



GCE A level

1243/01



S16-1243-01

**INFORMATION AND
COMMUNICATION TECHNOLOGY – IT3
Use and Impact of ICT**

A.M. WEDNESDAY, 22 June 2016

2 hours 30 minutes

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 13.

SECTION A

Answer all questions.

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| 0 | 1 | An expert user and a novice user have differing needs when using ICT. Explain what these differing needs are and then describe how <i>Human Computer Interfaces</i> (HCI) can be designed to satisfy these needs. [5] |
| 0 | 2 | Other than speech recognition or voice output, describe using examples, the features of a Human Computer Interface that would help a disabled person use a computer. [4] |
| 0 | 3 | A large organisation has decided that they need to update their network. Other than cost or the size of the organisation, describe in detail, three factors that they have to take into account when choosing their new network. [3×2] |
| 0 | 4 | <i>Ring</i> and <i>star</i> topologies are still used when designing networks; one benefit of star networks is that they are fault tolerant. Discuss other relative <i>benefits</i> and <i>drawbacks</i> of using these topologies. [6] |
| 0 | 5 | Many large IT projects now make use of distributed computing. Define what is meant by <i>distributed computing</i> and describe two applications which make use of it. [5] |
| 0 | 6 | Describe two advantages and two disadvantages that the use of distributed computing brings to large IT projects. [4] |
| 0 | 7 | A retail company already has a network and a basic website. Other than <i>order tracking</i> or <i>email confirmation</i> , describe in detail, the four main requirements that they need to have in place to allow them to offer on-line shopping. [4] |
| 0 | 8 | Many devices are used to give mobile access to the internet. Describe two advantages and two disadvantages to an employee of having mobile access to the Internet. [4] |
| 0 | 9 | Individuals can now apply to have links to content about them removed from search engines. Discuss why individuals might want these links removed and any concerns individuals or society might have about this issue. [6] |
| 1 | 0 | Employees are required to abide by a code of conduct with regard to the use of a company's ICT facilities. Other than <i>penalties</i> , give three examples of what should be contained in a code of conduct and illustrate each of these with a suitable different problem they are designed to overcome. [3×2] |
| 1 | 1 | A multinational bank is carrying out a risk analysis. <i>Other than the risks themselves</i> , describe in detail three of the factors the company should take into account when deciding how to minimise the risk to data. [3×2] |
| 1 | 2 | A poor <i>Management Information System</i> (MIS) can be disastrous for an organisation. Describe four of the factors which can make a MIS poor and four factors which can make a MIS good. [8] |
| 1 | 3 | During the <i>design</i> period of the <i>System Development Life Cycle</i> a system analyst has to look at a number of aspects. Other than <i>design of input methods</i> , describe in detail four aspects which should be considered when designing a new computer system. [8] |

SECTION B

Answer **either** questions 14, 15 and 16 **or** questions 17, 18 and 19.

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Following a company reorganisation, the introduction of new IT systems has a big impact upon the workforce and working patterns. Describe in detail **four fears** the workforce might have when a new IT system is introduced into their workplace. [8]

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Organisations are aware that data can be lost due to *accidental misuse*. Explain **two different** methods that the organisation could use to prevent it. [2]

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Organisations are very concerned about the safety of their data. Describe in detail **four** methods that could be used to prevent the loss of data due to *deliberate crimes* or *misuse*. [4×2]

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A relational database is made up of entities, attributes and relationships. Explain what is the meaning of each of the following terms: *entity*, *attribute* and *relationship*. [3]

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A hospital spinal unit stores patient records using a relational database. A patient is allocated to a ward and has a physiotherapist allocated to them as well. One table in this database could be:

WARD (Wardid, WardName, Capacity, FreeBeds)

With Wardid being the primary key.

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

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Describe in detail, **four** factors which make a relational database more efficient when compared with a flat file database. [8]

END OF PAPER