

MANAGEMENT ACCOUNTING

Certificate stage examination

7 June 2007

From 10.00am to 1.00pm
plus ten minutes reading time from 9.50am to 10.00am

Instructions to candidates

*There are **six** questions on this question paper*

*Answer **five** questions in total*

Three compulsory questions from **Section A**

Two of the three questions from **Section B**

*The questions in section A carry, in total, **60** marks*

*The questions in section B each carry a total of **20** marks*

All workings should be shown. Where calculations are required using formulae, calculators may be used but steps in the workings must be shown. Calculations with no evidence of this (for example, using the scientific functions of calculators) will receive no credit. Programmable calculators are not permitted in the examinations room.

Graph paper and cash analysis paper are available from the invigilator, where applicable.

Where a question asks for a specific format or style, such as a letter, report or layout of accounts, marks will be awarded for presentation and written communication.

SECTION A (Compulsory – answer all three questions)

1

XY Limited manufacture and sell a single product. The standard production cost for a single unit of the product is as follows:

		£
Direct materials	4 kilograms at £14 per kg	56.00
Direct labour	3 hours at £12 per hour	36.00
Production overhead	Variable	6.00
	Fixed	20.00
Standard production cost		118.00

In order to determine the fixed production overhead rate per unit, a normal operating capacity output level of 32,000 units per annum is assumed.

The selling price of the product is £280 per unit.

In addition to production overheads, the company also incurs selling, distribution and administration overheads. These are as follows:

Variable overheads: 20 per cent of the sales value
Fixed overheads: £360,000 per annum

In the relevant period, the only variance to occur is a fixed production overhead volume variance.

On 1 April 2006, there were no units of finished product in stock.
The fixed overhead expenditure is incurred at an even rate throughout the year.

The sales team of XY Limited has prepared a summary of the number of units produced and sold for the year. This is as follows:

	1/4/06 - 30/9/06	1/10/06 – 31/3/07
Production	17,000	14,000
Sales	14,000	16,000

• **Requirement for question 1**

- (a) Prepare statements for management that show sales, costs and profits for each of the six monthly periods, using
 - (i) Marginal costing
 - (ii) Absorption costing

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- (b) Prepare and explain a statement that reconciles the profit for each period using marginal costing, to that when absorption costing is used.

4
- (c) Identify and explain **three** situations where the use of marginal costing may prove more useful than absorption costing to the managers of XY Limited.

6

(20)

2

Greenbrough District Council runs a self financing venture called 'Outdoor Experience'. 'Outdoor Experience' organises and facilitates management team building weekends. The council makes use of the facility to train its middle and senior management. For this, it pays a fixed sum of £375,000 per annum. This is paid to the centre at quarterly intervals. The centre offers services to external clients who come from all over the country. A range of staff are employed at the centre. One of the Council's aims is to provide work opportunities to the long term unemployed. A skilled team of trained professionals is also on the workforce.

The Team Leaders at 'Outdoor Experience' are planning for the final quarter of 2007. The number of clients has not been as high as originally hoped for in the first three quarters of the year, and because of this, the financial performance has been put under some scrutiny by the District Council.

The Team Leaders have some experience of management accounting techniques and have managed to compile and categorise the total costs that have been incurred during the first three quarters. These are as follows:

	Quarter 1	Quarter 2	Quarter 3
	£	£	£
Labour	178,125	228,000	206,625
Centre utility overheads	34,500	42,200	38,900
Administration overhead	13,125	15,750	14,625
Consumables	139,375	178,400	161,675
Insurances	22,500	22,500	22,500
Advertising	7,800	7,800	7,800
Total cost	395,425	494,650	452,125

The number of clients that used the centre during the first three quarters was as follows:

	Total clients	% of non-council paying clients
Quarter 1	2,500	60
Quarter 2	3,200	70
Quarter 3	2,900	45

The fee for each non-council paying client is currently £250.00 per weekend. There is no additional fee to pay in respect of council employees. All of the income in respect of these clients is included in the fixed annual sum. However, all of the clients incur the same costs.

The Team Leaders predict that the total number of clients in quarter 4 will increase by 6% from those in quarter 3. Half of these will be paying clients.

The District Council has put forward a proposal to withdraw the fixed fee for the use made of the centre by their employees. It fears that the level of subsidy it is providing is too high. As an alternative, it proposes to pay on the basis of per client weekend but at a reduced rate of £150 per client weekend. The fee for non-council paying clients will remain at £250 per weekend.

• **Requirement for question 2**

- (a) Prepare a schedule of costs for quarter 4, based on the information given above. 7
- (b) Prepare and comment on a summary of performance for the centre for the full year 2007. The statement should show clearly, for each quarter, the total costs for the centre. It should also show the surplus or deficit generated both with and without council subsidy. 4
- (c) Calculate the total breakeven number of paying clients that would have been required in 2007, had the Council's proposal to withdraw the fixed fee and charge on a 'per client' basis been implemented at the start of the year. You should assume that the team leaders' forecasts in respect of quarter 4 client numbers are correct. 6
- (d) State the key assumptions upon which your answer to part (c) is founded. 3

(20)

3

'Trichem' operates a standard costing system of management reporting. The company produces specialised chemical compounds in batches that are used in health care products. These products are sold to NHS organisations all over the North East. The products have a limited life due to their chemical composition, therefore no stocks are kept.

Standard costing and budget data per batch for the four week period ended 30 April 2007 are as follows.

	Quantity per batch	Unit price £	Cost per batch £
Materials (litres)	7	17.00	119.00
Labour (hours)	11	13.40	147.40
Fixed overhead	11	9.45	103.95
Standard cost per unit			<u>370.35</u>

The company operate full absorption costing based on labour hours.

Standard cost of budgeted production is £5,184,900.

Actual production and expenditure for the period:

- The number of batches produced was 13,200.
- 95,420 litres of materials were used at a total cost of £1,479,010.
- 141,550 hours of labour were used at a cost of £1,898,035
- Expenditure of fixed overheads was £1,400,000.

• Requirement for question 3

Prepare a report for the Managing Director that:

- Details all expenditure variances and reconciles the standard cost of production with the actual cost of production and briefly explains possible reasons for any significant variances. 13
- Gives two specific examples of how the setting of standards may affect the behaviour of a manager who is held responsible for particular variances. 4
- Explains the characteristics that should be in place for a standard costing system to operate effectively in a public sector organisation and provides examples of **two** services where standard costing may prove successful. 3

(20)

SECTION B (Answer two from three questions)

4

X Limited is a newly formed company that manufactures component parts for the computer and television industry. Three components in its introductory range that are made and sold by the company are detailed below:

	Component A	Component B	Component C
Standard costs:	£	£	£
Direct materials	25	60	45
Variable overhead	6	3.5	8

Direct labour is required in each of three departments in the company. The hours required per product and the hourly rates are shown below:

	Rate per hr £	A	B	C
Department X	10	7	4	7.5
Department Y	12	2	1.5	2.5
Department Z	8	4	2	7.5

The total fixed overhead for the year was budgeted to be £280,000.

The sales volumes upon which the budget was based for the current year were set as a result of initial market research. They are as follows:

	Number of components	Price per component £
Component A	3,750	180
Component B	3,100	240
Component C	2,950	260

However, the company has made a number of business contacts during the course of its introductory year. The managers are confident that the volume of sales will increase substantially in the year to come. Based on their initial estimates, the figures that are to be used for the next year should be based upon the following percentage increase in sales volume. The sales price will remain at the same levels:

	Percentage increase
Component A	36%
Component B	25%
Component C	30%

All costs are expected to remain the same as in the current year.

The expansion of the company, although being potentially viable in terms of the sales volume, has some problems in terms of the labour required. The labour in departments X and Z is readily available in the local area. However, the labour for department Y is highly specialised and at the present time the company is unable to recruit any additional staff in this department due to general shortages in the labour market. The company does not currently permit the working of overtime.

• **Requirement for question 4**

- (a) Prepare a statement that shows the unit costs and unit contributions of the three components and the total profit that can be expected from their combined sales for the current year. 3
- (b) Prepare a recommendation to the Managing Director of X Ltd that suggests the most profitable product mix of components that can be sold during the next financial year, given the situation in the labour market. Express as a percentage the change from the current year that this profit would represent. 7
- (c) State two non-financial factors which should be considered in the event that the recommendations in (b) are implemented. 2
- (d) Where more than one constraint exists in decision making, a technique called linear programming can be used to recommend the optimum production schedule. Explain the following terms in relation to the technique of linear programming:
- Objective function
 - Feasible area
 - Slack variables
 - Shadow price
- 8

(20)

5

TAZ plc manufactures combined upholstery and carpet cleaning machines for the domestic market. They currently retail at £300 per machine. The head office of the company is based in Tripton and it has three factories that are widely spread across the country.

The company is facing increasing competition as well as a fall in market demand. As a result of this, the Sales Director has forecast that sales for the next financial year 07/08, will fall by 16.67% from those for the current year. The selling price cannot be increased as this would decrease demand further still.

The management team is currently considering the proposal to close one of the factories and of changing the output of one or both of the remaining factories. This is so profit can be maximised.

The summarised profit and loss accounts for the current year ending 30 April 2007 are as follows:

	Factory A	Factory B	Factory C
	£000	£000	£000
Direct materials	2,400	9,600	4,800
Direct wages	1,200	6,000	2,880
Variable production overhead	300	1,680	720
Fixed production overhead	1,500	5,280	2,400
Production cost	5,400	22,560	10,800
Administration overhead	600	3,600	1,680
Variable selling overhead	600	2,880	960
Fixed selling overhead	900	3,120	2,160
Head office costs	600	2,400	1,200
Sales	9,000	36,000	18,000
Profit	900	1,440	1,200
Total cost	8,100	34,560	16,800

Additional information:

1. The costs of closing the factories can be ignored as any costs incurred in decommissioning will be covered by the sale of plant.
2. All fixed costs except head office costs can be directly attributed to the factory to which they are allocated. Head office costs are apportioned to the factories at the year end.
3. There is sufficient capacity available at each factory to undertake additional production if required. Each factory could increase its output by up to twice the past year's level, without the need for major investment. Additional costs would be incurred in respect of supervision, storage maintenance etc. These facilities are readily available in each local area where the factories are located. The costs of these are forecast as follows:

	Factory A	Factory B	Factory C
	£000	£000	£000
Output rise of:			
1% - 25%	600	1,000	600
26% - 50%	700	1,200	800
51% - 75%	800	1,600	1,200
76% - 100%	1,000	2,000	1,400

4. Transport costs would be affected if one of the factories were to be closed. This would be because the customers from that locality would be served by the remaining factories. The extra costs per unit are forecast as follows:

To factory A locality	£20
To factory B locality	£30
To factory C locality	£24

5. It is expected that the overall reduction in sales will be in line with this year's sales volumes in each factory.

• **Requirement for question 5**

Prepare a statement for management that:

- (a) Evaluates the possibility of closing each one of the factories and of changing the output of one or both of the remaining two, to maximise profit. You should include the change in profit that would result in the closure of each of the three factories in your evaluation for the purposes of comparison. 15
- (b) Identifies the non-financial considerations if such a decision were to be implemented. 5

(20)

6

The Finance Director of Transmere Foundation Hospital has recently agreed to present a short lecture about budgeting. As a CIPFA trainee, he knows that you have done some work in this area as part of your studies and has requested that you help in preparing for the lecture.

- **Requirement for question 6**

Prepare briefing notes that the Finance Director can use in the lecture. Outline the key characteristics pertaining to each of the following approaches to budget setting. Explain any advantages and disadvantages of each method.

- | | |
|-------------------------------|---|
| (a) Incremental budgeting. | 5 |
| (b) Zero based budgeting. | 5 |
| (c) Activity based budgeting. | 5 |
| (d) Rolling budget setting. | 5 |

(20)
