MANAGEMENT ACCOUNTING

Certificate stage examination

6 December 2007

MARKING SCHEME

AT THE HEART OF YOUR CAREER

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Question 1

(a) Profit statement for the year ended 30 November 2007

	£000	£000
Sales revenue		1,500
Less variable costs:		
Direct materials	525	
Direct labour	300	
Variable production overhead	75	900
Contribution		600
Less fixed costs:		
Fixed production overhead	300	
Administration overhead	270	
Selling and distribution	180	750
Loss		(150)

2

2

(4)

(b) Evaluation of strategy 1

Increased advertising of £450,000. This would increase selling price by 20%. The new profit margin would be 10%.

		£
Current selling price	£1,500,000/75,000 units =	20
Less variable costs	£900,000/75,000	12
Contribution per unit		8

2

C/S ratio (profit margin) is therefore 8/20 = 40%

Therefore increased profit margin of 10% equals an increase in C/S ratio to 50%.

$$\text{Sales required} = \frac{\text{Existing fixed costs + £450,000 + 10\% sales value (profit)}}{\text{C/S ratio}}$$

$$= \frac{\text{£750,000 + £450,000 + 10\% sales value}}{50\%}$$

$$= \text{£2,400 + 20\% sales}$$

2

80% sales = £2,400, therefore sales required are £2,400/80 x 100 = £3,000.
20% increase in selling price = £24 per unit
£3,000/£24 = 125,000 units

	£	
Sales	3,000	(125,000 x £ 24 each)
Less variable costs	1,500	(£12 x 125,000)
Contribution	1,500	
Less fixed costs	1,200	(£750 + £450 additional)
Profit	300	(Profit margin of 10%)

2

Evaluation of strategy 2

Reducing the selling price by 10% and increasing volume by 30%

	£
Sales (£20 x 0.90 x 75,000 x 1.3)	1,755
Less variable costs (£12 x 75,000 x 1.3)	1,170
Contribution	585
Less fixed costs	750
Loss	(165)

3

Evaluation of strategy 3

Sales to increase to the breakeven point. Sales commission of 10% of sales value.

By paying 10% of sales value as commission we reduce the C/S ratio by 10%. The C/S ratio becomes 30%.

$$\text{Sales} = \frac{\text{Fixed costs}}{\text{C/S ratio}} = \frac{£750}{0.3} = £2{,}500$$

Required sales would become £2,500.
This is 125,000 units.

2

Evaluation of strategy 4

Productivity bonus system implementation.

	£	£
Sales (75,000 x 1.2 x £20)		1,800
Materials (75,000 x 1.2 x £7)	630	
Direct labour (75,000 x 1.2 x £7)	630	
Variable production overhead (75,000 x 1.2 x 1)	90	1,350
Contribution		450
Less fixed costs (£750 + £75)		825
Loss		(375)

3

Alternative appropriate workings will be awarded marks

Summary

- Option 1 appears to be the best option financially. This results in a profit of £300,000.
- Option 2 results in a bigger loss than that incurred last year and would not therefore be advisable.
- Option 3 requires that sales be increased to 2.5 million to break even. This is a huge increase on the current year and would not appear to be realistic.
- Option 4 results in a loss of £375,000 and should not be pursued.

2

(16)

(20)

Question 2

Standard profit margin per km:

		£
Standard price	=	12.400
Less standard cost £141,150/12,500	=	11.292
		1.108

1

(a) Calculate variances:

	£
Sales variances:	
Sales margin price variance	0
Sales margin quantity variance	
(Budgeted volume – Actual volume) x standard margin	
(12,500km – 11,800km) x £1.108	775.60 A

1

Materials variances:	
Materials price variance	0
Materials usage variance	
Standard usage 1,875kgs/12,500km = 0.15kgs per km.	
(Standard usage for actual output – Actual usage) x standard cost per kg	
11,800km x 0.15kg = (1,770kg – 1,795kg) = 25kgs x £10	250.00 A

1

Labour variances:	
Labour rate variance	
Standard cost for actual hours – actual cost	
(4,450hrs x £12.00) – £56,070	2,670 A

1

Labour efficiency variance	
Standard hours per km 4,800hrs/12,500km = 0.384hrs	
(Standard hours for actual kms – Actual hours) x standard cost per hour	
(11,800km x 0.384hrs) – 4,450hrs = 81.20hrs x £12	974.40 F

1

	£	
Variable overhead:		
Expenditure variance		
Standard overhead for actual hours – actual overhead		
(4,450 hrs x £9.00) – £42,300	2,250 A	*1*
Efficiency variance		
Standard overhead for standard hours – standard overhead for actual hours		
11,800km x 0.384hrs = 4531.20hrs		
(4,531.20hrs x £9.00) – (4,450hrs x £9.00)	730.80 F	*1*
Fixed overhead		
Expenditure variance		
Budgeted cost – Actual cost		
£21,600 – £25,100	3,500 A	*1*
Capacity variance		
Budgeted cost – (standard fixed overhead for actual hours)		
£21,600 – (4,450hrs x £4.50)	1,575 A	*1*
Efficiency variance		
(standard fixed overhead for actual hours) – (standard fixed overhead for standard hours)		
(4,450hrs x £4.50) – (4,531.20hrs x £4.50)	365.40 F	*1*

Statement to reconcile budgeted surplus with actual surplus
Period 3

	£ Adv	£ Fav	£
Budgeted surplus			13,850.00
Less sales variances			775.60 Adv
			13,074.40
Cost variances:			
Material usage	250		
Labour rate	2,670		
Labour efficiency		974.40	
Variable overhead exp.	2,250		
Variable overhead efficiency		730.80	
Fixed overhead exp.	3,500		
Fixed overhead capacity	1,575		
Fixed overhead efficiency		365.40	
	10,245	2,070.60	
Actual surplus			4,900

4

(14)

(b) Possible comments may include:

- Although the selling price remained the same (as this was set in the contract price), the operation has failed to clean the volume of road that it budgeted for.
- Although materials were obtained for the budgeted price, the quantity that was used was higher. This may be due to a poorer quality of materials or inefficiency of staff resulting in high wastage levels.
- The labour cost was more than the budgeted amount per hour. This may be because of a pay increase that was not taken into account in the budget. Alternatively, it may be because the operation employed employees with a higher level of skill that demanded higher wage rates.
- The labour force took less time to complete the work than budget. This indicates that they were more efficient. This could be related to the level of skill (see above). Alternatively, the increased labour cost may be linked to a productivity or bonus scheme.
- Variable overheads cost more than budget. However, less was absorbed due to the efficiency of the labour.
- Fixed overheads cost more than budget and less was absorbed due to less kilometres of road being cleaned than in the budget.

1 mark per relevant point made up to a maximum of (6)

(20)

Question 3

(a) Estimated cost of contract:

	Unit cost £	Total cost (3,500 units) £	
Materials:			
5kg G1 at replacement cost £16.95	84.75	296,625	*1*
4 kg G2 at replacement cost of G3 £11.40	45.60	159,600	*1*
less further processing costs 4kg x £3.80	(15.20)	(53,200)	*1*
Part X2	45.00	157,500	*1*
	160.15	560,525	
Labour:			
6 hrs skilled labour at agency cost £14.00	84.00	294,000	*1*
4 hrs semi-skilled labour at £8	32.00	112,000	*1*
Variable overhead:			
3 machine hours at £14 per hour (40% x £35)	42.00	147,000	*1*
Total variable costs	**318.15**	**1,113,525**	
Incremental fixed costs	8.29	29,015	*1*
Total costs	**326.44**	**1,142,540**	
Suggested price	**345**	**1,207,500**	
Profit	**18.56**	**64,960**	*1*

The contract should be accepted as the price offered is greater than the incremental costs of production. The contract should not be accepted if the price falls below £326.44 per component. *1*

(10)

(b)

- Will accepting the contract bring future work to the company?
- Will idle capacity be available to meet such future orders?
- Will there be a loss of goodwill from regular customers if they hear that the price offered for this contract is less than the normal price for similar components?
- Increased morale for the staff in the company as there will be a reduction in idle time.
- Will agency workers provide the appropriate quality of work?
- Will the supervisor be able to manage the project in addition to their normal workload?

1 mark per relevant point to maximum of (5)

(c)

- Used for decisions typically of a 'one off' nature. The treatment of fixed costs as non-relevant cannot be sustained in the longer term.
- It is difficult to obtain financial data about alternative courses of action.
- It is difficult to identify the 'benefit foregone' as we may not pursue this course of action. This may result in estimated costs, and as such, an incorrect decision may be made.
- Relevant costing deals with the financial aspects of a decision only. There are many qualitative factors that need to be taken into account before a decision is made.
- It is difficult to persuade managers to accept relevant costing principles.
- The decision reached by using relevant costing does not identify where the financing for a particular project will come from.

1 mark per relevant point to a maximum of (5)

(20)

Question 4

(a) Total cost and cost per customer:

	Accommodation £	Catering £	Leisure £	Treatments £	Total £
Labour (allocated)	165,000	150,750	52,500	57,750	426,000
Materials (allocated)	28,500	54,000	24,000	19,500	126,000
Power (Kwatt hrs)	30,000	15,000	75,000	6,000	126,000
Rent and rates (floor area)	54,000	18,000	27,000	9,000	108,000
Depreciation (machinery value)	7,500	15,000	45,000	22,500	90,000
Advertising (customer usage)	45,000	36,000	24,000	9,000	114,000
Office expenses (no of employees)	144,000	72,000	108,000	36,000	360,000
Total cost	474,000	360,750	355,500	159,750	1,350,000
No of customer days	22,500	18,000	12,000	4,500	57,000
Cost per day	21.07	20.04	29.63	35.50	
Marks	*1*	*1*	*1*	*1*	

Allow for alternative bases for apportionment

(4)

(b) The price would be as follows:

		£
Accommodation	£21.07 x 7	147.49
Catering	£20.04 x 7	140.28
Leisure	£29.63 x 4	118.52
Treatments	£35.50 x 3	106.50
		2
Total		512.79
Profit £512.79/0.75 x 0.25		170.93
Selling price		683.72
		2

(4)

(c)

	Costs absorbed £	Actual £	Under/over absorption £
Accommodation (£21.07 x 22,875)	481,976	480,000	1,976 over
Catering (£20.04 x 19,500)	390,780	412,500	21,720 under
Leisure (£29.63 x 10,200)	302,226	300,000	2,226 over
Treatments (£35.50 x 4,800)	170,400	187,500	17,100 under

(2)

(d) The following methods could be used:

- Machine hour rate

This is where the total costs are divided by the expected total number of machine hours to be used in the cost centre in the period.

It is appropriate when all products passing through the department or cost centre spend some time on a machine. The process should be machine intensive and the time spent on a particular machine must be a good indicator of the overhead cost that is incurred.

- Labour hours

This is where the total costs are divided by the expected total number of labour hours to be used in the cost centre in the period.

It is appropriate when all products passing through the department or cost centre spend some time being worked on by the labour employed. The process should be labour intensive and the labour time spent must be a good indicator of the overhead cost that is incurred.

- Percentage of direct wages cost

This is where a percentage of direct wages cost is added as overhead.
This method charges overheads on a time basis (as the above method does). However, it is only suitable when the cost of the direct wage does reasonably reflect time.

- Rate per unit

This method assumes that all products consume a similar amount of overhead. This is the case when there is only one product type, or where different products pass through an identical process.

Other methods may include:

- Percentage of direct materials
- Percentage of prime cost

1 mark for each method well described, 1 mark for each appropriate example given

(6)

(e) Impact of an incorrect fixed OAR:

- Fixed overhead variances – when the budgeted fixed overhead is different to the actual fixed overheads incurred, an expenditure variance will result. Where the level of activity (eg labour hours, machine hours) is higher or lower than budgeted, the result will be a volume variance. *2*
- Cost recovery – If overheads are underabsorbed, the actual overheads will not be fully recovered. The difference will be charged in the profit & loss account, representing an additional overhead cost to the business. If too much overhead is recovered, there is a possibility that the business may be un-competitive due to higher overheads being included in the prices than is necessary. *2*

(4)

(20)

Question 5

(a) Process to set the capital budget

- Starting point should be the existing capital programme.
- The position on existing schemes needs to be established.
- Policy considerations from the corporate planning process need to be considered and built in.
- New proposals are put forward by departmental heads with justification.
- Schemes may be appraised in terms of feasibility.
- Financial appraisal should be carried out and funding planned.
- External approval will be secured if required.
- Programme is approved by senior management.

1 mark per relevant point to a maximum of (4)

(b) Contents of the capital budget

- Description of scheme with location, size and other relevant features.
- Need for the scheme and priority ranking.
- Start date, implementation period and completion date.
- Capital costs of the scheme, analysed over type and over financial period.
- Revenue consequences in the year of completion and the full year effects.

1 mark per relevant point to a maximum of (4)

(c) Limiting factors to be considered

- Finance availability.
- External controls.
- Legislation.
- Government and EU controls (normally on borrowing and spending).
- Revenue consequences.
- Environmental / Social impact.

½ mark per relevant point to a maximum of (3)

(d) Sources of Finance

- Borrowing or other credit arrangements. These may be leasing or hire purchase. There may be legal or other controls connected to these.
- Internal sources of finance (reserves).
- Receipts from the sale of fixed assets.
- Income received from outside bodies (eg Grants from the EU or central government).
- Private finance.
- Charitable donations.

1 mark per relevant point to a maximum of (3)

(e) How the budget should be monitored

- Will often be a multi-disciplinary activity with a number of people being involved in the monitoring process.
- Need to monitor the overall financing position in order to monitor cash flows, ensuring appropriate financing arrangements are in place and external controls are complied with.
- Physical progress against budget needs to be monitored as there will be a financial effect of going over schedule.
- Individual schemes need to be monitored in relation to estimated costs and tight control should be maintained.
- Information will be non financial and financial.

1 mark per relevant point to a maximum of (4)

(f) Revenue consequences

- Should be a link to the revenue budgeting process.
- May be a cost of financing that needs to be built in to the revenue budget.
- Other revenue costs need to be considered (eg staff, overheads).

1 mark per relevant point to a maximum of (2)

(20)

Question 6

(a) Sales budget

	M1 £000	M2 £000	M3 £000	Total £000
Revenue	1,920	5,280	3,600	10,800

(1)

(b) Production budget

	M1 Units	M2 Units	M3 Units	Total Units
Opening stock	(2,000)	(2,400)	(3,000)	(7,400)
Sales	16,000	24,000	20,000	60,000
Closing stock	2,400	2,000	3,600	8,000
Production	16,400	23,600	20,600	60,600

(3)

(c) Materials purchase budget

	X1 Litres		X2 kg
Opening stock	10,000		15,000
Closing stock	16,000		20,000
Stock increase	6,000		5,000

1

M1 requirement			
16,400 x 4	65,600	16,400 x 6	98,400
M2 requirement			
23,600 x 6	141,600	23,600 x 8	188,800
M3 requirement			
20,600 x 5	103,000	20,600 x 3	61,800
Total	316,200		354,000

2

Cost per unit	£6	£4
Cost	£1,897,200	£1,416,000
Total	£3,313,200	

1

(4)

(d) Labour cost:

	Dept 1 hrs		Dept 2 hrs
M1 requirement			
16,400 x 1.5	24,600	16,400 x 3	49,200
M2 requirement			
23,600 x 2.5	59,000	23,600 x 4	94,400
M3 requirement			
20,600 x 4	82,400	20,600 x 5	103,000
Total	166,000		246,600
Cost per unit	£8		£6
Cost	£1,328,000		£1,479,600
Total	£2,807,600		

(3)

(e) Budgeted overhead absorption rates:

	Dept 1 Labour hours		Dept 2 Machine hours
M1 16,400 x 1.5	24,600	16,400 x 4	65,600
M2 23,600 x 2.5	59,000	23,600 x 4	94,400
M3 20,600 x 4	82,400	20,600 x 6	123,600
Total	166,000		283,600

2

Overhead	£830,000		£1,134,400
	166,000 hrs		283,600 hrs
OAR	£5 per labour hr		£4 per machine hr

1

(3)

(f) Standard product cost and standard profit

	M1 £	M2 £	M3 £
Material X1	24	36	30
Material X2	24	32	12
Labour – dept 1	12	20	32
Labour – dept 2	18	24	30
Prime cost	78	112	104

2

Production overhead			
Dept 1	7.5	12.5	20
Dept 2	16	16	24

2

	£	£	£
Production cost	101.5	140.5	148
Administration overhead	7.5	11	15.5
Total cost	109	151.5	163.5
Profit	11	68.5	16.5
Selling price	120	220	180

2

Admin overhead = $\frac{£701,900}{2,807,600}$ = £0.25 per £1 labour

(6)

(20)