GCE A level

1243/01

INFORMATION AND COMMUNICATION TECHNOLOGY
IT3
USE AND IMPACT OF ICT

P.M. TUESDAY, 12 June 2012

2½ hours

ADDITIONAL MATERIALS

You will need a WJEC 20-page booklet (pink), which has been specifically designed for this examination. No other style of answer booklet should be used. Should you run out of space, use a standard 4 page continuation booklet.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use a gel pen or correction fluid.

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

Use both sides of the paper. Write only within the white areas of the book.

Write the question number in the two boxes in the left hand margin at the start of each answer.

Leave at least two line spaces between each answer.

The intended marks for questions or part questions are given in brackets [ ]. You are advised to divide your time accordingly. The total number of marks available is 90.

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

Quality of written communication will be assessed in question 14.

SECTION A

Answer **all** *questions.*

| 0 1 | Discuss the different needs of a novice and an expert computer user, and describe how they could be met when designing a suitable *Human Computer Interface* (HCI). [5] |

| 0 2 | Discuss the needs of a disabled computer user and describe how they can be met when designing a suitable *Human Computer Interface* (HCI). [4] |

| 0 3 | Describe what is meant by the term *network topology*. [2] |

| 0 4 | Other than *topology* or *cost*, explain in detail **three** other factors which influence the choice of a network. [6] |

| 0 5 | *Peer-to-peer* and *client server* networks are two types of network. Compare and contrast these two types of network. [6] |

| 0 6 | Organisations are often concerned that some of their employees misuse their facilities. Describe **three** distinct ways that an employee can misuse ICT facilities. [3] |

| 0 7 | Most organisations now have a code of conduct to discourage their employees from misusing the ICT facilities. Describe **four** distinct guidelines a code of conduct should contain. [4] |

| 0 8 | A shop selling memorabilia already has a website and computer systems. The shop owner wants to expand and offer the customers an on-line shopping service. Describe in detail **four** main requirements needed for an efficient on-line shopping service. [4] |

| 0 9 | Discuss the advantages and disadvantages of on-line shopping to both the *business* and the *customer*. [7] |

| 1 0 | Parents are concerned about the lack of control of the Internet. Discuss, using suitable examples, their likely concerns. [8] |

| 1 1 | A Bank is very dependent on its ICT system for its administration. The Bank is undertaking a *risk analysis*. Describe in detail **two** of the factors the bank should take into account when deciding how much to spend to control and minimise the risk to data. 2 x [2] |

| 1 2 | A bank uses File Transfer Protocol (FTP). Describe in detail what is meant by FTP, state a use and give an advantage to the bank of using FTP. [4] |

| 1 3 | A systems analyst is called in to give advice after a new ICT system is implemented. Describe, using examples, **four** *maintenance issues* that could have arisen. [8] |

| 1 4 | Many organisations now depend on their Management Information System (MIS) for the success of their businesses. Discuss using appropriate examples **four** of the features of an effective MIS system. [8] |

SECTION B

*Answer **either** questions 15, 16, 17 and 18 **or** Questions 19 and 20.*

| 1 | 5 | Explain what is meant by a relational database. [2] |

| 1 | 6 | A DVD Rental Company uses a relational database management system for organising its lending. For simplicity, a person may only borrow one DVD at a time. Part of one table in the DVD Rental Company database could be:

BORROWER [BorrowerID, FirstName, Surname, Borrower Type, Address1, ...]

with BorrowerID being the primary key.

Give **two** other suitable tables you could expect to see in this database, identifying any primary and foreign keys. [7] |

| 1 | 7 | Relational databases are normalised to work effectively. Explain what is meant by the term *data normalisation*. [2] |

| 1 | 8 | Some companies now use *distributed databases*. Explain what is meant by the term *distributed databases* and explain their advantages and disadvantages. [6] |

| 1 | 9 | With the increase in the use of computing systems most organisations have adopted ICT security policies.
Discuss in detail **three** *different* types of potential threats to data. For each type of threat, describe the possible consequences of the destruction of data. You need to use **distinctly** different examples to illustrate your threats. [9] |

| 2 | 0 | Discuss **four** possible operational procedures for preventing misuse of data. Use distinct examples to illustrate your procedures. [8] |