to Question 5

(a) Budgeted gross profit for the month = £(100 – 77) x 400

= £23 x 400 = **£9,200**

Actual gross profit for the month:

	£		£
Sales			39,900
Material	14,880	½	
Labour	6,600	½	
Variable o/h	2,200	½	
Fixed o/h	10,200	½	
Cost of sales			33,880
Gross Profit			**£6,020**

(b) **Variance**

(i)	Selling Price	(420 x 100) – 39,900	2,100A
	Sales Volume Profit	(400 – 420) x 23	460F
(ii)	Material Price	14,880 – (4 x 3,400)	1,280A
	Material Usage	(4 x 3,400) – (4 x 420 x 8)	160A
(iii)	Labour Rate	6,600 – (8 x 850)	200F
	Labour Efficiency	(8 x 850) – (8 x 420 x 2)	80A
(iv)	Variable o/h Expend	2,200 – (2.5 x 850)	75A
	Variable o/h Efficiency	(2.5 x 850) – (2.5 x 2 x 420)	25A
(v)	Fixed o/h Expend	10,200 – (12 x 2 x 400)	600A
	Fixed o/h Volume	(12 x 2 x 400) – (12 x 2 x 420)	480F
Total cost variance			1,540A

Syllabus Topic 5: Standard costing and variances (5.4)

(c)

Budgeted gross profit		**£9,200**
Selling Price Variance	2,100A	
Sales Volume Profit Variance	460F	
Total Cost Variance	1,540A	
		3,180A
Actual Profit		**£6,020**

QUESTION 6

A manufacturing company operates a non-integrated accounting system. At the end of an accounting period the profit shown in the financial accounts was £18,956. Examination of the two sets of accounts revealed the following differences:

	Cost accounts £	**Financial accounts** £
Opening stock valuations:		
Raw material	31,600	29,546
Work in progress	12,780	15,750
Finished goods	16,568	19,235
Closing stock valuations:		
Raw material	23,790	24,468
Work in progress	14,680	17,780
Finished goods	19,389	18,350
Depreciation	9,726	10,385
Discounts Allowed	–	1,550
Discounts Received	–	750
Notional rent charge	7,500	–
Sundry investment income	–	2,500

REQUIRED

(a) Calculate the profit for the period as shown in the cost accounts by means of a profit reconciliation statement. (12 marks)

(b) Briefly explain the difference between an integrated and a non-integrated accounting system. (2 marks)

(c) Suggest a reason why the cost and financial accounting charges for depreciation are different. (2 marks)

(d) Explain what the item Notional rent charge means. (4 marks)

(Total 20 marks)

Model Answer to Question 6

(a)

		£	£
Profit as per financial accounts			18,956
Add			
Depreciation (10,385 – 9,726)			659
Discounts allowed			1,550
Less			21,165
Discounts received		750	
Notional rent charge		7,500	
Sundry investment income		2,500	
			10,750
			10,415
Stock adjustments			
Raw materials (opening)	[29,546 – 31,600]	–2.054	
Raw materials (closing)	[23,790 – 24,468]	–678	
Work in progress (opening)	[15,750 – 12,780]	2,970	
Work in progress (closing)	[14,680 – 17,780]	–3,100	
Finished goods (opening)	[19,235 – 16,568]	2,667	
Finished goods (closing)	[19,389 – 18,350]	1,039	
			844*
Profit as per cost accounts			11,259
*or			
Opening balances (–2,054 + 2,970 + 2,667)		3,583	
Closing balances (–678 – 3,100 + 1,039)		–2,739	844

(b) An integrated system uses a common input of data for financial and cost accounts.

A non-integrated system has two sets of accounts being kept in agreement by the use of control accounts or reconciled by other means.

(c) **Depreciation:**
The method of calculation could be different. The financial accounts might use a straight line method, where as the cost accounts might use reducing balance method.

(d) **Notional rent charge**
A notional rent charge represents a cost of using a resource, that is owned by the company, and has no conventional actual cost. It is important to include these in the cost of production to calculate the cost for pricing purposes.

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