CIPFA

MANAGEMENT ACCOUNTING

Certificate stage examination

5 June 2008

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)

1 XYZ NHS Trust operates a pharmacy unit that manufactures drugs and consumables under licence. Zeta is one of its products. It sells Zeta to other hospital pharmacies throughout the country.

The processes used to make Zeta are labour intensive and the manager of the unit uses a simple standard costing system in order to monitor costs. A statement of direct cost variances has been prepared for period 2:

XYZ Trust – Pharmacy Unit
Statement of direct cost variances

	£	£
Standard direct cost		1,315,062
Variances:		
Material price	6,050 A	
Material usage	81,270 A	
Labour rate	70 F	
Labour efficiency	3,528 A	90,778 A
Actual direct cost		1,405,840

Further information:
1,400 units of Zeta were made in period 2
The standard cost per kilo of raw material is £9.45
The cost of raw materials purchased was £1,357,400
The actual direct labour cost for the period was £48,440
The total number of hours worked was 7,700hrs

The budgeted production of Zeta was 1,520 units. The budgeted fixed overheads for period 2 relating to the Zeta are £46,512. The actual fixed overheads for this period were £53,500. Labour hours are used to absorb fixed overheads into product costs.

- **Requirement for question 1**

(a) Calculate the following:
- The actual number of kilos of raw material used.
- The standard kilos per unit.
- The standard labour rate per hour.
- The standard time in hours and minutes per unit. *8*

(b) Calculate the following fixed overhead variances and provide a reconciliation statement that reconciles full standard cost with actual cost:
- Fixed overhead expenditure variance.
- Fixed overhead volume variance.
- Fixed overhead efficiency variance.
- Fixed overhead capacity variance. *6*

(c) Explain the key features of
- Ideal standards.
- Attainable standards.
- A standard hour. *6*

(20)

2 Thyme Valley District Council raise a considerable amount of their yearly revenue from the tourism industry. One of the tourist attractions is a restored steam railway that carries passengers on a scenic route through the local area. The railway track is owned by a private company and the council pay rent to them for its use.

The Marketing Director for the Thyme Valley Steam Railway operation has been considering the forecast financial situation for the 3rd Quarter, July – September 2008. She has supplied you with the following:

Thyme Valley Steam Railway
Operational Statement – Quarter 3, 2008

	£	£
Turnover – ticketing		1,008,000
Cost of sales:		
Direct labour	328,320	
Variable railway service overheads	299,520	
Fixed railway service overheads	155,000	782,840
Gross profit		225,160
Admin and sales overheads	18,500	
Fees payable for line rental		
- Variable	149,760	
- Fixed	45,400	213,660
Profit from operations		11,500

In addition the following information is provided:

- In the 2nd Quarter, 72,000 tickets were sold and the forecast turnover for Quarter 3 is based on a 20% reduction in the volume of ticket sales due to seasonal variations.
- The variable fee payable to the rail track company is based on ticket sales, not turnover. If the number of tickets sold is more than 70,000, the variable cost falls by 70 pence per ticket for the entire quarter's volume.

The marketing team has put together two proposals that could improve the Quarter 3 financial position:

Proposal A – marketing campaign to increase ticket sales:
- Additional fee paid on a one-off basis of £15,420.
- In addition to this the advertising agency would receive £1.50 per ticket for all of the tickets sold during the quarter.
- It is estimated that this advertising campaign alone would increase the volume of ticket sales by 30% above their Quarter 3 forecast levels. The price per ticket would remain the same.

Proposal B – reduce ticket prices by 4%:
- It is estimated that this will bring the number of tickets sold back to 95% of the number sold in Quarter 2.
- Fixed admin and sales overheads would be reduced to £12,260.

- **Requirement for question 2**

(a) Produce an evaluation of both proposals that calculates:

- The number of tickets to be sold.
- The contribution per ticket.
- The change in operating profit compared with the forecast.
- The breakeven point in both the number of tickets and sales revenue.
- The % margin of safety over the breakeven number of tickets sold. *11*

(b) Recommend which proposal, if either, should be accepted on financial grounds. *3*

(c) Upon further investigation of costs it has become apparent that the service overheads which the Marketing Director has classified as fixed, in her forecast, may actually behave in a semi-variable manner, as she has not included all of the cost elements. You have obtained the total cost pattern for these overheads over six quarters and they are as follows:

Period	Ticket volume	Total Cost £
1	68,000	176,840
2	69,500	179,990
3	71,680	184,568
4	77,000	195,740
5	80,000	202,040
6	71,000	183,140

By analysing the period costs in the table, determine the fixed and variable elements of the service overhead costs and state how this may or may not change the recommendation that you made in part (b) above. *6*

(20)

3 The Couch Potato Sofa Company are a small manufacturing company that produce only two types of sofa marketed under the product names 'The King Edward' and 'The Maris Piper'. All of their production is purchased by a local wholesale sofa warehouse for onward sale to the public.

The company's Chief Accountant has recently been involved in a car accident and was rushed to hospital the day before he was about to begin the contract negotiations for the coming year with the wholesale company. You have been asked to help prepare for this meeting in his absence and have been given the following information by an eager to please accountancy assistant, who works with the Chief Accountant:

The Couch Potato Sofa Company
Profit Statement for the Year ended 31/3/2008

	King Edward	Maris Piper
	£	£
Sales	720,000	300,000
Rent and Business Rates	120,000	60,000
Direct materials	96,000	24,000
Direct labour	240,000	120,000
Insurance	4,800	2,400
Machine running costs	144,000	36,000
Net profit	115,200	57,600

When handing over this information, the accountancy assistant remarks: "It looks obvious to me that The King Edward sofa is much more profitable than The Maris Piper. It would seem sensible to stop production of The Maris Piper and concentrate on The King Edward, if we want to increase our profits next year". They also inform you that they have allocated floor rent, rates and insurances on the basis of the labour cost for each product. All other costs are direct costs of the individual product.

You carry out some additional investigations that reveal the following:

- Last year the wholesaler purchased all 2,400 King Edwards and 1,200 Maris Piper sofas.
- The King Edward sofas took 9,600 hours to manufacture on machinery owned by the company. The Maris Piper sofas used 2,400 hours. The machinery only has a capacity of 12,000 hours per year.
- No stocks of either product are maintained.
- In 2008/2009, it is planned to keep the selling prices of both sofas the same as in the previous year (shown in the profit statement).
- For planning purposes, costs are expected to remain at the same level in 2008/2009 as they were in 2007/2008.

- **Requirement for question 3**

(a) Prepare a profit statement for the year on a marginal cost basis that shows the results for each product and also in total. Calculate the contribution to sales ratio for each product. *3*

(b) You are informed that the maximum demand for the two products will be 4,800 King Edwards and 4,320 Maris Pipers and that the wholesaler wishes to sell a minimum of 720 of each product. Calculate the optimum production mix and the profit that would result from this per annum. *8*

(c) There is a possibility that another machine with identical running costs and capacity could be hired for £240,000 per annum. The floor rent, rates and insurance would not be affected as a result of this. Assuming the levels of demand stated above, calculate the best product mix and resulting profit if they decide to hire this machine in the coming year to increase capacity. *2*

(d) State the additional considerations that should be taken into account when negotiating with the wholesale company. *3*

(e) Explain the characteristics of a 'fixed cost'. Briefly outline one method in which the fixed costs of an organisation can be recovered through product sales. *4*

(20)

SECTION B (Answer two from three questions)

4

Girthmore District Council operates a Sporting Complex located in the centre of its largest town, Girth. The Council has recently driven a 'Healthy Lifestyle' campaign in conjunction with other local organisations, in order to improve the health of Girthshire's residents by increasing their level of activity. One measure of the success of the campaign, the council believe, will be an increase in the use of the Sporting Complex. At the current time, the complex is only open for 5 days per week.

The managers of the complex are soon to meet with council officials to set the budget for the coming period. For the meeting, the managers require an understanding of the overall trend in the number of client numbers as well as how the pattern of clients varies over a weekly period. The managers have obtained the data that shows the number of clients over the past 5 weeks. This is shown below:

Week	Day	Number of Clients
1	Tuesday	124
	Wednesday	112
	Thursday	127
	Friday	140
	Saturday	167
2	Tuesday	131
	Wednesday	111
	Thursday	129
	Friday	150
	Saturday	170
3	Tuesday	134
	Wednesday	118
	Thursday	128
	Friday	155
	Saturday	195
4	Tuesday	142
	Wednesday	122
	Thursday	130
	Friday	162
	Saturday	201
5	Tuesday	144
	Wednesday	130
	Thursday	134
	Friday	177
	Saturday	222

- **Requirement for question 4**

(a) By using an appropriate moving average, identify the average daily trend in the number of clients using the centre over the 5 week period. *5*

(b) Using the additive model, identify the daily variations in client numbers. *4*

(c) Forecast the number of clients for each day of the week in week 6. *3*

(d) Explain the conditions under which the use of time series methods will be the most useful and successful. *4*

(e) Explain the key differences between the additive model and the multiplicative model of seasonal variations and identify an example of when each would be appropriate for use in forecasting. 4

(20)

5

Fairside Patient Transport Services operates as part of Fairside Community Health Trust. The service operates in Fairside and the local surrounding area, providing non-emergency patient transport services to the local residents. There is a fleet of ambulances that operate from a local depot. The service is supported by a team of administrative staff, based at the depot, that coordinate requests for transport from GPs and hospital staff. The budgetary performance of the service is assessed on a six monthly basis.

The budget for the service is calculated based on the number of patient miles. The performance report for the first six month period of the year is shown below:

Fairside Patient Transport Service
Six months to 31 December
Performance Report

	Budget	Actual	Variance
Number of patient miles	38,000	47,000	9,000
	£	£	£
Pay			
Depot Operations Manager	21,000	21,500	500 A
Depot Assistant Manager	15,000	15,220	220 A
Drivers	108,120	120,000	11,880 A
Administrative assistants	74,000	89,000	15,000 A
Domestic staff	37,500	37,500	0
Total pay	255,620	283,220	27,600 A
Non Pay			
Diesel and vehicle costs	20,780	26,400	5,620 A
Medical consumables (disposable)	11,780	14,500	2,720 A
Medical equipment (non disposable)	15,000	7,500	7,500 F
Repairs and maintenance	33,725	39,266	5,541 A
Telephone expenses	9,500	9,600	100 A
Stationery costs	12,160	11,900	260 F
Heating and lighting of depot	6,000	5,900	100 F
Capital charge on premises	7,000	3,500	3,500 F
Total non pay	115,945	118,566	2,621 A
TOTAL EXPENDITURE	371,565	401,786	30,221 A

The following set of assumptions was used in compiling the budget report:

- The Depot Operations Manager and the Assistant Manager are both paid an annual salary.
- The Drivers are paid according to a two tier system. There are 12 full-time drivers who are each paid an annual salary of £16,500. Each driver is paid an additional £20 per 1,000 total patient miles up to 40,000 total patient miles for jobs completed. Over 40,000 total patient miles, the rate increases to £30 per 1,000 total patient miles. In addition to this, when the total transport service achieves certain volumes a system of bonuses comes into operation.
- The cost of the repairs and maintenance are semi-variable. This is based on a fixed cost of £14,250 per annum. The remainder of the cost varies according to the number of patient miles.

- The cost of diesel and vehicles includes a licence cost of £170 per vehicle per annum. There are 12 vehicles. The diesel cost varies in relation to the number of patient miles.

- The cost of medical consumables depends upon the level of patient need. For budgeting purposes, the patients are grouped into four levels of dependency. The associated cost of these is:

Level	£ per 10 miles	% of budgeted patients
A	2.30	45
B	2.70	20
C	3.10	15
D	5.30	20

- The cost of non-disposable medical equipment is based on a lease charge. This is fixed and paid on a quarterly basis.
- The administrative assistants are employed by a local agency. One administrative assistant is required for each 10,000 patient miles per quarter. After activity reaches this threshold, an additional admin assistant is commissioned from the agency. The weekly cost of one administrative assistant is £740.
- Domestic staff are employed by the Trust and are charged to the depot at a total fixed rate of £1,500 per week.
- The cost of heating and lighting is fixed. The cost of stationery and telephone expenses is variable according to the number of patient miles.
- The capital charge is a fixed recharge from the Trust headquarters. This is done quarterly by journal entry.
- The period to 31st December is based on 25 weeks.

- **Requirement for question 5**

(a) Prepare and comment on a performance monitoring report for the six month period to 31st December that presents a more realistic view of the financial performance of the Fairside Patient Transport Service than the one presented above. *16*

(b) Identify the main points that should be considered when preparing budgetary control reports. *4*

(20)

6

SandyBay Business School, part of SandyBay College, is currently undertaking a planning exercise to develop their curriculum for the coming academic year.

The Business School provides a wide range of Education courses in business related subjects. It also responds to the needs of local employers by developing and providing more bespoke courses, where it is financially viable to do so. In order for a course to be financially viable, the University require that it produces net income of £53 per staff teaching hour.

As part of the current exercise, the college is evaluating three courses they are considering offering next year. Three of these courses are detailed below:

'Finance for the Non Financial professional'
This existing course is offered on a 12 week basis , 2 hours per week. It is expected that one senior lecturer and two basic grade lecturers will be required to teach the course, totalling 24 hrs teaching input from each lecturer. It is expected that there will be 80 students that enrol on the course. It will require 180m² of classroom space as three rooms will be required. Proposed course fee: £275 per student.

'Taxation for the small business manager'
This bespoke course is to be run on an intensive 2 day basis. This will involve 12 hours teaching time in total, but two basic grade lecturers will team teach the sessions. It is expected that 12 local business managers will enrol for the course. It requires one classroom only of 60 m². Proposed course fee: £400 per student.

'*Football Finance'*
This course has been offered before and is being developed as a module that can be incorporated into a number of existing programmes. The course will run for 6 weeks for 1.5 hrs per week. One basic grade lecturer will be required only. It is expected that there will be 40 students. This will require 90m² of classroom space in total. Proposed course fee: £170 per student.

The costs of the business school are as follows. These have to be absorbed into the cost of the courses they provide:

	£
Basic grade lecturers	141,588
Senior grade lecturers	109,296
Cost of course development	10,080
Cost of administration	49,580
Student services	22,940
Utility overheads (heat, light and power)	63,000

There are six full time basic grade lecturers and four full-time senior grade lecturers. Each lecturer works 828 teaching hours per year.

The cost of course development is driven by the number of new courses in the year. In the coming year there are expected to be 6 new courses to be developed.

The cost of administration and student services is driven by the number of students. The business school expects a total of 740 students in the coming year.

The utility overheads are driven by the floor space of the classrooms required to run the course. The overhead absorption rate has been calculated as £3.50 per m² per week of the course. The minimum charge is based on one week (applied to courses of duration of less than one week).

- **Requirement for question 6**

(a) Calculate the costs of the three courses outlined above. Recommend which of the courses are financially viable according to the criteria set by the college. *12*

(b) Identify the key differences between traditional absorption costing systems and activity based systems of allocating fixed overheads to products or services. *8*

(20)