



GCE A level

1243/01

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

P.M. TUESDAY, 11 June 2013

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 13.

SECTION A

Answer **all** questions.

0	1	Describe four factors that should be taken into account when designing a Human Computer Interface (HCI) that could be used by a young child learning to read. [4]
0	2	A good HCI is important. Discuss the different requirements of <i>an expert user</i> and <i>an adult novice user</i> and describe how a well designed HCI can satisfy these needs. [6]
0	3	A national bank wants to ensure that its financial systems are secure against attack. Other than <i>code of conduct</i> , describe four factors that should be included in the bank's security policy. [8]
0	4	An international company makes use of <i>File Transfer Protocols</i> (FTPs). Describe in detail what is meant by FTP. Give one example of its use and describe one advantage for the company. [4]
0	5	A company is considering changing its network. Other than <i>topology issues</i> , describe in detail three factors that will influence the choice of a network. [6]
0	6	A small business only has <i>dialup</i> access to the Internet. It is considering signing up for <i>broadband</i> . Discuss the relative advantages and disadvantages that dialup and broadband give the business. [4]
0	7	A network manager uses <i>remote management</i> when managing the network. Describe four tasks that the network manager could do using remote management. [4]
0	8	Changes in modern technology have led to an increase in teleworking. Discuss the advantages and disadvantages to both employees and employers of teleworking. [8]
0	9	The Internet has helped the increase in distributed computing. Explain what is meant by <i>distributed computing</i> . [3]
1	0	Describe briefly an application which uses distributed computing. [2]
1	1	Discuss the advantages and disadvantages of distributed computing. [4]
1	2	Most organisations could not operate without a good Management Information System (MIS). Define what is meant by an MIS and describe the factors which make an MIS good or poor. [10]
1	3	A systems analyst is investigating a company with regard to creating a new ICT system. Describe three methods she would use to gather information about the existing system. [9]

SECTION B

Answer **either** question 14 or questions 15 to 19.

1	4
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“The growth in social networking sites and other entertainment sites has led to many concerns about the privacy, security and abuse of personal data on the Internet.”

Describe using suitable *different* examples, some of these concerns.

[18]

1	5
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A Hospital uses a relational database for storing patient records. Explain what is meant by a relational database. [2]

1	6
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Data consistency, Data redundancy, Data integrity and *Data independence* are all terms associated with relational databases. Explain what each of these **four** terms means. [4]

1	7
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Consultants and patients are allocated to wards but each patient has only one consultant and each ward has their own consultant. One table in this database could be:

WARD(Wardid, WardName, NumOfBeds)

With Wardid being the primary key.

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

1	8
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Describe what a *data warehouse* is and give an example of how a company might use it. [3]

1	9
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Explain what is meant by data mining and give a detailed example of how a company might use it. [3]



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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.

- 01 Describe FOUR factors that should be taken into account when designing a Human Computer Interface (HCI) that could be used by a young child learning to read. [4]
- 02 A good HCI is important. Discuss the different requirements of AN EXPERT USER and AN ADULT NOVICE user and describe how a well designed HCI can satisfy these needs. [6]
- 03 A national bank wants to ensure that its financial systems are secure against attack. Other than CODE OF CONDUCT, describe FOUR factors that should be included in the bank's security policy. [8]
- 04 An international company makes use of FILE TRANSFER PROTOCOLS (FTPs). Describe in detail what is meant by FTP. Give ONE example of its use and describe one advantage for the company. [4]

- 05 A company is considering changing its network. Other than TOPOLOGY ISSUES, describe in detail THREE factors that will influence the choice of a network. [6]**
- 06 A small business only has DIALUP access to the Internet. It is considering signing up for BROADBAND. Discuss the relative advantages and disadvantages that dialup and broadband give the business. [4]**
- 07 A network manager uses REMOTE MANAGEMENT when managing the network. Describe FOUR tasks that the network manager could do using remote management. [4]**
- 08 Changes in modern technology have led to an increase in teleworking. Discuss the advantages and disadvantages to BOTH employees and employers of teleworking. [8]**
- 09 The Internet has helped the increase in distributed computing. Explain what is meant by DISTRIBUTED COMPUTING. [3]**
- 10 Describe briefly an application which uses distributed computing. [2]**

- 11 **Discuss the advantages and disadvantages of distributed computing. [4]**
- 12 **Most organisations could not operate without a good Management Information System (MIS). Define what is meant by an MIS and describe the factors which make an MIS good or poor. [10]**
- 13 **A systems analyst is investigating a company with regard to creating a new ICT system. Describe THREE methods she would use to gather information about the existing system. [9]**

SECTION B

Answer EITHER question 14 OR questions 15 to 19.

- 14 “THE GROWTH IN SOCIAL NETWORKING SITES AND OTHER ENTERTAINMENT SITES HAS LED TO MANY CONCERNS ABOUT THE PRIVACY, SECURITY AND ABUSE OF PERSONAL DATA ON THE INTERNET.”**

Describe using suitable different examples, some of these concerns. [18]

- 15 A Hospital uses a relational database for storing patient records. Explain what is meant by a relational database. [2]**

- 16 DATA CONSISTENCY, DATA REDUNDANCY, DATA INTEGRITY and DATA INDEPENDENCE are all terms associated with relational databases. Explain what each of these FOUR terms means. [4]**

- 17 Consultants and patients are allocated to wards but each patient has only one consultant and each ward has their own consultant. One table in this database could be:

WARD(Wardid, WardName, NumOfBeds)

With Wardid being the primary key.

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

- 18 Describe what a DATA WAREHOUSE is and give an example of how a company might use it. [3]

- 19 Explain what is meant by data mining and give a detailed example of how a company might use it. [3]