

## **Cost Accounting Level 3**



International  
Qualifications from EDI

### **Model Answers** Series 4 2011 (3017)

# Cost Accounting Level 3

## Series 4 2011

### How to use this booklet

Model Answers have been developed by EDI to offer additional information and guidance to Centres, teachers and candidates as they prepare for LCCI International Qualifications. 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.

EDI provides Model Answers to help candidates gain a general understanding of the standard required. The general standard of model answers is one that would achieve a Distinction grade. EDI accepts that candidates may offer other answers that could be equally valid.

© Education Development International plc 2011

All rights reserved; no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission of the Publisher. The book may not be lent, resold, hired out or otherwise disposed of by way of trade in any form of binding or cover, other than that in which it is published, without the prior consent of the Publisher

## QUESTION 1

Cut Price Woods manufactures fence posts from second hand timbers. Firewood is generated as a by-product from the process.

Customers' requirements for the next two periods are 6,800 and 5,200 fence posts respectively. The following information is available:

### Manufacturing

- (1) Each length of timber is cut into four units
- (2) All units are inspected
- (3) A rejection rate of 20% is expected
- (4) Acceptable units are coated in a preservative and sold as fence posts
- (5) Rejected units are sold as fire wood.

### Stock Holding

- (6) A stock of finished fence posts will be maintained, at the end of each period, at 25% of the estimated sales for the following period
- (7) Second-hand timbers are ordered in quantities of 1,200 units at a reorder level of 400 units. Delivery is expected the next day
- (8) Stock levels at the start of first period:

Second-hand timbers	400 units
Finished fence posts	1,700 units.

### Costs

- (9) Second-hand timbers £4 per unit (excluding delivery costs)
- (10) Preservative £20 per 100 fence posts
- (11) Direct labour £2.50 per fence post
- (12) Fixed overheads £7,680 per period  
(Overheads are absorbed using a rate, recalculated each period, per fence post manufactured)
- (13) Second-hand timbers are delivered at a cost of £600 per 1,200 units
- (14) Firewood is sold at £0.50 per unit. The revenue generated is used to reduce the cost of fence posts.

### REQUIRED

Calculate:

- (a) The total number of second-hand timbers required for manufacturing the customers' requirements for the first period. (4 marks)
- (b) The stock value (£'s) at the end of the first period for both:
  - (i) second-hand timbers
  - (ii) finished fence posts.

The company uses the FIFO method of pricing stock issues. (14 marks)
- (c) The revenue, from the sale of firewood in the first period, if all rejected units are sold. (2 marks)

**(Total 20 marks)**

**MODEL ANSWER FOR QUESTION 1**  
**Syllabus topic 1: Materials and stock control (1.1)**

(a) **Manufacturing requirements for fence posts in first period:**

	<b>Units</b>	
Customers requirement for fence posts	6,800	
less opening stock of fence posts	1,700	<b>1</b>
add closing stock of fence posts (5,200 x 25%)	<u>1,300</u>	<b>1</b>
Manufacturing requirement	<u>6,400</u>	
Second-hand timber requirement for manufacturing allowing for a 20% rejection rate (6,400/4) / 0.80	<b>2,000</b>	<b>2 OF</b>
		(4 marks)

(b) (i) **Closing stock of second-hand timbers:**

	<b>Units</b>	
Opening stock of second-hand timbers	400	
Add two deliveries of 1,200 units	<u>2,400</u>	<b>1</b>
	2,800	
Less timbers required for manufacturing	<u>2,000</u>	<b>1 OF</b>
Closing stock (units)	<u>800</u>	<b>1 OF</b>
	<b>£'s</b>	
Timber value of closing stock (£4 x 800)	3,200	
Delivery cost (£600/1,200 x 800)	<u>400</u>	<b>1 OF</b>
	<b>3,600</b>	<b>1 OF</b>

(ii) **Closing stock of fence posts:**

	<b>£'s</b>	
Timber cost [£4 x (1,300/4) / 0.8]	1625.00	<b>2 OF</b>
Preservative (£20 x 1,300/100)	260.00	<b>1 OF</b>
Labour (£2.50 x 1,300)	3,250.00	<b>1 OF</b>
Delivery cost [(£600/1200 x 1,300/4) / 0.8]	203.13	<b>1 OF</b>
Fixed overheads (£7,680 x 1,300/6,400)	1,560.00	<b>1 OF</b>
Less sale of firewood. [£0.50 x (1,300/0.8) x 0.2]	<u>162.50</u>	<b>2 OF</b>
Value of closing stock	<b><u>6,735.63</u></b>	<b>1 OF</b>
		(14 marks)

(c) Income from sale of rejected timber (£0.50 x 2,000 x 0.2 x 4) **£800** **2 OF**  
(2 marks)

**(Total 20 marks)**

## QUESTION 2

Comfort Travel Ltd is a transport company operating six passenger vehicles. The business, located in rented premises, operates **Type L** and **Type M** vehicles and employs drivers contracted from an agency on the basis of individual jobs.

At present the company uses a traditional absorption costing system based on costs per vehicle/km. to establish the costs of operation. Budgeted operational data for the next period, for each vehicle type, is as follows:

	<b>Type L</b>	<b>Type M</b>
Agency driver costs (£)	20,000	6,000
Number of travelling passengers	8,400	1,600
Km per vehicle	16,000	12,000

The following additional information is provided for each vehicle type:

<b>Vehicle data</b>	<b>Type L</b>	<b>Type M</b>
Purchase price per vehicle (£)	80,000	16,000
Number of vehicles	4	2
Number of seats per vehicle	45	12

Budgeted operational overheads for the period, not including agency driver costs, are £44,000 absorbed on a rate per kilometre.

Further investigation has revealed the following activities and related operational overhead costs:

<b>Activities</b>	<b>Costs (£)</b>
Fuel	22,000
Vehicle insurance	2,816
Vehicle cleaning	1,632
Servicing	3,520
Road fund licence	1,200
Depreciation	5,632
Administration	5,400
Rent	<u>1,800</u>
	<u>44,000</u>

### Other information

- (i) Vehicle servicing is carried out regularly based on a predetermined number of kilometres completed
- (ii) Fuel costs are influenced by the number of kilometres completed
- (iii) Cleaning costs are influenced by the number of seats on the vehicles
- (iv) Vehicle insurance and depreciation are influenced by the purchase price of the vehicles.
- (v) Road fund licence costs are influenced by the number of vehicles in operation.
- (vi) Administration costs are influenced by the number of travelling passengers
- (vii) Rent is influenced by the number of parking bays required. Each vehicle **L** requires two bays for parking whereas each vehicle **M** only requires one.

### REQUIRED

Calculate the budgeted average operational cost per vehicle for the period, for each type of vehicle, using:

- (a) Traditional absorption costing (5 marks)
- (b) Activity based costing. (15 marks)

**(Total 20 marks)**

**MODEL ANSWER FOR QUESTION 2**  
**Syllabus Topic 2: Costing methods and systems (2.1 and 2.2)**

(a)

**Traditional absorption costing**

Overhead absorption rate

Vehicle Type	L	M	Total	
No of vehicles	4	2		
Km per vehicle	16,000	12,000		
Total Km	64,000	24,000	88,000	<b>1</b>
Overhead absorption rate (£44,000/88,000) =			£0.5 per km	<b>1</b>

Traditional absorption costing for each vehicle

Vehicle Type	£	£	
	L	M	
Agency driver	5,000	3,000	<b>1</b>
Overheads	<u>8,000</u>	<u>6,000</u>	<b>1 OF</b>
	<b><u>13,000</u></b>	<b><u>9,000</u></b>	<b>1 OF</b>

Workings (5 marks)

Overheads	
Type L	0.50 x 16,000 = £8,000
Type M	0.50 x 12,000 = £6,000

(b)

**Activity Based Costing**

Activity Driver	Vehicle L	Vehicle M	
	£	£	
Fuel	4,000 (0.25 x 16,000)	3,000 (0.25 x 12,000)	<b>1½</b>
	(22,000/88,000)		
Insurance	640 (0.008 x 80,000)	128 (0.008 x 16,000)	<b>1½</b>
	(2,816/352,000)		
Cleaning	360 (8.00 x 45)	96 (8.00 x 12)	<b>1½</b>
	(1,632/204)		
Servicing	640 (0.04 x 16,000)	480 (0.04 x 12,000)	<b>1½</b>
	(3,520/88,000)		
Licence	200 (200 x 1)	200 (200 x 1)	<b>1½</b>
	(1,200/6)		
Depreciation	1,280 (0.016 x 80,000)	256 (0.016 x 16,000)	<b>1½</b>
	(5,632/352,000)		
Administration	1,134 (0.54 x 8400/4)	432 (0.54 x 1600/2)	<b>1½</b>
	(5,400/10,000)		
Rent	<u>360</u> (180 x 2)	<u>180</u> (180 x 1)	<b>1½</b>
	(1,800/10)		
Total Overheads	<u>8,614</u>	<u>4,772</u>	

**MODEL ANSWER FOR QUESTION 2 CONTINUED**

Activity based costing for each vehicle

Vehicle Type	L	M	
	£	£	
Agency driver cost	5,000	3,000	<b>1 OF</b>
Overheads	<u>8,614</u>	<u>4,772</u>	<b>1 OF</b>
	<b><u>13,614</u></b>	<b><u>7,772</u></b>	<b>1 OF</b>

(15 marks)

**(Total 20 marks)**

### QUESTION 3

Makit Ltd, which produces a single component for the motor industry, has just completed its first year of trading. The summary profit and loss account for the year is set out below:

	£	£
Sales (20,000 units)		1,280,000
Direct Costs		
Direct material	360,000	
Direct labour	320,000	
Direct expenses	80,000	
Overheads		
Production	200,000	
Administration	160,000	
Selling	181,000	<u>1,301,000</u>
Net Loss		<u>21,000</u>

The following information is available:

- (i) all of the direct costs are variable with production
- (ii) the production overhead figure includes £80,000 fixed costs. The remaining production overheads vary with production
- (iii) all of the administration overheads are fixed
- (iv) variable selling overheads are incurred at the rate of £6 per unit. The remaining selling overheads are fixed.

#### REQUIRED

- (a) The break-even point in units and sales value. (7 marks)
- (b) The profit that would have been earned from the sale of 24,000 units. (2 marks)
- (c) The number of units needed to be sold to achieve a profit of £14,000. (2 marks)

The company has set a profit objective of £24,000 for year 2. Two suggestions have been made as to how this profit could be achieved.

Suggestion 1:

Reduce the selling price by £3 per unit and use a less expensive material that would reduce the direct material cost by £2 per unit

Suggestion 2:

Increase the selling price by £4 and increase advertising expenditure by £75,000  
In addition the use a less expensive material that would reduce the material cost by £2 per unit.

All other fixed costs and unit variable costs will remain unchanged for year 2.

#### REQUIRED

- (d) For each suggestion, calculate how many units need to be sold to achieve the profit objective of £24,000. (9 marks)

**(Total 20 marks)**



**MODEL ANSWER FOR QUESTION 3**  
**Syllabus Topic 3: Cost-volume-profit analysis (3.2) and (3.4)**

- (a) **Break-even point**  
 = Fixed costs / unit contribution = £301,000/£14 = **21,500 units** **1 OF**  
 Sales value 21,500 x £64 = **£1,376,000** **1 OF**

<b>Workings:</b>	<b>Variable</b>	<b>Fixed</b>	
	<b>£000</b>	<b>£000</b>	
Direct costs/overheads	<b>£000</b>	<b>£000</b>	
Direct material	360		
Direct labour	320		
Direct expenses	80		
Production overhead	120	80	
Administration overhead		160	
Selling overhead	<u>120</u>	<u>61</u>	
	<u>1,000</u>	<u>301</u>	<b>1</b>

Selling price per unit	(1,280,000/20,000)	£64	
Less variable cost per unit	(1,000,000/20,000)	<u>£50</u>	<b>1</b>
Contribution per unit		£14	<b>1</b>

(7 marks)

- (b) **Profit from sale of 24,000 units**
- |                    |                |                 |             |
|--------------------|----------------|-----------------|-------------|
| Total contribution | (24,000 x £14) | £336,000        | <b>1 OF</b> |
| less fixed costs   |                | <u>£301,000</u> |             |
| Profit             |                | <b>£ 35,000</b> | <b>1 OF</b> |
- (2 marks)

- (c) **Number of units sales for a profit of £14,000**
- Total contribution required = £14,000 + £301,000 = £315,000 **1 OF**
- Number of unit sales = £315,000/£14 = **22,500 units** **1 OF**
- (2 marks)

- (d)
- | <b>Suggestion 1:</b>  | £ per unit |             |
|---|------------|-------------|
| Contribution  | 14         |             |
| less decrease in selling price                              | 3          |             |
| plus reduction in material cost                             | <u>2</u>   |             |
| New contribution  | <b>13</b>  | <b>2 OF</b> |
| Total contribution required = £24,000 + £301,000 = £325,000 |            | <b>1 OF</b> |
| Number of sales units = £325,000/13 = <b>25,000 units</b>   |            | <b>1 OF</b> |

- | <b>Suggestion 2:</b>            | £ per unit |             |
|---------------------------------|------------|-------------|
| Contribution                    | 14         |             |
| plus increase in selling price  | 4          |             |
| plus reduction in material cost | <u>2</u>   |             |
| New contribution                | <u>20</u>  | <b>2 OF</b> |

**MODEL ANSWER FOR QUESTION 3 CONTINUED**

Fixed costs increase by £75,000 (increase in advertising)

New fixed cost £301,000 + £75,000 = £376,000

Total contribution required = £24,000 + £376,000 = £400,000

Number of sales units = £400,000/£20 = **20,000 units**

**1 OF**

**1 OF**

**1 OF**

(9 marks)

**(Total 20 marks)**

#### QUESTION 4

Sole Products 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 ending, which indicates that demand is now increasing. Management of the company, however, is concerned that the report also indicates a large adverse cost variance.

	<b>Budget</b>	<b>Actual</b>	<b>Variance</b>
Production/Sales (units)	10,500	12,000	1,500 F
Sales revenue (£)	<u>126,000</u>	<u>142,800</u>	<u>16,800 F</u>
Direct material (£)	52,500	57,000	4,500 A
Direct labour (£)	31,500	33,600	2,100 A
Production overheads (£)	26,000	28,000	2,000 A
Selling and distribution costs (£)	10,200	10,300	100 A
Administration costs (£)	<u>4,200</u>	<u>4,600</u>	<u>400 A</u>
Total costs (£)	124,400	133,500	9,100 A
Profit (£)	1,600	9,300	7,700 F

The following points have been revealed concerning the budget:

- (i) production overheads are £33,000 at the maximum annual capacity of 14,000 units
- (ii) selling and distribution costs include a fixed element of £6,000
- (iii) administration costs are fixed.

#### REQUIRED

- (a) Briefly explain the main differences between a flexible and a fixed budget. (4 marks)
- (b) Prepare a revised report for the year just ended, in the above format, using a flexed budget. (12 marks)
- (c) State **two** possible reasons for each of the direct materials and direct labour costs variances. (4 marks)

**(Total 20 marks)**

**MODEL ANSWER FOR QUESTION 4**  
**Syllabus Topic 4: Budgetary planning and control (4.6), (4.8) and (4.9)**

- (a) **Fixed Budget**
- 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. 2

**Flexible Budget**

- A flexible budget is used for control purposes.
  - It changes in response to changes in activity by recognising different cost behaviour patterns. 2
- (4 marks)

	Flexed Budget	Actual	Variance	
<b>Production/sales (units)</b>	12,000	12,000	0	
	<b>£</b>	<b>£</b>	<b>£</b>	
Sales revenue	<u>144,000</u>	<u>142,800</u>	<u>1,200</u> A	2
Direct material	60,000	57,000	3,000 F	1
Direct labour	36,000	33,600	2,400 F	1
Production overheads	29,000	28,000	1,000 F	2
Selling and distribution costs	10,800	10,300	500 F	2
Administration costs	<u>4,200</u>	<u>4,600</u>	<u>400</u> A	1
Total costs	140,000	133,500	6,500 F	1
 Profit	 4,000	 9,300	 5,300F	 2

(12 marks)

**Workings:**

Flexed sales budget  $126,000/10,500 \times 12,000 = \text{£}144,000$

Flexed direct material budget  $52,500/10,500 \times 12,000 = \text{£}60,000$

Flexed direct labour budget  $31,500/10,500 \times 12,000 = \text{£}36,000$

Production overheads

@ max output (14,000 units)  $\text{£}33,000 = \text{fixed cost} + 14,000 \times \text{unit variable cost}$

@ 10,500 units output  $\underline{\text{£}26,000} = \underline{\text{fixed cost}} + \underline{10,500 \times \text{unit variable cost}}$

$\text{£}7,000 = \qquad\qquad\qquad 3,500 \times \text{unit variable cost}$

unit variable cost  $= 7,000/3,500 = \text{£}2.00$  per unit

Fixed cost  $= 33,000 - 14,000 \times 2 = \text{£}5,000$

Flexed budget for 12,000 units  $= 5,000 + 12,000 \times 2 = \text{£}29,000$

Selling and distribution

@ 10,500 units  $10,200 = 6,000 + 10,500 \times \text{unit variable cost}$

Unit variable cost  $= (10,200 - 6,000) / 10,500 = \text{£}0.40$  per unit

Flexed budget for 12,000 units  $= 6,000 + 12,000 \times 0.4 = \text{£}10,800$

**MODEL ANSWER FOR QUESTION 4 CONTINUED**

- (c) Material variance may be favourable because of wastage below standard and/or unit prices below standard

**2**

Labour variances may be favourable because of a decrease in the time taken to complete the work and/or a labour rate below standard

**2**

(4 marks)

**(Total 20 marks)**

## QUESTION 5

Mix and Match Ltd uses a batch production method to produce its single product by combining two materials Tee and Pee. The company has budgeted for a material mix ratio of 80:20 for Tee and Pee respectively.

The following information relates to each batch:

Direct material input	200 kg
Material Tee standard price	£1.50 per kg
Material Pee standard price	£3.00 per kg

The standard production specification states that a 90% yield of product is expected.

The waste generated has no value.

Actual results for month 10 were as follows:

Output	1,890 kg	
Material Tee	1,140 kg	£1,610
Material Pee	860 kg	£2,780

There is no stock of raw material

### REQUIRED

(a) Calculate, for month 10, the following variances:

- (i) material price for each material and in total
- (ii) material mix for each material and in total
- (iii) material yield in total.

(12 marks)

(b) Explain the meaning of:

- (i) material mix variance
- (ii) material yield variance.

(4 marks)

(c) Calculate the total material usage variance and reconcile this with the appropriate variances calculated in part (a).

(4 marks)

**(Total 20 marks)**

**MODEL ANSWER FOR QUESTION 5**  
**Syllabus Topic 5: Standard costing and variance (5.4) and (5.6)**

(a) (i) **Material Price Variance**

(Actual Usage x Standard Price) - Actual cost		
Tee (1,140 x £1.50) - £1,610	100 F	1
Pee (860 x £3) - £2,780	<u>200 A</u>	1
		1

(3 marks)

(ii) **Material Mix Variance**

(Actual Usage in Standard Proportions – Actual Usage) x Standard Price		
Tee [80% of (1,140 + 860) – 1,140] x £1.50	690 F	2
Pee [20% of (1,140 + 860) – 860] x £3	<u>1,380 A</u>	2
	<u>690 A</u>	1

(5 marks)

Alternative solution for (ii)

(Actual input quantity – budgeted material input. Quantity for output produced) x (Standard weighted average cost per unit - standard cost per input unit)		
Tee [1,140 - (1,890/0.9) x 0.80] x (1.80 - 1.50)	162 A	
Pee [860 - (1,890/0.9) x 0.20] x [1.80 - 3.00]	<u>528 A</u>	
	<u>690 A</u>	

(iii) **Material Yield Variance**

(Actual input quantity – budgeted material input. Quantity for output produced) x Standard weighted average cost per unit of material input.		
[(1140 + 860) - (1,890/0.9) x] 1.8	180 F	4

(4 marks)

Alternative solution for (iii)

(Actual output - budgeted output for the actual material input) x standard weighted average cost per unit of output		
{1,890 - [(1,140 + 860) x 0.9]} x 2	180 F	

**Workings:**

Standard cost of mix

Tee	(200x 0.8) kg x £1.50	£240
Pee	(200 x 0.2)kg x £3	<u>£120</u>
		£360
Standard weighted average cost (material input)		
£360/200		£1.80 per kg
Standard weighted average cost (material output)		
£360/(0.9 x 200)		£2.0 per kg

**MODEL ANSWER FOR QUESTION 5 CONTINUED**

(b) (i) **Material mix variances** occur where substitutes within the mix of materials input are possible and when the materials are not mixed in standard proportions. It is a measure of whether the mix is cheaper or more expensive than the standard mix (at standard prices). **2**

(ii) A **Yield variance** arises where there is a difference between what the input should have been for the output achieved and the actual input.

Or

The difference between the output achieved and what should have been achieved with the material used. **2**

(4 marks)

(c) **Material Usage Variance**

(Standard usage - Actual usage) x Standard price

Tee  $[(2,100 \times 0.8) - 1,140] \times \text{£}1.50$

810 F

Pee  $[(2,100 \times 0.2) - 860] \times \text{£}3$

1,320 A

510 A **2**

Material mix variance

690 A

Material Yield Variance

180 F

510 A **2 OF**

(4 marks)

**(Total 20 marks)**



**EDI**

International House  
Siskin Parkway East  
Middlemarch Business Park  
Coventry CV3 4PE  
UK

Tel. +44 (0) 8707 202909

Fax. +44 (0) 2476 516505

Email. [enquiries@ediplc.com](mailto:enquiries@ediplc.com)

[www.ediplc.com](http://www.ediplc.com)



International  
Qualifications from EDI