# MANAGEMENT ACCOUNTING

**Professional 1 examination**
**4 December 2002**

From 2.00 pm to 5.00 pm
plus ten minutes reading time from 1.50 pm to 2.00 pm

***Instructions to candidates***

*Answer **five** questions: Two **questions** from Section **A** and **all three** questions in Section **B.** All questions carry equal 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 examination room.*

*Formula sheets, statistical tables, graph paper and cash analysis paper are available from the invigilator, where applicable. You will require NPV tables to complete question 4.*

*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.*

CIPFA

 

**SECTION A (Answer TWO questions)**

# 1

Last year Fairbanks College of Further Education contracted out its catering function to a private company 'Treats Catering Services'. During the next week there is to be a meeting of the management board of the college to review the success of this policy from a financial perspective.

You are employed in the college finance department and have been asked to prepare a report showing the performance of Treats in running the catering function for the last college term. The manager of Treats has provided you with an operating statement and, in accordance with the original agreement, he has also provided an analysis of the costs incurred during the first year.

The statement is shown below:

**Treats Catering Services**
**Operating statement for the 12 week period – Spring term 2002**
**Fairbanks College of Further Education**

| | **Fixed budget** | **Actual results** | **Variance** | |
|---|---|---|---|---|
| Number of meals provided per week | 700 | 620 | 80 | |
| | **£** | **£** | **£** | |
| **Variable costs** | | | | |
| Food | 37,800 | 36,450 | 1,350 | (F) |
| Catering consumables | 10,500 | 9,872 | 628 | (F) |
| Domestic supplies | 2,100 | 2,070 | 30 | (F) |
| **Semi-variable costs** | | | | |
| Menu printing | 1,122 | 1,145 | 23 | (A) |
| **Stepped costs** | | | | |
| Cooks | 16,800 | 16,800 | nil | |
| Catering assistants | 12,000 | 12,000 | nil | |
| **Fixed costs** | | | | |
| Rent and rates | 7,000 | 7,200 | 200 | (A) |
| Catering manager's salary | 8,200 | 8,200 | nil | |
| Equipment maintenance contract | 750 | 730 | 20 | (F) |
| Insurance costs | 300 | 305 | 5 | (A) |
| **Total cost** | **96,572** | **94,772** | **1,800** | **(F)** |

Additional information provided by Treats:

- Food costs are £4.50 per meal.
- Catering consumables cost £1.25 per meal served.
- Domestic materials are £0.25 per meal served.
- Menus are produced by an external printing contractor and Treats are charged £450 at the start of each term for this service. They are charged an additional cost of £12 for each batch of menus produced. Each batch is sufficient to cover 150 meals.
- One cook is required for every 4,000 meals produced. This limit cannot be exceeded. Cooks are paid £5,600 per term. All cooks are employed on a full time basis. Catering assistants are paid £200 per week. One catering assistant is required for every 2,000 meals. This limit cannot be exceeded and all catering assistants are also paid on a full time basis.
- Fixed costs are charged by the term.

Rachel Waters is the college manager responsible for the provision of catering services and is pleased with the results from the first year. She believes that the policy with regards to the contracting out of the service has been a great success.

- **Requirement for question 1**

(a) Prepare a revised operating statement for Rachel Waters that will more accurately represent the performance of Treats Catering Services over the spring term. *11*

(b) With reference to cost behaviour, explain why your operating statement is of more use to management than the one prepared by Treats. *3*

(c) Other than to review performance, briefly explain how preparing budgets may provide benefits to an organisation. *6*

*(20)*

**2**

'Nimtrone Limited' is a company that manufactures a range of products. At the start of the year the budgeted costs of one particular product, the Xantra, were as follows:

**Budgeted costs per unit**

| | |
|---|---|
| Direct material: | 4.5 kilograms at £12 per kilogram. |
| Direct labour: | Skilled: 3 hours at £14 per hour. |
| | Semi-skilled: 1.5 hours at £8 per hour. |
| Overheads: | Overheads are budgeted to be £47,250 per annum. Overheads are absorbed on a basis of total labour hours. |
| Budgeted production: | 1,500 units. |

During the period the following costs were actually incurred:

**Actual costs incurred**

| | |
|---|---|
| Direct materials: | 7,100 kilograms were used, costing £74,550 in total. |
| Skilled labour: | 4,275 hours worked at a total cost of £70,110. |
| Semi-skilled labour: | 2,225 hours worked at a total cost of £16,020. |
| Overheads: | Overheads incurred were £52,025. |
| Production: | 1,450 units. |

The production manager has expressed concern that the total costs seem to be running at too high a level against budgeted costs forecast at the start of the year. You work in the finance department and the production manager has approached you to see if you can analyse the causes of the problem.

- **Requirement for question 2**

(a) Calculate the budgeted total unit cost of the Xantra. *3*

(b) Prepare a report analysing the high level of costs that are worrying the production manager using appropriate materials, labour and overhead variances. *17*

*(20)*

# 3

In preparing annual budgets organisations may adopt one or more of a number of different approaches to budget setting.

'Banner Training' is a financial training organisation that specialises in the delivery of lectures to both private and public sector organisations. The company has been asked to deliver a lecture to a group of private and public sector non-financial managers outlining the different approaches to setting budgets.

- **Requirement for question 3**

Prepare briefing notes for the speaker to use in the lecture to the non-financial managers. Outline the key characteristics pertaining to each of the following approaches to budget setting, and explain any advantages and disadvantages of each method.

(a) Incremental budgeting. *4*

(b) Zero based budgeting (ZBB.) *4*

(c) Planning, programming budgeting systems (PPBS.) *4*

(d) Activity based budgeting (ABB.) *4*

(e) Rolling budget setting. *4*

*(20)*

## SECTION B (Answer all three questions)

**4** The management team of Fairbridge NHS Trust is considering two options that would enable them to provide a magnetic resonance imaging (MRI) scanning facility to their local purchasers. There are two options currently under consideration as detailed below.

### Option 1: Purchase of a MRI scanner

If the trust were to purchase a scanner it would be located in an existing part of the accommodation, replacing an existing service. This would result in a net loss of contract income to the trust of £200,000 per annum from year 1. The scanner would cost £1,100,000 and would be maintained from year 1 onwards at an additional cost of £23,000 per annum inclusive of consumables. Due to rapid technological advances in radiology equipment the scanner would be sold back to the medical company at the end of year 6 for £300,000. The trust charges depreciation on all medical equipment using the straight line method. Additional staffing costs would be £27,000 per annum. Initial projections indicate an annual demand of 820 scans rising each year by 5%. The price charged would be £500 per scan.

### Option 2: Using a mobile MRI service

The alternative is to buy in the services of a mobile MRI unit. The unit would visit the trust and be located on a presently unused piece of land near to the car park. This area would have to be specially prepared to support the unit at a cost to the trust of £17,500. This option would mean that there would be no loss of existing facilities and all additional staffing costs would be provided by the mobile MRI company. The trust would be charged for consumables as required and initial indications estimate the cost of these to be £15,000 per annum. The unit would be charged to the trust at a rate of £220,000 per annum with a contract period of 6 years. The trust predicts it can generate contract income of £280,000 per annum based on the time it will have use of the scanner. At the end of the contract period as a result of the adaptations it is possible to sell the land for £10,000.

The trust has a cost of capital of 6%.

- **Requirement for question 4**

(a) Calculate the net present value of both options and from your results recommend which alternative the trust should pursue. *7*

(b) Another method used to appraise capital projects is the internal rate of return. Calculate the internal rate of return for option 1 only. Explain what is meant by the internal rate of return. *5*

(c) Describe the effect on the net present value of the following (actual calculations are not required):

(i) An increase in the percentage cost of capital. *1*
(ii) A fall in demand for the service resulting in a reduction in contract income. *1*

(d) Describe two other methods of appraising capital projects and state two strengths and two weaknesses of each. *6*

*(20)*

**5**

'Talkshop' is a private company that specialises in the organisation and delivery of large conferences and training courses for public and private sector organisations. The company has recently been approached by a public sector organisation to organise and deliver a three day conference in the south of England. The accountant for 'Talkshop' has prepared the following cost estimates:

The venue for the conference will cost £3,000 per day. It will be required for a three day period. There are to be 12 guest speakers. They will be paid a sum of £300 each. The food for the delegates is expected to cost a total of £70 per delegate over the three day period. Conference programmes, name badges and additional printing will cost £10 per delegate. There will be 25 staff required to provide catering and waiter services. They will each be paid £40 for each of the 3 days. The price of the conference is to be inclusive of accommodation, and this is expected to cost 'Talkshop' £120 per delegate for the three day period. Directly attributable overheads are £900. The price charged per delegate is £250. The maximum capacity of the conference centre is 500 delegates.

- **Requirement for question 5**

(a) (i) Calculate the number of delegates required for 'Talkshop' to break even. *5*

(ii) Represent this information on a fully labelled break-even chart, ensuring that the break-even point is clearly indicated. *6*

(b) State the percentage margin of safety and the profit earned at this level if the maximum number of delegates attend the conference. *3*

(c) Calculate the price per delegate that would be required to produce a profit of £12,000, assuming the maximum number of delegates attend the conference. *3*

(d) State three assumptions that are inherent in the techniques that you have used. *3*

*(20)*

**6**

'Prime Productions Ltd' is a local broadcasting company that was set up five years ago with the assistance of a government grant. The original employees were media studies graduates who were keen to gain experience in the industry. The main aims of the company when it was first established were to produce programmes of local interest. The programmes were screened at off peak periods, for example at the end of the local news.

In the last few years the company has been successful and grown considerably. It now employs a full range of qualified staff and makes larger productions. In addition, it contracts with other television companies to make productions on their behalf. These productions are often screened nationally.

'Prime Productions Ltd' has recently been approached by a television company in the North West to record and produce a short documentary-drama. The company is currently very busy and has little spare capacity with which to fulfil the contract. However, the managing director, Giles Francis, believes that if they make this production, the company may award them more lucrative contracts in the future. Giles has put together some initial costs and these are outlined below:

**Camera operators:**

The production will require seven weeks of filming. It is estimated that four camera operators will be required for the full period. Most camera operators are employed on a freelance basis and cost the company £860 per week. The company have only a limited number of camera operators on which they can call and at present there is limited availability. In order to fulfil the requirement for the production it will be necessary to take one camera operator from another job. This camera operator is a full time employee and is paid an annual salary of £42,000. This will mean a loss of contribution of £6,600 due to penalty clauses that would be incurred.

**Manufacture of scenery:**

The scenery required will have to be specially made. Two painters are employed by the company, each being paid £350 for a 40 hour week. It is anticipated that they will have to work full time on this production for a period of 3 weeks. At the present time they only have enough work to occupy half of their time. In order to meet the deadline, each will be required to work overtime at time and a half for four hours per week during each of the three weeks.

The paint required is in stock. It cost £420 and is due to be used on another production. It would cost £470 to replace. Additional materials have a cost of £520. Half of these will have to be purchased for the production but half of them can be taken from leftover materials from previous jobs. The original cost of these materials in stock was £180. This half would have no alternative use.

**Lighting and sound:**

The lighting and sound technicians are employed by the company. The lighting technician is paid a salary of £30,000 per annum and the sound technician is paid £32,000 per annum. It is anticipated that they will be required for the full seven week filming period. Both are always fully employed within the business and the contribution lost if they worked on this job would be £13,500. Alternatively the company could employ lighting and sound technicians from an agency for a joint cost of £1,500 per week.

**Editing costs:**

The editing costs of the production, including hardware, are £4,700. This includes £300 depreciation charges on the editing equipment.

**Studio costs:**

The company will need to hire studio time in order to make the production. The studio is priced at £1,200 per day to hire. It is estimated that the production will require 18 days studio recording. The remainder is to be filmed outdoors, for which there is no charge.

**Overheads:**

All productions are charged with overheads at 5% of cost. This is to cover general fixed costs.

**Income:**

The income for the production would be £70,000.

- **Requirement for question 6**

(a) Assess whether it would be worthwhile financially for 'Prime Productions Ltd' to make the production. *11*

(b) Explain your treatment of each of the costs and revenues outlined in the initial costs prepared by Giles Francis. *7*

(c) Identify two non-financial factors that 'Prime Productions Ltd' should consider before making a final decision about the acceptance of the contract. *2*

*(20)*