IM 19.13m

SUBJECT:	INFORMATION TECHNOLOGY
DATE:	29th May 2013
TIME:	9.00 a.m. to 12.00 noon

Directions to Candidates

Candidates are recommended to demonstrate neatness and accuracy in their work. 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.

The Mathematics Question database is a web-based implementation tool that uses a typical relational database.

The idea behind this site is to make mathematics fun through challenging games and quizzes. It is aimed at basic math skills for grade 1 to grade 8 students. It offers over 5000 questions with answers.

The web-site is very user-friendly since it is aimed at students of a young age. It makes use of bright colours as well as a clear text font.

a) What would be the advantages of such a website? Mention at least THREE advantages. **[3 marks]**

b) A web-site is usually made up of web pages. Apart from the Home page, mention TWO other pages you would usually find in a web-site. **[2 marks]**

c) The site also makes use of *hyperlinks*. What do you understand by hyperlinks? **[2 marks]**

d) Before a web site is published it needs to pass through various testing. What is usually included in a Test Plan? **[2 marks]**

e) Most web designs use *HTML* code. What does HTML stand for? **[1 mark]**

f) The above website is a dynamic website; therefore it makes use of database technology. A database makes use of *Data Description Languages* (DDL) as well as *Data Manipulation Languages* (DML). Define the words in italics. **[2 marks]**

g) An *entity relationship diagram* is used to define the relationships as well as the *attributes* or *properties* of the data entities. Each and every *data entity* in a *database* has its own attribute and relationship with other data entities.

     i.   Define the words in italics. **[4 marks]**
    ii.   Mention TWO types of relationships. **[2 marks]**

h) *Validation rules* are important when creating a database. What do validation rules do? **[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) Computer-based crime is a growing problem in government as well as in the private sector.

     i.   What is meant by computer-based crime? **[2 marks]**
    ii.   Mention ONE problem for the government and ONE problem for the private sector because of computer crime. **[2 marks]**
    iii.   In order to reduce computer crime, an *information security policy* is usually used. Explain the term in italics. **[2 marks]**

b) Through ICT, even a small organisation can now cater to a worldwide market? Why is this so? **[4 marks]**

Question A3
This question is about *tools required to handle information*

a) Compare a hard-disk drive to a solid-state drive (SSDs) based on capacity, performance and cost. **[6 marks]**

b) Mention ONE advantage for each of the following input devices. **[4 marks]**

     i.   Digital Camera
    ii.   Barcode Reader
    iii.   Scanner
    iv.   Touch Screens

Question A4
This question is about *Internet related software*

a) Intranets and extranets are different types of communication. What is an **intranet** and what is an **extranet**? **[4 marks]**

b) What is the difference between a **domain name** and a **URL (Uniform Resource Locator)**? **[2 marks]**

c) List ONE advantage and ONE disadvantage of connecting to the Internet via a mobile phone. **[2 marks]**

d) E-mail is one of the services offered through the Internet. Give TWO other examples of an internet client application. **[2 marks]**

Question A5
This question is about *Systems Development*

a) Apart from on-line help, a new software package would usually include some form of documentation. Mention and explain at least TWO of these documentations. **[4 marks]**

b) Once a new system has been implemented, it should be evaluated.

     i.   What is the purpose of the *system evaluation*? **[2 marks]**
     ii.   What is the evaluation usually based on? **[3 marks]**

c) Mention ONE factor that needs to be considered during the feasibility study of a new system. **[1 mark]**

Question A6
This question is about *Categories of software*

a) The two main categories of software are *System Software* and *Application software*.
     i.   Define the words in italics. **[2 marks]**
     ii.   Give ONE example of System Software and ONE example of Application software. **[2 marks]**
     iii.   *Multitasking, multiprogramming* and *networking* are all different types of operating systems. Briefly explain each type of operating system. **[6 marks]**

Question A7
This question is about *Database Systems*

a) What is the role of the **Database Administrator** (DBA)? **[3 marks]**

b) What is a *data dictionary*? Mention at least TWO types of information found in a data dictionary. **[3 marks]**

c) The most common type of database is the relational database.

     i.   What is a *relational database*? **[1 mark]**
     ii.   *Entities*, *key fields* and *attributes* are used to describe a table in a relational database. Define the words in italics. **[3 marks]**

Please turn the page for Section B.

Section B: HUMAN COMMUNICATION & BUSINESS ORGANISATION

Answer question B1 and One other question from this section

Question B1

a) Telecommunication has a significant social, cultural and economic impact on modern society. Identify how teleworking and video-conferencing have affected the business environment.

[4 marks]

b) What is a sole-trader? Mention ONE advantage and ONE disadvantage of a sole-trader? **[3 marks]**

c) Social networking is one way of how a company spreads its information to suppliers and customers. Mention THREE other methods of how a company can spread its information. **[3 marks]**

Answer ONE question from B2 and B3

Question B2

a) *Verbal communication* skills are important in many aspects of our lives. Mention TWO advantages and TWO disadvantages of verbal communication. **[4 marks]**

b) *Written communication* also has great significance in today's business world. Give TWO advantages and TWO disadvantages of written communication as regards to business. **[4 marks]**

c) Business communication needs visual elements in order to be effective. Identify TWO visual communications that can be effective. **[2 marks]**

Question B3

a) If an organisation experiences change it may also need to implement new business strategies, which can create *resistance* among employees.
    i. Identify TWO possible factors that would have led to this change. **[2 marks]**
    ii. Mention THREE ways how the organisation can go about overcoming resistance to change. **[3 marks]**

b) What is the role of the *Chief Information Officer* (CIO) in an organisation? **[5 marks]**