407/01

INFORMATION AND COMMUNICATION TECHNOLOGY ICT1

INFORMATION SYSTEMS

P.M. THURSDAY, 8 June 2006

(1½ hours)

ADDITIONAL MATERIALS

In addition to this examination paper, you will need an 8 page answer book.

INSTRUCTIONS TO CANDIDATES

Answer **all** questions.

The intended marks for questions or parts of questions are given in brackets [ ]. You are advised to divide your time accordingly. The total number of marks available is 60.

You are reminded of the necessity for good written communication and orderly presentation in your answers.

SECTION A

Answer **all** *questions*.

1. *(a)* Define the term *data* and illustrate your answer with an example. [2]

(b) Explain the steps needed to turn *data* into *knowledge*. [2]

(c) The Data Protection Act (DPA) was introduced because people were concerned about data being held about them on computer files.
Give **two** of the concerns addressed by the Data Protection Act. [2]

2. Good quality information must use *accurate* and *valid* data.

(a) Define the term *accurate data*. [1]

(b) Data may pass a *validity* check but still be *inaccurate*. Using a suitable example, explain the difference between validity and accuracy. [2]

(c) In addition to being *accurate and valid* outline **two** other factors which would give good quality information. [2]

(d) Discuss, using an example, one way in which good quality information can add value to an organisation by aiding the decision making process. [2]

3. A student has been asked to find information on earthquakes and volcanoes. One method of finding such information is to use text books.

Name **two** *different* electronic methods of finding this information and for **each** give **one** advantage of using this method over using a text book. [4]

4. ICT is widely used in medicine.

(a) Doctors use spreadsheet software to process patient data. Define **each** of the following features of the spreadsheet software and give an appropriate example of how it can be used in *processing patient data*.

(i) Statistics [2]

(ii) Graph [2]

(b) Describe how the following are used *for patient care* in medicine.

(i) Computer control [2]

(ii) Barcode systems [2]

5. Good Human Computer Interfaces (HCIs) are designed so they have features suitable for the intended user.

    (a) Graphical User Interfaces (GUIs) are suitable for the non-expert user.
           Give **two** features of GUIs which make them suitable for the non-expert user. [2]

    (b) Name a *different* suitable HCI for **each** of the following:
       (i)   A computer programmer; [1]
      (ii)   A person with special needs. [1]

6. A design team uses Computer Aided Design (CAD) and Computer Aided Manufacture (CAM) software in designing its products.

    (a) Describe, using a suitable example, the role of CAD and CAM in design. [3]

    (b) One advantage of using CAD software to design products is the ability to have a 3D view of the product.
           Discuss *other* advantages and disadvantages to the design team of using CAD software. [3]

7. Banks must protect their online banking systems from both deliberate crimes and accidental destruction of data.

    (a) Describe, using examples relating to online banking, **two** different crimes identified by the *Computer Misuse Act*. [4]

    (b) Describe suitable strategies the bank could use to prevent *accidental* loss or damage to data. [3]

Turn over.

SECTION B

*Answer **all** parts of this question.*

8. A large supermarket company has many shops throughout the country. The company uses both a Local Area Network (LAN) and a Wide Area Network (WAN).

(a) Explain the difference between a LAN and a WAN. [2]

(b) Describe a suitable role for a LAN in the supermarket stock control system. [2]

(c) Describe a suitable role for a WAN in the supermarket stock control system. [2]

(d) Discuss, using specific examples, the advantages of using LANs and WANs:

  (i)   for the supermarket customer; [3]

  (ii)   for the supermarket manager. [3]

*Use distinctly different examples in **each** case.*

(e) The company also makes use of e-commerce.
Discuss **two** advantages and **two** disadvantages of using e-commerce for the company. [4]

*Use distinctly different examples in **each** case.*

Quality of Written Communication [2]