

Management Accounting Level 3



Model Answers

Series 2 2006 (Code 3623) Malaysia

Certificate in Management Accounting Level 3 - Malaysia

Series 2 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.

QUESTION 1

- (a) Describe the advantages of **decentralisation** and the objectives of **transfer pricing** systems for sales between divisions of decentralised companies. (7 marks)
- (b) Describe what is meant by **graphical linear programming**. (6 marks)
- (c) Describe **sensitivity analysis**, and state how it can be applied to capital investment appraisal calculations. (7 marks)
- (Total 20 marks)**

MODEL ANSWERS TO QUESTION 1

Advantages of decentralization

- (a) By being given the responsibility for the performance of their own areas, managers are likely to be more motivated to achieve their own objectives. Such greater motivation is likely to result in greater awareness of the environment in which the company is, or is likely to be, operating. This is likely to cause more prompt and effective actions being taken.

Objectives of transfer pricing systems

A transfer pricing system should allow for transfer prices to be set that will allow for divisional management performance to be realistically appraised, and should also allow management to make decisions that are of benefit to the organisation as a whole as opposed to being of benefit to the division only.

- (b) **Graphical Linear Programming** is a mathematical technique allowing management to make the best uses of more than one constraint. It is a technique which can be used to compare a given number of alternatives and extract the best option such as the least cost or the most profitable course of action. In the short term constraints exist which limit the organisations activities, such as sales potential, and resource availability. Graphical methods can be used where there is any number of limitations, but only two products as the axes have to represent the products. Linear programming has the limitation of there being a linear relationship between variables.
- (c) **Sensitivity analysis** is a method of assessing projects under conditions of uncertainty, by varying the values of key factors one at a time, and showing the effect of the variation on the project outcome. The objective is to identify which of the factors affects the outcome the most. In terms of capital expenditure decisions, this could involve adjusting the sales price or volume, variable or fixed costs, and seeing which has the greatest effect on the net present value, the rate of return or the payback period, whichever method is being considered. Sensitivity analysis is a useful way of identifying the most sensitive factors but gives no indication of any given variation occurring, and the process of adjusting one factor at a time and leaving the others constant may be unreal.

QUESTION 2

A Ltd has an opportunity to undertake a one-year contract for B Ltd, for which the production department has prepared the following cost statement.

Materials:		RM
A	In stock	20,000
B	On order	15,000
C	To be specifically ordered	35,000
Labour:		
Machine operator	(50 weeks at RM600 per week)	30,000
Labourer	(50 weeks at RM300 per week)	15,000
Supervisor		35,000
Other costs:		
Depreciation of machine		10,000
Variable overheads		2,000
General overheads		<u>15,000</u>
		177,000

B Ltd has offered A Ltd RM125,000 and the Production Manager is inclined to reject the contract, but has sought a second opinion from the accounting department.

The following information has now become available:

- (1) There is sufficient spare machine capacity, in the department concerned, to undertake the contract. The machinery is not currently in use. The company has recently received an offer of RM8,000 for it. Its resale value in one years time will be RM2,000.
- (2) Material A is obsolete and could not be sold. It could be used as a substitute for Material W which would cost RM10,000 to purchase a similar quantity, but would need processing at a cost of RM3,000 to make it useable.
- (3) Material B has not yet been delivered. It was ordered for another job which has now been cancelled and is of no further use to A Ltd. If it has to be sold the current price is RM20,000, owing to a problem in the producing country.
- (4) The machine operator will be transferred from another department with spare machine capacity where he currently earns a guaranteed wage of RM500 per week. The supervisor would transfer from the same department where he is currently a deputy supervisor at a salary of RM33,000 per year. He would not be replaced.
- (5) The labourer would be hired for the duration of the contract.
- (6) The general overhead is a charge of 33.3% on direct labour. The company applies this rate to all jobs to recover its fixed overhead.

REQUIRED

- (a) State, on the basis of incremental costs and revenues, whether or not the company should accept the contract. Prepare figures to support your conclusion. (15 marks)
- (b) List the general principles that you would use in making relevant cost decisions. (5 marks)

(Total 20 marks)

MODEL ANSWERS TO QUESTION 2

(a)			RM
	Material A	(10,000 – 3,000)	7,000
	Material B		20,000
	Material C		35,000
	Labour		
	Operator	(50 weeks x RM100)	5,000
	Labourer		15,000
	Supervisor	(35,000 - 33,000)	2,000
	Machinery	(8,000 – 2,000)	6,000
	Variable Overhead		<u>2,000</u>
			92,000
	Contract Price		<u>125,000</u>
	Profit		<u>33,000</u>

On the above figures the company should accept the offer.

- (b)
- Future costs and revenues should be considered.
 - Expenditure that has already been spent is irrelevant and should be disregarded.
 - Only incremental or differential costs i.e. those which will be changed by the decision should be considered.
 - Costs which are common to all alternatives should be disregarded
 - Overhead absorption rates are irrelevant

QUESTION 3

A company produces and sells a single product. The direct cost standards per unit of product are:

Direct Material	30 kilos at RM1.5 per kilo
Direct Labour	10 hours at RM6 per hour

Production overhead is all fixed and budgeted at RM600,000 for 60,000 labour hours to produce 6,000 units. Fixed overhead is absorbed on a per unit of product basis.

The following actual figures are available for the year:

Production	5,800 units
Direct material	185,000 kilos at a cost of RM259,000
Direct labour	57,000 hours at a cost of RM319,000
Production overhead	RM590,000

- (a) Calculate the appropriate variances for material, labour and overhead. (9 marks)
- (b) Prepare a statement for management reconciling the total standard cost with the cost of production for the year, using the variances calculated in (a) above. (5 marks)
- (c) Calculate the:
- (i) Capacity Ratio (2 marks)
 - (ii) Efficiency Ratio (2 marks)
 - (iii) Production Value (Activity) Ratio (2 marks)

(Total 20 marks)

MODEL ANSWERS TO QUESTION 3

(a)				
	Material			RM
	Price Variance	Actual price x actual usage		259,000
		Standard price x actual usage	(1.5x185,000)	<u>277,500</u>
				18,500 fav
	Usage	Standard price x actual usage		277,500
	Variance	Standard price x standard usage	(1.5 x 30 x 5,800)	<u>261,000</u>
				16,500 adv
	Labour			
	Rate Variance	Actual rate x actual hours		319,000
		Standard rate x actual hours	(6 x 57,000)	<u>342,000</u>
				23,000 fav
	Efficiency	Standard rate x actual hours		342,000
	Variance	Standard rate x standard hours	(10 x 6 x 5,800)	<u>348,000</u>
				6,000 fav
	Overhead			
	Expenditure	Actual		590 000
	Variance	Budget		<u>600,000</u>
				10,000 fav
	Volume	Budget		600,000
	Variance	Actual usage x standard rate		<u>580,000</u>
				20,000 adv

(1½ marks each, 1 if no sign or wrong sign)

(b)	Standard costs		
		5,800 units x RM205per unit	1,189,000
	Variences		
	Material price	18,500 fav	
	Material usage	<u>16,500 adv</u>	2,000 fav
	Labour Rate	23,000 fav	
	Labour Efficiency	<u>6,000 fav</u>	29,000 fav
	Overhead expenditure	20,000 adv	
	Overhead volume	<u>10,000 fav</u>	<u>10,000 adv</u>
			21,000 fav
	Actual Costs		
	Material	259,000	
	Labour	319,000	
	Overhead	<u>590,000</u>	<u>1,168,000</u>

(c)	(i) Capacity Ratio	<u>Actual hours</u>	<u>57,000</u> = 95%
	Budgeted hours	60,000	
	(ii) Efficiency Ratio	<u>Standard hours</u>	<u>58,000</u> = 101.75%
	Actual hours	57,000	
	(iii) Activity Ratio	<u>Standard hours</u>	<u>58,000</u> = 96.67%
	Budgeted hours	60,000	

QUESTION 4

A company is evaluating the investment in new machinery to manufacture a new product. Two alternatives (Machine A and Machine B) are being considered.

Estimates for the two machines are:

	Machine A	Machine B
Initial cost	RM800,000	RM760,000
Useful life	5 years	5 years
Residual value at the end of 5 years	RM120,000	RM60,000
Annual profits (net of straight line depreciation)	RM100,000	RM80,000

The company has a cost of capital of 12% per annum.

Discount factors:

	10%	12%	15%	20%
Year 1	.909	.893	.870	.833
2	.826	.797	.756	.694
3	.751	.712	.658	.579
4	.683	.636	.572	.482
5	.620	.567	.497	.402

REQUIRED

(a) Evaluate **each** machine using the following methods:

- (i) Payback (7 marks)
- (ii) Net present value (work to nearest RM000) (4 marks)
- (iii) Internal rate of return (5 marks)
- (iv) Profitability index (2 marks)

(b) Recommend with reasons which, if either, machine the company should purchase. (2 marks)

(Total 20 marks)

MODEL ANSWERS TO QUESTION 4

(a) (i) Payback

Annual cash flow (RM000)	Machine A	Machine B
Annual depreciation	$\frac{800 - 120}{5 \text{ years}} = 136$	$\frac{760 - 60}{5 \text{ years}} = 140$
Annual profit	100	80
Annual cash flow	236	220
Payback (RM)	$\frac{800}{236} = 3.4 \text{ years}$	$\frac{760}{220} = 3.5 \text{ years}$

(ii) Net present value (discounted at 12% per annum)

RM(000)	Cash Flow	Machine A		Machine B		
		Disc Factor	PV	Cash Flow	Disc Factor	PV
Year 0	(800)	1	(800)	(760)	1	(760)
1	236	.893	211	220	.893	197
2	236	.797	188	220	.797	175
3	236	.712	168	220	.712	157
4	236	.636	150	220	.636	140
5	356	.567	<u>202</u>	280	.567	<u>159</u>
NPV			<u>119</u>			<u>68</u>

(iii) Internal rate of return
Discounting at 20% per annum

RM(000)	Cash Flow	Machine A		Machine B		
		Disc Factor	PV	Cash Flow	Disc Factor	PV
Year 0	(800)	1	(800)	(760)	1	(760)
1	236	.833	197	220	.833	183
2	236	.694	164	220	.694	153
3	236	.579	137	220	.579	127
4	236	.482	114	220	.482	106
5	356	.402	<u>143</u>	280	.402	<u>113</u>
NPV			(45)			(78)

$$\text{IRR } 12\% + \left\{ \frac{119}{(119 + 45)} \right\} \times 8\% = 17.8\%$$

$$12\% + \left\{ \frac{68}{(68 + 78)} \right\} \times 8\% = 15.7\%$$

(iv) Profitability index

$$\frac{119}{800} = 14.9\%$$

$$\frac{68}{760} = 8.9\%$$

(b) Machine A should be chosen because, although the Payback is almost identical, A has a greater NPV, IRR, and Profitability Index.

QUESTION 5

A company has budgeted the following working capital ratios:

Raw material stock turnover	22.5 times
Finished goods stock turnover	20 times
Debtors collection period	40 days
Raw material creditors	36 days

Further information:

- (1) The debtors collection period is based on a budgeted Debtors figure of RM600,000.
- (2) All sales are on credit.
- (3) The company has a budgeted contribution to sales ratio of 40%
- (4) Raw material costs are budgeted as 80% of total variable costs
- (5) The company has budgeted fixed production costs for the year of RM760,000.
- (6) Assume each year is 360 days.

REQUIRED

- (a) Calculate the company's working capital cycle (in number of days). (6 marks)
- (b) Calculate the company's total working capital requirement (in RM000). (9 marks)
- (c) State what the consequences may be of having too much raw material stock. (5 marks)

(Total 20 marks)

MODEL ANSWERS TO QUESTION 5

(a) Working capital cycle (days)

Raw material	16	(360/22.5)
Finished stock	18	(360/20)
Debtors	<u>40</u>	
	74	
Creditors	<u>36</u>	
	38 days	

(b) Working capital (RM000)

Workings	Sales (600/40) x 360	5,400
	Variable Cost (100-40)%	3,240 (60% x 5,400)
	Raw Material 80%	2,592 (80% x 3,240)
	Cost of Sales	
	Variable	3,240
	Fixed	<u>760</u>
		<u>4,000</u>

Working capital (RM000)

	Raw Material (2,592/22.5)	115
	Finished stock (4,000/20)	200
	Debtors	<u>600</u>
		915
	Raw Material Creditors	
	(2,592/360) x 36	<u>259</u>
	Working Capital	656

(c) Possible consequences of over-stocking are:

- The costs of financing the stocks. This could be the interest charges on borrowed funds, or the opportunity cost of not using the funds to produce income.
- Greater risk of deterioration and obsolescence from holding larger than necessary stocks.
- Greater insurance costs.
- Greater risk of theft.
- The possibility of requiring more staff to handle the stock and the extra work involved in stocktaking.

QUESTION 6

A company makes two products, each of which passes through two operations, cutting and forming.

At present, production overhead is absorbed using a machine hour rate, but the company is considering using Activity Based Costing to absorb its production overheads.

Production details of the two products are:

	Product A	Product B
Cutting	4 operations per unit	3 operations per unit
Forming	2 operations per unit	3 operations per unit
Machine set up	1 per batch	1 per batch
Inspection	2 times per unit	2 times per unit
Machine hours	2 per unit	1.5 per unit
Budgeted production	5,000 units	4,400 units
Batch size	50 units	100 units.

Both products are made from the same raw material, which is issued on a single sheet basis, against a material requisition. One sheet of material will make 10 units of either product. No wastage of raw material is expected.

Budgeted costs for the period for each activity and their related cost drivers are:

	RM	Cost Driver
Cutting	49,800	Operations
Forming	46,400	Operations
Set up	2,160	Machine set ups
Inspection	22,560	Inspections
Stores	5,640	Material requisitions

REQUIRED

Calculate the production overhead per unit of each product:

- (a) Using a machine hour rate (calculated to two decimal places). (4 marks)
- (b) Using an activity based method of overhead apportionment and the cost drivers above. (16 marks)

(Total 20 marks)

MODEL ANSWERS TO QUESTION 6

(a)	A	B
Production	5,000 units	4,400 units
Machine hours	2 per unit	1.5 per unit
Total hours	10,000	6,600
Costs	RM	
Cutting	49,800	
Forming	46,400	
Set-up	2,160	
Inspection	22,560	
Stores	<u>5,640</u>	
	126,560	
Rate per hour	$\frac{126,560}{16,600} = \text{RM}7.62$	
Cost per unit	A	B
	$2 \times 7.62 = \text{RM}15.24$	$1.5 \times 7.62 = \text{RM}11.43$

(b) Activities

		A		B	TOTAL
Cutting	5,000 x 4	20,000	4,400 x 3	13,200	33,200
Forming	5,000 x 2	10,000	4,400 x 3	13,200	23,200
Set up *	100 x 1	100	44 x 1	44	144
Inspection	5,000 x 2	10,000	4,400 x 2	8,800	18,800
Stores **	500 x 1	500	440 x 1	440	940

* 1 set up per batch

A Production $\frac{5,000}{50} = 100$ batches B Production $\frac{4,400}{100} = 44$ batches
 Batch size 50 Batch size 100

** 10 units per sheet

A $\frac{5,000}{10} = 500$ B $\frac{4,400}{10} = 440$

Costs per activity

Cutting $\frac{49,800}{33,200} = 1.5$ per operation

Forming $\frac{46,400}{23,200} = 2.0$ per operation

Set-up $\frac{2,160}{144} = 15.0$ per set up

Inspection $\frac{22,560}{18,800} = 1.2$ per inspection

Stores $\frac{5,640}{940} = 6.0$ per requisition

QUESTION 6 CONTINUED

Product Costs	A	RM	B	RM
Cutting	4 x 1.5	6.0	3 x 1.5	4.5
Forming	2 x 2	4.0	3 x 2	6.0
Inspection	2 x 1.2	2.4	2 x 1.2	2.4
Set up	<u>1 x 15</u>	0.3	<u>1 x 15</u>	0.15
	50		100	
Stores	<u>6</u>	<u>0.6</u>	<u>6</u>	<u>0.6</u>
	10		10	
Total Cost per Unit		<u>13.3</u>		<u>13.65</u>