candidate's Number .....

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SMZ

ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION, 2009

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.		
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12.		
TOTAL		

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 a type of system software?

A. Microsoft Word

B. Antivirus software

C. Adobe Photoshop

D. Google Chrome

Correct answer: B. Antivirus software

Antivirus software is considered part of system software because it directly interacts with the operating system to protect the computer from malware and viruses. Microsoft Word and Adobe Photoshop are application software, while Google Chrome is a web browser.

ii) The term **CPU** stands for:

A. Central Processing Unit

B. Computer Processing Unit

C. Central Power Unit

D. Computer Power Usage

Correct answer: A. Central Processing Unit

CPU stands for Central Processing Unit. It is the brain of the computer that performs all the processing tasks and controls other components. The other options are incorrect because they do not represent the standard abbreviation of CPU.

iii) Which of these is a characteristic of RAM?

A. It is non-volatile

B. It is used for permanent storage

C. It is a secondary storage device

D. It is volatile

Correct answer: D. It is volatile

RAM is a volatile memory, meaning it loses all stored data when the computer is turned off. It is used as

temporary storage for data and instructions needed by the CPU. Permanent storage is provided by devices like hard disks.

iv) A type of computer that is specifically designed for a single task is called:

A. A general-purpose computer

B. An embedded system

C. A supercomputer

D. A mainframe computer

Correct answer: B. An embedded system

An embedded system is designed for one dedicated task, such as controlling a washing machine or ATM. General-purpose computers can perform multiple tasks, supercomputers handle highly complex calculations, and mainframes process massive amounts of data.

v) The most common type of mouse used with a desktop computer is a:

A. Trackball mouse

B. Optical mouse

C. Mechanical mouse

D. Joystick

Correct answer: B. Optical mouse

The optical mouse is the most common today because it uses light sensors for accurate movement detection. Trackball and mechanical mice are older technologies, and a joystick is mainly used for gaming.

vi) What is the process of arranging data in a specific order called?

A. Searching

B. Sorting

C. Filtering

D. Compressing

Correct answer: B. Sorting

Sorting is the process of arranging data in ascending or descending order, such as alphabetically or numerically. Searching looks for specific data, filtering selects data based on criteria, and compressing reduces file size.

vii) Which of the following is not a common type of network cable?

A. Twisted-pair

B. Coaxial

C. Fiber optic

D. Parallel

Correct answer: D. Parallel

Twisted-pair, coaxial, and fiber optic cables are all common network cables. Parallel cables are used mainly for connecting devices like printers, not for networking.

viii) The term **online banking** refers to:

A. Visiting a bank branch

B. Performing financial transactions over the internet

C. Using a credit card

D. Withdrawing cash from an ATM

Correct answer: B. Performing financial transactions over the internet

Online banking involves managing bank accounts and conducting transactions using the internet. Visiting a branch, using a credit card, or ATM withdrawal are not online banking.

ix) A program that is secretly installed on a user's computer to collect information without their consent is called:

A. Antivirus

B. Spyware

C. Adware

D. Freeware

Correct answer: B. Spyware

Spyware is malicious software that secretly monitors user activities and collects data. Antivirus protects against threats, adware shows advertisements, and freeware is free-to-use software.

x) The term **Wi-Fi** stands for:

A. Wireless Fidelity

B. Wireless Internet

C. World Wide Fiber

D. Wide Fidelity

Correct answer: A. Wireless Fidelity

Wi-Fi stands for Wireless Fidelity, a technology that allows devices to connect to the internet or communicate wirelessly within a network. The other options are incorrect because they are not the standard definition of Wi-Fi.

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2. Match the terms in Column A with their descriptions in Column B. Write the letter of the correct response in the table below.

COLUMN A

i. Modem

ii. Printer

iii. Spreadsheet

iv. Database

v. Malware

COLUMN B

A. A program used to manage and store large amounts of data.

B. A device that converts digital data into analog signals and vice-versa.

C. A program that organizes data in rows and columns for calculations.

D. A device that produces a hard copy of a document.

E. A software designed to damage or gain unauthorized access to a computer.

F. The process of copying files.

G. The main processing chip.

Answers:

i - B: A modem converts digital data into analog signals and vice-versa to allow internet connectivity.

ii - D: A printer produces a hard copy of a digital document.

iii - C: A spreadsheet organizes data in rows and columns for easy calculation.

iv - A: A database stores and manages large amounts of structured data.

v - E: Malware is harmful software created to damage or gain unauthorized access to systems.

3. a) Define **computer hardware** and **computer software**.
   b) Give two (2) examples of each.
   c) Explain the relationship between hardware and software.

a) Computer hardware is the physical parts of a computer that you can touch, such as the processor, memory modules, hard disk, keyboard, and monitor. Computer software is the set of instructions and programs that tell the hardware what to do, including operating systems and application programs.

b) Examples of hardware include the central processing unit (CPU) and a hard disk drive. Examples of software include the Windows operating system and Microsoft Word application.

c) The relationship between hardware and software is complementary and interdependent. Software provides instructions that the hardware executes; without software the hardware is idle and cannot perform useful tasks, and without hardware software cannot run. The operating system acts as an intermediary, managing hardware resources and providing a platform for application software to function.

4. a) What is a **user interface**?
   b) Describe the difference between a **Graphical User Interface (GUI)** and a **Command-Line Interface (CLI)**.
   c) Give one (1) example of an operating system that uses a CLI.

a) A user interface is the layer through which a user interacts with a computer system, enabling input and output. It includes the visual elements, menus, commands, and controls that allow users to give instructions to programs and receive feedback.

b) A Graphical User Interface, GUI, uses graphical elements such as windows, icons, buttons, and menus, allowing users to interact with the system using a mouse and keyboard with visual feedback. A Command-Line Interface, CLI, requires users to type textual commands into a console or terminal; it is text-based, often faster for experienced users, but less intuitive for beginners.

c) An example of an operating system that uses a CLI is MS-DOS. Many modern operating systems also provide CLI environments, for example Linux distributions include shells like Bash.

5. a) State two (2) differences between **RAM** and **ROM**.
   b) Briefly explain the purpose of **cache memory**.
   c) Why is RAM considered a volatile memory?

a) One difference is that RAM is read-write memory, meaning the CPU can both read from and write to it, while ROM is typically read-only and stores firmware that should not change during normal operation. Another difference is volatility: RAM is volatile and loses its contents when power is turned off, whereas ROM is non-volatile and retains data without power.

b) Cache memory is a small, very fast memory located close to the CPU, used to store frequently accessed instructions and data so the processor can retrieve them quickly. The purpose of cache is to reduce the average time to access data from main memory and improve overall system performance.

c) RAM is considered volatile because it requires a continuous power supply to maintain its stored information. When the computer is switched off or loses power, the contents of RAM are erased, which is why permanent storage devices are used for long-term data retention.

6. a) Define **data transmission media**.
   b) Give two (2) examples of **guided media** and two (2) examples of **unguided media**.
   c) Explain the difference between **broadband** and **narrowband** internet connections.

a) Data transmission media are the physical pathways or channels through which data and signals travel between devices in a communication system. These media carry electrical, optical, or radio signals from a sender to a receiver.

b) Examples of guided media are twisted-pair cable and fiber optic cable, where the signal is directed along a physical conductor. Examples of unguided media are radio waves and microwave transmission, where signals propagate through the air without a physical guiding medium.

c) Broadband refers to high-capacity transmission techniques that carry multiple signals and support high data rates simultaneously, for example DSL, cable, or fiber connections that offer continuous high-speed internet. Narrowband refers to lower-capacity connections with limited data rates, often providing a single channel of communication and slower speeds, for example traditional dial-up connections.

7. a) What is a **blog**?
   b) Explain the difference between a **blog** and a **traditional website**.
   c) Mention two (2) common uses of a blog.

a) A blog is an online platform or web page where an individual or organization publishes short articles, entries, or posts in reverse chronological order, often allowing readers to comment and interact.

b) The difference between a blog and a traditional website is that blogs are typically updated frequently with time-stamped posts and focus on commentary, personal reflection, or topical content, while traditional websites are usually static, organized as pages with fixed information about an organization, product, or service. Blogs emphasize ongoing content and reader engagement; traditional sites emphasize structured, static information.

c) Two common uses of a blog are sharing personal experiences and opinions, and publishing educational or how-to articles to teach readers about a subject.

8. a) Briefly explain the concept of **e-commerce**.
   b) Give two (2) examples of e-commerce websites.
   c) State two (2) advantages and two (2) disadvantages of e-commerce.

a) E-commerce is the buying and selling of goods and services over the internet, including activities such as online shopping, electronic payments, and digital marketplaces that connect buyers and sellers remotely.

b) Examples of e-commerce websites include Amazon and eBay.

c) Two advantages of e-commerce are convenience for customers who can shop at any time and a wider market reach for sellers who can access customers globally. Two disadvantages are security and privacy concerns when financial and personal data are transmitted online, and the lack of physical inspection of products before purchase which may lead to dissatisfaction and returns.

9. a) What is **computer security**?
   b) State three (3) main goals of computer security.
   c) Briefly explain the term **phishing**.

a) Computer security is the practice of protecting computer systems, networks, and data from theft, damage, unauthorized access, and other threats. It combines policies, procedures, and technical controls to preserve the confidentiality, integrity, and availability of information.

b) Three main goals of computer security are confidentiality, ensuring only authorized users can access sensitive data; integrity, ensuring data is accurate and not tampered with; and availability, ensuring systems and data are accessible to authorized users when needed.

c) Phishing is a fraudulent technique used by attackers to trick individuals into revealing sensitive information, such as usernames, passwords, or credit card details, usually by impersonating a trustworthy entity via email or fake websites.

10. a) Explain the term **ergonomics** in the context of computer use.
    b) State any three (3) risks of poor ergonomics.
    c) Give two (2) tips for maintaining proper posture while using a computer.

a) Ergonomics in computer use refers to designing the workstation, equipment, and tasks to fit the user, so as to reduce strain, prevent injury, and improve comfort and productivity. It considers keyboard placement, screen height, chair support, and work habits.

b) Three risks of poor ergonomics are repetitive strain injuries such as carpal tunnel syndrome, neck and shoulder pain from improper monitor height, and lower back pain from inadequate lumbar support or prolonged poor sitting posture.

c) Two tips for maintaining proper posture are to position the top of the monitor at or slightly below eye level so the neck remains neutral, and to sit with feet flat on the floor and the lower back supported by the chair to preserve the natural lumbar curve.

Section C: (10 Marks)

Attempt ONLY ONE (1) question from this section.

11.

a) What is **word processing**?
b) Explain the following features of a word processing program:
i. Formatting
ii. Mail merge
iii. Headers and Footers
c) Briefly describe how to save a new document in MS Word.

a) Word processing is the use of a computer program to create, edit, format, and print text documents. It allows users to write letters, reports, essays, and other documents efficiently, providing tools for editing, formatting, and organizing text.

b) i. **Formatting** refers to adjusting the appearance of text and paragraphs, such as changing font type, size, color, alignment, line spacing, and adding bullet points or numbering. Formatting makes a document more readable and visually appealing.

ii. **Mail merge** is a feature that allows the user to automatically insert data from a database or spreadsheet into a document, creating personalized letters, envelopes, or labels for multiple recipients efficiently.

iii. **Headers and Footers** are areas at the top and bottom of a document page where information like page numbers, document titles, or dates can be inserted. They appear on every page and help in organizing and navigating large documents.

c) To save a new document in MS Word, click on the **File** menu, select **Save As**, choose a location on the computer or cloud storage, give the document a descriptive name, select the desired file format (e.g., .docx), and click **Save**. This stores the document permanently for later retrieval.

12.

a) What is a **computer laboratory**?
b) State three (3) safety precautions to observe when working in a computer lab.
c) Explain the importance of a **network server** in a computer lab.
d) What is the main purpose of a **computer fan**?

a) A computer laboratory is a dedicated room or area equipped with multiple computers, networking devices, and peripherals where students or users can perform practical computer-related tasks such as learning, programming, and research.

b) Three safety precautions in a computer lab are:

- Ensure electrical sockets and wiring are safe to prevent shocks.
- Avoid eating or drinking near computers to prevent damage from spills.
- Keep walkways clear to prevent tripping over cables and other obstacles.

c) A network server in a computer lab centralizes resources and services such as file storage, user authentication, printing, and internet access. It ensures efficient management, secure access, and sharing of resources among multiple users.

d) The main purpose of a computer fan is to cool down internal components, especially the CPU and GPU, by circulating air and preventing overheating. This helps maintain optimal performance and prolongs the lifespan of the computer hardware.