CIPFA

FINANCIAL MANAGEMENT, SYSTEMS & TECHNIQUES

Certificate stage examination

June 2008

MARKING SCHEME

AT THE HEART OF YOUR CAREER

Question 1

(a) Prepare a response for the Chief Constable's Personal Assistant.

There are three main differences are between the Freedom of Information Act (FOI) 2000 and the Data Protection Act 1998.

Individuals already have the right to access information about themselves held on computer and in some paper files, under the Data Protection Act 1998. As far as public bodies are concerned, the Freedom of Information Act 2000 extends these rights to allow access to **all** the types of information they hold, whether personal or non-personal.

The Data Protection Act 1998 applies only to data which is stored on computers or in 'relevant' paper files. Relevant files are those which are structured, for example, by listing individuals in alphabetical order by surname. The Freedom of Information Act 2000 gives a general right of access to **all** types of 'recorded' information held by public authorities.

The Data Protection Act 1998 applies to all UK companies, whereas the Freedom of Information Act 2000 relates to public authorities only (and private sector organisations which provide services on behalf of public sector bodies.

1 mark for each relevant point up to a maximum of (2)

(ii) **Briefly explain each of the three categories of computer-related crime.**

Computer criminals

These are well-educated, white-collar workers who feel undervalued or bear some resentment to an employer or former employer. Such individuals resort to sabotage, vandalism or theft as a means of revenge against the employer. Other computer criminals may find ways of compromising system security and take advantage of these in order to steal money, goods or services.

1 mark for good answer, ½ mark for basic answer

Information warriors

They seek to obtain data by any means necessary. Such people resort to illegal methods, such as hacking, to obtain the information they require. It is worth noting that the information obtained may not necessarily be used in pursuit of criminal activities.

1 mark for good answer, ½ mark for basic answer

Hackers

They are described as individuals who seek to break into systems as a test of their abilities. Few hackers attempt to cause damage to the systems they access and few are interested in gaining any sort of financial profit.

1 mark for good answer, ½ mark for basic answer

iii) State the basic motives behind the actions of hackers.

Motives of hackers

It can be argued that there are four basic motives behind the actions of hackers.

- Some hackers believe that all information should be free. Such individuals feel a duty to ensure free access to information held by government departments and private companies.

1

- Some hackers believe that they provide an important service to companies by exposing flaws in security.

1

- Some people believe that hacking serves an educational purpose by helping them to improve their knowledge and skills. Since no harm is caused to any systems accessed, their actions are acceptable and should not be considered threatening.

1

- For some hackers it is simply for enjoyment or excitement. They find stimulation in the challenge of defeating the designers of the security measures used by a given system.

1

(9)

(b) In preparation for a response to the Accounts Assistant, calculate the penalty interest and compensation that could be claimed (as of today) under the Late Payment of Commercial Debts (Interest) Act 1998 (as amended by the Late Payment of Commercial Debts Regulations 2002). Assume a bank base rate over the period of 5.2%.

The rate of (simple) interest claimable is bank base rate plus 8%, so the calculation is:

Debt x Interest rate x (number of days late / 365)

22,350 x (0.08 +0.052) x 150/365

= £1,212.41

2

An alternative correct answer would be to assume that the debt is overdue by 120 days (i.e. the original 150 days less 30 days)

So:

Debt x Interest rate x (number of days late / 365)

22,350 x (0.08 +0.052) x 120/365

= £969.93

2

Compensation rates for debt recovery costs

Size of the unpaid debt	Compensation to be paid
£10,000 or more	**£100**

1

(3)

(c) Prepare a response for your manager

(i) Calculate the mean and standard deviation with the information given.

μ **=** Σ x/N

= 153,741.6/21,353

= 7.2

$$\sigma = \sqrt{\frac{\sum (x-\mu)^2}{N}}$$

= √350,243/21,353

= 4.05

1 mark for each calculation up to a maximum of 2

(ii) Explain the terms mean and standard deviation.

The mean is a measure of central tendency. The mean is calculated by totalling all values in the group and dividing by the number of values in the group.

1 mark for explanation

The standard deviation is a measure of spread. It provides information to support the average, by indicating how the data is 'spread' around the mean.

1 mark for explanation

Other valid explanations should be awarded marks

(iii) Using the above information calculate the proportion of emergency calls with a duration of

- **less than 5 minutes**

$Z = |5 - 7.2|/4.05 = 0.54$

From the normal distribution tables, **29.46%** of the emergency calls were less than 5 minutes.

2

- **more than 10 minutes**

$Z = |10 - 7.2|/4.05 = 0.69$

From the normal distribution tables, **24.51%** of the emergency calls were more than 10 minutes.

2

(8)

(20)

Question 2

(a) Explain what the EOQ model aims to do and its main assumptions.

The Economic Order Quantity (EOQ) model has been developed to establish the optimum size of orders to be placed (in an attempt to reduce the total costs of inventory). It also then establishes how many orders need to be placed, their frequency and the overall cost of the inventory management process.

2 marks for a good explanation, 1 mark for a basic explanation

Main assumptions

- Known demand for item of inventory.
- Constant usage of inventory items over the period, that is, a linear function.
- Quantity ordered does not vary over time.
- The order cost per item can be estimated and is constant.
- Other variables are fixed over time.
- The inventory replenishment is instantaneous when the inventory level has reached zero.
- There are only two types of cost to be considered: holding costs and ordering costs.
- There are no costs associated with running out of stock.

½ mark per assumption up to a maximum of 2
(4)

(b) Calculate the EOQ for ordering wheelchairs for next year at JES and total associated ordering and holding costs.

In this instance it is assumed that the number of new wheelchairs required next year will increase at twice the percentage of increase from last year to the current year. The increase from last year to this year is 260/226 = 15%. Therefore, twice the level of increase is 30%, which is 260 x 1.3 = 338

1 mark for calculation of demand

The formula for the EOQ is as follows:

√ (2CD/H)

where:

D = units used during the year (annual demand)

C = cost of ordering (per order)

H = cost of holding one unit of inventory for one year.

= √ 2 x 30 x 338/0.8

= 159.2 <u>say 160</u> (wheelchairs) or = 159.2 <u>say 159</u> (wheelchairs)

1 mark for calculation of EOQ

Number of orders required is 338/160 = <u>2.11</u> per annum *(this could be rounded down to 2 orders or up to 3 orders with subsequent calculations being affected)*
or
Number of orders required is 338/159 = <u>2.13</u> per annum *(this could be rounded down to 2 orders or up to 3 orders with subsequent calculations being affected)*

1 mark for calculation of no. of orders

If use 2.11 orders
Ordering Cost = £30 x 2.11 = £63.30 *1*

Stock-holding costs = 160/2 x £0.80 = £64 *1*

Total Annual cost = £63.30 + £64 = £127.30
1(only if 3 previous calculations are correct)

If use 2 orders
Ordering Cost = £30 x 2 = £60 *1*

Stock-holding costs = 160/2 x £0.80 = £64 *1*

Total Annual cost = £63.30 + £64 = £124
1(only if 3 previous calculations are correct)

If use 3 orders
Ordering Cost = £30 x 3 = £90 *1*

Stock-holding costs = 160/2 x £0.80 = £64 *1*

Total Annual cost = £63.30 + £64 = £154
1(only if 3 previous calculations are correct)

Other answers using number of orders as 2 of 3 are valid (6)

(c) Describe any limitations of using the EOQ model in this instance.

One of the problems with the EOQ model is that it assumes a steady demand for the inventory items. We do not know that this is the case in this instance and we have been told that demand is only based on demographic data and is increasing.

It also assumes that there will be no delays between placing and receiving the order. This assumption is not realistic as we are told that there is a lead time of 10 days.

The EOQ model assumes a constant usage of stock which is not likely to be the case with wheelchairs.

It also assumes that inventory can fall to zero without adverse effects which is not likely to be the case in this instance.

The scenario states that there is a problem with storage space so ordering 159 wheelcahirs at a time may not be possible.

Some wheelchairs may be returned to the store and re-used. The calculation of holding costs does not take this into account.

Other points may be valid
1 mark per limitation up to a maximum of (3)

(d) If the re-order level model is going to be used next year, calculate at what level of stock new wheelchairs would need to be ordered (assume no safety stock).

Re-order level (ROL) = Lead time x Demand

= 338/250 x 10 = 13.52 wheelchairs

This means that when there were 14 wheelchairs left in stock it would be time to re-order.

1/2 mark for calculationand ½ mark for rounding up to 14 wheelchairs

(e) An alternative stock model is the Just-In-Time (JIT) management system. Briefly explain what is meant by JIT.

JIT is based upon the idea of ensuring that an organisation has the right items of the right quality in the right place at the right time. The result of the approach will be a reduction or even total elimination of inventory in all its forms within the organisation. JIT has sometimes been described as stockless production.

2 marks for good explanation, 1 mark for basic explanation (2)

(f) For any public sector organisation identify one item of stock that would be suitable for the JIT method, with a reason and…

Examples:

- Stationery (assuming can guarantee next day delivery as items are not always needed same day)
- Computer consumables (assuming can guarantee next day delivery as some items are not always needed same day)
- Any item that is not critical/life-threatening if it runs out.

1 mark for example, 1 mark for reason to a maximum of (2)
Other items may be valid

(g) One item of stock that would not be suitable for the JIT method, with a reason

Examples:

- Life-saving drugs, blood (life-threatening results if run out, essential for running service)
- Gritting materials for roads (dangerous if run out, difficult to predict demand, essential for running service)
- Forensic kits in Police service (difficult to predict demand, essential for running service)

1 mark for example, 1 mark for reason to a maximum of (2)
Other items may be valid

(20)

Question 3

(a) Calculate whether there is a significant relationship between geographical area and achievement of the recycling target using a Chi-squared test (at a 5% level of significance).

This question is designed to test the students' ability to apply and explain the use of chi-squared. It also requires students to be able to explain different types of errors in hypothesis testing.

The null and alternative hypotheses should be stated as:
H_0: There is no relationship between geographical area and achievement of the recycling target.
H_1: There is a relationship between geographical area and achievement of the recycling target.

1 mark for stating both hypotheses

The observed data has been provided in the question as:

Observed Data							
	North	South	East	West	Central	Total	%
No. of local authorities that achieved target	8	20	5	8	15	56	56
No. of local authorities below target	10	11	7	4	12	44	44
	18	31	12	12	27	100	100

We need to use this observed data to estimate what values we would expect if there was no relationship between geographical area and achievement of the recycling target.

Expected Data							
	North	South	East	West	Central	Total	%
No. of local authorities that achieved target	10.08	17.36	6.72	6.72	15.12	56	56
No. of local authorities below target	7.92	13.64	5.28	5.28	11.88	44	44
	18	31	12	12	27	100	100

3 marks for correct table
2 marks awarded if numbers rounded up.

We now use the above observed and expected values to calculate χ^2:

O	E	O-E	$(O-E)^2$	$(O-E)^2 / E$
8	10.08	-2.08	4.3264	0.429
20	17.36	2.64	6.9696	0.401
5	6.72	-1.72	2.9584	0.440
8	6.72	1.28	1.6384	0.244
15	15.12	-0.12	0.0144	0.001
10	7.92	2.08	4.3264	0.546
11	13.64	-2.64	6.9696	0.511
7	5.28	1.72	2.9584	0.560
4	5.28	-1.28	1.6384	0.310
12	11.88	0.12	0.0144	0.001
				3.443

5 marks for table and correctly calculating χ^2
3 marks awarded if numbers rounded up.

In order to obtain the critical value from the tables we need to calculate the degrees of freedom:

(number of columns – 1) x (number of rows – 1)
(5-1) x (2-1) = 4

1 mark for correctly calculating degrees of freedom

Taking a 5% significance level the critical value from the χ^2 table is 9.488.

1 mark for correctly identifying the critical value

Our calculated χ^2 of 3.443 is less than the critical value of 9.488, so we accept the null hypothesis.

This means that there is no relationship between geographical area and achievement of the recycling target.

2 marks for concluding to accept the null hypothesis and what this means

(13)

(b) Explain the difference between a Type I and a Type II error in hypothesis testing.

Type I error – reject a null hypothesis when it is in fact true.

Type II error – accept a null hypothesis when it is in fact false.

1 mark per point up to (2)

(15)

Question 4

(a) Prepare a briefing note which includes the following:

1 mark for format of briefing note

- An explanation of the Gateway review process

  Government Gateway reviews are in-depth reviews of procurement projects, throughout critical stages of the lifecycle.
  Or…The Gateway Project Review Process looks at the readiness of a project to progress to the next phase at six key stages in the life of the project.

  1 mark for explanation

- Who would carry out the reviews

  Independent (from outside the project) commercially experienced teams.

  1

- The aims of the reviews

  To provide a valuable perspective on issues facing the internal team and an external challenge to the robustness of plans and processes.

  1

- What the reviewers do

  The reviewers examine progress and make an assessment of the likelihood of successful delivery of the project.

  1

- The length of the reviews

  The length of each review depends upon the scope and risk of the project and usually lasts between three to five days including the preparatory planning day.

  1

- What assurances are provided by the process

  The Gateway Review process gives assurance that:
  - People with appropriate skills and experience are deployed on the project.
  - All the stakeholders covered by the project fully understand the project status and the issues involved.
  - The project is ready to progress to the next stage of development or implementation.
  - There is visibility of realistic time and cost targets for projects.
  - There is improvement of knowledge and skills amongst staff through participation in Gateway project review teams.

  1 mark per point up to a maximum of(4)

(10)

(b) Once the submarines have been procured, explain why it is necessary to be proactive in the management of these assets.

- Fixed assets have a long-term value to the organisation.
- They should contribute to the ongoing business of the organisation.
- Organisations will be charged for the use of their assets through the capital charging mechanism.
- The needs of the organisation may change over time.
- Assets may need to be used flexibly and alternative uses may need to be considered.
- The value of assets will need to be safeguarded and protected against events which may lead to devaluation or obsolescence.

1 mark per point up to a maximum of (5)

(15)

Question 5

(a) For each risk shown on the risk register, state one appropriate method of treatment for that risk.

Risk ref	Description of risk	Planned treatment of risk
A	Risk of fire within library buildings	- Install smoke detectors - Install sprinkler system
B	Risk of theft of data projectors & computer equipment in schools	- Install CCTV - Install burglar alarms - Security code to enter rooms where equipment stored
C	Risk of public tripping accidents on pavements	- Health & Safety audit - increased highway inspections
D	Risk of budget overspends due to increasing numbers of older people	- monthly monitoring of budgets - prioritisation of service provision - longer-term forecasting

1 mark per point made per risk up to a maximum of (4)
Other points may be valid

(b) Identify six other headings that should be included on a risk register.

- Impact/severity of risk.
- Likelihood of occurrence of risk.
- Risk rating.
- Assessment of residual risk (after risk treatment).
- Risk owner.
- Timescale for treating risk.
- Budgetary implications of risk.
- Progress to date.

$^1/_2$ mark for each point made up to a maximum of (3)
Other headings may be valid

(c) The risk culture of an organisation will be based on its attitude to risk. Identify and explain the four main organisational attitudes to risk.

- Risk neutral – this is where the organisation remains impartial. Its risk strategy will be inconsistent and action will depend on the individual hazard.
- Risk averse – when the organisation is reluctant to take any risk. Its risk strategy will be to take the safest course of action or the one that will result in the safest outcome.
- Risk seeking – the opposite of "averse", when the organisation will take the best of the best outcomes, no matter how risky. Risk will seem irrelevant and the focus will be on the best outcome at whatever cost.
- Regret averse – this is when the organisation wants to avoid any remorse on its decision, the option that minimises the maximum regret.

1 mark for each attitude identified, 1 mark for a good explanation of risk attitude, up to an overall maximum of (8)

(15)

Question 6

(a) (i) State what is the Prudential Code

The Prudential Code became effective from 1 April 2004 and sets out a framework for self-regulation of capital spending for local authorities.
In effect, it allows local authorities to invest in capital projects which best meet their service delivery objectives as long as they are affordable, prudent and sustainable.

1 mark for each relevant point up to a maximum of (2)

(ii) State the key objectives of the Prudential Code

The key objective of the Prudential Code is to provide a framework for local authority capital finance to ensure that:

- capital expenditure plans are affordable
- all external borrowing and other long term liabilities are within prudent and sustainable levels, and
- treasury management decisions are taken in accordance with professional good practice.

1 mark for each relevant point up to a maximum of (3)

(iii) Describe three examples of prudential indicators that could be used.

Looking ahead for a three year period:

- estimates of the ratio of financing costs to net revenue stream;
- estimates of the incremental impact of capital investment decisions on the Council Tax.

After the year end:

- actual ratio of financing costs to net revenue stream.

Looking ahead for a three year period:

- estimates of capital expenditure;
- estimates of capital financing requirement (underlying need to borrow for a capital purpose);
- authorised limit for external debt;
- operational boundary for external debt.

After the year end:

- actual capital expenditure;
- actual capital financing requirement;
- actual external debt.

General

- compliance with the CIPFA *Code of Practice for Treasury Management in the Public Services;*
- upper limits on fixed interest rate and variable interest rate exposures;
- upper and lower limits for the maturity structure of borrowings;
- upper limit for principal sums invested for periods longer than 364 days.

1 mark for each relevant point, up to a maximum of (3)

(8)

(b) (i) Define the term e-government.

The term can be defined as the use of information and communication technologies to improve the activities of public sector organisations.

1 mark for a good definition

(ii) Describe the three main aims of e-government (as set out in the 1999 Modernising Government White Paper).

Its three main aims were to:
1. Make the UK the best place in the world for e-commerce
2. Ensure everyone who wants to can access the Internet
3. Ensure all government services are online by 2005.

1 mark per aim up to a maximum of (3)

(iii) Describe the three main transformations required by transformational government.

1. Services enabled by IT must be designed around the citizen or business, not the provider, and provided through modern, coordinated delivery channels.
2. Government must move to a shared services culture - in the front-office, in the back-office, in information and in infrastructure.
3. There must be broadening and deepening of government's professionalism in terms of the planning, delivery, management, skills and governance of IT enabled change.

1 mark per fully-explained transformation up to a maximum of (3)

(7)

(15)

Question 7

(a) Describe what is meant by a Public Private Partnership (PPP) and the three categories of PPPs.

Public Private Partnerships (PPPs) bring public and private sectors together in long term partnership for mutual benefit.

1 mark for description of PPP

Categories of PPPs include:
- The introduction of private sector ownership into state-owned businesses.
- The Private Finance Initiative (PFI), which involves the public sector entering into a long-term contract to purchase services from the private sector.
- The use of private sector expertise to exploit the commercial potential of government assets.

1 mark per category

(b) Identify the main reasons for entering into PPPs.

Reasons for entering into PPPs are:
- Access to sources of finance.
- Utilising private sector skills and expertise.
- Transferring risk.
- Keeping assets "off balance sheet".

1 mark per reason

(c) Identify the responsibilities of Government and the public sector within a PPP.

Government retains responsibility for:
- deciding between competing objectives;
- defining objectives, and then ensuring that they are delivered to required standards;
- ensuring that wider public interests are safeguarded.

1 mark per responsibility up to a maximum of 2

The public sector remains responsible for:
- deciding, as the collective purchaser of public services, on the level of services that are required, and the public sector resources which are available to pay for them;
- setting and monitoring safety, quality and performance standards for those services; and
- enforcing those standards, taking action if they cannot be delivered.

1 mark per responsibility up to a maximum of 2

4

(d) Identify the benefits that the public sector brings to a PPP.

- Dedicated and professional staff, motivated to improve public services and to raise people's general quality of life.
- A portfolio of assets and businesses, which are often central to the delivery of key public services.

- A unique source of data, and a wealth of ultimate ideas and intellectual property.

1 mark for each relevant point
(15)