BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 6 Professional Graduate Diploma in IT

COMPUTER SERVICES MANAGEMENT

EXAMINERS' REPORT

September 2015

General comments on candidates' performance

Candidates who scored low marks for this paper typically provided minimal, or incomplete answers that failed to answer the question points. Others attempted to answer a different question to the one set. As in all examinations, the importance of reading the question carefully and then providing the required answers cannot be over-emphasised.

While many of the discussion questions were of high quality, candidates are reminded not to spend too much time on introductions and conclusions but to concentrate on the requirements of the question.

The answer pointers below are for guidance only; to gain full marks, answers would have to be expanded. Valid alternative answers that were relevant to the questions, as set, would also attract up to full marks.

Section A

A1.

The Chief Executive of a large organisation has a special interest in climate change and green/sustainability. The Board has therefore agreed to consider a strategy of reducing carbon footprint, with the additional aim of reducing operating costs.

Discuss how a technology strategy for the organisation's Computer Services Department could achieve these two objectives.

(25 marks)

Indicative answer points:

This was a "discuss" question and the candidates were required to apply their knowledge of computer services to the growing demand for sustainable computing. Points raised should relate to computer services actions which would reduce the carbon footprint and/or costs. There were many alternative answers but points that could be mentioned include:

- Audit of all operations to see if older systems could be discontinued
- Purge systems of old data
- Increase automated operating
- Discuss with users the possibility of reducing the frequency of standard reports
- Look at alternatives to printing
- Procedures for switching off equipment when not being used
- Look at the economics of replacing older equipment with energy-efficient new equipment: monitors, disk drives, etc

- Review use of servers and other network equipment to see if single units could replace several older multiple units
- Review software licences and cancel unwanted ones
- Review DR arrangements – could these be reduced in cost, given technology/mobile computing
- Consider all aspects of SLA to identify savings

Answers were placed into the following "bands" and the mark allocated according to how the answer fitted each band.

Low mark range (0-9 marks)

Candidate **explained** 2-3 possible IT areas for either sustainable computing or administrative savings, but the answer lacked depth.

Good mark range (10-17 marks)

Candidate **described** 4-5 IT areas for sustainable computing and administrative savings.

High mark range (18-25 marks)

Candidate **discussed** 5-6 areas and analysed how sustainable computing and cost savings could be achieved.

Examiners' comments

A popular question which attracted a range of enthusiastic answers. Most candidates included obvious areas that could be considered, such as reducing the need for paper outputs and turning off equipment when not in use. However, the better candidates gave the question greater thought and included many less obvious areas, such as server virtualisation and reviewing service level agreements. Some candidates failed to mention the need to reduce costs at the same time.

A2.

You are the Computer Services Manager for a medium-sized company which plans to expand its business operation. The Directors have been advised by management consultants to consider using cloud computing; however, they had difficulty in understanding the various terms used by the management consultants and have asked how the cloud services would be charged.

Using non-technical language, prepare a report to:

a) Describe the IaaS, PaaS and SaaS service models **(12 marks)**

b) Explain how cloud services are charged **(5 marks)**

c) Discuss the suitability of cloud computing for the company, given its plans to expand. **(8 marks)**

Indicative answer points:

a) Cloud computing is normally a concept that involves a combination of the following layers:

- **Infrastructure as a Service (IaaS).** The cloud provider supplies on-line hardware, rather than the organisation buying its own. Typically, this will include servers, networking and data storage. The cloud provider is responsible for maintaining and running the hardware.

- **Platform as a Service (PaaS).** The cloud provider supplies a platform, typically hardware and operating systems, to run application software supplied by the business. It is not necessary to download the platform software, as it can be operated using an internet browser.

- **Software as a Service (SaaS).** The cloud provider supplies application software that can be accessed using an internet connection. There is no need for an organisation to buy and install the application software.

(4 marks for each layer described in non-technical language. **Max 12 marks**)

b) Charges

Organisations can be charged a fixed cost for use of the cloud facility or pay a usage rate based on the number of transactions processed; this applies to renting software, a platform or the computer system infrastructure.

(5 marks)

c) Suitability

Cloud computing would be suitable for the company, as the costs need to be known in advance these could be transaction-based or fixed.

Capacity can be scaled to suit the company. The alternative of having an in-house facility could not be scaled as easily.

Cloud is particularly suitable where an organisation needs to trial a particular type of software, rather than buy it first. This might be useful for a company planning to expand.

(**8 marks**. Some examiner discretion)
(12+5+8 = 25 marks)

Examiners' comments

This question concerned the communication of IT services to users unfamiliar with computer jargon.

Few candidates gained full marks for Part a), as the descriptions provided for the three types of services were confused, inaccurate or written in technical language. Many candidates took inspiration from the name of the service type and confined their descriptions to a rearrangement of words. For example, there is evidence that "infrastructure as a service" was typically described as "a service where the infrastructure is supplied by the cloud provider….". No marks were awarded for this type of answer.

Candidates generally achieved some marks for Part b); however, to gain full marks, answers were required which contained the likely charging for the different service types, including fixed prices, minimum charging and types of usage charge.

Part c) was answered well, with candidates unable to gain good marks if the explanations were too narrow or relied on technical language.

A3.

"Bring your own device (BYOD) is a policy of allowing employees to bring personally-owned mobile devices to their place of work and use them to access both the organisation's computer systems and their personal applications, such as social media, word processing and email."

In the context of computer services, discuss the advantages and disadvantages of introducing a BYOD policy into a large organisation.

(25 marks)

Indicative answer points:

Answers would be expected to include most of the following, or similar:

Advantages

1) Cost savings. A BYOD policy enables a business to save money on high-priced devices that it would normally be required to purchase for its employees. Employees may take better care of devices that they view as their own property

2) Increased Flexibility. Allowing workers to bring their own devices into the workplace can drastically increase workplace flexibility and worker productivity. For organisations that still utilise desktop computers, a BYOD policy would, with little effort, allow workers to work remotely. If employees travel in the course of their work, they will not be required to transport multiple devices to satisfy their personal and work needs, as they will have everything, they need in one device.

3) Increased Productivity. Because workers will always have their device with them, whether at work or at home, they will be more available and be able to continue their work seamlessly, wherever they are. Employees needing to leave work early for personal reasons can continue their work at home. Eliminating barriers between home and work will allow employees access to all necessary information and can lead to increased productivity.

4) Attractiveness to job seekers. A BYOD policy can potentially lead to job seekers choosing your company over another.

5) DR. Avoids having to provide terminals/PCs in DR standby centre.

Disadvantages

1) Data Security. Allowing employees to use their own devices for work purposes could lead to company data being compromised. The problem lies in trying to find the best method to allow users to access all data necessary, while keeping that data safe and secure. Since BYOD is a relatively new concept for organisations, there is no clear-cut best policy or practice for maintaining organisational data security. Organisations are beginning to establish guidelines and policies to better manage BYOD security but determining which is best for an organisation may incur unwanted costs.

2) Cost. There could be cost savings for organisations but implementing guidelines and security for the devices will have costs.

3) Privacy. Privacy operates two ways: for the employer and the employee. The device an employee uses for work will also be the same computer used to surf the web or log into Facebook and Twitter. Because of this, employees are wary about their employers being able to "spy" on them and have access to their personal passwords, websites, and information.

4) What happens when an employee leaves? Since employees would be using their own devices, organisations may worry about retrieving all company data and information if an employee were to leave or be fired. Also, most organisations only allow company related information to be saved and edited on their own servers or require employees to use secure cloud based sharing software such as Dropbox to share and edit documents.

(1 mark for each advantage or disadvantage, plus further marks for extension points. Maximum 25 marks)

Examiners' comments

This was the most popular question. Many candidates had plenty to write about and gained high marks as a result. There is evidence that this was a topic that engaged most of the candidates.

The best candidates provided insightful answers, including the advantages of BYOD to the organisation in the event of a disaster and issues involving employee confidentiality, as opposed to the more usual discussions about employer confidentiality.

Section B

B4. You are the IT services manager for an innovative high technology company based in the UK. The organisation plans to invest heavily in high power server technology to support a new computation intensive research direction. Given the nature of the research, the company insists that all data processing is carried out on-site.

You have been asked by the Chief Executive to lead the design and development of a new facility to house this large server population.

a) Write a non-technical report, which will be submitted to the Management Board, justifying what you consider to be the THREE key physical design criteria for the facility. **(12 marks)**

b) For ONE of the criteria, write a technical brief which discusses how this issue should be addressed in the specification, development and on-going management of the new facility. **(13 marks)**

Indicative answer points:

a) Note that these are PHYSICAL criteria – not the discussion of a favourite processor technology or operating system

- Location of facility close to staff access and services
- Physical security – due to high value systems
- Provision of services – water, power, cooling – and the protection of these services
- Management of physical risk – flooding, severe weather, fire, chemical risks.

b)

- Should be in report format to obtain good marks.
- Note that the three sections – specification, development and on-going management – should each be addressed in appropriate detail.

Examiners Comments:

This question was attempted by just under half the candidates. The quality of the answer given by those attempting the question was extremely variable, with a few very good answers being seen. Sadly, a large number of answers were of a poor quality. There is evidence that many candidates were not able to respond appropriately to a question of this kind. A number of answers sought to include material that did not correspond closely enough to the question being asked – in an apparent attempt to make very generic, and often poorly presented, text "fit" the answer. These answers inevitably obtained only a few marks.

B5.

The new Chief Executive of your company has come from an organisational environment where many non-critical IS/IT services are routinely outsourced. This is something that has never been done in your organisation, and the IS/IT staff are concerned that they are going to lose their jobs.

The Chief Executive has asked you, the Director of Information, to carry out an in-depth review of current IT provision with the aim of identifying any areas which would be immediately suitable for outsourcing. The objective is to free staff from routine tasks - enabling them to address business development tasks instead.

a) Write a memo to the IT staff, which clearly explains the rationale for the review and describe how they can most effectively contribute to the process.
(12 marks)

b) Produce a document which defines the review process. It should aim to address the legitimate concerns of the staff, while effectively gathering the information required by the Chief Executive.
(13 marks)

Indicative answer points:

a)

- Memo format is required.
- The aim is to reassure and gain the cooperation of the staff – if this is not obtained, the review may well be not fit for purpose.
- Ensure you explain that the object is to enhance their role – not render it obsolete.

b)

- For the review to be useful, the way the information is gathered is critical.
- The protocol should be able to be used as a template for discussion across a wide range of IS/IT activities.
- The format of the protocol should reflect these requirements.

Examiners Comments:

This question was attempted by nearly three quarters of candidates. Many answers were not presented in the required format and were unable to gain marks allocated for the correct format. A question of this sort requires credible and convincing use of language as well as an understanding of the issues raised in the scenario. Answers provided demonstrated that many candidates were not comfortable operating in such an environment and appeared ill-prepared for this challenge. The intent of the question was to get the candidate to demonstrate how they would perform in professional practice – and the answers were marked accordingly.