



GCE AS/A level

417/01

**INFORMATION AND
COMMUNICATION TECHNOLOGY**

ICT4

USE AND IMPACT OF ICT

P.M. FRIDAY, 12 June 2009

1½ 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. A good Human Computer Interface (HCI) is vital for an information system to work well. Describe **four** factors which should be taken into account when designing a good HCI, explaining why **each** factor is important. [4 × 2]

2. A sports shop wishes to set up an e-commerce system to offer its customers an on-line shopping service.
 - (a) Other than hardware, describe in suitable detail **four** requirements for a successful on-line shopping service. [4]
 - (b) Discuss the advantages and the disadvantages of on-line shopping to both the customer and the business. [6]

3. A County Council has decided to introduce a code of a conduct for all its ICT users.

Describe **three** problems which might have prompted this decision and suggest suitable guidelines which could be included in the code of conduct, to avoid such problems in the future. [3 × 2]

4. Recently the government urged internet service providers to ban websites which promote illegal activities.

Discuss the legal, moral and ethical issues raised by this request. [8]

5. A national building society wants to ensure that its financial systems are secure against fraud, as they are used to transfer money and financial information.

Other than needing a code of conduct, describe **four** factors that should be included in an ICT security policy for this company. [8]

SECTION B

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

6. A business has thirty staff each of whom have their own stand-alone computer. The business is considering networking all these computers but is concerned at problems this may create.

As an ICT consultant you have been asked to prepare a report for the company's owners, outlining the issues that networking the computers could bring.

Your report should include:

- The benefits and drawbacks of moving to a networked system
- The factors involved in choosing a network
- The extra communications facilities and possible changes in working practices that this network could provide. [18]

Quality of Written Communication. [2]

7. (a) A school uses a relational database management system for storing pupil subject choices. A *pupil* may take many *subjects* taught by many *teachers*.

(i) Explain what is meant by a relational database. [2]

(ii) One table in this database could be:

TEACHER (Teacher Code, Name, Room)

with Teacher Code being the primary key.

Give **two** other suitable tables you could expect to see in this database, identifying any primary and foreign keys. [8]

(iii) Explain why relational databases are more secure than a flat file approach for storing subject choices. [2]

(b) (i) Explain, using a suitable example, what is meant by a distributed database. [2]

(ii) Hospitals use distributed medical databases. Describe the problems that could arise when using such distributed medical databases. [4]

Quality of Written Communication. [2]