

Management Accounting Level 3



International
Qualifications from EDI

Model Answers Series 2 2010 (3024)

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Series 2 2010

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

A company manufactures a single product which it sells for £15.00 per unit. Variable costs of production and fixed costs of production are £6.00 per unit and £135,000 per period respectively. The distribution of the product results in additional variable costs of £1.20 per unit and additional fixed costs of £30,750 per period. The company is budgeting sales of £375,000 for the coming period and its maximum production capacity is 35,000 units per period.

REQUIRED

- (a) Calculate for the coming period, the budgeted:
- (i) break-even point (in sales units) (3 marks)
 - (ii) profit. (3 marks)

The company is keen to improve its budgeted profit through increased sales in the coming period and is considering the following alternative sales strategies:

Strategy I

Reduce selling price by 10% in order to increase the total budgeted sales units by 25%. In addition, an advertising campaign costing £7,500 will further increase the original budgeted sales units by 8%.

Strategy II

Offer a 20% selling price discount to a single major customer who is prepared to buy 35,000 units. This will result in a 90% reduction in the fixed distribution costs per period.

If either of the sales strategies is adopted, variable costs of production will increase by £0.30 per unit produced above 28,000 units.

REQUIRED

- (b) Calculate the revised budgeted profit under Strategy I and Strategy II. (12 marks)
- (c) Recommend which sales strategy the company should adopt giving reasons for your advice. (2 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 1

(a) (i) Calculation of break-even point

$$\text{Contribution per unit} = £15.00 - (£6.00 + £1.20) = £7.80$$

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{Contribution/unit}} = \frac{£135,000 + £30,750}{£7.80} = 21,250 \text{ units}$$

(a) (ii) Calculation of budgeted profit for the coming period

$$\text{Budgeted units} = \frac{£375,000}{£15.00} = 25,000 \text{ units}$$

	£	£
Contribution (£7.80 × 25,000 units)		195,000
<u>Less: Fixed costs:</u>		
Production	135,000	
Distribution	<u>30,750</u>	<u>165,750</u>
Budgeted profit		<u>29,250</u>

(b) Calculation of revised budgeted profit under Strategy I

$$\text{Revised selling price} = £15.00 \times 0.9 = £13.50$$

Revised sales units

Original budgeted units	25,000
Effect of price reduction (25,000 × 0.25)	6,250
Advertising campaign (25,000 × 0.08)	<u>2,000</u>
Revised sales units	<u>33,250</u> units

	£	£
Contribution [(£13.50 – £7.20) × 28,000 units]		176,400
[(£13.50 – £7.50) × 5,250 units]		<u>31,500</u>
		207,900
<u>Less: Fixed costs:</u>		
Production	135,000	
Distribution	30,750	
Advertising campaign	<u>7,500</u>	<u>173,250</u>
Budgeted profit		<u>34,650</u>

Calculation of revised budgeted profit under Strategy II

$$\text{Revised selling price} = £15.00 \times 0.8 = £12.00$$

	£	£
Contribution [(£12.00 – £7.20) × 28,000 units]		134,400
[(£12.00 – £7.50) × 7,000 units]		<u>31,500</u>
		165,900
<u>Less: Fixed costs:</u>		
Production	135,000	
Distribution (£30,750 × 0.1)	<u>3,075</u>	<u>138,075</u>
Budgeted profit		<u>27,825</u>

QUESTION 1 CONTINUED

- (c) The company should adopt Strategy I as it increases budgeted profit by £5,400 (£34,650 – £29,250) compared with Strategy II which reduces budgeted profit by £1,425 (£27,825 – £29,250).

QUESTION 2

A company operates a standard costing system for the single product that it manufactures and sells. The company had budgeted to produce and sell 5,000 units at a selling price of £90 per unit during Period 8. The following information has been extracted from its standard cost card for Period 8:

	£ per unit
Direct material (2 kg × £18.15 per kg)	36.30
Direct labour (1¾ hours × £8.40 per hour)	14.70
Fixed overhead	16.50

During Period 8, the actual production and sales were 4,720 units and the operating statement prepared for the period was as follows:

	£	£
Sales		392,940
<u>Less Costs</u>		
Direct materials (10,680 kg) 187,968	187,968	
Direct labour (7,630 hours) 69,433	69,433	
Fixed overheads	<u>78,750</u>	
Operating profit	<u>56,789</u>	<u>336,151</u>

There were no stocks held at the beginning or end of Period 8.

REQUIRED

- (a) Calculate the following variances for Period 8:
- (i) sales price (2 marks)
 - (ii) sales volume profit (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)
 - (vii) fixed overhead expenditure (2 marks)
 - (viii) fixed overhead volume (2 marks)
- (b) Prepare a statement that reconciles the budgeted operating profit with the actual operating profit for Period 8. (3 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 2

(a)

(i) Sales price variance
(Standard price × Actual units) – (Actual price × Actual units)
(£90.00 × 4,720 units) – £392,940
£424,800 – £392,940 = **£31,860 Adverse**

(ii) Sales volume profit variance
(Standard profit* × Actual units) – (Standard profit × Budgeted units)
(£22.50* × 4,720 units) – (£22.50 × 5,000 units)
£106,200 – £112,500 = **£6,300 Adverse**

*Standard profit = £90 – (£36.30 + £14.70 + £16.50) = £22.50

(ii) Direct material price variance
(Standard price × Actual usage) – (Actual price × Actual usage)
(£18.15 × 10,680 kg) – £187,968
£193,842 – £187,968 = **£5,874 Favourable**

(iii) Direct material usage variance
(Standard price × Standard usage) – (Standard price × Actual usage)
[£18.15 × (4,720 × 2 kg)] – (£18.15 × 10,680 kg)
£171,336 – £193,842 = **£22,506 Adverse**

(v) Direct labour rate variance
(Standard rate × Actual hours) – (Actual rate × Actual hours)
(£8.40 × 7,630 hours) – £69,433
£64,092 – £69,433 = **£5,341 Adverse**

(iv) Direct labour efficiency variance
(Standard rate × Standard hours) – (Standard rate × Actual hours)
[£8.40 × (4,720 × 1¾ hours)] – (£8.40 × 7,630 hours)
£69,384 – £64,092 = **£5,292 Favourable**

(vi) Fixed overheads expenditure variance
Budgeted fixed overheads – Actual fixed overheads
(£16.50 × 5,000 units) – £78,750
£62,500 – £78,750 = **£3,750 Favourable**

(vii) Fixed overheads volume variance
(Standard rate × Actual units) – (Standard rate × Budgeted units)
(£16.50 × 4,720 units) – (£16.50 × 5,000 units)
£77,880 – £82,500 = **£4,620 Favourable**

(b) Statement of reconciliation of budgeted operating profit with actual operating profit

	£	£	£
Budgeted operating profit			112,500
<u>Sales variances:</u>			
Sales price variance	31,860 Adv		
Sales volume profit variance	<u>6,300 Adv</u>		
		38,160 Adv	
<u>Direct material variances:</u>			
Material price variance	5,874 Fav		
Material usage variance	<u>22,506 Adv</u>		
		16,632 Adv	
<u>Direct labour variances:</u>			
Labour rate variance	5,341 Adv		
Labour efficiency variance	<u>5,292 Fav</u>		
		49 Adv ½	
<u>Fixed overhead variances:</u>			
Fixed overhead expenditure variance	3,750 Fav		
Fixed overhead volume variance	<u>4,620 Adv</u>		
		<u>870 Adv</u>	
			<u>55,711 Adv</u>
Actual operating profit			<u>56,789</u>

QUESTION 3

The accounts of a retail company for Year 5 are presented as follows:

Balance sheet at end of year		Profit and loss statement for the year		
	£000	£000	£000	
<u>Fixed assets</u> (net book value)		680	Sales	3,800
<u>Current assets</u>			<u>Less: Cost of sales</u>	<u>2,280</u>
Stock	840		Gross profit	1,520
Trade debtors	920		<u>Less: Operating expenses</u>	<u>1,200</u>
Cash at bank	<u>40</u>	<u>1,800</u>	Net profit	<u>320</u>
		2,480		
<u>Less: Current liabilities</u>				
Trade creditors		<u>780</u>		
		<u>1,700</u>		
<u>Capital and reserves</u>				
Share capital		1,000		
Reserves		<u>700</u>		
		<u>1,700</u>		

All sales and purchases are made on credit. Assume that 1 year = 365 days.

REQUIRED

- (a) Calculate for Year 5, the:
- (i) current ratio (to 2 decimal places) (2 marks)
 - (ii) working capital cycle (rounded to whole days). (3 marks)

The company is considering whether to grant extended credit facilities to its customers for the coming year. It is estimated that increasing the collection period for trade debtors by 24 days will result in 15% increase in sales. However, stocks held will have to be increased by 20% to cope with the increased demand. In order to finance the increase in stocks and debtors, the company will increase the payment period to trade creditors by 12 days and utilise bank overdraft facility at an interest rate of 8% for the remaining balance.

If the above policy is implemented, it is estimated that bad debts will increase by 5% of the trade debtors and operating expenses will increase by 7½%. The company expects to earn a constant gross profit of 40% on sales.

REQUIRED

- (b) Calculate for the coming year, the expected increase in:
- (i) working capital cycle (workings to be rounded to whole days) (5 marks)
 - (ii) net working capital investment in stock, trade debtors and trade creditors (workings to be rounded to the nearest £000) (5 marks)
 - (iii) net profit (workings to be rounded to the nearest £000). (5 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 3

(a)

(i) **Current ratio** = $\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\text{£1,800}}{\text{£780}} = 2.31 : 1$

(ii) Working capital cycle

Stockholding period = $(\text{£840} \div \text{£2,280}) \times 365 = 134$ days

Add: Debtors collection period = $(\text{£920} \div \text{£3,800}) \times 365 = \frac{88}{222}$ days

Less: Creditors payment period = $(\text{£780} \div \text{£2,280}) \times 365 = \frac{125}{97}$ days

Working capital cycle

(b)

(i) Expected increase in working capital cycle

Stockholding period = $[(\text{£840} \times 1.2) \div (\text{£3,800} \times 1.15 \times 0.6)] \times 365 = 140$ days

Add: Debtors collection period = $88 + 24 = \frac{112}{252}$ days

Add: Creditors payment period = $125 + 12 = \frac{137}{115}$ days

Working capital cycle

\therefore **Expected increase in WCC** = $115 - 97 = 18$ days increase

(i) Expected net working capital investment in stock, debtors and creditors

Increase in stock = $[(\text{£840} \times 1.2) - \text{£840}] = \text{£1,008} - \text{£840} = 168$ £000

Add: Increase in debtors = $[(\text{£3,800} \times 1.15) \times (112 \div 365) - \text{£920}] = \text{£1,341} - \text{£920} = \frac{421}{589}$

Less: Increase in creditors = $[(\text{£3,800} \times 1.15 \times 0.6) \times (137 \div 365) - \text{£780}] = \text{£984} - \text{£780} = \frac{204}{\text{£385}}$

Net investment in working capital

(iii) Expected increase in net profit

	£000	£000
Increase in gross profit $[(\text{£3,800} \times 0.15) \times 0.4]$		228
<u>Less:</u> Incremental charges		
Bad debts increase $(\text{£1,341} \times 0.05)$	67	
Operating expenses increase $(\text{£1,200} \times 0.075)$	90	
Interest on bank overdraft $(\text{£385} \times 0.08)$	<u>31</u>	<u>188</u>
Expected increase in net profit		<u>40</u>

QUESTION 4

A company manufactures a single product which is sold for £75 per unit. Details of the budgeted costs for the product are as follows:

<u>Variable costs (per unit)</u>	£
Direct material	20
Direct labour	15
Variable production overhead	9
Variable non-production overhead	3
<u>Fixed costs (per period)</u>	
Production overheads	£240,000
Non-production overheads	£150,000

Fixed production overheads are absorbed on the basis of 20,000 budgeted units of production per period.

The actual activity for Period 3 and Period 4 was as follows:

	Period 3	Period 4
Sales	16,000 units	20,000 units
Production	21,000 units	22,000 units

There was no stock at the start of Period 3.

REQUIRED

- (a) Prepare profit statements for each of Period 3 and Period 4 using:
- (i) absorption costing (8 marks)
 - (ii) marginal costing. (7 marks)
- (b) Discuss the usefulness of marginal costing for short-term decision-making. (5 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 4

- (a) Variable production cost per unit = £20 + £15 + £9 = £44
 Total production cost per unit = £20 + £15 + £9 + £12* = £56
 *Fixed production overheads per unit = £240,000 ÷ 20,000 = £12

(i) Absorption costing statement

		Period 3			Period 4	
		£000	£000		£000	£000
Sales	16,000 × £75		1,200	20,000 × £75		1,500
<u>Production costs</u>						
Opening stock		–		5,000 × £56		280
Production	21,000 × £56	1,176		22,000 × £56	1,232	
		1,176			1,512	
<u>Less: Closing stock</u>	5,000 × £56	(280)		7,000 × £56	(392)	
Total production costs		896			1,120	
Over-absorption	1,000 × £12	(12)	884	2,000 × £12	(24)	1,096
Gross profit			316			404
<u>Less: Non-production</u>						
Variable overhead	16,000 × £3	48		20,000 × £3	60	
Fixed overhead		150	198		150	210
Profit for period			118			194

(ii) Marginal costing statement

		£000	£000		£000	£000
Sales	16,000 × £75		1,200	20,000 × £75		1,500
<u>Production costs</u>						
Opening stock					220	
Production	21,000 × £44	(924)		22,000 × £44	968	
		924			1,188	
<u>Less: Closing stock</u>	5,000 × £44	(220)		7,000 × £44	(308)	
Variable production costs		704			880	
Non-production o/h	16,000 × £3	48	752	20,000 × £3	60	940
Contribution			448			560
<u>Less: Fixed overheads</u>						
Production		240			240	
Non-production		150	390		150	390
Profit for period			58			170

(b)

Marginal costing enables the analysis of different market price/volume levels to allow selection of optimal contributions.

It can be used in conjunction with CVP analysis to determine break-even points for profit planning purposes.

The exclusion of fixed production costs on a marginal basis enables the company to be more competitive by only using those costs that are relevant in decision-making in the short term.

Profits cannot be easily manipulated by increasing stocks in times of low sales since stocks exclude fixed costs and profits, therefore, vary directly with sales.

QUESTION 5

A company is considering acquiring new machinery to expand its production capacity. Two alternative machines with identical lifespan of four years have been identified and the profiles of their expected cash flows are as follows:

	Machine A £000	Machine B £000
Purchase cost of machine	500	800
Working capital requirement at Year 0	60	80
Estimated annual net cash inflows:		
Year 1	120	210
Year 2	260	320
Year 3	200	280
Year 4	130	260
Estimated disposal value of machine	30	100

The working capital required at Year 0 will be released at the end of Year 4. The machines are to be depreciated on a straight-line basis.

The company's cost of capital is 12% per annum and the relevant discount factors are as follows:

Year 1	0.893
Year 2	0.797
Year 3	0.712
Year 4	0.636

REQUIRED

- (a) Calculate for each of **Machine A** and **Machine B**, the
- (i) payback period (4 marks)
 - (ii) net present value. (8 marks)
- (b) Recommend which machine should be purchased based on your answer to part (a), giving a reason for your decision (2 marks)
- (c) Describe the strengths and weaknesses of the payback method of capital investment appraisal. (6 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 5

(a) (i) Payback period

Year	Machine A		Machine B	
	Cash flows £000	Cumulative cash flows £000	Cash flows £000	Cumulative cash flows £000
0	(560)	(560)	(880)	(880)
1	120	(440)	210	(670)
2	260	(180)	320	(350)
3	200	20	280	(70)
4	220*	240	440**	370

* 130 + 30 + 60 = 220 ** 260 + 100 + 80 = 440

Payback period for Machine A = 2 + (180 ÷ 200) = 2.9 years

Payback period for Machine B = 3 + (70 ÷ 440) = 3.16 years

(ii) Net present value

Year	Machine A			Machine B		
	Cash flow £000	Factor	Present value £000	Cash flow £000	Factor	Present value £000
0	(560)	1.000	(560.00)	(880)	1.000	(880.00)
1	120	0.893	107.16	210	0.893	187.53
2	260	0.797	207.22	320	0.797	255.04
3	200	0.712	142.40	280	0.712	199.36
4	220	0.636	<u>139.92</u>	440	0.636	<u>279.84</u>
			<u>36.70</u>			<u>41.77</u>

NPV = £36,700 **NPV** = £41,770

(b) Machine B should be selected over Machine A as it generates a higher net present value, even though its payback period is slightly higher.

(c) Strengths and weaknesses of the payback method include the following:

Strengths

The payback method is simple and easy to understand as it does not require the mathematical methodology of discounting;

It is a useful method when precision in estimates of profitability of a project is not crucial and when predicted cash flows in later years are highly uncertain;

Weaknesses

It ignores the timing of cash flows and those that occur after the payback point;

The time value of money is ignored since the cost of capital is not applied in appraising a project; however, the discounted payback attempts to address this weakness.

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