

ATD LEVEL I

DCM LEVEL I

**INFORMATION COMMUNICATION TECHNOLOGY**

**TUESDAY: 18 May 2021.**

**Time Allowed: 3 hours.**

**Answer any FIVE questions.**

**ALL questions carry equal marks.**

**QUESTION ONE**

- (a) Data processing methods have evolved over time in tandem with the technology advancement.  
In relation to the above statement, state three evolutionary data input technologies, citing one factor in each case that determines their application suitability. (6 marks)
- (b) Describe six ways that information communication technology could be used to prevent crime in the society today. (6 marks)
- (c) State two types of files needed to support different data processing system. (2 marks)
- (d) Explain three trends of current information communication technology infrastructure. (6 marks)
- (Total: 20 marks)**

**QUESTION TWO**

- (a) One of the growing technologies is Radio Frequency Identification (RFID), a system for tagging and identifying mobile objects.
- (i) Identify three benefits of RFID over barcoding. (3 marks)
- (ii) List two disadvantages of RFID over barcoding. (2 marks)
- (b) (i) Highlight three disadvantages of a Wide Area Network (WAN). (3 marks)
- (ii) State four advantages of intranet. (4 marks)
- (c) Many businesses are now aware of the benefits derived through adoption and use of information communication technology (ICT) but there are many challenges which must be addressed.  
Highlight four challenges that prevent ICT usage in businesses. (4 marks)
- (d) Applications software are programs designed to help end users solve particular problems or perform specific tasks. The end-user could either choose to use proprietary software or open-source software.
- (i) Describe four barriers that you may encounter when using proprietary software. (2 marks)
- (ii) Outline four benefits associated with the use of open-source software. (2 marks)
- (Total: 20 marks)**

**QUESTION THREE**

- (a) A member of staff in the human resource department reports to the IT service desk that they have found an unlabeled USB disk plugged into a spare port on their office desktop PC. Your organisation has strict rules regarding removable media and has banned them from the site.  
Indicate the first five actions which you would take. (5 marks)

- (b) The management of the organisation where you work has decided to set up a new computer server room. You have been asked to recommend where the new central computer server room in your organisation should be located. The organisation is based in a five story modern office block on a business park close to a major town, with a staff restaurant on part of the ground floor. There is space to locate the central computer server room in any of the five floors.

Outline six factors that need to be considered when choosing an appropriate location for the new central server room. (6 marks)

- (c) Operating system is the most basic software in a computer system.

Explain:

(i) Three advantages of time sharing operating system. (3 marks)

(ii) Two disadvantages of time sharing operating system. (2 marks)

- (d) Describe four major criteria for selecting file organization method. (4 marks)

**(Total: 20 marks)**

#### QUESTION FOUR

- (a) Most computerised security systems make use of biometric analysis. Name three physical features of human beings that could be considered in this analysis. (3 marks)

- (b) (i) List four ways in which data integrity could be compromised. (4 marks)

(ii) A technician recommended that a computer in the principal's office need a central processing unit (CPU) upgrade.

State two reasons that might have necessitated upgrading of the CPU. (2 marks)

- (c) (i) State three ways in which organisations manage system entropy. (3 marks)

(ii) Explain three types of errors that could occur during data collection stage of data processing cycle. (3 marks)

- (d) (i) Explain the meaning of identification and authentication in computer access control. (2 marks)

(ii) State three benefits of telecommuting. (3 marks)

**(Total: 20 marks)**

#### QUESTION FIVE

- (a) (i) Differentiate between "data" and "information" as used in computing. (2 marks)

(ii) List four mouse technologies. (2 marks)

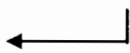
(iii) Outline three criteria used to classify computers. (3 marks)

- (b) Name three non-electronic tools that were used before the invention of electronic computers. (3 marks)

- (c) Identify the keyboard keys represented by the symbols below and their functions:



(i)



(ii)



(iii)

(3 marks)

- (d) Identify three ways in which ICT could be used in industrial control. (3 marks)

- (e) In each of the following, state an example of a popular application in the market:

(i) Word processing. (1 mark)

(ii) Spreadsheet. (1 mark)

(iii) Presentation. (1 mark)

(iv) Computerised accounting software. (1 mark)

**(Total: 20 marks)**

**QUESTION SIX**

- (a) Explain the term “file organisation”. (2 marks)
  - (b) State the method of file access for the following file organisation methods:
    - (i) Index sequential. (1 mark)
    - (ii) Serial. (1 mark)
    - (iii) Sequential. (1 mark)
    - (iv) Random. (1 mark)
  - (c) Organisations use massive resources to develop information systems.
    - (i) Define the term “information system”. (1 mark)
    - (ii) Describe three elements of an information system. (3 marks)
    - (iii) State the main purpose of an information system. (2 marks)
  - (d) Explain the use of BIOS in a computer system. (2 marks)
  - (e)
    - (i) Explain two uses of forms in a database design. (2 marks)
    - (ii) Differentiate between bound and unbound control in the context of database applications. (2 marks)
    - (iii) List two components of a spreadsheet. (2 marks)
- (Total: 20 marks)**

**QUESTION SEVEN**

- (a) Identify a reason for each of the following disk management techniques:
    - (i) Disk partitioning. (2 marks)
    - (ii) Disk compression. (2 marks)
    - (iii) Disk defragmentation. (2 marks)
  - (b) Highlight two reasons why a password may not be a reliable security control measure. (2 marks)
  - (c) Explain how the following data security measures function:
    - (i) Audit trail. (2 marks)
    - (ii) Log file. (2 marks)
    - (iii) Fire walls. (2 marks)
  - (d) Give two disadvantages of using e-commerce rather than the conventional method of carrying out business. (2 marks)
  - (e)
    - (i) Define the term “email”. (1 mark)
    - (ii) Outline three advantages of emails. (3 marks)
- (Total: 20 marks)**
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