

## **Management Accounting Level 3**



International  
Qualifications from EDI

### **Model Answers** Series 3 2012 (3024)

# Management Accounting Level 3

## Series 3 2012

### 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.

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## QUESTION 1

Barmby Ltd recently launched a new product (Product Aye). The variable cost of the product was estimated, prior to the launch, at £43.00 per unit along with total fixed costs of £348,000 per period.

The initial selling price of Product Aye was set so as to achieve a net profit margin of 10% based on a sales volume of 12,000 units per period.

### REQUIRED

- (a) Calculate the initial selling price of Product Aye.

(4 marks)

Stewart Brady has estimated the sales demand for one of its products, Product Bee, at three different selling prices. The company is seeking to determine which of the three prices would generate the most profit.

The estimates of the selling price/demand relationships are:

<b>Selling price</b>	<b>Sales demand</b>
£38.00 per unit	16,500 units
£42.00 per unit	14,300 units
£46.00 per unit	11,000 units

The variable costs of Product Bee are:

Production	£18.40 per unit
Administration and selling	£4.60 per unit

Fixed costs of £203,500 would not change over the relevant output range.

### REQUIRED

- (b) Determine the selling price for Product Bee that would generate the most profit.

(4 marks)

Koren Evans is considering undertaking a new job that would require the use of 140 units of Component C127. This component is used regularly on other jobs carried out by the company.

The company currently has 180 units of Component R127 in stock: the components were purchased for £64.00 per unit. The current purchase price of the component is £67.00 per unit. The existing stock of Component R127, if sold, would generate net revenue of £58.00 per unit.

### REQUIRED

- (c) State and explain:

- (i) The relevant cost per unit of Component R127 that should be used by the company in deciding whether to undertake the new job
- (ii) An example of a sunk cost from the information about Component R127 above.

(6 marks)

- (d) Discuss briefly the usefulness for decision-making of:

- (i) Absorption costing
- (ii) Marginal costing.

(6 marks)

**(Total 20 marks)**

**MODEL ANSWER TO QUESTION 1**

**Syllabus Topic 3: Short term decision making (3.5), (3.2) and (3.1)**

(a) Product Aye: initial selling price

	<b>£ per unit</b>
Variable costs	43.00
Fixed costs	<u>29.00</u> (£348,000 ÷ 12,000 units)
Total costs	72.00 <b>2</b>

÷ 0.9

Selling price **£80.00 per unit** **2 of**

(4 marks)

(b) Product Bee: selling price for most profit

At selling price £38, total contribution = 16,500 units × (£38 - £23) = £247,500 **1**  
At selling price £42, total contribution = 14,300 units × (£42 - £23) = £271,700 **1**  
At selling price £46, total contribution = 11,000 units × (£46 - £23) = £253,000 **1**

Selling price of **£42.00** generates the most profit. **1**

(4 marks)

(c) (i) Relevant cost **£67** per unit, the current purchase price, because 140 more units of Component R127 would have to be purchased if the component was used in the new job. **2**

(ii) Sunk cost **£64** per unit, the original purchase price of the stock, because a sunk cost is a cost that has already been incurred. **2**

(6 marks)

(d) Usefulness for decision-making

Full absorption costing provides an indication of the long-term profitability of different products and services and thus may be useful in prompting decisions. It should, however, be realised that product unit costs are very dependent, in the sharing of fixed costs, both on the level of activity and on the arbitrary nature of cost apportionment and absorption. **2**

Marginal costing on the other hand, focusing as it does on contribution, can be useful for certain short-term decisions, especially regarding sales pricing and product mix. **2**

However, all decisions, whether short-term or long-term, should be taken on the basis of the relevant costs of each situation which will invariably be different from how information is organised for routine reporting in the management accounts. **2**

(6 marks)

**(Total 20 marks)**

## QUESTION 2

Fryalt McLean is preparing financial budgets for the first three months of Year 4. The company's summarised balance sheet at the end of Year 3 is as follows:

	<b>£000</b>	<b>£000</b>
<b>Fixed assets</b> (at cost)	350	
<b>Less:</b> Accumulated depreciation	<u>210</u>	140
<b>Current assets</b>		
Stock	320	
Trade debtors	300	
Cash at bank	<u>30</u>	<u>650</u>
		790
<b>Less: Current liabilities</b>		
Trade creditors	220	
Taxation	<u>50</u>	<u>270</u>
		<u>520</u>
<b>Capital and reserves</b>		
Share capital		310
Reserves		<u>210</u>
		<u>520</u>

The following information on the company's budgeted activities for the first three months of year 4 is available:

1. Sales and purchases:

	<b>Month 1</b>	<b>Month 2</b>	<b>Month 3</b>
	£000	£000	£000
Cash sales	120	140	100
Credit sales	360	480	400
Credit purchases	280	360	300

2. Gross profit: 37.5% of sales.
3. All trade debtors are expected to pay, one month following sale.
4. Payment for credit purchases is to be made in the month following purchase.
5. The following expenses are to be paid per month:

Salaries and wages	£80,000
Selling and administrative expenses	£60,000

6. Fixed assets costing £250,000 are to be purchased for cash in Month 1. It is company policy to charge for depreciation at the rate of 20% on the cost of fixed assets (including those purchased during the year).
7. The taxation liability is payable in Month 3.

### REQUIRED

- (a) Prepare, for the first three months of year 4:
- (i) a combined budgeted profit statement (before tax) (4 marks)
  - (ii) a cash budget for each month. (11 marks)
- (b) Prepare a statement that reconciles budgeted net profit and budgeted cashflow for the three-month period. (5 marks)

**(Total 20 marks)**

**MODEL ANSWER TO QUESTION 2**  
**Syllabus Topic 4: Budgetary planning and control (4.5)**

(a) (i) **Budgeted profit statement for the first three months of year 4**

	<b>£000</b>	<b>£000</b>	
Sales		1,600	<b>1</b>
<b>Less: Cost of sales:</b>			
Opening stock	320		
<b>Add Purchases</b>	<u>940</u>		
	1,260		
<b>Less: Closing stock</b>	<u>260</u>	<u>1,000</u>	
Gross profit (0.375 × 1,600)		600	<b>1of</b>
<b>Less: Expenses</b>			
Salaries and wages (80 × 3)	240		<b>1/2</b>
Selling and administrative (60 × 3)	180		<b>1/2</b>
Depreciation [(0.2 × 600 × 3) ÷ 12]	<u>30</u>	<u>450</u>	<b>1</b>
<b>Budgeted net profit</b>		<u>150</u>	

(4 marks)

**Syllabus Topic 5: Cash and working capital management (5.2) & (5.7)**

(ii) **Cash budget for the first three months of year 4**

	<b>Month 1</b>	<b>Month 2</b>	<b>Month 3</b>
	<b>£000</b>	<b>£000</b>	<b>£000</b>
<b>Receipts</b>			
Cash sales	120	140	100
Credit sales	<u>300</u>	<u>360</u>	<u>480</u>
	<u>420</u>	<u>500</u>	<u>580</u>
<b>Payments</b>			
Credit purchases	220	280	360
Fixed assets	250		
Tax liability			50
Salaries and wages	80	80	80
Selling and admin expenses	<u>60</u>	<u>60</u>	<u>60</u>
	<u>610</u>	<u>420</u>	<u>550</u>
Net cash flow <b>1of</b>	( 190)	80	30
Opening cash balance	30	( 160)	( 80)
Closing cash balance	( 160)	( 80)	( 50)

(11 marks)

## MODEL ANSWER TO QUESTION 2 CONTINUED

### (b) Reconciliation of budgeted net profit with budgeted cash flow

	£000		£000
Budgeted net profit			150
<b>Adjustment for non-cash item</b>			
Depreciation			<u>30</u> ½
			180
<b>Payments of a non-revenue nature</b>			
Purchase of fixed assets	(250)	½	
Taxation liability	<u>( 50)</u>	½	<u>(300)</u>
			(120)
<b>Changes in working capital</b>			
Decrease in stock (260 – 320)	60	1	
Increase in trade debtors (400 – 300)	(100)	1	
Increase in trade creditors (220 – 300)	<u>80</u>	1	<u>40</u>
Reduction in cash			( 80)
Opening cash balance			<u>30</u> ½
Budgeted cash (closing cash balance)			<u>( 50)</u>

(5 marks)

**(Total 20 marks)**

### QUESTION 3

Folan Ltd operates a standard marginal costing system for the single product it manufactures.

The standard selling price of this product is £132 per unit

Production and sales of 6000 units are budgeted for period 10.

The variable manufacturing cost standards set for period 10 are as follows:

		<b>£ per unit</b>
Direct material	(2.5 kilos × £16.90 per kilo)	42.25
Direct labour	(1.25 hours × £18.80 per hour)	23.50
Variable production overhead	(1.25 direct labour hours × £13.40 per hour)	16.75

The variable production overheads are absorbed on the basis of direct labour hours.

Actual results for Period 10 were as follows:

Production	6,380 units
Sales (5,640 units)	£810,750
Direct material, purchased and used (14,730 kilos)	£279,870
Direct labour (8,535 hours)	£153,630
Variable production overhead	£89,740

Opening and closing stocks of finished goods are valued at the standard variable manufacturing cost per unit for period 10.

### REQUIRED

- (a) Calculate the actual contribution for Period 10. (3 marks)
- (b) Calculate the following variances for Period 10:
- (i) sales price (2 marks)
  - (ii) sales volume contribution (3 marks)
  - (iii) direct material price (2 marks)
  - (iv) direct material usage (2 marks)
  - (v) direct labour rate (2 marks)
  - (vi) direct labour efficiency (2 marks)
- (c) Suggest **four** possible causes of the direct material variances calculated in part (b). (4 marks)

**(Total 20 marks)**



**MODEL ANSWER TO QUESTION 3**

**Syllabus Topic 6: Standard costing and variances (6.2), (6.3), (6.5) & (6.11)**

(a)		£	£	
	Sales		810,750	$\frac{1}{2}$
	<b>Less Marginal cost of sales</b>			
	Direct material	279,870		$\frac{1}{2}$
	Direct labour	153,630		$\frac{1}{2}$
	Variable production overhead	<u>89,740</u>		$\frac{1}{2}$
		523,240		
	<b>Less: Stock increase</b>			
	£82.50* × 740 (6,380 – 5,640)	<u>61,050</u>	<b>1of</b>	<u>462,190</u>
	<b>Actual contribution</b>			<b>348,560 of</b>

(3 marks)

\*Standard marginal cost per unit = £42.25 + £23.50 + £16.75 = £82.50

- (b) (i) **Sales price variance**  
 (Standard price × Actual units) – (Actual price × Actual units)  
 (£132.00 × 5,640 units) – £810,750  
 £744,480 – £810,750 = **£66,270 Favourable 2**  
 (2 marks)
- (ii) **Sales volume contribution variance**  
 (Standard contribution\*\* × Actual units) – (Standard contribution × Budgeted units)  
 (£49.50 × 5,640 units) – (£49.50 × 6,000 units)  
 £279,180 – £297,000 = **£17,820 Adverse 2 of**  
 (3 marks)
- \*\*Standard contribution = £132.00 – £82.50 = £49.50 **1**
- (iii) **Direct material price variance**  
 (Standard price × Actual usage) – (Actual price × Actual usage)  
 (£16.90 × 14,730 kilos) – £279,870  
 £248,937 – £279,870 = **£30,933 Adverse 2**  
 (2 marks)
- (iv) **Direct material usage variance**  
 (Standard price × Standard usage) – (Standard price × Actual usage)  
 [£16.90 × (6,380 × 2.5 kilos)] – (£16.90 × 14,730 kilos)  
 £269,555 – £248,937 = **£20,618 Favourable 2**  
 (2 marks)
- (v) **Direct labour rate variance**  
 (Standard rate × Actual hours) – (Actual rate × Actual hours)  
 (£18.80 × 8,535 hours) – £153,630  
 £160,458 – £153,630 = **£6,828 Favourable 2**  
 (2 marks)
- (vi) **Direct labour efficiency variance**  
 (Standard rate × Standard hours) – (Standard rate × Actual hours)  
 [£18.80 × (6,380 × 1.25 hours)] – (£18.80 × 8,535 hours)  
 £149,930 – £160,458 = **£10,528 Adverse 2**  
 (2 marks)

- (c) Possible causes of price variance: rushed purchase orders  
 better quality materials purchased  
 unexpected price increases
- Possible causes of usage variance: reduced material wastage  
 efficient materials handling  
 improved production process

**1 mark for each cause; maximum of 3 marks for each variance**

(4 marks)

**(Total 20 marks)**

#### QUESTION 4

Dawson Chester is considering introducing a new product to add to its present range. Manufacture of the product would require equipment costing £2,100,000 with a residual value of £120,000 after five years when the product is discontinued. A recent study carried out suggests that the product should be sold for £320 per unit with demand expected to be 10,000 units per annum.

The product is expected to have a constant contribution/sales ratio of 32.5% and annual fixed costs of £360,000 (excluding straight-line depreciation of new equipment).

Assume that net cash flows occur at the end of the years to which they relate.

The company's cost of capital is 15% per annum.

Discount factors:	Year	15%	20%
	1	0.870	0.833
	2	0.756	0.694
	3	0.658	0.579
	4	0.572	0.482
	5	<u>0.497</u>	<u>0.402</u>
		<u>3.353</u>	<u>2.990</u>

#### REQUIRED

- (a) Calculate, in relation to the new product, the:
- (i) net present value (5 marks)
  - (ii) internal rate of return. (3 marks)
- (b) Advise the company on whether the introduction of the new product is worthwhile, on the basis of the net present value and internal rate of return in part (a). (2 marks)
- (c) Calculate (stating whether this is an increase or decrease) by how much the estimates for each of the following must change before the new product is no longer financially viable:
- (i) sales units (4 marks)
  - (ii) net operating cash flows (3 marks)
  - (iii) fixed costs. (3 marks)

Your calculations should be made in percentages to 1 decimal place.

**(Total 20 marks)**

**MODEL ANSWER TO QUESTION 4**

**Syllabus Topic 7: Long-term decision-making (7.7), (7.8), (7.13 & (7.15)**

(a) (i) **NPV of new product**

(SP × C/S ratio × Annual sales) – Annual fixed costs = Annual net operating cash flows

$$(\text{£}320 \times 0.325 \times 10,000) = \text{£}1,040,000 \text{ } 1\frac{1}{2} - \text{£}360,000 \text{ } \frac{1}{2} = \text{£}680,000$$

	Cash flows £	Disc./Annuity factors @ 15%	Present values £	
Annual net operating cash flows	680,000	3.353	2,280,040	<b>1 of</b>
Residual value of equipment	120,000	0.497	<u>59,640</u>	<b>1</b>
			2,339,680	
<b>Less: Cost of equipment</b>			<u>(2,100,000)</u>	<b>½</b>
<b>Net present value</b>			<u>239,680</u>	<b>½ of</b>

(5 marks)

(ii) **IRR of new product**

	Cash flows £	Disc./Annuity factors @ 20%	Present values £	
Annual net operating cash flows	680,000	2.990	2,033,200	
Residual value of equipment	120,000	0.402	<u>48,240</u>	
			2,081,440	
<b>Less: Cost of equipment</b>			<u>(2,100,000)</u>	
		NPV	<u>( 18,560)</u>	<b>1 of</b>

$$\text{IRR} = 15\% + \{5\% \times [239,680 \div (239,680 + 18,560)]\} = \underline{19.6\%} \text{ } 2 \text{ of}$$

(3 marks)

(b) The new product should be introduced by the company since it will generate a positive NPV and earn an IRR of 19.6% which is higher than the cost of capital of 15%. **2 of**

(2 marks)

(c) (i) Change in sales units =  $\frac{\text{NPV}}{\text{Sales units} \times (\text{SP} \times \text{C/S ratio}) \times \text{AF}} \times 100\%$

$$= \frac{\text{£}239,680 \text{ } \frac{1}{2} \text{ of}}{10,000 \text{ } \frac{1}{2} \times (\text{£}320 \times 0.325) \text{ } 1 \times 3.353 \text{ } 1} \times 100\% = 6.9\%$$

6.9% **decrease** in sales units **1 of**

(4 marks)

(ii) Change in net operating cash flows (NOCF) =  $\frac{\text{NPV}}{\text{NOCF} \times \text{AF}} \times 100\%$

$$= \frac{\text{£}239,680 \text{ } \frac{1}{2} \text{ of}}{\text{£}680,000 \text{ } \frac{1}{2} \times 3.353 \text{ } 1} \times 100\% = 10.5\%$$

10.5% **decrease** in net operating cash flows **1 of**

(3 marks)

(iii) Change in fixed costs =  $\frac{\text{NPV}}{\text{Fixed costs} \times \text{AF}} \times 100\%$

$$= \frac{\text{£}239,680 \text{ } \frac{1}{2} \text{ of}}{\text{£}360,000 \text{ } \frac{1}{2} \times 3.353 \text{ } 1} \times 100\% = 19.9\%$$

19.9% **increase** in fixed costs **1 of**

(3 marks)

**(Total 20 marks)**

### QUESTION 5

Rosenoir McKenna is comprised of two divisions, R and T. Division R manufactures a single product which has the following standard production cost per unit, based on a budgeted output of 12,000 units in a given period:

	£ per unit
Direct materials	16
Direct labour	12
Production overheads:	
Variable	10
Fixed	<u>22</u>
	<u>60</u>

In a typical period, Division R incurs additional non-production costs of £20,000 for selling 2,500 units to the external market for £72 per unit. The remainder of Division R's output is internally transferred to Division T as an intermediate product. Division T's unit standard cost of converting the intermediate product into its final product is as follows:

	£ per unit
Direct labour	9
Production overheads:	
Variable	5
Fixed	<u>8</u>
	<u>22</u>

Division T incurs additional non-production costs of £57,000 per period for selling its final product to the external market for £118 per unit.

### REQUIRED

- (a) Calculate the profits for each of Division R and Division T for a period, using the following **transfer prices**:
- (i) market price (6 marks)
  - (ii) standard variable production costs (4 marks)
  - (iii) 110 percent of full standard production costs (4 marks)
- (b) State **three** objectives of a system of transfer pricing between divisions, in a centralised organisation. (6 marks)

**(Total 20 marks)**

**MODEL ANSWER TO QUESTION 5**

**Syllabus Topic 8: Performance evaluation and transfer pricing (8.9)**

(a) (i) **Market price transfer price**

	Division R			Division T	
	£000	£000		£000	£000
Sales - External market (2,500 × £72)		180 <sup>1/2</sup>	(9,500 × £118)		1,121 <sup>1/2</sup>
Transfers to Division T (9,500 × £72)		<u>684</u> <b>1</b>			
		864			
<b>Less:Costs</b>					
Transfer from Division R			(9,500 × £72)	684 <b>1</b>	
Standard production (12,000 × £60)	720 <sup>1/2</sup>		(9,500 × £22)	209 <sup>1/2</sup>	
Non-production	<u>20</u> <b>1</b>	<u>740</u>		<u>57</u> <b>1</b>	<u>950</u>
Net profit		<u>124</u>			<u>171</u>

(6 marks)

(ii) **Standard variable production costs transfer price**

Transfer price = £(16 + 12 + 10) = £38 per unit **1**

	Division R			Division T	
	£000	£000		£000	£000
Sales - External market (2,500 × £72)		180	(9,500 × £118)		1,121
Transfers to Division T (9,500 × £38)		<u>361</u> <b>1of</b>			
		541			
<b>Less:Costs</b>					
Transfer from Division R			(9,500 × £38)	361 <b>1of</b>	
Standard production (12,000 × £60)	720		(9,500 × £22)	209	
Non-production	<u>20</u>	<u>740</u>		<u>57</u>	<u>627</u>
Net profit		<u>(199)</u> <b>1</b>			<u>494</u> <b>1</b>

(4 marks)

(iii) **110% of full standard production costs transfer price**

Transfer price = £60 × 1.1 = £66 per unit **1**

	Division R			Division T	
	£000	£000		£000	£000
Sales - External market (2,500 × £72)		180	(9,500 × £118)		1,121
Transfers to Division T (9,500 × £66)		<u>627</u> <b>1of</b>			
		807			
<b>Less:Costs</b>					
Transfer from Division R			(9,500 × £66)	627 <b>1of</b>	
Standard production (12,000 × £60)	720		(9,500 × £22)	209	
Non-production	<u>20</u>	<u>740</u>		<u>57</u>	<u>893</u>
Net profit		<u>67</u> <b>1</b>			<u>228</u> <b>1</b>

(4 marks)

(b) A system of transfer pricing is designed to:

- 1 Promote autonomy among the divisions in order for decentralisation to work effectively **2**
- 2 Motivate the managers of both selling and buying divisions to trade with each other **2**
- 3 Contribute to a measure of divisional performance, which can be used as a basis for evaluation **2**
- 4 Encourage goal congruence, thereby ensuring that the profits of the business as a whole are optimised **2**
- 5 Provide a basis for allocating resources within a division, thereby ensuring that managers are able to make correct divisions **2**

Accept any other reasonable response

(6 marks)

**(Total 20 marks)**

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