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ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION, 2016

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.

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

**SECTION A (15 Marks)**

Attempt ALL questions from this section.

1. Choose the letter of the correct answer and write it in the table provided.

i) Which of the following is an example of an output device?

- A. Keyboard
- B. Scanner
- C. Speaker
- D. Mouse

The correct answer is C: Speaker.

A speaker outputs sound generated by the computer. Keyboards and mice are input devices, while scanners input images into the computer.

ii) The main circuit board of a computer is known as the:

- A. CPU
- B. Motherboard
- C. Hard disk
- D. RAM

The correct answer is B: Motherboard.

The motherboard connects and allows communication between all components of a computer. The CPU is the processor, hard disk is storage, and RAM is temporary memory.

iii) The term "volatile" in computer memory means:

- A. Data is permanent
- B. Data is lost when power is off
- C. It is very fast
- D. It is slow

The correct answer is B: Data is lost when power is off.

Volatile memory, like RAM, loses its stored data once the computer is turned off, unlike non-volatile memory such as ROM.

iv) The acronym ROM stands for:

- A. Read Only Memory
- B. Random Only Memory
- C. Read Other Memory
- D. Random Outer Memory

The correct answer is A: Read Only Memory.

ROM is non-volatile memory that stores essential instructions for booting the computer.

v) Which one of these is a system utility software?

- A. Microsoft Word
- B. Disk Defragmenter
- C. Google Chrome
- D. Adobe Photoshop

The correct answer is B: Disk Defragmenter.

Disk Defragmenter optimizes storage on a hard disk. Microsoft Word, Chrome, and Photoshop are application software.

vi) A computer that provides services to other computers in a network is called a:

- A. Client
- B. Workstation
- C. Server
- D. Node

The correct answer is C: Server.

A server provides data, services, and resources to other computers in a network. Clients request services, and nodes are simply devices on a network.

vii) Which of the following is a type of network topology?

- A. Bus
- B. Bridge
- C. Router
- D. Switch

The correct answer is A: Bus.

Bus is a type of network topology where all devices are connected to a single central cable. Bridges, routers, and switches are devices used in networks.

viii) An example of a portable computer is a:

- A. Desktop computer
- B. Server
- C. Supercomputer
- D. Laptop

The correct answer is D: Laptop.

Laptops are portable computers with integrated components. Desktops, servers, and supercomputers are not designed for portability.

ix) What is the process of converting data into a secret code to prevent unauthorized access called?

- A. Encryption
- B. Decryption
- C. Compression
- D. Formatting

The correct answer is A: Encryption.

Encryption transforms readable data into coded form to prevent unauthorized access. Decryption reverses the process, compression reduces size, and formatting prepares storage media.

x) A device that translates digital signals from a computer into a format that can be transmitted over telephone lines is a:

- A. Router
- B. Modem
- C. Switch
- D. Hub

The correct answer is B: Modem.

Modems modulate and demodulate signals for transmission over phone lines. Routers direct traffic, switches connect devices, and hubs broadcast signals.

2. Match the items in Column A with their descriptions in Column B.

i. GUI → E: A user interface that uses graphical elements like icons and menus.

GUI provides a graphical environment to interact with the computer.

ii. Piracy → B: The illegal copying or distribution of software.

Piracy involves unauthorized duplication of copyrighted software.

iii. Malware → A: Software designed to disrupt computer operations or gain unauthorized access.

Malware includes viruses, worms, and spyware that harm or compromise systems.

iv. LAN → C: A network that connects computers within a small geographical area.

LAN connects devices in offices, schools, or homes.

v. Hard disk → D: A storage device that stores data on magnetic platters.

Hard disks are used for long-term data storage.

### **SECTION B (75 Marks)**

Attempt ALL questions from this section.

3. Write down two (2) differences between Primary storage and Secondary storage.

Primary storage, like RAM, is volatile and temporary, while secondary storage, like hard disks, is non-volatile and permanent.

Primary storage has faster access speed compared to secondary storage, which is slower but holds much larger volumes of data.

4. a) Briefly explain the following:

i. Word wrap

Word wrap automatically moves text to the next line when it reaches the end of a margin without needing to press Enter.

ii. Word art

Word Art is a feature that allows the creation of decorative text with effects like shadows, colors, and 3D shapes.

b) Identify three (3) possible reasons for a computer not being able to save data in a disk.

The disk may be full, preventing new data from being saved.

The disk may be write-protected, restricting modifications.

The disk may be corrupted or physically damaged, preventing proper writing of data.

c) i) Define the term word processing.

Word processing is the creation, editing, formatting, and printing of text documents using specialized software.

ii) Specialized software for word processing is known as

A word processor, such as Microsoft Word or LibreOffice Writer.

iii) Give two (2) advantages of using a word processing program.

It allows easy editing and formatting of text.

It supports features like spell check and tables to improve document quality.

5. a) As a Computer specialist, explain the benefits of having the following devices in a computer room:

i. Voltage stabilizers

Voltage stabilizers protect computers from fluctuations in electrical supply, preventing damage to components.

ii. Surge protector

Surge protectors prevent sudden power spikes from destroying hardware connected to the network.

b) Define the following terms:

**i. Utility programs**

Utility programs are software designed to maintain, optimize, and manage computer resources, like antivirus or disk cleanup tools.

**ii. Backup**

Backup is creating a copy of important data to prevent loss in case of failure or accidental deletion.

**c) Briefly explain the effects of the following on computers:**

**i. Dust**

Dust accumulation can cause overheating and reduce performance or lifespan of components.

**ii. Liquid**

Liquid spillage can short-circuit components, leading to permanent damage.

**6. a) i) What is a search engine?**

A search engine is a web-based tool used to locate and retrieve information on the Internet using keywords.

**ii) Identify any four (4) common search engines.**

Google, Bing, Yahoo, DuckDuckGo.

**b) Define the following terms:**

**i. e-learning**

E-learning is the use of digital resources and internet technologies to deliver educational content remotely.

**ii. Electronic commerce**

Electronic commerce (e-commerce) is the buying and selling of goods or services via the internet.

**c) Analyze any two (2) advantages of using the e-learning method.**

It allows learners to study at their own pace from any location.

It reduces the cost of physical classrooms and printed materials.

7. a) Write a short explanation of computer peripherals.

Computer peripherals are external devices connected to a computer to enhance functionality, such as input, output, or storage devices.

- b) Give four (4) typical examples of computer peripherals.

Keyboard, mouse, printer, and scanner.

- c) The figure below shows six (6) parts of a personal computer. Two (2) parts have already been labeled.

- i) Write the names of the remaining parts.

For instance: Monitor, CPU, Keyboard, Mouse, Speaker, Printer (depending on the labels in the figure).

- ii) State the importance of parts A, B, C, and D.

Each part plays a critical role: Monitor displays output, CPU processes data, Keyboard inputs data, Mouse navigates interface.

8. a) Show the difference between Application software and System software.

Application software performs specific tasks for users, like word processors or games, while system software manages hardware and provides a platform for applications, like operating systems.

- b) i) Define the term operating system.

An operating system is software that manages computer hardware and software resources and provides services to application programs.

- ii) Mention any two (2) examples of operating systems.

Windows 10, Linux.

- iii) Write down any four (4) functions of an operating system.

Manages memory and storage.

Controls input and output devices.

Schedules and manages processes.

Provides a user interface.

9. a) Early computing devices have been replaced by modern computing devices due to several reasons.

Identify any two (2) early computing devices.

Abacus and mechanical calculators.



b) The first computer generation covers the period from 1951-1958. Write down the periods covered by:

i) Second computer generation: 1959-1964

ii) Third computer generation: 1965-1971

iii) Fourth computer generation: 1971-present (or 1971-1980 for microcomputers, depending on reference)

c) Analyze two (2) characteristics of computers in the 5th computer generation.

They use artificial intelligence techniques.

They are capable of natural language processing and voice recognition.

10. a) Define Data Transmission media.

Data transmission media are physical or wireless channels that carry signals between devices for communication.

b) List four (4) types of transmission media.

Twisted pair cable, coaxial cable, fiber optic cable, and radio waves (wireless).

c) i) Outline two (2) advantages of using fiber cable.

High bandwidth capacity allows fast data transmission.

Immune to electromagnetic interference.

ii) Identify any two (2) disadvantages of fiber cable.

High installation cost.

Difficult to splice and repair.

### **SECTION C (10 Marks)**

Answer only ONE (1) question from this section.

11. From the table above.

a) i. Write a formula to find the average mark for the entire class.

=AVERAGE(B2:B20)

ii. Write a formula to find the sum of marks for each student.

=SUM(C2:F2)

iii. Write a formula to find the maximum mark on the computer subject.

=MAX(C2:C20)

b) Write down two (2) applications of a spreadsheet program.

Managing financial records and creating charts for data analysis.

12. a) Define the term internet.

The internet is a global network of interconnected computers that allows the sharing of information and communication worldwide.

b) Give the difference between the Hub and router.

A hub broadcasts data to all devices on a network, while a router directs data between networks and manages traffic efficiently.

c) Briefly explain any three (3) benefits of having a LAN in a work organization.

Enables file and resource sharing among employees.

Facilitates communication and collaboration.

Reduces operational costs by centralizing resources.

d) Analyze any three (3) factors to be considered when choosing an Internet Service Provider.

Connection speed and bandwidth to meet organizational needs.

Reliability and uptime guarantee.

Customer support and service availability.