SMZ

ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION

063 INFORMATION AND COMPUTER STUDIES

Time: 2:30 Hours **ANSWERS** **Monday 08th November 2021.**

Instructions

1. This paper consists of sections A, B, and C
2. Answer all questions in section A and B and C
3. All writings must be in **blue** or **black** ink.
4. Communication devices and any unauthorized materials are **not** allowed in the assessment room.
5. Write your **Examination Number** at the top right hand corner of every page.

1. Choose the letter of the correct answer and write it below the item number in the table below.

(i) Which of the following components allows the computer to permanently retain large amounts of data?

A. CPU

B. CD

C. Memory

D. Mass storage device

Answer: D

Reason: A mass storage device is used to retain large amounts of data permanently.

(ii) Which one of the following is the best definition of a computer?

A. A device used to process information

B. A device used to process information and store data

C. A device used to process data

D. A device used to output data

Answer: B

Reason: A computer processes, stores, and retrieves information and data.

(iii) Which of the memory chips is programmed during the manufacturing process?

A. EEPROM

B. PROM

C. RAM

D. ROM

Answer: D

Reason: ROM (Read-Only Memory) is pre-programmed during manufacturing and cannot be altered.

(iv) The two types of RAM are:

A. Erasable and volatile

B. Erasable and programmable

C. Static and dynamic

D. Volatile and non-volatile

Answer: C

Reason: RAM is classified into static RAM (SRAM) and dynamic RAM (DRAM).

(v) It is not a sequential access device:

A. CD-ROM

B. DAT

C. Magnetic tape

D. 8-mm Helical scan

Answer: A

Reason: CD-ROM allows random access, while the others are sequential access devices.

(vi) An input device that is widely used in a supermarket is:

A. Bar code reader

B. Keyboard trackball

C. Mouse

D. Keyboard

Answer: A

Reason: A barcode reader is commonly used in supermarkets to scan product codes.

(vii) The fifth generation languages are also called:

A. Assembly language

B. Machine language

C. Natural language

D. Installation language

Answer: C

Reason: Fifth-generation languages are designed to resemble natural language for ease of programming.

(viii) One of the following is a permanent storage device:

A. Compact disk

B. Floppy disk

C. Hard disk

D. Scanner

Answer: C

Reason: Hard disks are permanent storage devices used to store data.

(ix) These are two possible values that are used to represent a bit:

A. One and two

B. One and zero

C. Zero and two

D. Zero and ten

Answer: B

Reason: A bit is represented as either 0 or 1 in binary systems.

(x) A computer that holds databases and programs for many terminals is known as:

A. Client

B. Domain

C. Node

D. Server

Answer: D

Reason: A server is designed to manage and store data and applications for multiple users.

2. Match the size of data units in List A with the appropriate size in List B by writing the letter of the correct response below the item number in the table below.

Column A:

(i) 16 - 64 bits

(ii) 1 trillion bytes

(iii) Eight bits

(iv) 1 million bytes

(v) One binary digit

Column B:

A. Byte

B. Word

C. Bit

D. Terabyte (TTB)

E. Mega Bytes (MB)

F. Kilo Bytes (KB)

G. 60 - 90 bits

Answers:

(i) B. Word

(ii) D. Terabyte (TTB)

(iii) A. Byte

(iv) E. Mega Bytes (MB)

(v) C. Bit

3. (a) Write down two differences between primary storage and secondary storage.

i. Primary storage is directly accessible by the CPU and stores data temporarily, while secondary storage is not directly accessible by the CPU and stores data permanently.

ii. Primary storage is faster but more expensive (e.g., RAM), whereas secondary storage is slower but more cost-effective (e.g., hard drives).

(b) Fill the blank column.

Secondary Storage Device	**Typical Capacity**
Magnetic hard disk	500 GB to 2 TB
Solid-state hard disk	128 GB to 2 TB
DVD	4.7 GB

4. (a) Briefly explain the following:

(i) Word wrap

Word wrap is a feature in word processing that automatically moves text to the next line when it reaches the edge of the current line, ensuring proper text formatting without manual line breaks.

(ii) Word art

Word art is a tool in word processing software that allows users to create stylized and decorative text effects, such as curved, shadowed, or colorful designs.

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

i. The disk is full or does not have enough storage capacity.

ii. The disk is corrupted or damaged.

iii. The computer lacks proper write permissions for the disk.

(c) (i) Define the term word processing.

Word processing refers to the use of computer software to create, edit, format, and print textual documents such as letters, reports, and memos.

(ii) Specialized software for word processing is known as:

Microsoft Word.

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

i. Enables quick and easy editing of text, such as adding, deleting, or rearranging content.

ii. Provides formatting tools for creating professional-looking documents, including fonts, styles, and layouts.

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

(i) Voltage stabilizers

Voltage stabilizers protect computer equipment from voltage fluctuations by maintaining a steady electrical current, preventing damage to sensitive components.

(ii) Surge protector

Surge protectors guard against sudden power surges or spikes by diverting excess electricity, protecting the computer and its peripherals from damage.

(b) Define the following terms.

(i) Utility programs

Utility programs are software tools designed to perform specific maintenance or optimization tasks on a computer, such as disk cleanup, antivirus scans, or file compression.

(ii) Backup

Backup refers to creating a copy of data or files stored on a computer to ensure they can be restored in case of data loss, corruption, or system failure.

(c) Briefly explain the effects of the following on computers.

(i) Dust

Dust can accumulate inside the computer, clogging fans and vents, leading to overheating, reduced performance, and potential hardware damage.

(ii) Liquid

Liquid spills can short-circuit electrical components, causing permanent damage to the computer's hardware and data loss.

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

A search engine is a software program or platform that helps users find information on the internet by searching a database of indexed websites and displaying relevant results based on user queries.

(ii) Identify any four common search engines.

i. Google

ii. Bing

iii. Yahoo

iv. DuckDuckGo

(b) Define the following terms.

(i) E-learning

E-learning refers to the use of digital technologies, such as computers and the internet, to deliver educational content and facilitate learning outside a traditional classroom setting.

(ii) Electronic commerce

Electronic commerce, or e-commerce, is the buying and selling of goods and services over the internet, including online banking, shopping, and payment transactions.

(c) Analyze any two advantages of using e-learning methods.

i. Flexibility: E-learning allows learners to access educational materials at their convenience, enabling them to learn at their own pace and schedule.

ii. Cost-effectiveness: E-learning reduces costs associated with travel, accommodation, and physical materials, making education more accessible.

7. (a) Write a short explanation on computer peripherals.

Computer peripherals are external devices connected to a computer to enhance its functionality or provide input, output, or additional storage capabilities. Examples include keyboards, mice, printers, and external hard drives.

(b) Give four typical examples of computer peripherals.

i. Printer

ii. Scanner

iii. External hard drive

iv. Webcam

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

(i) Write the names of the remaining parts.

Assuming the diagram includes a CPU, printer, and other common parts:

- Monitor

- Keyboard

- Mouse

- Speakers

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

- A (Monitor): Displays visual output from the computer.

- B (Keyboard): Used for inputting text and commands into the computer.

- C (CPU): Processes data and executes instructions.

- D (Printer): Converts digital documents into hard copies.

8. (a) Show the difference between application software and system software.

- Application software is designed to perform specific tasks for users, such as word processing, spreadsheet management, or web browsing.

- System software manages the computer's hardware and provides a platform for application software to run, such as operating systems and utility programs.

(b) (i) Define the term operating system.

An operating system is system software that manages computer hardware, software resources, and provides common services for computer programs.

(ii) Mention any two examples of operating systems.

i. Windows

ii. Linux

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

i. Managing hardware resources, such as memory and processors.

ii. Providing a user interface for interaction with the computer.

iii. Managing file storage and retrieval.

iv. Handling system security and user access control.

9. (a) Identify any two early computing devices.

i. Abacus

ii. Analytical Engine

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

i. Second computer generation: 1959–1965

ii. Third computer generation: 1966–1975

iii. Fourth computer generation: 1976–present

(c) Analyze two characteristics of computers in the fifth computer generation.

i. Artificial intelligence: Fifth-generation computers integrate AI technologies to enable tasks such as machine learning, natural language processing, and decision-making.

ii. Parallel processing: They utilize multiple processors to perform complex tasks simultaneously, enhancing efficiency and speed.

10. (a) Define data transmission media.

Data transmission media refers to the physical or wireless pathways through which data is transmitted between devices in a network.

(b) List four types of transmission media.

i. Twisted pair cables

ii. Coaxial cables

iii. Fiber optic cables

iv. Wireless (radio waves)

(c) (i) Outline two advantages of using fiber cables.

i. High-speed data transmission: Fiber cables support faster data transfer compared to traditional cables.

ii. Resistance to electromagnetic interference: Fiber cables are less susceptible to signal loss due to external interference.

(ii) Identify any two disadvantages of fiber cables.

i. High installation cost: Installing fiber optic cables is expensive compared to other media.

ii. Fragility: Fiber cables are delicate and require careful handling to avoid damage.

11. (a) From the table provided:

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

=AVERAGE(C2:F8)

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(E2:E8)

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

i. Financial analysis: Creating budgets and tracking expenses.

ii. Data organization: Managing data in rows and columns for easy retrieval and processing.

12. (a) Define the term internet.

The internet is a global network of interconnected computers that allows users to share information, access resources, and communicate through various platforms.

(b) Give the difference between a hub and a router.

i. A hub connects multiple devices within a local area network but does not manage traffic between them.

ii. A router connects multiple networks and directs data packets between them efficiently.

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

i. Resource sharing: Enables sharing of resources like printers and files among employees.

ii. Communication: Facilitates internal communication through emails and messaging.

iii. Centralized management: Simplifies monitoring and control of network resources.

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

i. Speed: Ensure the ISP offers high-speed internet suitable for organizational needs.

ii. Reliability: The provider should have minimal downtime and consistent service.

iii. Cost: Choose an ISP with affordable pricing and flexible plans based on the budget.