

**THE BCS PROFESSIONAL EXAMINATIONS
Professional Graduate Diploma**

April 2007

EXAMINERS' REPORT

Computer Services Management

General comments on candidates' performance:

The examiners were encouraged to see that the standard of answers was better than in 2006, with some excellent papers being submitted. For some candidates there remained areas where improvements could be made and the following comments should be noted by all candidates.

- Provide comprehensive answers. The examiners are seeking evidence that the candidate has an in-depth knowledge of computer services beyond that of an average computer user. This knowledge has to be communicated to the examiner in order for marks to be gained.
- Read the question carefully. In order to achieve a good mark, it is essential that the candidate provides an answer that reflects the question actually being asked – rather than the question the candidate prefers.
- Provide only relevant information. A number of candidates provided very long answers which included much information which was not asked for. Material which is not relevant to the question will not obtain any marks and is a waste of the candidates valuable time.
- Avoid repetition. Some candidates attempted to answer questions by merely repeating points made in the questions or by including in their answers the subject matter of other questions. Candidates should be advised that they will not gain any marks for such efforts.
- Answer only the required number of questions, and all parts of the questions should be attempted. In their enthusiasm to complete the paper, some candidates omitted parts of the question, perhaps just answering parts a) and b) and omitting part c) altogether. Conversely, some candidates answered more than the required three questions; because of time constraints, this meant that there were often four, or even five, poor answers rather than three good answers. As credit is only be given for the three best answers, all future candidates are advised to attempt only three questions and to concentrate their thoughts accordingly.

An indication is given below of the expected answer points for this examination. However, marks were given for additional points, or valid alternative answers, if relevant to the question.

Question 1

“Creative chaos” is the term used by the manager of the Web Design Group in the New Media Company to describe the work environment of the group. The manager views this environment as an essential part of the design process.

Unfortunately, your role as Systems Manager for the New Media Company comes into conflict with this ethos when you discover that the chaos extends to system administration, configuration management and the authorisation of user privileges.

a) Write a letter to the manager of the Web Design Group expressing your concern regarding these issues and asking for a meeting to discuss the matter further. **(10 marks)**

b) In preparation for the meeting, write a document describing how you propose to more closely manage ONE of these areas of concern - in a manner which will not have an impact on the intellectual freedom currently enjoyed by the group. **(15 marks)**

Examiners' comments

The question was the least popular choice. Those that answered it provided an answer which was either very competent or fairly poor. The question was intended to reflect the increasingly important requirement for IT service staff to engage with other key groups who have a high level of IT skill – and add value to these groups through the professional knowledge of the IT staff.

Answer pointers

Part (a)

- The candidate is asked for a letter - so the response should be in this format.
- What is wanted is a carefully worded document which shows the author is seeking a solution which benefits both parties.
- Conflict of this type is common - but solutions are not quite as common!

Up to two marks for the format of the response – reflecting the request for a letter.

Up to four marks for the way the issues and concerns are expressed.

Up to four marks for how the way forward is explored.

Part (b)

- The document must be even handed, accurate and descriptive without being too technical to be understood by the customer.
- There is a need to show that the candidate understands the issues which the customer believes are important - or is actively seeking to understand them through dialogue.
- As a technical person, the candidate may be able to offer services which actually benefit the customer - once their trust is gained. The perceived need for freedom may be based on a false premise.

Up to three marks for the format of the document.

Up to six marks for discussing how the concern should be managed.

Up to six marks for the way in which the proposal minimises the impact on the creative process.

Question 2

You have just been appointed Computer Services Manager for a national bank that has around three million customers. Upon appointment you are horrified to learn that two months previously a laptop computer, containing details of all the bank's customers, was stolen from an employee's house. The press have just become aware of this theft and have made it front page news. Understandably, the bank's customers are concerned about security implications and have flooded the switchboard with enquiries.

Further investigations show that over recent months there have been several instances where sensitive and commercially valuable data has been lost. To make matters worse, you are told that a number of laptops have become infected by viruses, as employees have used the laptops for connection to the Internet.

The CEO has asked you to prepare a report to include the following:

- a) Identify and evaluate FIVE data security measures to prevent thieves gaining access to data. **(12 marks)**
- b) Recommend security practices that employees should follow to reduce laptop theft. **(8 marks)**
- c) Suggest how the incidence of virus infection could be reduced. **(5 marks)**

Examiners' comments

This was a popular question that was attempted by all but one candidate.

The question was answered well. Candidates clearly understood the need for security measures and were able to explain these in the required level of detail.

Answer pointers

a) Data security measures

- Password protect
- Encrypt all data
- Encourage use of LAN, rather than laptop
- Keep access software separate from data
- Procedures/rules to prevent download of all customer details
- Procedures to remove customer name and all account details when data used for queries/trend spotting etc.
- Keep data on separate media
- Other relevant measure

(Twelve marks: 2 for up to five points raised and explained, depending upon depth of argument, plus 2 extra marks for quality of answer, at examiner's discretion.)

b) Security practices:

- Do not leave unguarded in a public place
- Do not leave visible through car (or bus) windows or leave on seat whilst driving
- Do not carry laptop in a purpose-made laptop carrying case. Looks nice but informs all you have a laptop! Police advise is to carry in general shopping bag.
- Incentives/disincentives if laptop not stolen/stolen
- Other relevant measure

(Eight marks: 2 for each point raised and explained.)

c) Virus protection

- Virus check facility placed on all laptops, updated with latest pattern whenever network accessed
- Discourage use of Internet downloads (or remove facility)
- Procedures to advise against opening unknown e-mail attachments
- Education/awareness training for managers
- Other relevant measure

(Five marks: 1 for each point raised and explained.)

Question 3

You are the IT service manager for a medium sized financial company based in the centre of a capital city.

One Monday morning, you are trying to get to work by public transport. You are a few hundred metres from your office building when you find that all the streets around the building are blocked by police barriers. Access to the area is completely restricted – as the police have received a warning that a building in the area has become seriously contaminated with radioactive material. There is no estimate as to when access will be possible.

Using your mobile phone, you manage to contact most of your team and you meet in a café to discuss your next move. It is clear from the discussion that your business continuity plan is wholly inadequate to deal with a problem on this scale.

- a) Produce a list of the most important FIVE activities you will carry out in response to this situation and justify the reasons for including each activity. **(15 marks)**

Fortunately, the warning turns out to be a false alarm and you are able to return to your office by lunchtime. The episode has caused significant concern to senior management and they are keen to see a review of the business continuity plan

- b) Describe what steps the business should take in order to update the business continuity plan. **(10 marks)**

Examiners' comments

This was a popular question and was answered well by many candidates. A number of candidates demonstrated a very sound understanding of the key principles of business continuity planning and provided highly developed proposals. A few candidates concentrated on the effects of radioactive materials on data media – and did not address the core elements of the question. These responses did not score well – as they did not provide the breadth of information required for a full answer.

Answer pointers

Part (a)

- The request is for a list – but it must be annotated with appropriate supporting information to gain good marks. A bare list will not score well!
- Determine the safety of you staff as far as you are able.
- Find out whether public services (e.g. electricity supply) are still functioning in the restricted area. Are you systems still up? Is there external access to them?
- Check if you have access to off-site backups of your key systems. Determine if these will be sufficient to enable you to continue trading if a suitable hardware platform can be found elsewhere.
- Seek to make contact with senior management to “plug in” to their emergency response process.
- Determine the extent to which it is feasible to launch the business continuity / disaster recovery plan. Does it depend on access to the building, or has some external provision been made?
- Liaise with senior management regarding moving to the business continuity plan.
- Look at longer term issues of accommodation for systems and staff. Do you have partner organisations or branch offices which could take up the load?
- Seek to establish links with the command structure of the Police / civil protection agencies regarding access to premises. They may have a mechanism for accompanied/limited access to some areas.

Up to three marks were awarded for each of five points.

Part (b)

- Memo format is asked for – candidates lost marks if they didn't use it.
- Point out that IS/IT systems do not exist in a vacuum. The only way to plan for an event on this scale is to look at the whole organizational requirement. It is not just an IT issue!
- Look at systems that allow your organization to survive events on this scale. Consider the use of warm/cold off site facilities for recovering information systems.
- Build a plan which will enable you to regularly test your readiness without unrealistic disruption to daily business.

*Up to five marks were awarded for the degree of overall coverage in reviewing the plan.
Up to five marks were awarded for the depth and comprehensive nature of the response provided.*

Question 4

You are working in an organisation that has recently implemented a large customer database system. The Computer Services Division for the organisation has five separate areas:

- A help desk department for recording and monitoring of all problems and requests
- A technical support department which deals with all application independent software
- A network department responsible for the corporate network and maintenance of all desktop equipment
- An operations department responsible for all aspects of live operation, including application maintenance
- A development department which develops all new systems (including the database system that has just been implemented)

You are employed as a support analyst and have been given the task of investigating why the users of the new system experience periods of very slow response times.

- a) In order to determine the cause of the slow response time, briefly explain the detailed functions of each department and give reasons why it may be necessary for you to visit each department as part of your investigation. **(12 marks)**
- b) On the assumption that the slow response has been caused by an error in the application code, describe a process that will lead to new code being reliably implemented in the live system. **(13 marks)**

Examiners' comments

This was another popular question which was set to investigate the candidate's understanding of the workings of a typical IT division and the roles played by the various functional departments.

Part a) was generally answered well but some candidates failed to describe adequately the functions of each department. For instance, merely repeating the function of each department using the wording given in the question did not gain marks. Maximum marks were given to candidates who described in detail the functions of each department.

Part b) provided some disappointing answers and demonstrated the candidates' general lack of understanding of the processes involved in error-correction. Many candidates omitted key stages, such as the need to test the corrections made or even to implement them into the live code. There was some evidence that candidates had left this question until the end of the examination and this could account for some of the incomplete and apparently rushed answers.

Answer pointers

The departments involved and their functions are listed below:

- 1 Helpdesk. Responsible for recording issues; maintaining basic communication with users; and allocating reference numbers and priority levels for users. Possibly using helpdesk management software, the staff would also keep statistics and MI for use by the IS management. Helpdesk would be useful in resolving the response time problem as the staff could provide details of all reports of this; this information could be used to see if a pattern was occurring – e.g. if the problem always happened at the same time of day, or when a particular process was being operated alongside.
- 2 Technical Support. Usually responsible for the continued reliable operation of all non-application code, such as operating systems and database management software. They would be able to check if the slow response was a reported problem in any of the software types and versions used. They may even be able to help further with identification of the types of programs running alongside customer database application or provide statistics of computer usage during the affected times.
- 3 Development Department. Responsible for development of application code, including agreeing requirements with users, preparing test data, running tests with the users and documenting all changes. They may have information relating to past response problems during testing or may be able to pinpoint the problem to a particular transaction type.
- 4 Operations Department. Responsible for the live operation and security of all systems. Often also responsible for maintenance and implementing any changes to code or software. Operations may be able to assist with details of when parts of the system were implemented. This will help ascertain when the problem occurred and perhaps pinpoint the response problem to a particular release of the live code.
- 5 Network Department. Responsible for all aspects of the corporate network, including routers, switches and physical cabling and connection points. Often responsible for all telephony as well. Responsible for all desktop equipment, including PCs, printers, etc. Networks may be able to help ascertain if the problem is an issue with network contention or issues with the particular PCs used to access the customer database.

(One mark for describing the functions of each of the five departments and a further mark for giving reasons why the support analyst would need to contact each department, making ten marks in all. A further 2 marks, at the examiner's discretion, can be awarded according to the overall quality of answer, giving a total of 12 marks.)

b) Process leading to live implementation

The outline process below, or something very similar, would apply:

- Code corrected
- Program and link testing performed
- User and operational testing performed
- Change signed off
- Code transferred to live system and compiled with other code
- Change documented
- Help desk records updated
- Customer informed

(Thirteen marks: 2 x 5 for five correctly defined processes, plus a further 3 marks at the examiner's discretion.)

Question 5

Companies have a responsibility to ensure that they trade only within, increasingly complex, legal constraints.

- a) With reference to current UK legislation, describe three areas of computer services management where the organisation must ensure legal compliance. **(15 marks)**
- b) Describe how you would review the operation of your computer services function in response to a new piece of legislation coming into being. **(10 marks)**

Examiners' comments

This was the least popular question and was, in general competently answered by candidates.

It should be noted that question was "With reference to current UK legislation" – and a number of candidates lost marks by not providing examples within this remit. Some candidates referred to the requirements of trade organisations, professional bodies and local codes of practice – none of which were relevant without a direct association with UK law.

Some candidates quoted UK legislation which, while correct, did not have obvious relevance to computer services management. These responses did not score highly, as they failed to address the question appropriately.

A few candidates did not express an adequate understanding of the legislation they cited – and did not score well as a result.

Answer pointers

Part (a)

The following areas are indicative, but not exclusive:

- Data Protection Act
- Health and Safety at Work Act
- Computer Misuse Act
- A wide range of financial and company law
- Interception of communications legislation
- (Note – Freedom of Information Act only applies to public organisations, except in very specialised circumstances. This question talks about "companies")

Up to five marks were awarded for each of three areas of computer service management linked to UK legislation.

Part (b)

- This section is about describing a process for review and change management.
- What the legislation represents is less important than how you plan to demonstrate conformity.
- The background of the candidate will have an impact on how this is addressed – and a wide range of solutions will be equally appropriate.

Up to five marks were awarded for the description of the process the candidate proposed.

Up to five marks were awarded for the likelihood of a successful outcome given the scenario portrayed by the candidate.