

INFORMATION MANAGEMENT AND CONTROL

Professional 1 examination 9 December 1999

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 in total: **Two** questions from Section **A**, and **three** 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 examinations room.

Formula sheets, statistical tables, graph paper and cash analysis paper are available from the invigilator, where applicable.

SECTION A (Answer TWO questions)**1**

As part of its continuing investment in information technology, your organisation is in the process of reviewing its existing information systems and considering the possibility of making major changes to them. The review is being led by your Director of Finance.

She has been asked to address the Board on the nature of information systems and on business process re-engineering. Knowing that you are familiar with the relevant theory as part of your CIPFA studies she has asked you to prepare a set of briefing notes to help her prepare her presentation.

- **Requirement for question 1**

- (a) List the four key elements of an Information System, and briefly describe each one. 8
- (b) Briefly describe the process of “Business (Process) Re-Engineering”, give some possible reasons for undertaking such a task, and outline the key steps in such a process. 12

(20)

2

Your organisation has decided to implement a major new information system. You have been chosen to be the Project Manager. You appreciate that you will have a large team coming from a variety of backgrounds, most of them non-technical. You have decided therefore to give an introductory talk to explain the processes that you will all be going through.

- **Requirement for question 2**

Write a briefing note to your Director of Finance on the following topics (in each case both naming the component and giving a brief outline of its key elements):

(a) The five stages of the standard “Systems Development Life Cycle”. *10*

(b) The four standard stages of prototyping, together with a brief summary of the advantages and disadvantages of prototyping as a system-development technique. *10*

(20)

3

You have just been appointed Deputy Director of Finance & Information, and have been asked to take full responsibility for the Information Technology division. Your Information Manager (an IT specialist) has asked for your permission to set up a small network of personal computers so that a team of in-house programmers can start to work on the new accounting system that your organisation is developing.

- **Requirement for question 3**

- (a) Outline briefly for your Director of Finance the main advantages of using a network of computers rather than stand-alone machines. 4
 - (b) List and describe the controls that you would want to see in place within the system-development team. 4
 - (c) List and describe the additional controls that you would want to see the Development Team incorporate into the final program and the associated computer environment. 12
- (20)

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

Cateratonia County is a large unitary authority. School meals are provided by Cateratonia Direct Services (CDS). The actual expenditure to date and original budget at outturn prices for the current financial year (1 April 1999 to 31 March 2000) are set out below:

**Cateratonia Direct Services Budgetary Statement
1 April 1999 to 31 October 1999**

| | Original Budget at Outturn Prices | Actuals |
|--------------------------------|----------------------------------------------|------------------|
| | £ | £ |
| Employees | | |
| Managers | 69,500 | 42,700 |
| Administrators | 183,000 | 108,900 |
| Catering Staff | 1,580,000 | 925,000 |
| Premises | | |
| Electricity | 35,000 | 12,000 |
| Gas | 45,000 | 18,000 |
| Transport | | |
| Travelling Expenses | 5,000 | 3,500 |
| Supplies & Services | | |
| Catering Equipment | 35,000 | 25,000 |
| Food | 1,500,000 | 800,000 |
| Capital | | |
| Asset Rentals | <u>65,000</u> | <u>37,900</u> |
| Total | | |
| Expenditure | <u>3,517,500</u> | <u>1,973,000</u> |
| Income | | |
| Contract Deficit | 2,500,000 | 1,458,300 |
| Guarantee | | |
| School Meal | | |
| Sales | <u>1,020,000</u> | <u>505,000</u> |
| Total Income | <u>3,520,000</u> | <u>1,963,300</u> |
| Surplus/(Deficit) | 2,500 | (9,700) |

Notes:

1. Managers and Administrators will receive a 2% pay award on 1 September 2000. This is in line with national agreements.
2. All staff costs in the budgetary control statement include on-costs such as national insurance and pension contributions.
3. The management and administrative functions are to be reorganised. The Deputy Manager Supplies will retire on 30 September 2000 and be replaced by an Administrative Assistant on 1 October who will be appointed on a salary of £12,500.

Current annual staffing costs and structures as at 1 September 1999 are set out below:

| Managers | £ | Administrators | Total Salaries |
|------------------------------|----------|-------------------------------|-----------------------|
| | | | £ |
| CDS Manager | 25,000 | Supervisors x 4 | 60,000 |
| Deputy Manager (Staffing) | 21,800 | Senior Administrators x 2 | 30,000 |
| Deputy Manager (Supplies) | 22,700 | Administrative Assistants x 4 | 48,000 |
| | | Administration Clerks x 6 | 45,000 |

4. CDS employs the following catering staff:

| | Cooks | Assistant Cooks | General Catering Assistants |
|-----------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------|
| Number | 35 | 50 | 90 |
| Current annual wage per employee (inclusive of oncosts) as at 1 September 1999 | £11,000 | £9,500 | £8,000 |

5. The wage increase for catering staff for the next financial year is 1.5%. This is again in line with national agreements and will be with effect from 1 September 2000.
6. School kitchens are separately metered and the costs charged directly to CDS. Caterationia has negotiated a new gas contract which will come into force on 1 January 2001.

It is anticipated that the new contract will result in a 5% saving on existing gas costs. It should be noted that gas costs are usually incurred on the following basis:

| | |
|--------------------|-----|
| April – June | 20% |
| July – September | 15% |
| October – December | 30% |
| January – March | 35% |

The calculations for the 2000/2001 financial year should be based on 1999/2000 actuals.

Electricity should be budgeted for on the basis of 1999 – 2000 original outturn with an inflationary increase of 1.5%.

7. Transport costs have been higher than anticipated and the CDS manager feels that they were originally underestimated. Therefore, transport costs for the coming year should be based on actuals for the current year plus an inflationary allowance of 1%.
8. CDS has replaced a large amount of catering equipment in the current year. It is envisaged that expenditure in the next budget should be reduced by 25% on projected actuals for the coming year, but should still allow for an inflationary increase of 2%.
9. A 1% inflationary allowance should be added to food costs.
10. Asset rentals relate to charges from Cateratonia County to CDS for use of school premises and their office accommodation in County Hall. This will remain unchanged for 2000 – 2001.
11. The contract deficit guarantee represents a payment from Cateratonia County to CDS to cover the fixed costs of providing the school meals service. The income from school meal sales represents amounts paid over the counter.

From 1 April 2000 the contract deficit guarantee payment will no longer be made and CDS will be required to recover all its costs by means of its charges for meals. In return CDS will be given freedom over the range of menus offered and the prices charged.

The Catering Manager has supplied the following information based on her preliminary market research.

| No. of Meals Sold Per Annum | Probability | Average Income Per Meal £ | Probability |
|------------------------------------|--------------------|--------------------------------------|--------------------|
| 1,800,000 | 0.20 | 1.00 | 0.20 |
| 2,000,000 | 0.35 | 1.30 | 0.25 |
| 2,200,000 | 0.30 | 1.60 | 0.40 |
| 2,500,000 | 0.09 | 1.80 | 0.10 |
| 3,000,000 | 0.04 | 2.00 | <u>0.05</u> |
| 3,600,000 | <u>0.02</u> | | 1.00 |
| | 1.00 | | |

The current average number of meals sold in the year is 2,000,000. But with freedom over menus and pricing the Catering Manager feels that there is scope to market the service to pupils and be more responsive to their suggestions.

The cost of free school meals will be met by Cateratonia County on the basis of £2 per pupil. These are in addition to the Catering Manager's estimates and are likely to average 400,000 meals per annum. She feels that 4,000,000 meals are the most which could be served within current staffing levels.

- **Requirement for question 4**

Prepare the original budget at outturn prices for the 2000 – 2001 financial year for Cateratonia Direct Services.

(20)

5

All organisations need effective budgetary control systems otherwise the budget process itself is diminished in its reliability and significance within the organisation. Budgetary control systems are usually typified as being negative feedback control systems. At the same time it is also accepted that the systems are people based and rely upon budget holders managing the budgets for which they are responsible.

- **Requirement for question 5**

- (a) Explain what is meant by negative feedback control, identifying the main elements of this control and relating those elements to budgetary control systems. 6
- (b) Discuss the main causes of difficulty with budgetary control systems relating those causes to the elements which you have previously identified. 8
- (c) Explain why it may be more difficult dealing with the people based problems than other types of problem. 6

(20)

6

Standard costing was developed largely as a means of producing budgets that could be flexed to reflect changing levels of activity. The way that standard costs are constructed also means that variance analysis can be carried out which enhances budgetary control information.

- **Requirement for question 6**

- (a) List the main arguments for and against the use of standard costing and variance analysis. 4
- (b) Establish a list of criteria for the successful introduction of the standard cost approach. 6
- (c) Discuss the reasons why standard costing and variance analysis are not more widely used within the public sector. 4
- (d) Identify an activity within a public sector organisation where a standard cost approach has been or could be adopted. Describe and comment upon the methodology which has been or could be used in this case. 6

(20)

7

Your organisation has set up a project team to investigate the potential impact of the Euro and set up systems which would be required to cope with the effects of the changeover. The immediate output from the team's work will be a report to the Chief Executive for which a strict deadline has been set. At the moment this work is regarded as fairly low priority and the budget for the project will have to be tightly controlled.

Against this background you have been able to identify the main project activities and an order of precedence. This is shown in the table below along with an estimate of the time required to complete each activity (in working days).

| Activity | Preceding activity | Time to complete (days) | Potential reduction due to weekend working (days) |
|----------|--------------------|-------------------------|---------------------------------------------------|
| A | - | 3 | 2 |
| B | A | 5 | 2 |
| C | A | 7 | 3 |
| D | A | 2 | - |
| E | B | 4 | - |
| F | C | 8 | - |
| G | D | 10 | 4 |
| H | D | 14 | 4 |
| I | F | 7 | 2 |
| J | E | 6 | 2 |
| K | J | 9 | 3 |
| L | G,I | 12 | 4 |
| M | H | 6 | 2 |
| N | K,L | 8 | 2 |

The initial costings for the project indicate a fixed element of £20,000 plus a daily cost of £1,000. The overall budget allocated to the project is £64,000.

The report is required by the Chief Executive to go to the spring meeting of the management board. This gives 40 days for completion.

If necessary certain activities can be completed more quickly through the working of overtime at weekends. The additional cost of this is £700 per day, except for activities A, C, H, J and N where it is £1,400 per day as a result of more people being involved.

- **Requirement for question 7**
 - (a) Calculate the project time and, using a network diagram, the cost based upon the initial estimates given above. 6
 - (b) Recalculate the time and cost in order to identify the minimum cost and the minimum time for the project within budget. 8
 - (c) Prepare a short briefing note for the Chief Executive which explains the options available and makes appropriate recommendations. You should also explain how a GANNT chart could be used as a means of planning and controlling the use of staff resources throughout the project. 6
- (20)