

Management Accounting Level 3



Model Answers

Series 4 2006 Singapore (Code 3723)

Vision Statement

Our vision is to contribute to the achievements of learners around the world by providing integrated assessment and learning services, adapted to meet both local market and wider occupational needs and delivered to international standards.



© Education Development International plc 2006 Company Registration No: 3914767
All rights reserved. This publication in its entirety is the copyright of Education Development International plc.
Reproduction either in whole or in part is forbidden without written permission from Education Development International plc.

International House Siskin Parkway East Middlemarch Business Park Coventry CV3 4PE
Telephone: +44 (0) 8707 202909 Facsimile: + 44 (0) 24 7651 6566
Email: customerservice@ediplc.com

Management Accounting Level 3

Series 4 2006

How to use this booklet

Model Answers have been developed by Education Development International plc (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 2006

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.

Management Accounting Level 3

Series 4 2006

QUESTION 1

- (a) Explain what is meant by **Activity Based Costing**, making comparison with traditional absorption costing. (6 marks)
- (b) Discuss the **human behavioural problems** that can be associated with budgetary control systems. (8 marks)
- (c) Describe what is meant by a **transfer price**. State why transfer prices may be required between divisions in a decentralised organisation, and the objectives of transfer prices in such an organisation. (6 marks)
- (Total 20 marks)**

MODEL ANSWER TO QUESTION 1

- (a) Activity based costing is a technique which involves tracing resources used, and costing units of output. Resources are assigned to activities, and costs assigned to units of output using cost drivers such as number of inspections, number of material requisitions and the number of machine set-ups.

This will provide a more accurate relationship between costs and activities, than traditional absorption costing systems which sometimes apportion costs to cost centres on a rather arbitrary basis, these are sometimes then absorbed into product cost by means of a blanket rate.

Using activity based costing, by identifying the cost driver which will cause the cost of the activity to change, will give a greater control over overhead costs and lead to more accurate product costing.

- (b) Without the participation of the person charged with the implementation of the budget the budget may be seen as unattainable, this fact could lead to de-motivation, which in turn could bring about a poor performance.

There is a need to segregate costs into their controllable and uncontrollable elements so that accountability for variances from budget can be made fairer.

There is a tendency towards the end of a budget period to spend money unnecessarily so that the budget level can be maintained in the following year.

There may be a possibility that target levels may be understated in order to make them achievable.

There should be goal congruence; i.e. the aspirations of the individual budget holder should be in agreement with those of the organisation as a whole.

- (c) A transfer price is the price charged by one part of an organisation to another part, for services or goods that are supplied. A transfer price can be cost, market value or a price negotiated between the parts of the organisation concerned.

A transfer price may be required in order to assess the performance of each part of the organisation according to managerial responsibility.

The objectives of a transfer price are that prices will;
Allow realistic measurement of managerial performance
Achieve goal congruence and profit maximisation for the organisation as a whole.

QUESTION 2

A company has budgeted to sell 200,000 units of its single product in the forthcoming year at a selling price of \$20 per unit. The variable cost per unit will be \$12.

The company's budgeted fixed costs are \$1,000,000 for the year.

REQUIRED

- (a) Calculate for the year:
- (i) the budgeted break-even point (in units) (3 marks)
 - (ii) the budgeted margin of safety (in units) (2 marks)
- (b) Explain the significance of both the break-even point and the margin of safety. (4 marks)
- (c) Calculate the increase in budgeted sales units required:
- (i) to increase the existing budgeted profit by one third (3 marks)
 - (ii) to maintain the existing budgeted profit if the company now budgets for an advertising campaign at a cost of \$250,000 (2 marks)
- (d) Calculate: the selling price that will be required, assuming that sales units remain at 200,000, to maintain the original budgeted profit if the advertising campaign in (c) goes ahead and the variable cost per unit increases by \$1 per unit. (6 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 2

(a)

(i)	Contribution per unit	\$
	Selling price	20
	Variable cost	<u>12</u>
		8

$$\text{Break-even point: } \frac{\text{Fixed costs}}{\text{Contribution per unit}} = \frac{\$1,000,000}{8} = 125,000 \text{ units}$$

(ii) Margin of safety: Budgeted sales units - Break-even point

$$200,000 - 125,000 = 75,000 \text{ units}$$

(b) The break even point is the sales figure that a company must achieve before it begins to earn a profit. It is the point at which its total fixed costs will have been recovered

The margin of safety is the amount of sales units from the maximum that a company can afford to lose before it finds itself in a loss-making situation.

(c)

(i)	Present profit:		\$
	Sales	200,000 x \$20	\$4,000,000
	Variable cost	200,000 x \$12	2,400,000
	Fixed cost		<u>1,000,000</u>
	Profit		600,000

$$\text{Additional contribution required: } 600,000 \times 1/3 = 200,000$$

$$\text{Units required: } \frac{200,000}{\$8} = 25,000$$

(ii) Additional contribution required: \$ 250,000

$$\text{Units required: } \frac{250,000}{8} = 31,250$$

(d)

	\$
Original profit	600,000
Advertising	250,000
Fixed cost	<u>1,000,000</u>
Contribution	1,850,000

$$\text{Contribution per unit } \frac{1,850,000}{200,000} = \$9.25$$

Contribution per unit	\$9.25+
Variable cost	<u>13</u>
Selling price	22.25

QUESTION 3

A company produces and sells a single product, the standard selling price and production costs of which are:

	\$ per unit
Selling price	25
Direct material 1 kilo x \$7 per kilo	7
Direct labour 2 hours x \$4 per hour	8
Fixed overhead 2 hours x \$2 per hour	4

The figures for a recent period were:

Budgeted production and sales	20,000 units
Actual production	19,000 units
Actual units sold	18,800 units
Actual sales revenue	\$451,200
Actual direct material 19,000 kilos x \$6.8 per kilo	\$129,200
Actual direct labour 38,200 hours x \$3.8 per hour	\$145,160
Actual fixed production overhead	\$83,900

Raw material stocks were unchanged during the period.

REQUIRED

(a) Calculate for the period:

- (i) The standard gross profit (2 marks)
- (ii) The actual gross profit (2 marks)

(b) Calculate the following variances for the period:

- (i) Selling price (2 marks)
- (ii) Sales volume profit (2 marks)
- (iii) Material price (2 marks)
- (iv) Labour rate (2 marks)
- (v) Labour efficiency (2 marks)
- (vi) Fixed production overhead expenditure (2 marks)
- (vii) Fixed production overhead capacity (2 marks)
- (viii) Fixed production overhead efficiency (2 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 3

(a) (i) Standard gross profit:

Per unit $(\$25 - 19) = \6
 Total $18,800 \times \$6 = 112,800$

(ii) Actual gross profit:

Sales		\$451,200
Production cost of sales		
Material	129,200	
Labour	145,160	
Fixed overheads	<u>83,900</u>	
	358,260	
-Closing stock increase		
200 X 19	<u>3,800</u>	<u>354,460</u>
Gross profit		<u>\$96,740</u>

(b) (i) Sales price variance

Actual units x actual price	451,200
Actual units x standard price (18,800 x \$25)	<u>470,000</u>
	18,800 A

(ii) Sales volume profit variance

Budgeted units x standard profit (20,000 x \$6)	120,000
Actual units x standard profit (18,800x \$6)	<u>112,800</u>
	7,200 A

(iii) Material price variance

Standard price x actual usage (\$7 x 19,000)	133,000
Actual price x actual usage	<u>129,200</u>
	3,800 F

(iv) Labour rate variance

Actual hours x actual rate	145,160
Actual hours x standard rate (38,200 x \$4)	<u>152,800</u>
	7,640 F

(v) Labour efficiency variance

Actual hours x standard rate	152,800
Standard hours x standard rate (19,000 x 2 x \$4)	<u>152,000</u>
	800 A

(vi) Fixed production overhead expenditure variance

Actual	83,900
Budget (20,000 x \$4)	<u>80,000</u>
	3,900 A

(vii) Fixed overhead capacity variance

Budgeted hours x standard rate (20,000 x 2 x \$2)	80,000
Actual hours x standard rate (38,200 x \$2)	<u>76,400</u>
	3,600 A

(viii) Fixed overhead efficiency variance

Actual hours x standard rate	76,400
Standard hours x standard rate (19,000 x 2 x \$2)	<u>76,000</u>
	400 A

QUESTION 4

A company commenced trading on 1 July, producing and selling a single product.

Unit variable cost and selling price details of the product are:

	\$ per unit
Selling price	50
Direct material	10
Direct labour	12
Variable production overhead	4
Variable selling and distribution overhead	3

Monthly fixed overheads are:

Production overheads	\$100,000
Selling and distribution overheads	\$60,000

Activity is budgeted at 10,000 units per month, which is used to establish a pre-determined fixed overhead absorption rate if absorption costing is used.

The following activity took place during July and August:

	July	August
Sales	9,000 units	11,000 units
Production	12,000 units	13,000 units

REQUIRED

- (a) Prepare profit statements for each month using:
- (i) Marginal costing (9 marks)
 - (ii) Absorption costing (8 marks)
- (b) Prepare a statement reconciling the marginal with the absorption profit for each month. (3 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 4

(a) (i) Marginal Costing

Unit cost	\$
Material	10
Labour	12
Variable production overhead	<u>4</u>
Variable production cost	26
Fixed production overhead (100,000 / 10,000)	<u>10</u>
Total production cost	<u>36</u>

		July			August	
		\$000		\$000	\$000	\$000
Sales	9,000 x \$50			450	11,000 x 50	550
Production cost						
O. Stock	Nil	Nil	+		78	+
Production	12,000 x \$26	<u>312</u>			<u>338</u>	
		312	-		416	-
C Stock	3,000 x \$26	<u>78</u>			<u>130</u>	
Variable production cost of sales		234			286	
Variable selling and Distribution overhead	9,000 x \$3	<u>27</u>		<u>261</u>	11,000 x \$3	<u>33</u> <u>319</u>
Contribution				189	-	231 -
Fixed cost				<u>160</u>		<u>160</u>
Profit				<u>29</u>		<u>71</u>

(ii) Absorption costing

		July			August	
		\$000		\$000	\$000	\$000
Sales				450		550
Production cost						
O. Stock		Nil	+		108	+
Production	12,000 x \$36	<u>432</u>			<u>468</u>	
		432	-		576	-
C. stock	3,000 x \$36	<u>108</u>			<u>180</u>	
		324			396	
Over absorption	2,000 x \$10	<u>20</u>		<u>304</u>	3,000 x \$10	<u>30</u> <u>366</u>
Gross profit				146	-	184 -
Selling and distribution ohd						
Fixed		60			60	
Variable	9,000 x \$3	<u>27</u>		<u>87</u>	11,000 x \$3	<u>33</u> <u>93</u>
Profit				<u>59</u>		<u>91</u>

(b)

	(\$000)	July		August
Marginal profit		29		71 -
Fixed overhead in opening stock		nil	+	30 +
Fixed overhead in closing stock		<u>30</u>	(5,000 x \$10)	<u>50</u>
Absorption profit		<u>59</u>		<u>91</u>

QUESTION 5

A company has been awarded a contract to produce 85,000 units of a new product over five years. A machine has to be purchased to fulfil the contract at a cost of \$600,000 with a residual value of \$50,000 at the end of five years.

The selling price of the product will be \$24 per unit with a variable production cost of \$7 per unit, and other variable overheads of \$2 per unit. Incremental fixed cost (other than depreciation of the machine) will be \$50,000 per year.

The customer is prepared to take delivery of the product under two alternative schedules, schedule 1 and schedule 2.

The output/sales under each schedule would be:

	Schedule 1	Schedule 2
Output (units)		
Year 1	22,000	17,000
Year 2	22,000	17,000
Year 3	15,000	17,000
Year 4	15,000	17,000
Year 5	11,000	17,000

The company has a cost of capital of 10% per annum.

Discount factors at 10% are:

Year 1	.909
Year 2	.826
Year 3	.751
Year 4	.683
Year 5	.621

REQUIRED

(a) Calculate:

the Accounting Rate of Return for the contract (using average investment)

(3 marks)

(b) Evaluate each schedule using:

(i) Payback

(6 marks)

(ii) Net Present Value

(6 marks)

(c) Recommend with reasons, which schedule should be undertaken.

(2 marks)

(d) A further method of evaluation is the Internal Rate of Return. State briefly how the Internal Rate of Return is calculated and its significance (You are **NOT** required to calculate the Internal Rate of Return).

(3 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 5

(a) Accounting Rate of Return

Annual profits		
Selling price	\$24	
Variable costs	<u>9</u>	
Contribution	15	
		\$
Total contribution \$15 x 85,000		1,275,000
Total depreciation		550,000
Fixed cost (\$50,000 x 5)		<u>250,000</u>
Total profit		475,000
Life		5 years
Average annual profit		95,000
Average investment		
		$\frac{600,000 + 50,000}{2} = 325,000$
Accounting rate of return		$\frac{95,000}{325,000} = 29.2\%$

(b) (i)

Payback

Schedule 1

Schedule 2

	Annual cash flow			
Year 1	(22,000 x 15) - 50,000	280,000	(17,000 x 15) - 50,000	205,000
2	(22,000 x 15) - 50,000	280,000	(17,000 x 15) - 50,000	205,000
3	(15,000 x 15) - 50,000	175,000	(17,000 x 15) - 50,000	205,000
4	(15,000 x 15) - 50,000	175,000	(17,000 x 15) - 50,000	205,000
5	(11,000 x 15) - 50,000	115,000	(17,000 x 15) - 50,000	205,000
		} 50,000		} 50,000

Payback period

$$\frac{600,000 - 560,000}{40,000} = 2 \text{ years}$$

$$\frac{600,000 - 410,000}{190,000} = 2 \text{ years}$$

$$\frac{40,000}{175,000} = .23$$

$$\frac{190,000}{205,000} = .92$$

Period

2.23 years

2.92 years

(ii) Net present value

Schedule 1

Schedule 2

	(\$000)	Cash flow	disc factor	NPV	Cash flow	Disc factor	NPV
Year 0		(600)	1	(600)	(600)	1	(600)
1		280	.909	254	205	.909	186
2		280	.826	231	205	.826	169
3		175	.751	131	205	.751	154
4		175	.683	120	205	.683	140
5		165	.621	<u>102</u>	255	.621	<u>158</u>
NPV				238			207

MODEL ANSWER TO QUESTION 5

- (c) The company should select schedule 1 as it has a higher NPV, and a shorter payback period.

- (d) Internal Rate of return is the discount rate that gives a zero NPV. A project is worthwhile if it produces an IRR greater than the company's cost of capital. It can be calculated using linear interpolation between two sets of discounted figures, also by a graphical representation of two sets of figures.

QUESTION 6

A company prepared the following budgets for the first two months of its trading period:

	Month 1	Month 2
Production (units)	13,500	20,800
Sales (units)	15,000	20,000
Costs (\$000)		
Material	216	332.8
Labour	270	416
Overhead:		
Production	235	308
Administration	46	53.3
Selling and distribution	180	195

Overheads are comprised of fixed costs and proportionately variable costs. The variable elements of selling and distribution overheads vary with sales. All other variable costs vary with production.

The actual sales and production for month 2 are:

Sales	21,000 units
Production	21,500 units

The following actual costs were recorded for month 2:

	(\$000)
Material	350
Labour	482
Overhead:	
Production	352
Administration	60
Selling and distribution	205

REQUIRED

- (a) Prepare the revised cost budget for month 2 based on the actual sales and production. (8 marks)
- (b) Calculate:
the cost variances for Month 2 (8 marks)
- (c) Calculate:
the total budgeted production cost per unit for each of months 1 and 2, based on the original budget and explain the difference between the figures. (4 marks)

(Total 20 marks)

MODEL ANSWER TO QUESTION 6

(a) Workings

Material $\frac{\$216,000}{13,500 \text{ units}} = \16 per unit

Labour $\frac{\$270,000}{13,500 \text{ units}} = \20 per unit

Production overhead

High	20,800 units	\$308,000
Low	<u>13,500</u> units	<u>235,000</u>
	7,300	73,000

Variable cost $\frac{73,000}{7,300} = \$10 \text{ per unit}$

Fixed cost	\$308,000 -
20,800 x 10	<u>208,000</u>
	100,000

Administration overhead:	High	\$53,300
	Low	<u>46,000</u>
		7,300

Variable cost $\frac{7,300}{7,300} = \$1 \text{ per unit}$

Fixed cost	\$53,300 -
20,800 x 1	<u>20,800</u>
	32,500

Sales and distribution overhead	High	20,000 units	\$195,000
	Low	<u>15,000</u>	<u>180,000</u>
		5,000	15,000

Variable cost $\frac{\$15,000}{5,000} = \3 per unit

Fixed cost	\$195,000 -
20,000 x 3	<u>60,000</u>
	135,000

Flexed cost budget month 2

Costs (\$000)		Variable	Fixed	Total
Material	21,500 x 16	344		344
Labour	21,500 x 20	430		430
Overhead				
Production	21,500 x 10	215	100	315
Administration	21,500 x 1	21.5	32.5	54
Selling and distribution	21,000 x 3	63	135	198
		<u>1,073.5</u>	<u>267.5</u>	<u>1,341</u>

MODEL ANSWER TO QUESTION 6 CONTINUED

(b) Cost variances month 2

(\$000)	Budget	Actual	Variance
Material	344	350	6 A
Labour	430	482	52 A
Overhead			
Production	315	352	37 A
Administration	54	60	6 A
Selling and distribution	198	205	7 A

(c)

	Month 1	Month 2
(000)	$\frac{721}{13.5} = \$53.4$	$\frac{1,056.8}{20.8} = \$ 50.8$

Decrease is because of the effect of the increase in production upon the fixed cost per unit.