GCE A level

1243/01

INFORMATION AND COMMUNICATION TECHNOLOGY
IT 3
USE AND IMPACT OF ICT

A.M. THURSDAY, 23 June 2011

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

ADDITIONAL MATERIALS

In addition to this examination paper, you will need a 12 page answer book.

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 1 and **one** question in Section 2.

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 H.

SECTION 1

*Answer **all** questions.*

Question A. The Human Computer Interface (HCI) on a computer can be adapted for different tasks.

| 0 | 1 | Describe in detail, **three** factors, *other than layout appropriate to task*, using different examples that should be taken into account when designing a good HCI. [6]

| 0 | 2 | Describe the factors that should be taken into account when designing an appropriate layout of an HCI that would be used by a young child learning how to read. [4]

Question B. When designing a network for a company, the likely topology is one of the areas to be looked at.

| 0 | 3 | Compare and contrast the relative advantages and disadvantages of ring and star topologies.

[6]

| 0 | 4 | A network manager uses remote management when managing the network. Describe **four** tasks that the network manager could do using remote management. [4]

Question C. A large company has branches all over the UK and uses its ICT systems to manage customer records and all its financial dealings. The company's Data Officer has written a security policy to protect the data held by the company.

| 0 | 5 | Describe the use of user accounts and logs as a way of ensuring the confidentiality of customer records. [2]

| 0 | 6 | Explain **two** other factors which the company should take into account when designing its security policy. [4]

Question D. Some large data processing projects make use of *distributed computing.*

| 0 | 7 | Explain what is meant by distributed computing. [2]

| 0 | 8 | State the advantages and disadvantages of distributed computing. [4]

Question E. A multi-national company uses a website for its e-commerce activities.

| 0 | 9 | Define **two** methods by which a customer could find the website and explain how each might be used to find the website on the internet. [4]

| 0 | 10 | Describe the **four** main requirements the company has to put in place for this website to be used for interactive online shopping. [4]

Question F. The introduction of a new ICT system can cause a number of changes in the workplace.

| 1 | 1 | Describe **three** of the changes which are likely to be a cause of stress to the staff and the worries each might bring. [6]

| 1 | 2 | Describe, using examples, **two** things that management could do to lessen any worries that the staff might have about the introduction of the new system. [4]

Question G.

| 1 | 3 | Describe in detail **two** of the factors an organisation needs to consider when producing a risk analysis. [4]

Question H. A system analyst has just designed a new ICT system for an organisation.

| 1 | 4 | Discuss **two** of the different changeover strategies that the organisation could use for conversion to the new system. [6]

| 1 | 5 | After the new system is working, it will have to be maintained. Describe **two** different methods of system maintenance, illustrating each method with an appropriate distinct example. [6]

Question I.

| 1 | 6 | More and more organisations are now using *Management Information Systems (MIS)*. Describe using appropriate examples **three** factors that can lead to an effective MIS. [6]

Turn over for Section 2.

SECTION 2

Answer **either** *question* **J** *or question* **K**.

Question J. A public library in a large town uses a relational database for their book lending system. When a *borrower* takes out a *book*, the *loan* is recorded.

Relational databases hold the data in a number of tables. In this library system there is a table for Borrower, which is partially shown below:

BORROWER [BorrowerID, Surname, Firstname, ...]

where BorrowerID is the primary key.

| 1 | 7 | Explain what is meant by a *primary key* and a *foreign key*. [2]

| 1 | 8 | Give **two** other suitable tables, you would expect to see in this library loan system, identifying any primary or foreign keys. [7]

| 1 | 9 | Give **three** reasons why relational databases are more secure than the *flat file approach*. [3]

The Council's library service uses a data warehouse to hold details about all library loans throughout its area. Holding this large central store of data allows the library staff to use data mining.

| 2 | 0 | Describe what is meant by a *data warehouse* and explain the advantages it might give the library service. [3]

| 2 | 1 | Explain what is meant by *data mining* and give an example of how the library staff might use it. [3]

Question K.

| 2 | 2 | The use of the internet causes major moral, social and ethical issues. Discuss using appropriate examples these issues and the effect that they are having on modern society. [18]