CIPFA

MANAGEMENT ACCOUNTING

Certificate stage examination

8 June 2006

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

Instructions to candidates

*Answer **five** questions in total: **Three** questions from **Section A** and **two** questions from **Section B**. The marks available for each question are shown in italics in the right hand margin.*

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.

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.

AT THE HEART OF YOUR CAREER

SECTION A (Compulsory)

1 Laserquest Printing Services has received an invitation to tender for the supply of 7,500 prospectuses for a local University.

It is normal practice to calculate a full cost price based on the costs of setting up the appropriate software and printing facilities, and an initial print run of 500 copies. A full cost is then prepared for any further print runs based on a volume of 1,000 copies per run. Laserquest add a mark up of 10% of total production cost to cover non-production costs and profit.

The following information is available to prepare the tender:

Initial set up and print run for 500 prospectuses:

Materials requirement:

Printing ink	Total litres required for set up and printing of first 500 prospectuses	Value per litre (£)
Blue	1	21.00
Yellow	2	17.00
Red	1.5	22.00
Black	5	27.50

The value per litre is based on an AVCO system of stock valuation and represents the average price paid for ink stocks. This is the cost used under the current pricing methodology.

The paper is in stock and will cost £1.20 per prospectus.

Labour requirement:

Skilled printers will be required for 7 hours. They are paid £13.00 per hour. Unskilled labour required would be 6 hours paid at £7.00 per hour.

Production Overheads:

The company use an activity-based overhead costing system to charge overhead costs to contracts.

The following rates are currently in use:

Labour related overheads: £3.00 per direct labour hour
Machine related overheads: £4.50 per machine hour
Set up costs: £600 per set up

Materials handling overheads:
Ink: £40 per colour used
Paper: £11 per 500 prospectuses printed.

It is estimated that 15 machine hours will be needed for the set up and first run of 500 prospectuses.

Costs for each subsequent run of 1,000 prospectuses

Materials: The quantities of ink required are proportionately the same as in the initial run. The paper prices are the same per prospectus as they are for the initial run.

Labour: Each run of 1,000 prospectuses only requires unskilled labour of 12 hours. No skilled labour is required once set up is complete.

Overheads: The same overhead rates will apply as in the initial run but each additional run of 1,000 prospectuses will require 25 machine hours. No set up is required after the initial set up has taken place.

Additional Information:

Once the initial quote has been prepared, it is revealed that Laserquest are not the only company bidding for the contract. They are anxious that their quote should be the most competitive. The company currently has spare capacity. The following is then identified:

1. The unskilled labour is used for a range of other duties as well as helping in printing specific contracts. If they work on the contract for the university, the company will have to employ agency staff to perform these other duties instead. This will cost £600 for the time of the contract.

2. The paper used for the job is in regular use by the company. Any paper used will have to be replaced at a cost equivalent to £1.25 per prospectus.

3. 10% of the machine related overhead costs are variable. The labour related overheads are fixed in nature in the short term, as are materials handling costs. Set up costs are 100% variable.

4. The skilled printers who will work on the university contract are paid a salary. No overtime will be required for the contract.

5. Research into the ink prices quoted shows the following:

	Litres in stock	Current purchase price	Resale price
		£	£
Blue	7	20.00	18.00
Yellow	12	16.00	See below
Red	3	18.00	14.00
Black	0.5	29.00	22.00

The red ink has no other current use. Any ink currently held in stock would be sold if not used on this contract. Black ink is in regular use by the company. Blue ink is in regular use but in short supply. Any blue ink used by the company would need to be replaced from a different supplier at a price 50% above the current purchase price. The yellow ink has a limited shelf life. If it is not used on the contract it will have to be disposed of at a cost of £40 for the whole current stock.

- **Requirement for question 1**

(a) Determine the price that should be quoted for the university contract to supply 7,500 prospectuses assuming Laserquest's current pricing methodology is used. *6*

(b) Using the additional information provided, calculate the minimum price that could be quoted. *10*

(c) State the key principles that Laserquest should consider when using relevant costing in situations such as the above. *4*

(20)

2 Fitbodies Ltd is a company that specialises in the manufacture of gymnasium equipment, which they make to order. The company has just completed a large order of cross trainers for a local gym and the full cost of the job is being calculated so that a price can be prepared for the gym manager.

There are only two materials needed to complete the manufacture of the cross trainers. In December 2005, 105 kilos of Material A and 43 kilos of Material B were issued to the job. The company uses a simple average cost basis to price its stock issues. An extract from the stock records is shown below. The computerised stock system calculates stock prices to 2 decimal places:

Stock purchases of Material A				**Stock purchases of Material B**			
Month	**Transaction**	**Kilos**	**£**	**Month**	**Transaction**	**Kilos**	**£**
Sept	Opening	568	1,355	Sept	Opening	175	735
Sept	Purchase	105	262				
Nov	Purchase	88	231	Nov	Purchase	43	200

The following machine hours and direct labour hours were worked, including overtime, in order to complete the cross trainers:

	Dept X	Dept Y	Dept Z
Machine hours	114	65	16
Direct labour hours	21	14	43
Direct wages hourly rate (£)	9.80	8.60	10.20

It is not normally necessary for the employees in the company to work overtime but because the new equipment was needed for the gym opening, which was brought forward by request of the gym management, it was necessary for the workers in Department Z to work 12 hours overtime on this occasion. This was paid at double time and the overtime hours worked are included in the 43 labour hours stated in the table.

Overheads are charged to each job by the application of pre-determined overhead absorption rates. These are calculated on a departmental basis. When calculating the absorption rates for the forthcoming financial year, Fitbodies Ltd re-allocates service department overheads to production departments by using the simultaneous equation method. A profit margin of 15% is incorporated into selling price.

Further information is provided below:

Estimated Production Overheads for year commencing Sept 2005

Overhead	£000
Light and heat	35
Machine depreciation	44
Indirect materials and labour	88
Machine insurance	15
Rates	70

Estimates for year commencing Sept 2005

	Dept X	Dept Y	Dept Z	Administration	Maintenance
Machine hours	87,500	43,750	17,500	-	-
Direct labour hours	17,500	8,750	52,500	-	-
Floor space (sq metres)	1,312	1,750	438	210	650
Indirect materials & labour (% to each dept.)	20	25	15	15	25
Admin. estimate of work done for depts	15%	30%	25%	-	30%
Maintenance estimate of work done for depts.	40%	25%	15%	20%	-

- **Requirement for question 2**

(a) Calculate the full price of the job for the gymnasium using the costing methodology stated above. *16*

(b) Briefly discuss two other methods, other than the simultaneous equation method, of recharging service department overheads to production departments. *4*

(20)

3 Greens, a local soft drinks manufacturer, produces a tropical fruit drink from fresh pineapples and mangos. The process is performed in a single operation and the standard cost for a five-litre carton of the drink is shown below:

Standard cost for five litres of fruit drink:

		£
Direct materials:	5kg pineapple at £1.30 per kg	6.50
	3kg mango at £0.65 per kg	1.95
Direct labour:	0.5 hours at £6.00 per hour	3.00
Overheads:	Variable: 1.5 machine hours at £1.50 per machine hour	2.25
	Fixed: 1.5 machine hours at £3 per machine hour	4.50
Total standard cost		18.20
Standard profit mark up (10% of cost)		1.82
Standard selling price		20.02

Fixed overheads are absorbed on the basis of machine hours. The rate included in the standard cost is calculated based on monthly fixed overheads of £7,500 and 2,500 machine hours.

Greens plan to produce 2,000 five litre packs of juice in May and the budgeted costs based on the above information are as follows:

Budget for 2,000 five litre packs based on standard cost:

		£
Sales (2,000 five litre packs at £20.02 for five litres)		40,040
Direct materials:		
Pineapple 10,000kg at £1.30	13,000	
Mango 6,000kg at £0.65	3,900	
Direct labour:		
1000 hours at £6.00	6,000	
Variable overhead 3000 hours at £1.50	4,500	
Fixed overheads	7,500	34,900
Budgeted profit		5,140

At the end of May, 1,800 five litre packs were produced and sold and the following actual costs and revenues were recorded:

Sales revenue:	1,800 five litre packs generating sales revenue of £43,200.
Pineapple:	8,500 kg of pineapple costing £12,325
Mango:	6,750 kg mango costing £3,645
Labour:	925 hrs of labour costing £5,735
Variable overheads:	£4,200
Fixed overheads:	£7,700

- **Requirement for question 3**

(a) Calculate the variances for sales, materials (including mix and yield variances), labour and overheads for the month of May. *12*

(b) Prepare a statement that reconciles budgeted and actual cost. Suggest three reasons why the variances may have occurred. *5*

(c) Outline the potential problems that could be encountered when using a standard costing system. *3*

(20)

SECTION B (Answer two questions from this section)

4 Ridgewere University runs a public tennis club. The main activity is the running of the indoor and outdoor tennis courts, but there are also a number of other facilities that are available for use by its members. These include a number of squash courts and a clubhouse with a bar. In addition, the club also generates income by hiring out function rooms to corporate clients. The club is run as a 'business unit'.

The Manager of the club is not satisfied with the budgetary statements that are produced for him. He feels that they do not represent the true financial position of the club. He would like you to review the latest budgetary control statement in the light of some additional information that has now been provided.

The latest report for the 9 month period from August 2005 to April 2006 is shown below:

Ridgewere University Tennis Club
Budgetary Control Statement
1 August 2005 to 30 April 2006

Budget Head	**Total Budget**	**Budget to Date**	**Actual**
Income	**£**	**£**	**£**
Tennis club fees	504,000	378,000	445,320
Squash court income	168,000	126,000	148,440
Clubhouse bar income	88,320	66,240	62,880
Corporate room hire	18,000	15,500	14,220
Club functions	6,000	4,500	4,740
Items for resale	88,320	66,240	59,350
Total income	**872,640**	**656,480**	**734,950**
Expenditure			
Employees	453,250	339,470	362,880
Electricity	40,440	30,330	18,360
Gas	18,720	14,040	6,960
Rates	33,600	25,200	25,200
Repairs	21,600	16,200	15,360
Maintenance	39,000	29,250	20,100
Water	45,360	34,020	21,180
Items for resale	76,800	57,600	48,680
Stationery	2,400	1,800	1,980
Miscellaneous	1,800	1,350	1,560
Central support costs	14,640	10,980	10,980
Total expenditure	**747,610**	**560,240**	**533,240**
Surplus/Deficit	**125,030**	**96,240**	**201,710**

The following information is provided:

Tennis club income

- The majority of people who use the tennis club regularly pay an annual fee. This is collected in two equal instalments in August and January. 75% of the fee income is collected in this way. The remaining 25% is collected when guests use the courts. In the past the pattern of this income has been as follows:

  Aug - Oct – 30%
  Nov - Jan – 40%
  Feb - April – 20%
  May - July – 10%

- The club functions income refers to two specific events. Half the income relates to the annual tennis members summer ball. The income from this is received in June. The remainder relates to the Christmas disco held in December.

Other club facilities

- The squash courts are a new facility and were only completed in October 2005. The total budget figure shown in the statement represents only the budgeted income from their opening on 1 November 2005. The courts are used on a regular basis throughout the year.

- Rooms are hired by corporate clients. These are hired on a regular basis.

- The clubhouse bar income reflects the same pattern as the income from use of the tennis courts by guests.

- Items for resale include the following budgeted purchases for the period August to April.

	£
Tennis balls and accessories	2,400
Squash accessories	2,400
Clothing and footwear merchandise	72,000

The budgeted profit mark up on these items is 15%. At the start of the August budget period there was some outstanding stock and at the end of April not all of this stock, and that purchased since had been sold. Prices of all items have remained stable in the period. The details from stock records show the following:

	Budgeted opening stock value	Budgeted closing stock value
	£	£
Tennis balls and accessories	1,650	950
Squash accessories	1,200	1,750
Clothing and footwear	15,000	17,000

The income on the balls and accessories for resale is received evenly throughout the year. 70% of the clothing and footwear merchandise is sold evenly from February to July. The balance is sold evenly throughout the remaining months of the year.

Staffing costs

- Permanent employees cost £400,000 per annum before pay awards. Temporary staff are recruited in October, November and December at a monthly cost, before pay awards, of £15,000. All staff, including temporary staff, receive a 2.5% pay award on 1 November 2005. The remaining budget is incurred evenly throughout the year.

Other overhead costs

- The £39,000 maintenance is managed by the maintenance supervisor and covers three areas as follows:

Maintenance of the courts	75%
Fruit machines in the club house	18%
Computer equipment maintenance	7%

  The maintenance of the courts is carried out 4 times a year in October, January, May and July. The fruit machine maintenance is carried out twice a year in January and July and the computers are maintained on an annual basis on 1 June.

- Utility payments are made in the same months as the payments for the maintenance of the courts. The pattern of expenditure is constant from year to year. However, with regard to electricity and gas, 45% of the annual budget relates to the May payment. The remainder is paid equally over the other three payments.

- The central support costs include charges from the Directors of Finance and Legal and Administration, under service level agreements. These charges are made to all University departments on a fixed cost basis, regardless of service usage.

- All other items are incurred evenly throughout the year.

- **Requirement for question 4**

(a) Prepare a revised budgetary control statement that can be presented to the Manager of the tennis club. Comment on any areas that you consider should be the subject of further investigation. *16*

(b) Outline the main advantages and disadvantages of profiling budgetary control information. *4*

(20)

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5 You are a member of the Finance Department in a public services organisation. You have been seconded to the local Further Education College to assist with a series of lectures for public sector employees. These lectures are aimed at providing new employees from a wide range of public sector organisations with the basics in public sector finance.

The first lecture is to be on the nature of capital budgeting in the public sector.

- **Requirement for question 5**

You are to prepare notes that will help you give the lecture. They should include the following:

(a) The procedure that is followed when setting a capital budget. *4*

(b) The likely contents of a capital budget. *4*

(c) The factors that could limit capital budgets. *3*

(d) The available sources of finance that could be used to finance capital projects. *3*

(e) The monitoring of the capital budget. *4*

(f) How the revenue effects of the capital budget are treated. *2*

(20)

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6 The Thames Travel Company specialises in the manufacture and distribution of accessories for cars and motorcycles across central London and the suburbs. The Management Board of the company have decided to expand their potential market by capitalising on the recent demand for pedal cycles caused by congestion charging and concerns for global warming. They intend to start manufacture of pedal cycles from 2007.

The design team have come up with two basic models and two enhanced models for the initial launch of the cycles.

The manufacture involves two processes. These are frame manufacture; and assembly and accessory fitting.

Year 1

At the present time there are 40 employees who are available to undertake frame manufacture and 20 who are available to undertake assembly and accessory fitting. Each employee works a 37-hour week. At the present time no overtime is permitted so all of the output has to be completed within the normal working week. Employees working on the frame manufacture cost £11 per hour. Those working on the assembly and accessory fittings cost £15 per hour. All the employees can be fully utilised elsewhere in the company if not working on this venture.

The anticipated time in hours that each process will take is as follows:

	Ladies Basic	Ladies Enhanced	Gents Basic	Gents Enhanced
Frame manufacture	2.25	2.20	2.20	2.60
Assembly and fitting	1.25	1.80	1.40	3.00

The direct materials are expected to be £55 for the ladies basic, £60 for the ladies enhanced, £60 for the gents basic and £100 for the gents enhanced. There is no limit on the availability of materials.

Variable overheads of £27 per cycle are incurred for both the basic models and £30 per cycle for both of the enhanced models.

Fixed overheads allocated to the cycle workshop are £6,660 per annum. The organisation use labour hours upon which to base its overhead absorption rates.

The company has done some initial market research and this indicates that demand and selling prices are likely to be as follows:

Model	Number of cycles	Selling price £
Ladies basic	200	145.50
Ladies enhanced	75	165.00
Gents basic	220	170.00
Gents enhanced	80	240.00

Year 2

In year 2 all other factors are assumed to be as in year 1. However, two further options become available in order to meet demand fully:

The first is to lift the overtime ban and pay overtime at a rate of time and a half in order to meet the demand. If this happened however, it would be necessary to raise the selling price of *all* sales of the specific model being completed during overtime by £25 per cycle. The selling price of the other models would remain as in year 1.

The second option is to buy in the completed cycles necessary to meet demand from another supplier. This would cost the company £270 per cycle. The selling price of *all* sales of the model in question would be increased by £55 if this option were to be pursued. The Management Board are reluctant to pursue this option, as they are concerned it may lower demand.

- **Requirement for question 6**

(a) Determine the production plan that would maximise the profit available to the Thames Travel Company in year 1 assuming that no overtime is worked. State the profit that would be earned as a result of this plan. *7*

(b) Advise Thames Travel Company of their most profitable course of action in year 2, assuming that all of the demand is to be satisfied. *5*

(c) Comment on any non-financial factors that companies should consider when deciding whether to make or buy. *5*

(d) What is the purpose of the technique of linear programming and how does its purpose differ from that used in this scenario? *3*

(20)
