SUBJECT:	INFORMATION TECHNOLOGY
DATE:	7th September 2013
TIME:	4.00 p.m. to 7.00 p.m.

Directions to Candidates

Note that marks will be awarded for neatness and accuracy. Workings are considered as part of the answer and must be shown.

Section A: COMPUTING PRINCIPLES

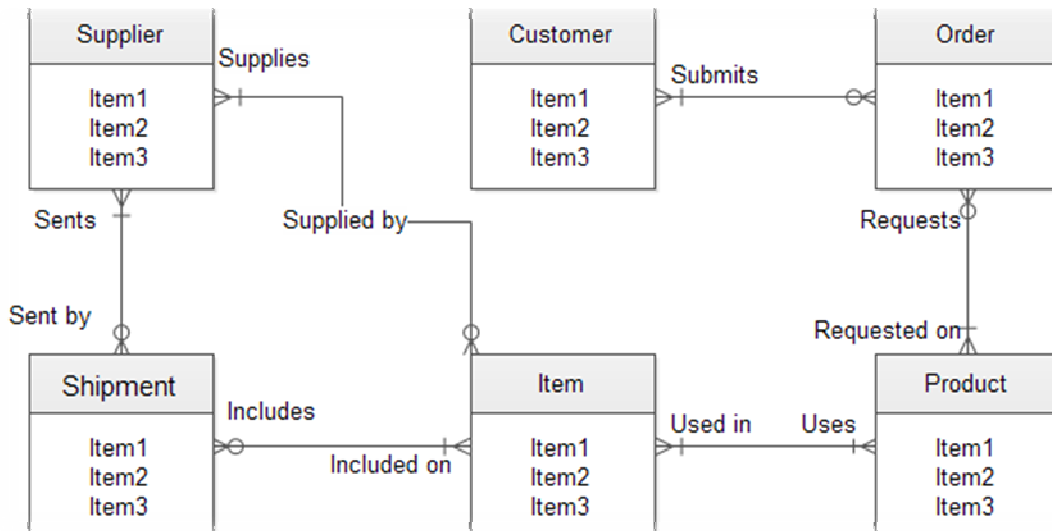*Answer Question A1 and any* **FOUR** *other questions from this section.*

Question A1
This question is compulsory.

Databases are found on most sites on the Internet today. Any site that has content that users can contribute and edit, or any site that has a login, or any site that has dynamic content, will almost certainly be backed by some sort of database. In actual fact, every website on the internet has its own database where it stores user information and other information like for example ebay.com; amazon.com; Wikipedia and Google. All these websites have their own database.

a) Bandwidth is one of the main concerns when choosing the right web hosting plan. Mention TWO resources that might affect bandwidth capacity. **[2marks]**

b) Mention THREE types of links that are found in a website. **[3 marks]**

c) Give ONE example of a web browser. Would a web site run on all browsers? Why? **[3 marks]**

d) A website is the company's on-line lobby. Mention TWO things that should be included in the home page to attract more visitors to the site. **[2 marks]**

This question continues on the next page.

e) Below is an example of a simple database for the business order process.

f) What is this type of diagram called and what does it do? **[2 marks]**

g) How many entities does it contain? **[1 mark]**

h) How many relationships are there in this example? **[1 mark]**

i) What is the difference between a *primary key* and a *foreign key*? **[2 marks]**

j) What is a database *query*? **[2 marks]**

k) State two roles of a database *administrator*. **[2 marks]**

Answer ANY FOUR of questions A2, A3, A4, A5, A6 and A7

Question A2
This question is about the role of Information and Communication Technology (ICT) today.

a) Give TWO advantages and TWO disadvantages for the following: **[6 marks]**
   i. E-Learning;
   ii. E-Government;
   iii. E-Business.

b) What is meant by the following: **[4 marks]**
   i. Computer Aided Design (CAD);
   ii. Simulation.

Question A3
This question is about Information: The tools required to handle it

a) What is the difference between *serial* and *parallel* transmission? **[4 marks]**

b) Mention TWO factors that affect the rate of transmission. **[2 marks]**

c) Which type of transmission method is used on all data transfer applications over long distances? Explain why this method is used. **[4 marks]**

Question A4
This question is about Internet Related Software

a) The Internet protocols consist of a suite of communication protocols, of which the two best known are the *Transmission Control Protocol (TCP)* and the *Internet Protocol (IP)*. The Internet protocol suite not only includes lower-layer protocols (such as TCP and IP), but it also specifies common applications such as electronic mail and file transfer.
  i. Define the terms in italics. **[2 marks]**
  ii. Name another TWO protocols that are included in the Internet protocol suite that have to do with electronic mail and file transfer. **[2 marks]**

b) Mention and explain TWO solutions one can use to protect oneself from internet fraud.
[4 marks]

c) Mention ONE advantage and ONE disadvantage of using the internet via a mobile phone.
[2 marks]

Question A5
This question is about Systems Development

a) The waterfall model is a sequential design process, often used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases.
  i. List (in their respective order) the stages that make up the Waterfall model. **[4 marks]**
  ii. Explain any THREE of the above stages. **[6 marks]**

Question A6
This question is about categories of software

a) Differentiate *bespoke* software from *generic* software. **[3 marks]**

b) Name and explain TWO components of an Operating System. **[4 marks]**

c) Mention THREE differences between *CLI* and *GUI*. **[3 marks]**

Question A7
This question is about database systems

A relational database is a set of tables containing data fitted into predefined categories.

    i.   Taking a typical business order entry database, name TWO tables one would find in it.

                  [2 marks]

   ii.   Identify THREE fields that would be found in each table.   **[3 marks]**

  iii.   What is *data redundancy*? How do Relational Databases decrease data redundancy?

                  [3 marks]

  iv.   What is meant by *data consistency* in a relational database?   **[2 marks]**

Section B: HUMAN COMMUNICATION & BUSINESS ORGANISATION

Answer question B1 and One other question from this section

Question B1

a)   Prepare a letter as a means of communication between an office employee and his manager whereby the employee is stating that he is unhappy with his current job role and would like a meeting with his manager to discuss this situation.   **[5 marks]**

b)   What is *mixed economy*?   **[1 mark]**

c)   Explain what a Private (Ltd) Company is as opposed to a Public (Plc) company.   **[4 marks]**

Answer ONE question from B2 and B3

Question B2

The Internet has become a major channel for communication for many people around the world. Briefly discuss how this channel has made this possible.   **[10 marks]**

Question B3

Delegation of authority is critical to the growth and expansion of an organisation, as long as it is matched by an equal amount of *responsibility* and *authority*. Discuss.   **[10 marks]**