GCE A level

417/01

INFORMATION AND COMMUNICATION TECHNOLOGY
ICT4
USE AND IMPACT OF ICT

P.M. FRIDAY, 13 June 2008

$1\frac{1}{2}$ hours

ADDITIONAL MATERIALS

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

INSTRUCTIONS TO CANDIDATES

Answer **all** questions in Section A and **one** question in Section B.

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. The Human Computer Interface (HCI) is an important part of an ICT system.

   (a) Other than on screen help, state **two** factors which should be taken into account when *designing* a good user interface.
   Explain why **each** factor is important. [4]

There are different types of HCI.

   (b) Describe a different, sensible use and benefit of the following types of HCI.

   (i) Biometric. [2]

   (ii) Voice. [2]

2. Network topologies have different properties.

   (a) Draw and label a ring network. [2]

   (b) State **two** advantages of a star network. [2]

   (c) Other than cost or topology issues discuss in detail **three** factors that will influence the choice of a network. [6]

3. Southland Council has found the need for an Intranet.

   (a) Define the term 'Intranet' and describe a benefit of using this Intranet. [2]

   (b) Describe **two** methods a councillor could use to quickly find information on the Intranet. [4]

4. A large college has invested heavily in their ICT system for administration.

   The college is undertaking a *risk analysis*.

   (a) Describe in detail **two** of the factors the college should take into account when deciding how to develop, control and minimise the *risk* to data. [4]

   (b) Identify a problem that could arise if steps are not taken to minimise the risk, discuss its possible impact and describe in detail a suitable strategy to overcome it. [4]

5. The Internet, whilst bringing a number of benefits to society has also raised a number of issues. Discuss in detail moral, social or ethical issues associated with the use of the Internet. Illustrate your answers with a distinctly different example of **each** issue. [8]

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SECTION B

*Answer **either** question 6 **or** question 7.*

6. *(a)* A large medical practice uses a relational database management system for storing *patient* records and running their *appointment* systems. The practice has several *doctors* and many *patients*. Each *patient* can make one or more *appointments* with a *doctor*. The practice receptionist records which *patient* has made an *appointment* with which *doctor* and the time and date of the *appointment*.

(b) (i) Explain what is meant by the term relational database. [2]

(ii) One table in this database could be

DOCTOR (<u>Doctor Code</u>, Name, Room, Tel Num)

Give **two** other suitable tables you could expect to see in this database, identifying any primary or foreign keys. [6]

(c) Distributed databases are now widely used.

(i) Explain what is meant by the term distributed database and discuss their advantages and disadvantages in general terms. [6]

(ii) Research is ongoing on the use of Electronic Patient Records (EPR). Discuss the specific benefits that the EPR system would bring to medicine and the main concern about its use. [4]

7. Many businesses use the Internet for commercial activity.

(a) Describe the facilities a company has to put in place in order to turn its web site into an e-commerce operation. [4]

(b) Evaluate the impact that e-commerce has had on businesses and their customers. [14]

Quality of Written Communication [2]