

# MANAGEMENT ACCOUNTING

**Certificate stage examination  
9 June 2004**

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: All **three** questions from **Section A** and **two** 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.*

*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 (Answer all three questions)****1**

You are the Treasury Accountant at Birchville Housing Association and have responsibility for the management of the Association's cash resources. To help you perform this role, you prepare cash flow budgets on a six monthly basis to plan over the longer term. These budgets are presented to the Finance Committee for approval. These should accompany a short report that highlights areas of significance or potential problems, together with suggested courses of action. These budgets form the basis for monthly and weekly cash flow budgets, which are used for monitoring on a more regular basis.

The Association has access to borrowing of up to £70,000 at an annual rate of 6.7% in the form of an overdraft facility with their local bank. Additional borrowing must be negotiated in advance. Interest on any amounts over the overdraft limits will be calculated at the same rate as the overdraft. Surplus funds can be invested at the bank at an annual rate of 3.4%. Interest is charged or credited to the bank account every six months. Any interest applicable for the period October to March will be charged or credited to the bank account on 1 April 2005. Bank interest is calculated on the balance at the end of each month.

You are about to begin preparing the cash budget for the six months from October 2004 to March 2005. You have the following information:

- The Association receives rents from tenants at three different levels according to the property type. All rents are payable in advance (ie rent for October is due on 1 October) and the majority are paid in cash. The rent increases each year on 1 October. The rents are as follows:

	Rent per month w.e.f 1/10/2003	Rent per month w.e.f 1/10/2004	Number of properties
Band A	320	350	600
Band B	235	250	400
Band C	180	190	200

- Not all rent is paid when it is due and the Association has to work hard to collect rents from some tenants. From past experience the Association expects to receive 60% of total rent in the month due, 25% in the following month and 15% a month after that. The Association does not charge interest on rent paid one month after it is due, but will charge interest on overdue rent at 2% on any outstanding balance after 2 months.
- An annual grant of £2,400,000 is due in October from the Local Authority. This is paid directly into the Association's bank account in twelve equal monthly instalments.
- A receipt of £96,000 is due in February 2005. This is in respect of the sale of office accommodation, no longer required by the Association.
- The cost of salaries and wages is £230,000 per month. A pay award of 3% was due in September, but will not be paid until after negotiations have

concluded. It is expected that the award will be settled ready for the February payroll. All arrears will be paid at this time.

6. A total of £2,500,000 of purchases are expected during the year commencing 1 April 2004. The Association makes some cash purchases but also takes advantage of credit facilities. Each year the purchases follow a similar pattern.

40% made during April – September

60% made during October – March

Purchases during these periods are made evenly, 10% of purchases are made in cash and the remainder by credit. The Association enjoys a 30 day credit period, meaning that credit purchases are not paid for until the month after the purchase is made.

7. Certain properties are in a state of disrepair and capital works of £270,000 are planned for November 2004.
8. Other expenses totalling £648,000 are incurred evenly throughout the year.
9. The bank balance at 30 September 2004 was £100,000 in credit.

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• **Requirement for question 1**

- (a) Prepare the cash flow budget and report to be presented to the Finance Committee for the six month period to 31 March 2005. 14
- (b) Calculate the net interest charge or credit for the period that can be expected from the bank on 1 April 2005. 2
- (c) The capital works form part of the Association's five year capital programme. Outline the content of a typical capital budget in a public service organisation and any possible constraints upon it. 4

**(20)**

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# 2

Stansfield Police Authority is a medium sized authority that has its own training establishment, where trainee officers undertake their initial basic training. At the present time, the majority of trainees are from the Stansfield Authority, but due to increased recruitment of officers across the country, there is a demand to expand training facilities.

Stansfield Authority is currently assessing whether it is feasible to expand their facilities. They are considering building a new wing onto the existing training facility, and have a maximum of £600,000 with which to do so. They have approached the Council's Building Services Department, in which you work as a Management and Contract Accountant, to undertake the work. The Building Services Department operates as an independent profit centre.

You are required to advise senior management within the Building Services Department whether the project to expand the training facility will be worthwhile from a financial perspective. You have been given the following information regarding costs and revenues:

## Materials

Most of the materials for the contract will be ordered from local suppliers, the estimated cost of these is £400,000. In addition, some roofing materials are already in the store, these currently have a replacement cost of £150,500. The Building Services Department purchased them six months ago at a cost of £130,000 for another job, but they did not get used. They have no alternative use, but could be sold for £90,300.

## Labour

A team of builders will be recruited from local sub-contractors. It is estimated that there will be a need to recruit nine grade 1 workers over a fifteen week period. The weekly cost of each builder is £320. In addition, they would need six grade 2 workers. It is anticipated that half of these will be from the Building Services Department, the other half from an agency. Grade 2 agency labour will be required for a total of 20 weeks, and will cost £400 per worker per week. At the present time three of the builders are fully employed on another contract from which they will be transferred. In doing this the Building Services Department will be late in delivering this contract, and will incur a penalty charge of £1,750.

A full time foreman will be required for the contract. This individual is salaried at £21,000 per annum. The Building Services Department is not currently operating at full capacity and no replacement is considered necessary. However, additional overtime costs totalling £700 will be incurred, as the remaining foremen have to increase their hours to cover workload.

## Other information

Some of the work would have to be done on a piece of specialist machinery. This is owned by the Building Services Department. They allow other local firms to use it at an hourly rate of £25. There are few of these machines in the local area and it operates at full capacity. The contract on the training centre would require 50 hours of use. The machine and the other assets have a combined value of £720,000 and are depreciated at a rate of 10% straight line.

Due to the disruptive nature of the work, it will be necessary to relocate the current trainees to alternative accommodation. This will cost a total of £275 per week. It is anticipated that it will only be necessary for eight weeks of the contract period.

Apportioned general fixed overheads based on floor area in the planning documentation would be £86,000.

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• **Requirement for question 2**

- (a) Assess whether the expansion is a viable contract for the Building Services Department, assuming that Stansfield Police Authority pay a price of £600,000 for the contract. 13
- (b) Explain how the technique you have used in arriving at your recommendation differs from the approach used in job costing. 4
- (c) Explain the non financial factors that the Building Services Department may wish to take into consideration before making a final decision. 3
- (20)**
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**3**

Dickens Limited is a large company that manufactures one product. They use standard costing to reconcile budgeted and actual profit by producing a statement for management on a monthly basis.

You are the Management Accountant who has responsibility for preparing this statement and have been given the following information for the month of May 2004.

Budgeted sales and production 30,000 units.

Standard costs per unit:

Direct materials:	Plastic	5 kg @ £3 per kg
	Aluminium	2.5kg @ £15 per kg

Direct Labour 2.5 hrs at £9.00 per hour

It is company policy to absorb fixed production overheads at 200% of direct wages.

Sales price is set, so as to give a profit of 25% of sales price.

The actual data for May is as follows:

Production and sales 28,500 units

Selling price was actually 10% higher than the budget due to changes in market demand.

Direct materials used:	Plastic	148,000kg costing £3.60 per kg
	Aluminium	74,000kg costing £14.10 per kg

The company paid for 74,000 hours of direct labour at an hourly rate of £9.60.

Fixed production overhead incurred was £1,500,000.

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• **Requirement for question 3**

- |     |                                                                                                                        |    |
|-----|------------------------------------------------------------------------------------------------------------------------|----|
| (a) | Calculate the standard cost and budgeted selling price of the product.                                                 | 3  |
| (b) | Prepare a short statement that shows actual profit made during the period.                                             | 3  |
| (c) | Draft a statement for management that reconciles actual profit to budgeted profit detailing all appropriate variances. | 12 |
| (d) | Comment on the performance of Dickens during the month of May 2004.                                                    | 2  |

**(20)**

**SECTION B (Answer two questions)****4**

Muscle Pro produces two products, the Tri-worker and the Bi-worker. Budget unit data relating to these products for September 2004 is as follows:

	Bi-worker	Tri-worker
	£	£
Selling price	300	200
Materials	160	60
Labour	60	40

Each unit of product incurs the costs of the processing and the finishing departments. Due to some current internal building work, the capacity available in September is 1,400 hours of processing and 2,000 hours of finishing. The cost of this capacity has been budgeted at £14,000 and £20,000 respectively for the month. This is fixed regardless of usage levels.

The two products require hours in each of the two departments as follows:

	Bi-worker	Tri-worker
Processing	2.0	4.0
Finishing	5.0	4.0

Selling prices are fixed and the maximum output that can be produced of either product in September is 800 units. At the moment demand for both products is in excess of this quantity.

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• **Requirement for question 4**

- (a) Represent the above in a form suitable for linear programming. 4
- (b) Calculate the optimal production plan for September 2004 and state the profit at this level. 4
- (c) (i) Calculate the shadow price of one additional hour in both departments. 6
- (ii) Explain what a shadow price is and comment on those calculated in (c) (i) above. 3
- (d) State three assumptions inherent in the technique of linear programming. 3

**(20)**

## 5

Cranes Construction is a company that is in the process of completing three building contracts for local industries. Information relating to these contracts for the previous year, together with other relevant information is shown below:

	North £000	South £000	Central £000
Contract price	2,227	2,640	3,630
<b>B/fwd balances at start of year:</b>			
Materials on site	30	-	45
Written down value of plant on site	116	-	561
Accrued wages	7	-	15
<b>Transactions during the previous year:</b>			
Profit transferred to P & L	-	-	53
Cost of work certified (cost of sales)	627	-	1,221
<b>Transactions during the current year:</b>			
Materials delivered to the site	330	132	594
Wages paid	150	68	330
Salaries and other expenses	60	23	75
Written down value of plant issued to sites	53	285	-
Apportioned central expenses	30	15	75
<b>C/fwd balances at the end of the year:</b>			
Material on site	-	30	-
Written down value of plant on site	30	225	345
Accrued wages	15	8	18
Value of work certified at end of year	1,290	300	3,150
Cost of work not certified at end of year	-	-	83

The agreed retention rate for all three contracts is 10% of the value of work certified by the contractors' architects.

The Central Contract C is due to be completed in the near future and the site engineer has estimated that the extra costs required to complete the contract will total £458,000. This includes an amount for plant depreciation and contingencies.

It is company policy where contracts are more than 85% complete to credit the profit and loss with the attributable profit. This is based upon the following formula:

$$\frac{\text{Cash received to date}}{\text{Contract price}} \times \text{Estimated total contract profit}$$

Profit for the current period consists of profit to date minus profit already transferred to the P&L in previous periods.

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- **Requirement for question 5**

Prepare contract accounts for the three contracts showing clearly the amounts of any profits or losses charged or credited to the profit and loss account.

(20)

# 6

Bloomsbury NHS Trust is a medium sized acute trust that delivers patient services in the Directorates of: Care of the Elderly; Renal Services; Children's Services; General Medicine and General Surgery.

You are the Contract Pricing Accountant with responsibility for costing services provided by the directorates and ultimately setting prices for the individual procedures that each directorate provides to its purchasers. These prices are based on full cost.

In addition to the 'front line' services, there are a number of other trust wide support services. Some of these are medical (such as physiotherapy and radiography) and some are non-medical (such as catering and domestic services). The full cost of both of these sets of functions must be incorporated into the contract prices.

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• **Requirement for question 6**

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| (a) How can overhead costs be classified and how do they differ from variable costs in terms of their behaviour?                                                                        | 3           |
| (b) Using the principles of absorption costing, outline the stages that you would incorporate into the process of establishing contract prices to be presented to the purchasers.       | 8           |
| (c) What is meant by under and over absorption of overheads, and what may be the reasons for this occurring in Bloomsbury NHS Trust?                                                    | 4           |
| (d) Describe, in general terms, the process of Activity Based Costing and state why it may give more accurate overhead costs as opposed to more traditional absorption costing methods? | 5           |
|                                                                                                                                                                                         | <b>(20)</b> |