IM19.22s

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

INTERMEDIATE MATRICULATION LEVEL
2022 SECOND SESSION

SUBJECT:	**Information Technology**
DATE:	2nd September 2022
TIME:	9:00 a.m. to 12:05 p.m.

Directions to Candidates
Workings are considered as part of the answer and must be shown.

SECTION A: COMPUTING PRINCIPLES
Answer Question 1 and any other FOUR questions from this section.

This question is compulsory.

Question A1

A hardware store keeps a record of all the paint present in the shop via a database management system (DBMS). Paint details such as paint code, paint colour and price are recorded. Since the paint is bought from various suppliers, the suppliers' details are also recorded. These include the supplier ID, name, surname and locality.

a. Draw an Entity-Relationship (E-R) diagram for the above-mentioned scenario. (3)

b. Identify a primary key for **each** of the two entities specified in part (a). (1)

c. Mention **ONE** other type of relationship cardinality, apart from those utilised in part (a). (1)

d. Select **ONE** attribute from **each** of the two entities, and specify their field types. (2)

Data Description and Data Manipulation Languages can be used to handle entities in the context of an SQL database.

e. Define the term Data Description Language. (1)

f. Define the term Data Manipulation Language. (1)

The paint shop is interested in having a web-based client application.

g. Define the term Internet registries. (1)

h. Differentiate between a web server and a web browser. (2)

i. Mention **THREE** different Internet utilities and give an example of **each**. (3)

j. Provide **THREE** examples of Internet protocols and outline their purpose. (3)

(Total: 18 marks)

Please turn the page.

Answer any FOUR questions from questions 2, 3, 4, 5, 6 and 7.

Question A2

Nowadays the term Internet commerce is used frequently. This is mostly attributable to convenience and the fast-paced day-to-day life.

a. Define the term Internet commerce. (1)

b. Mention **ONE** advantage and **ONE** disadvantage of Internet commerce from the customers' point of view. (2)

c. Mention **ONE** advantage and **ONE** disadvantage of Internet commerce from the point of view of the business. (2)

d. Define the term e-marketing. (1)

e. How does ICT assist businesses in gaining a competitive advantage? (2)

(Total: 8 marks)

Question A3

A computer system is made up of several components. The type of components selected might differ, depending on the user requirements.

a. Mention **TWO** components forming part of a computer system, apart from the processor. (1)

b. Outline **each** of the **TWO** components mentioned in part (a). (2)

c. List **TWO** categories of computers currently in existence. (1)

d. Define **each** category of computers specified in part (c). (2)

e. For **each** category of computer specified in part (c), provide **ONE** possible area of use. (2)

(Total: 8 marks)

Question A4

A newly-opened insurance company has recently installed a network system which uses wired communication media. One of the managers did not agree with this decision and complained with the board of directors that wireless communication media would have been better.

a. Differentiate between wired and wireless communication media. (2)

b. Mention **THREE** types of wired communication media and **THREE** types of wireless communication media which could be suitable for the insurance company. (2)

c. Mention **TWO** factors which might affect the rate of data transmission in the network of the insurance company. (1)

d. The insurance company makes use of synchronous transmission for their everyday operations. What is synchronous transmission? (1)

e. Mention and outline another type of transmission which might be used by the insurance company. (2)

(Total: 8 marks)

Question A5

The microprocessor is an important component of a computer system.

a. List **FOUR** components of a typical microprocessor. (2)

b. Outline the main purpose of **each** component mentioned in part (a) above. (4)

c. List **TWO** differences between RAM and ROM. (2)

(Total: 8 marks)

Question A6

The Software Development Life Cycle (SDLC) refers to a set of stages that provide a standardised model for application development and lifecycle management. One of the most popular models is the waterfall model.

a. Outline any **FOUR** phases of the waterfall model. (4)

b. Mention **TWO** advantages and **TWO** disadvantages of the waterfall model. (4)

(Total: 8 marks)

Question A7

A feasibility study for a new system must be thorough, unbiased, and objective.

a. Outline **FIVE** key areas of a feasibility study. (5)

Proper evaluation of the new system is also very important.

b. Outline **THREE** factors that should be considered during system evaluation. (3)

(Total: 8 marks)

Please turn the page.

SECTION B: HUMAN COMMUNICATION AND BUSINESS ORGANISATON
Answer Question 1 and ONE other question from this section.

This question is compulsory.

Question B1

The Director of Communications within an airline requires the help of the Information Technology (IT) manager to find the best communication technologies to use in the airline's communications efforts.

a. Outline **THREE** different categories of communication that the airline can consider. (3)

b. Provide **ONE** advantage for **each** communication category mentioned in part (a). (3)

c. Outline **ONE** communication technology for **each** category mentioned in part (a) that the airline can use in its communication. (3)

d. Explain **ONE** way how the airline can use electronic communication. (1)

(Total: 10 marks)

Answer ONE question from 2 and 3.

Question B2

a. Outline the role of the following functional areas within an airline:
   i. Human Resources; (1)
   ii. Administration; (1)
   iii. Marketing and Sales; (1)
   iv. Finance. (1)

b. For any **TWO** areas listed in part (a), mention **ONE** type of personnel and outline their role within the airline. (2)

c. What is an organisational chart? (1)

d. Use a diagram to show the difference between a hierarchical and a matrix organisational chart. (2)

e. Outline **ONE** advantage of having an organisational chart for the airline. (1)

(Total: 10 marks)

Question B3

A photographer has been operating as a sole trader for several years. Her business has been growing steadily and she is now thinking about changing her business from sole trader to a private (Ltd.) company.

a. What is a sole trader? (1)

b. What is a private (Ltd.) company? (1)

c. Outline **TWO** advantages and **TWO** disadvantages of a sole trader. (4)

d. Outline **TWO** advantages and **TWO** disadvantages of changing a business from a sole trader to a private (Ltd.) company. (4)

(Total: 10 marks)