

General Certificate of Education
June 2003
Advanced Level Examination



INFORMATION AND COMMUNICATION TECHNOLOGY ICT5
Unit 5 Information: Policy, Strategy and Systems

Tuesday 24 June 2003 Morning Session

In addition to this paper you will require:
a 16-page answer book.

Time allowed: 2 hours

Instructions

- Use a blue or black ink, or ball-point pen. Use pencil only for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is ICT5.
- Answer **all** questions.

Information

- The maximum mark for this paper is 90.
- Mark allocations are shown in brackets.
- The use of brand names in your answers will **not** gain credit.
- You are reminded of the need for good English and clear presentation in your answers. Question 9 should be answered in continuous prose. The Quality of Written Communication will be assessed in this answer.

Answer **all** questions.

- 1 Differentiate between *alpha-testing* and *beta-testing*. (4 marks)
- 2 A soft drinks manufacturer uses one particular hardware, operating system and applications package combination throughout its organisation. One department finds that this particular set-up does not suit its needs. The manager of this department decides to purchase different hardware and operating system, and the specialist applications that he requires.
- (a) Describe **two** reasons why the manager's action may not be advisable. (4 marks)
- (b) A large organisation should have an Information Technology Management Policy.
Give **two** reasons why such a policy is necessary. (2 marks)
- 3 A school has approached you for advice as it plans to develop a computer-based learning environment for its pupils aged from 6 to 10.
- (a) Describe **two** factors the school should consider whilst designing the interface for the computer system. (4 marks)
- (b) State, with a reason:
- (i) **one** example of a suitable input device that could be used by the pupils; (2 marks)
- (ii) **one** example of a suitable output device that could be used by the pupils. (2 marks)
- 4 A large international corporation uses an extensive wide area network, linking all its offices around the world to exchange data and information.
- Describe **four** ways in which the company can use its computer network to support the exchange of data and information. (8 marks)

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- 5 A travel company is reviewing the current disaster recovery plan for its computer-based booking system. Bookings come into the company by various means, including via post, over the telephone and via the Internet.
- (a) State, with a different reason for each one, **three** possible weak points in the booking system. *(6 marks)*
 - (b) Besides the frequency and content of the backups, and the media used, describe **two** other issues that should be considered when reviewing the backup strategy. *(4 marks)*
- 6 There are several types of human/computer interface.
- (a)
 - (i) Describe **one** feature of a command line interface. *(2 marks)*
 - (ii) Name, giving **one** reason, **one** application where this interface would be appropriate. *(2 marks)*
 - (b)
 - (i) Describe **one** feature of a menu driven interface. *(2 marks)*
 - (ii) Name, giving **one** reason, **one** application where this interface would be appropriate. *(2 marks)*
 - (c)
 - (i) Describe **one** feature of a graphical user interface. *(2 marks)*
 - (ii) Name, giving **one** reason, **one** application where this interface would be appropriate. *(2 marks)*
- 7 A car insurance company needs to replace the computer application that it uses to provide quotations. The company decides to look at several software packages that may provide this replacement.
- (a)
 - (i) Why should evaluation criteria be established before comparing the packages? *(1 mark)*
 - (ii) “Functionality” and “User Friendliness” have already been established as important criteria for success. Name **two** other criteria that could also be used in this situation. For each criterion, describe why it is relevant to this company. *(6 marks)*
 - (b) The company decides that there is no readily available application that exactly fulfils its needs. It therefore decides to employ an external development team to provide a bespoke software solution.
 - (i) State **one** advantage of this approach. *(1 mark)*
 - (ii) State **one** limitation of this approach. *(1 mark)*
 - (c) What is the purpose of using a team to develop a software solution rather than just one individual? *(2 marks)*

8 A large supermarket chain is about to introduce a website so that customers can purchase their shopping on-line.

- (a) During testing, it is discovered that the site cannot be viewed correctly using certain browser software.

Describe why this may be a problem for the supermarket. (2 marks)

- (b) This system will involve extensive financial transactions. The retailer is aware that security is an issue.

Describe **two** measures that can be taken to ensure that this facility is secure. (4 marks)

- (c) In addition to a computer fitted with a modem, and a knowledge of the site address, give **two** items that are necessary for the customer to be able to connect to the retailer's website. (2 marks)

- (d) Explain how protocols and addressing mechanisms are used to support the World Wide Web. (3 marks)

9 A charitable organisation needs to coordinate all the data that it holds at several locations across the world. They have discovered that there is often conflicting data held in different sites, and time is wasted in reconciling them. A consultant has recommended that they use a relational database management system. The organisation has accepted this advice and is now advertising for the post of database administrator. In the advertisement it states that each applicant should write a supporting letter. You have decided to apply for this post.

Write a letter in support of your application, paying particular attention to:

- the role of a database administrator;
- how a relational database management system can help with this problem;
- the advantages of a client/ server solution to this problem.

The Quality of Written Communication will be assessed in your answer. (20 marks)

END OF QUESTIONS