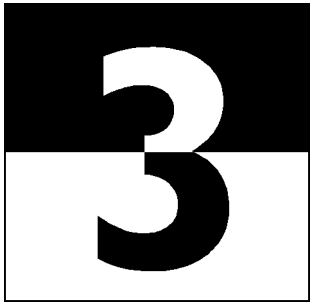


Management Accounting



Level 3

Series 2 2003

(Code 3023)

Model Answers

Management Accounting Level 3

Series 2 2003

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.

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Management Accounting Level 3

Series 2 2003

QUESTION 1

REQUIRED

- (a) Describe the traditional full absorption costing method of attributing production overheads to products. (7 marks)
- (b) Describe the activity based costing (ABC) method of attributing production overheads to products. (7 marks)
- (c) Outline the benefits that may result from using activity based costing instead of the traditional absorption method. (6 marks)

(Total 20 marks)

Model Answer to Question 1

- (a) The traditional full absorption costing method of attributing production overheads to products is a three stage process of allocation, apportionment and absorption (assuming that cost centres have already been established).
First, each overhead item is allocated, whenever possible, directly to the cost centre where it is incurred, eg the wages of indirect workers employed exclusively in a particular cost centre.
Some overheads, eg rent and rates of the factory, cannot be allocated directly to cost centres and have to be apportioned between cost centres on an appropriate basis, eg rent and rates on the basis of space occupied. The cost apportionment stage also involves the sharing of the overheads attributed to each service cost centre across production cost centres, again on an appropriate basis.
The third stage, absorption, involves the establishment and use of absorption rates to enable the attribution of the overheads of each production cost centre to each product produced. Commonly a rate per direct labour hour worked, or per machine hour, is used.
- (b) The activity based costing (ABC) method seeks to discover the causal factor, known as the cost driver, which determines the demand for each separate overhead activity. Each activity will be a discrete area of work which may cut across cost centre boundaries. For example, material requisitioning may be identified as an activity and the number of requisitions raised as the key cost driver. There are likely to be more activities than there are cost centres.
ABC involves three further stages once every activity, and the related cost driver for each, has been established.
First, cost pools are created to collect the costs of activities having the same cost driver.
Second, the incidence of each cost driver for each product is measured.
Third, the costs of each cost pool (and activity) are attributed to products using the cost driver measures.
- (c) The potential benefits of activity based costing:
ABC should result in more accurate attribution of overheads to products and thus more reliable product cost information. In ABC, activities are linked directly with products whereas traditional absorption costing uses production volume based absorption rates that are not directly linked to overhead incidence. Using traditional methods, high volume products tend to be overcharged and low volume products undercharged.
ABC should result in better control of overhead expenditure through greater understanding of the factors that drive them. ABC methods provide a clearer cause and cost effect than traditional absorption costing.

QUESTION 2

The budgeted profit of a product in Month 10 was £30,000. 12,400 units of the product were actually sold in Month 10 for a total revenue of £183,520. The performance statement for the month relating to the product included the following variances:

Selling price variance	£2,480 Adverse
Sales volume profit variance	£1,000 Favourable

REQUIRED

(a) Calculate for Month 10:

- (i) the standard unit selling price of the product (4 marks)
- (ii) the standard profit per unit of the product. (4 marks)

In Month 11, budgeted sales of the product were 13,000 units at a revised standard selling price of £14.60 per unit. Standard costs were £12.30 per unit. The average selling price in Month 11 was actually £14.50 per unit with total revenue of £189,950.

REQUIRED

(b) Calculate for Month 11:

- (i) the selling price variance (3 marks)
- (ii) the sales volume profit variance. (3 marks)

(c) Write a short report summarising the sales performance in Months 10 and 11.

(6 marks)

(Total 20 marks)

Model Answer to Question 2

- (a) (i) Standard selling price = $(£183,520 + £2,480) \div 12,400$ units
= £15.00 per unit
- (ii) Standard profit = $(£30,000 + £1,000) \div 12,400$ units
= £2.50 per unit
- (b) (i) Selling price variance = $£189,950 - [£189,950 \div £14.50/\text{unit}] \times £14.60/\text{unit}$
= £1,310 Adverse
- (ii) Sales volume profit variance = $[(£189,950 \div £14.50/\text{unit}) - 13,000] \times £2.30/\text{unit}$
= £230 Favourable

(c) Report:

Sales volume in each month was above that budgeted (+3.3% and +0.8% in Months 10 and 11 respectively). Units sold were 5.6% higher in Month 11 than in Month 10.

However, the selling price achieved declined by 2% month on month, and the standard selling price was not achieved in either Month 10 (-1.3%) or Month 11 (-0.7%).

Before taking account of cost performance against standard (no information provided), the budgeted profit was not achieved in either month, falling short by £1,480 in Month 10 and by £1,080 in Month 11, as evidenced by the total sales variance.

QUESTION 3

A company is assessing the viability of a proposed investment project. The following information is provided:

- (1) Development costs, totalling £12,000, have already been incurred.
- (2) Investment of £223,000 in fixed assets would be required at the beginning of the project.
- (3) Investment of £52,000 in working capital would also be required at the beginning of the project. The working capital would be expected to increase by £5,000 in each of years 1, 2 and 3. The total investment in working capital would be released at the end of the project.
- (4) The project life would be six years.
- (5) Sales less incremental operating costs (excluding depreciation) are estimated as follows:

Year 1	£40,000
Year 2	£55,000
Year 3	£70,000
Year 4	£80,000
Year 5	£80,000
Year 6	£70,000

- (6) In addition to the incremental operating costs included in (5) above, the project would be charged with a share of the general fixed overheads of the company. This charge is estimated to be £11,000 per annum.
- (7) The required rate of return is 10% per annum.
- (8) Discount factors:

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
5%	0.952	0.907	0.864	0.823	0.784	0.746
10%	0.909	0.826	0.751	0.683	0.621	0.564
15%	0.870	0.756	0.658	0.572	0.497	0.432

REQUIRED

- (a) In relation to the investment project:
 - (i) list the cash flows for each year that are relevant to the decision whether to invest in the project (6 marks)
 - (ii) calculate the internal rate of return (%) (6 marks)
 - (iii) calculate the payback period (years and months) (4 marks)
 - (iv) recommend, with a reason, whether the investment is worthwhile. (2 marks)
- (b) State the limitations of the payback period as a measure of investment viability. (2 marks)

(Total 20 marks)

Model Answer to Question 3

(a) (i) Cash flows (£000):

Year	Capital inv	Working cap	Operating	Total
0	(223)	(52)		(275)
1		(5)	40	35
2		(5)	55	50
3		(5)	70	65
4			80	80
5			80	80
6		67	70	137

NB Development costs already incurred are a sunk cost and are not relevant.
 General fixed costs are a committed cost resulting from the general operations of the company and are not relevant.

(ii) Internal rate of return (IRR):

Year	Cash flows £000	Disc factor 10%	PV £000	Disc factor 15%	PV £000
0	(275)	1.000	(275)	1.000	(275)
1	35	0.909	31.8	0.870	30.5
2	50	0.826	41.3	0.756	37.8
3	65	0.751	48.8	0.658	42.8
4	80	0.683	54.6	0.572	45.8
5	80	0.621	49.7	0.497	39.8
6	137	0.564	<u>77.3</u>	0.432	<u>59.2</u>
			<u>28.5</u>		<u>(19.1)</u>

$$\begin{aligned} \text{IRR} &= 10\% + (5\% \times \frac{28.5}{47.6}) \\ &= \underline{13\%} \end{aligned}$$

(iii) Payback period:

275	-	35	=	240	(1 year)
	-	50	=	190	(2 years)
	-	65	=	125	(3 years)
	-	80	=	45	(4 years)
	+	(45 x 12)	=	7 months	
		80			

Payback period = 4 years 7 months

(iv) The investment project is worthwhile because IRR % > 10 (or because NPV + ve at 10%).

(b) The payback method:

- takes no account of the time value of money
- ignores cash inflows/outflows after payback is reached.

QUESTION 4

The following summary analysis relates to the performance, in Month 5, of the single product manufactured and sold by a company:

	£000	£000
Sales		264
Direct materials	94	
Direct labour	58	
Overheads	<u>89</u>	<u>241</u>
Profit		<u>23</u>

Notes relating to the above summary:

- (1) The unit selling price of the product was £12.00.
- (2) Variable overheads were £1.50 per unit.

In Month 6, the following are forecast:

- (1) The selling price will be increased by £0.50 per unit.
- (2) Direct material prices will increase by 6%.
- (3) Direct labour productivity will increase by 5%.
- (4) Variable overheads per unit will remain unchanged.
- (5) Fixed overhead expenditure will increase by £4,000.

REQUIRED

(a) Calculate for Month 5:

- (i) the break-even point (sales units to the nearest hundred) (7 marks)
- (ii) the contribution/sales ratio (%). (2 marks)

(b) Calculate for Month 6:

- (i) the sales revenue (to the nearest £000) required to achieve a profit of £30,000 (8 marks)
- (ii) the profit expected if 23,000 units are sold. (3 marks)

(Total 20 marks)

Model Answer to Question 4

- (a) Sales units = $\text{£}264,000 \div \text{£}12.00/\text{unit} = 22,000$ units
Fixed overheads = $\text{£}89,000 - (22,000 \text{ units} @ \text{£}1.50/\text{unit}) = \text{£}56,000$
Contribution = $\text{£}264,000 - (\text{£}94,000 + \text{£}58,000 + \text{£}33,000) = \text{£}79,000$
Contribution per unit = $\text{£}79,000 \div 22,000 \text{ units} = \text{£}3.591$

(i) Break-even point (sales units) = $\text{£}56,000 \div \text{£}3.591/\text{unit} = \underline{15,600 \text{ units}}$

(ii) Contribution/sales ratio = $(\text{£}3.591 \div \text{£}12.00) \times 100\% = \underline{29.9\%}$

[or = $(\text{£}79,000 \div \text{£}264,000) \times 100\%$]

(b)		<i>£/unit</i>	
	Selling price	12.50	
	Variable costs:		
	Direct materials	4.529	$[(\text{£}94,000 \div 22,000 \text{ units}) \times 1.06]$
	Direct labour	2.511	$[(\text{£}58,000 \div 22,000 \text{ units}) \div 1.05]$
	Variable overheads	<u>1.500</u>	
		8.54	
	Contribution	<u>3.96</u>	

(i) Required contribution = $\text{£}90,000$ ($\text{£}60,000 + \text{£}30,000$)

Required sales revenue = $(\text{£}90,000 \div \text{£}3.96/\text{unit}) \times \text{£}12.50/\text{unit} = \underline{\text{£}284,000}$

(ii) Profit expected = $(23,000 \text{ units} \times \text{£}3.96/\text{unit}) - \text{£}60,000 = \underline{\text{£}31,080}$

QUESTION 5

A company has produced a profit forecast, by month, for the period May to September:

	£000				
	May	June	July	Aug	Sept
Sales	72	80	120	140	112
Production cost of sales:					
Raw materials used	27	28	36	42	33
Factory wages	26	26	30	33	27
Production overheads	<u>21</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>22</u>
Cost of production	74	75	88	98	82
Opening stock of finished goods	49	58	67	67	67
Closing stock of finished goods	<u>58</u>	<u>67</u>	<u>67</u>	<u>67</u>	<u>65</u>
	65	66	88	98	84
Gross profit	<u>7</u>	<u>14</u>	<u>32</u>	<u>42</u>	<u>28</u>
Administration and selling overheads	12	12	13	13	13
Net profit/(loss)	<u>(5)</u>	<u>2</u>	<u>19</u>	<u>29</u>	<u>15</u>

Notes:

- (1) 10% of sales are for cash. Credit sales are settled in the month after sale.
- (2) Suppliers of raw materials are paid one month after delivery.
- (3) Stock of raw materials (end of month):

April	£14,000
May	£17,000
June	£20,000
July	£21,000
August	£21,000
September	£20,000

- (4) Factory wages are paid for each month on the last day of the month.
- (5) Monthly production overheads include depreciation of £6,000 and rent of £3,000. Rent is paid quarterly in advance on the last day of March, June, September and December. The remaining production overheads are paid in the month following that incurred as are all administration and selling overheads.
- (6) Capital expenditure of £35,000 will be incurred in August. This will not affect the monthly depreciation charge.
- (7) A bank overdraft balance of £3,000 is expected on 1 June.
- (8) The profit forecast does not include any bank interest and no allowance is to be made for this in any of the budgets at this stage.

REQUIRED

- (a) Prepare a cash budget for **each** of the months June, July and August. (11 marks)
- (b) List the budgeted current asset and current liability items (with values) at the end of August. (5 marks)
- (c) List **two** main reasons, with supporting figures, to explain why the total profit of £50,000, forecast for the three months June to August, is not reflected in the forecast bank balance at 31 August. (4 marks)

(Total 20 marks)

Model Answer to Question 5

(a) Cash budget:

£000	June	July	August
Receipts			
from customers - cash sales	8	12	14
- credit sales	<u>64.8</u>	<u>72</u>	<u>108</u>
	72.8	84	122
Payments			
for raw materials*	30	31	37
factory wages	26	30	33
production overheads	21	12	13
admin and selling overheads	12	12	13
capital expenditure	<u>---</u>	<u>---</u>	<u>35</u>
	89	85	131
Net cash inflow/(outflow)	(16.2)	(1)	(9)
Opening bank balance	(3)	(19.2)	(20.2)
Closing bank balance	(19.2)	(20.2)	(29.2)

* material usage ± change in raw material stock

(b)

£000		
Current assets at 31 August:		
Stock of raw materials	21	
Stock of finished goods	67	
Debtors	126	(£140,000 × 0.9)
Prepaid rent	<u>3</u>	(for September)
	217	
Current liabilities at 31 August:		
Creditors - materials	42	(purchases in August)
- overheads	27	(£14,000 + £13,000)
Bank	<u>29.2</u>	
	98.2	

(c) The major reasons why the profit of £50,000 for the three months is not reflected in the bank balance (where the **overdraft** has **increased** by £26,200) are:

- (i) the increase in debtors of £61,200 (90% of £140,000 - £72,000)
- (ii) the capital expenditure excess over the depreciation in the period of £17,000 (£35,000 - £18,000).

The increase in stock (of £13,000) is slightly more than offset by the increase in creditors (of £15,000).

QUESTION 6

A company manufactures a single product. The following information is available for a month:

Actual:

Output	36,200 units
Production overheads	£42,090

Budget:

Production overheads:

at 30,000 units – £39,200

at 40,000 units – £41,500

at normal capacity – the predetermined production overhead absorption rate is £1.18 per unit

REQUIRED

Calculate for the month:

(a) The budgeted:

- (i) variable production overheads per unit (2 marks)
- (ii) fixed production overhead expenditure (2 marks)
- (iii) output (units) at normal capacity (4 marks)
- (iv) total production overhead expenditure at normal capacity. (2 marks)

(b) The production overhead absorbed.

(2 marks)

(c) The following production overhead variances:

- (i) total (2 marks)
- (ii) expenditure (3 marks)
- (iii) volume. (3 marks)

(Total 20 marks)

Model Answer to Question 6

- (a) (i) Budgeted variable production overheads per unit = $\frac{£41,500 - £39,200}{40,000 - 30,000 \text{ units}}$
= £0.23 per unit
- (ii) Budgeted fixed production overhead expenditure = $£41,500 - (40,000 \text{ units} \times £0.23/\text{unit})$
= £32,300
- (iii) Budgeted output = $£32,300 \div (£1.18 - £0.23/\text{unit})$
= 34,000 units
- (iv) Budgeted total production overhead expenditure = $34,000 \text{ units} \times £1.18/\text{unit}$
= £40,120
- (b) Production overhead absorbed = $36,200 \text{ units} \times £1.18/\text{unit}$
= £42,716
- (c) Production overhead variances:
- (i) Total = actual overhead expenditure – overhead absorbed
= $£42,090 - £42,716$
= £626 Favourable
- (ii) Expenditure = actual overhead expenditure – flexed budget
= $£42,090 - [£32,300 + (36,200 \text{ units} \times £0.23/\text{unit})]$
= £1,464 Adverse
- (iii) Volume = budgeted fixed overhead – fixed overhead absorbed
= $£32,300 - (36,200 \text{ units} \times £0.95/\text{unit})$
= £2,090 Favourable



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