Management Accounting

3

Level 3

Series 4 2003

(Code 3023)

Model Answers

Management Accounting Level 3
Series 4 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.

Management Accounting Level 3
Series 4 2003

QUESTION 1

REQUIRED

(a)   Describe **3** benefits that a system of budgetary planning and control may bring to an organisation.

(6 marks)

(b)   Define, giving examples, the term **principal budget factor** and explain its importance in budgeting.

(6 marks)

(c)   Outline the advantages of **decentralisation** and the objectives of **transfer pricing** between divisions in a decentralised organisation.

(8 marks)

Model Answer to Question 1

(a)   Benefits of a budgetary planning and control system:

- Planning – the budgeting process forces management to think ahead about what it is trying to achieve and produces a plan of the activities of a business, the resources required and the expected financial consequences.
- Co-ordination **–** the preparation of budgets enables, and indeed necessitates the co-ordination of the various activities/functions/resources within a business.
- Communication – budgeting serves to communicate to individuals within a business the objectives, strategy and operating plan of the business and the role that each individual is expected to play.
- Control **–** budgets provide a basis for comparison of actual results enabling a business to monitor progress towards its goals/targets and to highlight areas of deviation from plan.
- Participation/motivation **–** the involvement of managers in the setting of budgets, and in the control process, can increase motivation focused on achieving business objectives.

(b)   Principal budget factor:

The principal budget factor is the factor (aspect of the business) that will limit the activities of an organisation for a period. It is important that this is identified at the outset of budgeting as it will influence all other budgets.

In many cases sales demand is the limiting (and thus principal budget) factor but availability of resources could in some situations limit the sales that can be achieved.

(c)   Decentralisation and transfer pricing:

Decentralisation enables the delegation of responsibility and decision-making to divisional managers. This should improve the motivation and performance of divisional managers and enable group top management to concentrate on business strategy free from day to day operational issues.

The objectives of transfer pricing (the pricing of goods/services provided by one division to another) are that the prices set will:

- Permit realistic appraisal of the performance of divisional managers
- Encourage goal congruence i.e. encourage divisional managers to take decisions regarding the purchase of goods/services that are in the best interests of the group as a whole.

QUESTION 2

A company has the following working capital ratios:

Raw material stock turnover	20 times
Finished goods stock turnover	15 times
Debtors collection period (credit sales)	35 days
Raw material creditors payment period	30 days

The summary profit and loss account of the company for a year is set out below:

	£000	£000
Sales (90% on credit)		6,030
Production cost of sales:		
Raw materials	1,720	
Direct labour	1,290	
Overheads	1,640	4,650
Gross profit		1,380
Selling and administration overheads		1,020
Net profit		360

Assume a 360 day year.

REQUIRED

(a) Calculate:

    (i)   the working capital cycle (number of days)

    (ii) the total working capital (£000).

(11 marks)

In addition to the working capital values calculated in (a)(ii), the company has a bank overdraft of £276,000.

REQUIRED

(b) Calculate:

    (i)   the current ratio

    (ii) the quick (acid test) ratio.

(5 marks)

The company is considering offering discount to its credit customers for early settlement.

REQUIRED

(c) Outline the general impact that the introduction of an early settlement discount would have on working capital requirements and on the liquidity ratios.

(4 marks)

(Total 20 marks)

Model Answer to Question 2

(a) (i) Working capital cycle:

	Days	
Raw material	18	(360 ÷ 20)
Finished goods stock	24	(360 ÷ 15)
Debtors	<u>35</u>	
	77	
Raw material creditors	<u>(30)</u>	
	<u>47</u>	

(ii) Total working capital:

	£000	
Raw material stock	86	(1,720 ÷ 20)
Finished goods stock	310	(4,650 ÷ 15)
Debtors	<u>527.6</u>	[(6,030 × 0.9) × (35 ÷ 360)]
	923.6	
Raw material creditors	<u>(143.3)</u>	[1,720 × (30 ÷ 360)]
	<u>780.3</u>	

(b) (i) Current ratio:

(stock + debtors) : (creditors + overdraft)
= 923.6 : 419.3

= <u>2.2 : 1</u>

(ii) Quick (acid test) ratio:

(debtors) : (creditors + overdraft)
= 527.6 : 419.3

= <u>1.3 : 1</u>

(c) Introduction of early settlement discount:

The introduction of an early settlement discount would result in a reduction in debtors and thus in the requirement for working capital. This should enable the company to reduce its bank overdraft.

This may thus lead to an increase in both of the liquidity ratios (current and quick).

QUESTION 3

A company is considering undertaking a one-off job. The following schedule has been prepared:

Manufacturing costs for one-off job:

	£	Notes
Materials	3,600	(1)
Direct labour	4,520	(2)
Machine maintenance and depreciation	920	(3)
General overheads	3,100	(4)

Notes:

(1) 400 kg of material will be used on the job. This material, which cost £9.00 per kg when purchased some time ago, is no longer used in the company's normal business. The complete stock of 1,500 kg (or any part thereof) could be sold for £8.00 per kg. The current replacement cost of this material is £8.60 per kg.
(2) Direct labour costs comprise the wages of two employees, skilled in the manufacturing operation required for this one-off job. They would be transferred from another department. This would necessitate the hiring of sub-contract staff, at a cost of £4,900, to carry out their normal work.
(3) Machine maintenance and depreciation represents the normal period cost based on the expected duration of the one-off job. The asset value of the machine used on the job will be unaffected but incremental maintenance costs of £270 would be expected. Machine capacity is limited and other work would have to be delayed resulting in lost contribution of £300.
(4) General overheads comprise an apportionment of overhead costs (excluding maintenance and depreciation) based on the direct labour hours expected to be worked on the one-off job. Incremental general overheads for the job are estimated at £1,170.

REQUIRED

(a) Prepare a revised manufacturing cost schedule for the one-off job on a relevant cost basis.

(10 marks)

(b) Calculate the selling price for the job so as to provide a profit margin (net of relevant manufacturing costs) of 40%.

(2 marks)

(c) Briefly explain what is meant by the term **opportunity cost** and provide two examples of opportunity costs from the information above.

(8 marks)

(Total 20 marks)

Model Answer to Question 3

(a) Revised manufacturing cost schedule:

	£	
Materials	3,200	(400 × 8.00)
Direct labour	4,900	
Machine maintenance & depreciation	570	(270 + 300)
General overheads	1,170	
	9,840	

(b) Selling price for one-off job:

£9,840 ÷ 0.6 = £16,400

(c) Opportunity costs:

The term **'opportunity cost'** is used in decision-making to mean the benefit foregone by not pursuing the next best alternative.

Examples of opportunity costs are:

(i)   the sale of the 400 kg of materials at £8.00 per kg that would be foregone if the one-off job is undertaken.

(ii) the contribution of £300 that could have been obtained from other work.

QUESTION 4

Details relating to the standard production costs per unit of a product are:

Direct materials	1.2 kg at £8.60 per kg
Direct labour	0.8 hours at £7.50 per hour
Variable production overhead	0.8 direct labour hours at £1.20 per hour
Fixed production overhead	1.1 machine hours at £12.00 per machine hour

The standard selling price of the product is £47.50 per unit.

No raw material stock is held.

The following variances occurred in a period during which 4,100 units of the product were both manufactured and sold:

Sales volume profit	£851 Favourable
Selling price	Nil
Direct material price	£176 Favourable
Direct material usage	£430 Adverse
Labour rate	£210 Adverse
Direct labour efficiency	£555 Favourable
Total variable production overhead	£87 Favourable
Fixed production overhead expenditure	£216 Favourable
Fixed production overhead volume	£660 Adverse

REQUIRED

Calculate the:

(a) (i)   budgeted production units

(ii)   budgeted sales units.

(6 marks)

(b) (i)   standard cost of actual production

(ii)   standard gross profit on actual units sold.

(5 marks)

(c) (i)   actual cost of direct materials

(ii)   actual direct labour hours worked

(iii)   actual fixed overhead expenditure.

(9 marks)

(Total 20 marks)

Model Answer to Question 4

Workings:

Standard production costs and gross profit:

	£ per unit	
Production costs:		
Direct material	10.32	(1.2 kg × £8.60/kg)
Direct labour	6.00	(0.8 hrs × £7.50/hr)
Variable production overhead	0.96	(0.8 dlhrs × £1.20/hr)
Fixed production overhead	13.20	(1.1 m/c hrs × £12.00/hr)
	30.48	
Selling price	47.50	
Gross profit	17.02	

(a) (i) Budgeted production units:

4,100 + (660 ÷ 13.20) = <u>4,150 units</u>

(ii) Budgeted sales units:

4,100 - (851 ÷ 17.02) = <u>4,050 units</u>

(b) (i) Standard cost of actual production:

4,100 × 30.48 = <u>£124,968</u>

(ii) Standard gross profit on actual units sold:

4,100 × 17.02 = <u>£69,782</u>

(c) (i) Actual cost of direct materials:

(4,100 × 10.32) - 176 + 430 = <u>£42,566</u>

(ii) Actual direct labour hours worked:

(4,100 × 0.8) - (555 ÷ 7.50) = <u>3,206 hours</u>

(iii) Actual fixed production overhead expenditure:

(4,150 × 13.20) - 216 = <u>£54,564</u>

<u>or</u> (4,100 × 13.20) + 660 - 216 = £54,564

QUESTION 5

A company is considering an investment in new manufacturing facilities to meet the growing demand for its products.

The new manufacturing facilities would cost £2.4 m (Year 0). As a result of rapid technological change the facilities would be expected to have a useful life of only four years with no terminal value. The facilities would be depreciated over the four years on a straight-line basis.

Net cash inflows from the investment, starting in one year's time and including inflation at 3% per annum, are estimated as follows:

	£
Year 1	772,500
Year 2	795,675
Year 3	874,182
Year 4	900,407

The cost of capital in real terms is 8% per annum.

Discount factors are as follows:

5%	8%	11%
0.952	0.926	0.901
0.907	0.857	0.812
0.864	0.794	0.731
0.823	0.735	0.659

REQUIRED

(a) Adjust the net cash inflows above, for **each** of the four years, to real (current) terms.

(4 marks)

(b) Calculate the net present value (NPV) of the proposed investment.

(9 marks)

(c) Using the above net cash inflows including inflation, calculate:

(i)   the payback period

(ii) the accounting rate of return.

(7 marks)

(Total 20 marks)

Model Answer to Question 5

(a) Net cash inflows in real (current) terms:

Year 1	£750,000	$(772,500 \div 1.03)$
Year 2	£750,000	$(795,675 \div 1.03^2)$
Year 3	£800,000	$(874,182 \div 1.03^3)$
Year 4	£800,000	$(900,407 \div 1.03^4)$

(b) Net present value (NPV):

Year	Cash flow £000	Disc factor 8%	NPV £000	or	Cash flow £000	Disc factor 11%*	NPV £000
0	(2,400)	1.000	(2,400)		(2,400)	1.000	(2,400)
1	750	0.926	694.5		772.5	0.901	696.0
2	750	0.857	642.8		795.675	0.812	646.1
3	800	0.794	635.2		874.182	0.731	639.0
4	800	0.735	588.0		900.407	0.659	593.4
			160.5				174.5

* The discount rate in money terms (ie to discount net cash flows including inflation) should be 11.24% (ie $[1.08 \times 1.03] - 1$). This accounts for the difference in the two NPV values above.

(c) (i) Payback period:

2,400,000 - 772,500 = 1,627,500
1,627,500 - 795,675 =   831,825
+ $(831,825 \div 874,182)$

= 2 years 11½ months (approx 3 years)

(ii) Accounting rate of return:

$$\frac{(772,500 + 795,675 + 874,182 + 900,407 - 2,400,000) \div 4}{2,400,000 \div 2} \times 100\%$$

= 19.6%

QUESTION 6

The following data applies to a joint manufacturing process for a period:

Joint production costs   £76,800
Output:
   Product A   600 kg
   Product B   1,000 kg
   Product C   800 kg

No stock of finished goods is held and sales of the above quantities were made in the period at the following prices per kg:

   Product A   £50.00
   Product B   £30.00
   Product C   £37.50

REQUIRED

(a) Calculate the gross profit of **each** product in the period (both in total and per kg) using **each** of the following methods of apportioning joint production costs:

   (i)   weight of output

   (ii)   sales value.

                                                                                  (10 marks)

(b) Calculate the gross profit margin (%) of **each** product resulting from **each** of the cost apportionment methods applied in (a) above.

                                                                                  (3 marks)

Consideration is being given to the further processing of Product C to form Product FPC. 1 kg of Product C would result in 1.2 kg of Product FPC. Additional prime costs of £14.00 per kg of Product FPC would be incurred in the further processing operation. Product FPC would be sold for £49.50 per kg.

REQUIRED

(c) Establish whether the further processing operation, to form Product FPC, would be worthwhile.
                                                                            (7 marks)

(Total 20 marks)

Model Answer to Question 6

(a) (i) Weight of output:

Joint production cost per kg = £76,800 ÷ 2,400 kg

= £32.00 per kg

Gross profit statement:

	Product A	Product B	Product C
Selling price (per kg)	£50.00	£30.00	£37.50
Joint production cost (per kg)	£32.00	£32.00	£32.00
Gross profit (per kg)	£18.00	(£2.00)	£5.50
× kg sold	600	1,000	800
Gross profit (total)	£10,800	(£2,000)	£4,400 = £13,200 total

(ii) Sales value:

Gross profit statement:

	Product A	Product B	Product C
Sales revenue (total)	£30,000	£30,000	£30,000
Joint production cost (total)	£25,600	£25,600	£25,600
Gross profit (total)	£4,400	£4,400	£4,400 = £13,200 total
÷ kg sold	600	1,000	800
Gross profit (per kg)	£7.$\dot{3}$	£4.40	£5.50

(b) Gross profit margin:

	Product A	Product B	Product C
Weight of output	18.00/50.00	(2.00)/30.00	5.50/37.50
	= 36.0%	= ($6.\dot{6}$%)	= 14.$\dot{6}$%
Sales value	7.$\dot{3}$/50.00	4.40/30.00	5.50/37.50
	= 14.$\dot{6}$%	= 14.$\dot{6}$%	= 14.$\dot{6}$%

(c) Further processing:

Revenue	£59.40 (49.50 × 1.2)	**or**	£49.50
less Product C	£37.50		£31.25 (37.50 ÷ 1.2)
Incremental revenue	£21.90		£18.25
Incremental cost	£16.80 (14.00 ×1.2)		£14.00
Incremental profit	£5.10 per 1.2 kg of FPC	÷ 1.2 =	£4.25 per kg of FPC

Therefore, further processing is worthwhile