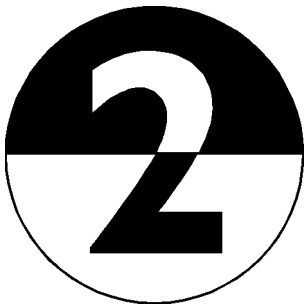
EXAMINATIONS BOARD

Cost Accounting



Level 2

Series 2 2004

(Code 2016)

Model Answers

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Cost Accounting Level 2
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 2
Series 2 2004

QUESTION 1

The following types of expenses are incurred in a manufacturing and trading company:

1 Oil used to lubricate production machinery
2 Motor vehicle licences for lorries operating from finished goods warehouse
3 Depreciation of factory plant and equipment
4 Chemicals used in the laboratory
5 Commission paid to sales representatives
6 Salary of the Secretary to the Finance Director
7 Maintenance of factory buildings
8 Holiday pay of factory machine operatives
9 Salary of security guard in raw material warehouse
10 Fees to advertising agency
11 Rent of finished goods warehouse
12 Salary of scientist in laboratory
13 Insurance of the company's office premises
14 Salary of Supervisor working in the factory
15 Protective clothing for factory machine operatives

REQUIRED

(a) Place **each** expense within the following classifications:

Production overhead
Selling and Distribution overhead
Administration overhead
Research and Development overhead

You may simply list the relevant reference number under the appropriate heading in your answer.

(15 marks)

(b) State what cost unit applies to **each** of the following:

(i) Mining (1 mark)

(ii) Gas production (1 mark)

(iii) Healthcare (hospital) (1 mark)

(iv) Rail passenger service (1 mark)

(v) Factory canteen. (1 mark)

(Total 20 marks)

Model Answer to Question 1

(a) **Production overhead**

1 Oil used to lubricate production machinery
3 Depreciation of factory plant and machinery
7 Maintenance of factory buildings
8 Holiday pay of factory machine operatives
9 Salary of security guard in raw material warehouse
14 Salary of Supervisor working in the factory
15 Protective clothing for factory machine operatives

Selling and Distribution overhead

2 Motor vehicle licences for lorries operating from finished goods warehouse
5 Commission paid to sales representatives
10 Fees to advertising agency
11 Rent of finished goods warehouse

Administration overhead

6 Salary of Secretary to the Finance Director
13 Insurance of company's office premises

Research and Development overhead

4 Chemicals used in the laboratory
12 Salary of scientist in laboratory

(b) **Cost Unit**

(i) Tonne
(ii) Therm or 1,000 cubic metres
(iii) Patient bed per day/week
(iv) Passenger/kilometre
(v) Employee

QUESTION 2

(a) Briefly explain **each** of the following terms in the context of materials control:

(i) Continuous stocktaking (4 marks)

(ii) Perpetual inventory system. (4 marks)

The following information relates to a component used in the manufacture of a single product:

Re-order quantity		2, 900 units
Usage per week	Maximum	1,100 units
	Minimum	900 units
Estimated delivery period	Maximum	4 weeks
	Minimum	2 weeks

REQUIRED

(b) Using the above data calculate the:

(i) Re-order level (2 marks)

(ii) Maximum stock level (4 marks)

(iii) Minimum stock level (3 marks)

(iv) Average stock level. (3 marks)

(Total 20 marks)

Model Answer to Question 2

(a) (i) Under a **continuous stocktaking system** a number of items are counted daily or at frequent intervals and compared with the stock records. Discrepancies are investigated and control action taken where necessary. All items should be checked at least once every accounting period. Continuous stocktaking will help ensure that an efficient system of materials control is achieved and avoids the disruption and costs of an annual stocktake.

(ii) A **perpetual inventory system** may be defined as a method of recording stores balances after every receipt and issue, to facilitate regular checking and to avoid closing down for stocktaking. It enables management to know the stock levels at any time without having to have a physical stock check. The efficient operation of a perpetual inventory system usually requires continuous stocktaking.

(b) (i) Re-order level (ROL) = Maximum usage x maximum lead time

= 1,100 x 4

= 4,400 units

(ii) Maximum stock level = ROL – (minimum usage x minimum lead time) + ROQ

= 4,400 – (900 x 2) + 2,900

= 5,500 units

(iii) Minimum stock level = ROL – (Average usage x Average lead time)

4,400 – (1,000 x 3) = 1,400 units

(iv) Average stock level:

Minimum stock level + ½ ROQ

= 1,400 + (½ x 2,900) = 2,850 units or $\frac{1{,}400 + 4{,}300}{2}$ = 2,850 units

QUESTION 3

A chemical compound is made in two consecutive processes. The output of Process **X** is passed to Process **Y** then further material is added. The process costs for the Period 8 were:

Process X

Direct material	2,000 kilograms at £5 per kg
Direct labour	£7,200
Process plant hire	140 hours at £60 per hour

Process Y

Direct material added	1,400 kilograms at £12 per kg
Direct labour	£4,200
Process plant hire	80 hours at £72.50 per hour

The departmental overhead for Period 8 was £6,840 and is apportioned to the two processes on the basis of the direct labour costs.

Output in Period 8:	**Process X**	**Process Y**
Expected output	80% of input	90% of input
Actual output	1,400 kg	2,620 kg

There was no work-in-progress at either the beginning or the end of the period.

Losses are sold as scrap for £0.50 per kg from Process **X** and £1.825 per kg from Process **Y.**

REQUIRED

Prepare the accounts for Processes **X** and **Y** for Period 8.

(20 marks)

Model Answer to Question 3

Process X

	Kg	£		Kg	£
Direct material	2,000	10,000	Normal loss	400	200
Direct labour		7,200	Process Y	1,400	26,005
Process plant hire		8,400	Abnormal loss	200	3,715
Departmental overhead		4,320			
	2,000	29,920		2,000	29,920

Workings

Departmental overhead = 60% of direct labour cost ie $\frac{(6{,}840 \times 100\%)}{(7{,}200 + 4{,}200)}$

Process X:	£
Direct material (2,000 kg @ £5 / kg)	10,000
Direct labour	7,200
Process plant hire (140 hrs @ £60/hr)	8,400
Departmental overhead (60% x £7,200)	4,320
Total costs	29,920
Less scrap value of normal loss (20% x 2,000 kg x £0.5/kg)	200
	29,720

Cost / kg = $\frac{29{,}720}{2{,}000\,\text{kg} \times 80\%}$ = £18.575

Process Y

	Kg	£		Kg	£
Process X	1,400	26,005	Normal loss	280	511
Direct material	1,400	16,800	Finished goods	2,620	56,989
Direct labour		4,200			
Process plant hire		5,800			
Departmental overhead		2,520			
Abnormal gain	100	2,175			
	2,900	57,500		2,900	57,500

Workings

Process Y:	£
Transfer from process X	26,005
Direct material (1,400 kgs @ £12/kg)	16,800
Direct labour	4,200
Process plant hire (80 hrs @ £72.50	5,800
Departmental overhead (60% x £4,200	2,520
Total costs	55,325
Less scrap value of normal loss (2,800 kg x 10% x £1.825)	(511)
	54,814

Cost / kg = $\frac{£54{,}814}{2{,}800\text{kg} \times 90\%}$ = £21.7516

QUESTION 4

A company has the following budgeted data for its first year of operation:

	£ Per unit
Direct materials	1.30
Direct labour	1.50
Variable overhead	0.20
Fixed overhead (£150,000 / 150,000 units of normal volume)	1.00
Total standard factory cost	4.00
Selling price	5.00

Other expenses:	
Fixed selling and administration overhead	£65,000
Sales commission	5% of sales value

Production and sales in units	
Opening stock	Nil
Production	170,000
Sales	140,000

REQUIRED

(a) Prepare a budgeted profit statement for the first year of operation using:

(i) absorption costing principles (9 marks)

(ii) marginal costing principles. (8 marks)

(b) Prepare a statement reconciling the differences in the net profit calculated in (i) and (ii). (3 marks)

(Total 20 marks)

Model Answer to Question 4

(a) (i) Profit statement (absorption costing):

	000 units	£000
Sales at £5	140	700
Opening stock (nil)	–	–
Cost of production at £4	170	680
Less closing stock at £4	30	120
	140	560
Less over absorption of fixed overhead at £1		20
Production cost of goods sold		540
Gross profit		160
Less selling and administration overhead (fixed)		65
Commission (variable)		35
Net profit		60

(ii) Profit statement (marginal costing)

	000 units	£000
Sales at £5	140	700
Opening stock (nil)	–	–
Variable cost of production at £3	170	510
Less closing stock at £3	30	90
Variable production cost of goods sold	140	420
Manufacturing contribution		280
Variable sales commission		35
Contribution		245
Fixed costs:		
Factory overhead		150
Selling and administration overhead		65
Net profit		30

NB Alternative presentations of the profit statements are possible:

(b) Reconciliation of profit figures

Absorption	£60,000
Marginal	£30,000
Difference	£30,000

Increase in closing stock 30,000 at £1

QUESTION 5

A company manufactures three products, **A, B,** and **C**. Each product is started in the Machining Department and completed in the Finishing Department. The budgeted direct costs for the next trading period are:

	Product		
	A	**B**	**C**
	£/Unit	**£/Unit**	**£/Unit**
Materials	18.50	15.00	22.50
Wages			
Machining Department at £5 per labour hour	10.00	5.00	10.00
Finishing Department at £4 per labour hour	6.00	4.00	8.00
	34.50	24.00	40.50

There are machines in both departments and machine hours required to complete one unit of each product are:

	A	**B**	**C**
Machining Department	4	1.5	3
Finishing Department	0.5	0.5	1

Budget output in units for the next trading period:	6,000	8,000	2,000

Budgeted production overheads for the next trading period:

Machining Department	£100,800
Finishing Department	£94,500

REQUIRED

(a) Calculate pre-determined production overhead absorption rates using:

(i) a labour hour rate for each department

(ii) a machine hour rate for each department.

(10 marks)

(b) Calculate the **total** production cost **per unit** of each product using:

(i) the labour hour rates as calculated in (a) above

(ii) the machine hour rates as calculated in (a) above.

(6 marks)

(c) State, with brief reasons, which rate (labour hour or machine hour) you consider would be most appropriate for each department.

(4 marks)

(Total 20 marks)

Model Answer to Question 5

(a) (i)

Labour Hours	**Machining**	**Finishing**
A 10/5 x 6,000 =	12,000	6/4 x 6,000 = 9,000
B 5/5 x 8,000 =	8,000	4/4 x 8,000 = 8,000
C 10/5 x 2,000 =	4,000	8/4 x 2,000 = 4,000
Total	24,000	21,000

Overhead absorption rate:	**Machining**		**Finishing**
Budgeted overhead	£100,800		£94,500
Budgeted labour hours	24,000		21,000
=	£4.20 per labour hour	=	£4.50 per labour hour

(ii) **Machine hours**

A	4 x 6,000	24,000	0.5 x 6,000	3,000
B	1.5 x 8,000	12,000	0.5 x 8,000	4,000
C	3 x 2,000	6,000	1 x 2,000	2,000
		42,000		9,000

Overhead absorption rate:

Budgeted overhead	£100,800		£94,500
Budgeted machine hours	42,000		9,000
=	£2.40 per machine hour	=	£10.50 per machine hour

(b) **Calculation of total production cost per unit of each product**

(i) **Labour hour rates**

		A £		**B** £		**C** £
Direct materials and wages		34.50		24.00		40.50
Production overhead:						
Machining	2 x 4.20	8.40	1 x 4.20	4.20	2 x 4.20	8.40
Finishing	1.5 x 4.50	6.75	1 x 4.50	4.50	2 x 4.50	9.00
Total Cost		49.65		32.70		57.90

(ii) **Machine hour rates:**

Direct materials and wages		34.50		24.00		40.50
Production overhead:						
Machining	4 x 2.40	9.60	1.5 x 2.40	3.60	3 x 2.40	7.20
Finishing	0.5 x 10.50	5.25	0.5 x 10.50	5.25	1 x 10.50	10.50
Total cost		49.35		32.85		58.20

(c) Machining Department – machine hours – Machine intensive
Finishing Department – labour hours – Labour intensive

QUESTION 6

A manufacturing company operates an integrated accounting system.

The following information was available for a period:

	£
Cost of finished goods produced	512,050
Production cost of goods sold	493,460
Direct materials issued	197,750
Direct wages incurred	85,480
Production overheads incurred	220,720
Direct material purchases	216,590

Production overheads are absorbed at 250% of direct wages.

The stock account balances at the beginning of the period were:

	£
Raw materials stores control	54,250
Work-in progress control	89,100
Finished goods control	42,075

REQUIRED

Prepare the following control accounts for the period in the integrated system, showing clearly the double entries between the accounts, and the closing balances:

(a) Raw material stores control (4 marks)

(b) Work-in progress control (7 marks)

(c) Finished goods control (4 marks)

(d) Production overhead control. (5 marks)

(Total 20 marks)

Model Answer to Question 6

(a)

Raw material stores control

	£		£
Balance b/d	54,250	Work in progress	197,750
Creditors/Purchase Ledger	216,590	Balance c/d	73,090
	270,840		270,840

(b)

Work-in progress control

	£		£
Balance b/d	89,100	Finished goods control	512,050
Stores control	197,750	Balance c/d	73,980
Direct wages	85,480		
Production overhead control (250% x £85,480)	213,700		
	586,030		586,030

(c)

Finished goods control

	£		£
Balance b/d	42,075	Cost of goods sold	493,460
Work-in-progress	512,050	Balance c/d	60,665
	554,125		554,125

(d)

Production overhead control

	£		£
Actual/incurred	220,720	Work-in-progress	213,700
		Under absorbed to Profit & Loss Account	7,020
	220,720		220,720

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