General Certificate of Education
June 2006
Advanced Level Examination

AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

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

Tuesday 20 June 2006   9.00 am to 11.00 am

For this paper you must have:
- a 16-page answer book

Time allowed: 2 hours

Instructions
- Use 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.
- The marks for questions are shown in brackets.
- You will **not** gain credit for the use of brand names in your answers.
- 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.

ICT5

Answer **all** questions.

1 Give **four** resources that could be charged for by using network accounting software. *(4 marks)*

2 An ICT manager has chosen some alternative software solutions for evaluation.

   Name and explain **three** criteria that might be used in the evaluation. *(6 marks)*

3 (a) Organisations make use of the Internet for many activities.

       State **three** such legitimate activities. *(3 marks)*

   (b) The World Wide Web is supported by a network infrastructure. This consists of a number of components.

       (i) Describe the role of a router. *(2 marks)*

       (ii) Describe the role of a web server. *(2 marks)*

4 There are different ways by which an organisation may obtain a software solution.

   Explain **one** benefit to an organisation of:

   (a) purchasing an 'off-the-shelf' package; *(2 marks)*

   (b) leasing software under a licence; *(2 marks)*

   (c) using an in-house development team to create a bespoke solution; *(2 marks)*

   (d) using an external software house to create a bespoke solution. *(2 marks)*

5 A software house sells an Operating System (OS) for PCs.

   (a) Although alpha and beta tested before release to the general public, the OS sometimes fails to function correctly.

       Give **three** reasons why this may happen. *(3 marks)*

   (b) From time to time during the life of the OS, the software house distributes maintenance releases.

       Describe **two** reasons why the maintenance releases may be necessary. *(4 marks)*

6 College staff can obtain the A Level specifications for their subjects from the AQA Website. These are provided as Portable Document Format (PDF) files.

  (a) Give **three** possible reasons why PDF has been selected as the format in which to provide these files. *(3 marks)*

  (b) The AQA Website has an Internet Protocol (IP) address, which has the form: *nn.nnn.nnn.nnn* .

     Explain the role of IP addresses in the functioning of the Internet. *(2 marks)*

  (c) College staff do not need to know the IP address of the AQA website, as they can use the Uniform Resource Locator (URL) instead – http://www.aqa.org.uk .

     Explain **two** benefits to the college staff of using the URL. *(4 marks)*

7 A relational database is to be designed for a hospital.

  (a) State **four** reasons why normalisation should be used in the design process. *(4 marks)*

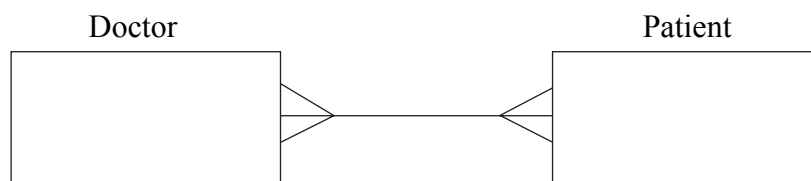 (b) In the context of a hospital, explain the following terms:

    (i) *entity*; *(2 marks)*

    (ii) *attribute*; *(2 marks)*

    (iii) *relationship*. *(2 marks)*

  (c) **Figure 1** is an entity-relationship model of some of the hospital's data.

Figure 1

    (i) What type of relationship does **Figure 1** show? *(1 mark)*

    (ii) Describe the relationships shown in **Figure 1**. *(2 marks)*

    (iii) What problem would be experienced when constructing a relational database using this model? *(1 mark)*

    (iv) Draw an alternative entity-relationship diagram that removes the problem you stated in answer to part (iii), above. *(3 marks)*

Turn over ▶

8 A chain of high street clothes shops has a large information system.

Describe, using examples, **four** factors that should be considered when devising a backup strategy for the clothes shops' data. *(12 marks)*

9 The owner of a large private hotel has been advised to purchase a new ICT system. He is concerned that he could be taken advantage of by ICT suppliers, as he has little knowledge of ICT.

He asks you, as an independent consultant, to prepare some guidelines for him so that he can understand the issues involved.

Write a report for the owner, paying particular attention to:

- system requirements;

- user interface requirements;

- reliability of the system.

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

END OF QUESTIONS