O33

SMZ

ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION, 2000

063   **INFORMATION AND COMPUTER STUDIES**

Time: 2:30 Hours.   **ANSWER**

INSTRUCTIONS TO CANDIDATES

1. This paper consists of Three (3) sections A, B and C.

2. Answer **ALL** questions from Section A and B and **ONLY ONE** questions from section C

3. Write your examination number on each page.

4. Write all answers on the space provided.

5. Use a blue or black pen in writing. Drawings must be in pencil.

6. Cellular phones and unauthorized materials are not allowed in the examination room.

	THIS PART FOR EXAMINER'S ONLY	
Question number	**MARKS**	**SIGNATURE**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
TOTAL		

Section A: (15 Marks)

1. Choose the correct answer and write its letter in the table provided below.

i) Which of the following is a non-volatile memory?

A: RAM

B: ROM

C: Cache

D: Register

Answer: B: ROM

Read-Only Memory (ROM) is non-volatile, meaning it retains data even when the power is off. RAM and cache are volatile, losing data when power is lost, and registers are temporary storage inside the CPU.

ii) The main function of the ALU (Arithmetic Logic Unit) is to:

A: Store data

B: Perform arithmetic and logical operations

C: Control data flow

D: Manage memory

Answer: B: Perform arithmetic and logical operations

The ALU performs calculations (addition, subtraction, multiplication, division) and logical operations (comparisons, AND/OR operations). Data storage, flow control, and memory management are handled by other parts of the CPU.

iii) Which of the following is not an input device?

A: Keyboard

B: Mouse

C: Monitor

D: Scanner

Answer: C: Monitor

Monitors display output and do not input data into the computer, unlike keyboards, mice, and scanners which provide data input.

iv) The operating system that is open-source and free to use is:

A: Windows

B: Linux

C: MacOS

D: iOS

Answer: B: Linux

Linux is open-source and freely available for modification and use. Windows, MacOS, and iOS are proprietary and require licenses.

v) A device used to connect multiple computers in a network is called a:

A: Router

B: Switch

C: Hub

D: Bridge

Answer: A: Router

A router connects multiple networks and directs data between them. Switches and hubs connect devices within a single network, and a bridge connects network segments but does not route data.

vi) The main advantage of using cloud storage is:

A: Unlimited storage capacity

B: Access from anywhere with internet

C: Higher security

D: Faster data retrieval

Answer: B: Access from anywhere with internet

Cloud storage allows users to store and retrieve data from any location with internet connectivity, unlike local storage which is limited to a single device.

vii) Which of the following is a function of the operating system?

A: Managing hardware resources

B: Running applications

C: Providing user interface

D: All of the above

Answer: D: All of the above

Operating systems manage hardware, allow applications to run, and provide a user interface for interaction.

viii) The process of converting data into a secret code to prevent unauthorized access is known as:

A: Encryption

B: Compression

C: Decryption

D: Authentication

Answer: A: Encryption

Encryption secures data by converting it into a format that can only be read by someone with the decryption key. Decryption reverses encryption, compression reduces data size, and authentication verifies identity.

ix) Which of the following is not a type of software?

A: Application software

B: System software

C: Hardware

D: Utility software

Answer: C: Hardware

Hardware is the physical part of a computer. Application, system, and utility software are types of programs.

x) The primary purpose of a firewall is to:

A: Speed up internet connection

B: Protect against unauthorized access

C: Store data

D: Manage network traffic

Answer: B: Protect against unauthorized access

Firewalls monitor and control incoming and outgoing network traffic to prevent unauthorized access. They do not store data or increase internet speed.

2. Match the devices in Column A with their functions in Column B.

COLUMN A	COLUMN B	Answer
i. Printer	D. Produces hard copy output	D
ii. Microphone	C. Captures audio input	C
iii. Speaker	E. Provides audio output	E
iv. Monitor	B. Displays visual output	B
v. Headphones	A. Converts digital signals to sound	A

Section B: (75 Marks)

3. a) Define the term 'computer network'.

   A computer network is a system of interconnected computers that can share resources, data, and information efficiently.

   b) Explain the difference between LAN and WAN.

   A Local Area Network (LAN) covers a small area such as a building or office, providing high-speed connections. A Wide Area Network (WAN) spans large geographical areas like cities or countries and usually has slower speeds due to longer distances.

4. a) List four types of computer memory and briefly describe each.

   RAM (Random Access Memory) is volatile memory used for temporary storage during program execution.

   ROM (Read-Only Memory) is non-volatile memory that stores essential startup instructions.

Cache memory is fast, temporary memory inside the CPU that stores frequently used data.

Virtual memory uses part of the hard drive as temporary RAM when physical memory is insufficient.

b) What is the function of the CPU in a computer system?

The CPU executes instructions, performs calculations, and coordinates the operations of other hardware components. It is considered the brain of the computer.

5. a) Describe the steps involved in creating a new folder in Windows operating system.

Right-click on the desktop or inside a folder, select 'New', then 'Folder'. Type the folder name and press Enter. The new folder is now ready for organizing files.

b) Explain how to change the desktop background in Windows.

Right-click on the desktop, select 'Personalize', choose 'Background', select an image from the available options or browse your own, then click 'Apply' to set it.

6. a) What is a spreadsheet?

A spreadsheet is a computer program that organizes data in rows and columns, allows calculations, analysis, and visual presentation through charts and graphs.

b) List and explain three basic functions of a spreadsheet application.

SUM: Adds numbers in selected cells.

AVERAGE: Calculates the mean value of numbers in a range.

IF: Performs logical tests and returns values depending on whether conditions are true or false.

7. a) Define the term 'internet'.

The internet is a global network of computers that communicate using standard protocols to share data and resources worldwide.

b) Explain the difference between the internet and the World Wide Web.

The internet is the infrastructure of connected networks. The World Wide Web is a service on the internet that allows access to web pages through browsers.

8. a) What is a database?

A database is an organized collection of electronic data that allows for easy access, management, and updating.

b) List and explain three types of database management systems.

Hierarchical DBMS: Organizes data in a tree structure with parent-child relationships.

Relational DBMS: Stores data in tables with defined relationships.

Network DBMS: Uses graph structures to allow multiple relationships between records.

9. a) Define the term 'computer virus'.

A computer virus is a malicious program that can replicate itself and infect files or systems, causing potential damage or data loss.

b) Describe two methods to protect a computer from viruses.

Install and regularly update antivirus software to detect and remove viruses.

Avoid downloading files or opening attachments from unknown or untrusted sources.

10. a) What is the purpose of an operating system?

An operating system manages computer hardware, provides a user interface, and enables applications to run.

b) List and explain three types of operating systems.

Batch OS: Executes jobs in batches without user interaction.

Multitasking OS: Allows multiple programs to run simultaneously.

Real-time OS: Provides immediate responses to inputs, used in critical applications like industrial control.

Section C: (10 Marks)

11. a) Define the term 'email'.

Email is an electronic system for sending messages and files over the internet between users.

b) Explain the steps involved in sending an email.

Log into your email account, click 'Compose', enter recipient address, subject, and message, attach files if needed, then click 'Send'.

c) List and explain three email etiquette practices.

Use a clear subject line to indicate the purpose of the email.

Maintain professional language and tone throughout the message.

Avoid sending unnecessary attachments to prevent cluttering the recipient's inbox.

12. a) Define the term 'computer hardware'.

Computer hardware refers to the physical components of a computer system that can be seen and touched.

b) List and describe five essential components of a computer system.

CPU: Processes instructions and manages operations.

RAM: Temporary memory for active applications.

Hard disk: Stores data and programs permanently.

Monitor: Displays visual output to the user.

Keyboard: Inputs data and commands into the computer system.