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**ZANZIBAR EXAMINATION COUNCIL**

**FORM THREE ENTRANCE EXAMINATION, 2013**

**063**          **INFORMATION AND COMPUTER STUDIES**

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

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### 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.

| Question number | THIS PART FOR EXAMINER'S ONLY | |
| --- | --- | --- |
| | MARKS | SIGNATURE |
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| 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. Adobe Photoshop

C. Operating system

D. Google Chrome

The correct answer is C: Operating system.

System software manages computer hardware and software resources, unlike application software such as Word, Photoshop, or Chrome, which perform specific tasks for the user.

ii) The term GUI stands for:

A. General User Internet

B. Graphical User Interface

C. Global User Index

D. Graphics User Input

The correct answer is B: Graphical User Interface.

GUI allows users to interact with a computer through graphical elements like icons, buttons, and menus, making it more user-friendly than command-line interfaces.

iii) Which of these is a characteristic of ROM?

A. It is volatile

B. It is used for temporary storage

C. It is non-volatile

D. It is a secondary storage device

The correct answer is C: It is non-volatile.

ROM retains data even when the computer is powered off, unlike volatile memory such as RAM.

iv) A type of computer that is small, lightweight, and has a battery is a:

A. Desktop computer

B. Mainframe

C. Supercomputer

D. Laptop

The correct answer is D: Laptop.

Laptops are portable and powered by batteries, making them convenient for mobile computing, unlike desktops, mainframes, or supercomputers.

v) The main purpose of a printer is to:

A. Display images

B. Input text

C. Produce a hard copy

D. Store data

The correct answer is C: Produce a hard copy.

Printers convert digital documents into physical paper copies.

vi) The term IP address stands for:

A. Internet Protocol Address

B. Internal Protocol Address

C. Internet Port Address

D. Internal Port Address

The correct answer is A: Internet Protocol Address.

An IP address uniquely identifies devices on a network to facilitate communication.

vii) A program that is designed to help a user remove unwanted files and clean up a hard disk is a:

A. Word processor

B. Spreadsheet program

C. Utility program

D. Database program

The correct answer is C: Utility program.

Utility programs optimize system performance, manage files, and remove unnecessary data.

viii) Which of the following is an example of an open-source operating system?

A. Microsoft Windows

B. macOS

C. Linux

D. Chrome OS

The correct answer is C: Linux.

Linux is freely available and allows users to modify its source code, unlike proprietary systems like Windows or macOS.

ix) The term cyberspace refers to:

A. The physical space in a computer

B. The virtual world of computers and networks

C. The space between computers

D. A type of computer memory

The correct answer is B: The virtual world of computers and networks.

Cyberspace is the digital environment where online communication and transactions occur.

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

A. Decryption

B. Compression

C. Encryption

D. Formatting

The correct answer is C: Encryption.

Encryption transforms readable data into a coded format to secure it from unauthorized users.

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

i. Modem → D: A device that converts digital data into analog signals and vice versa.

ii. Router → C: A device that directs data traffic between networks.

iii. Switch → E: A device that connects multiple computers and sends data to a specific recipient.

iv. Hub → B: A device that connects multiple computers and sends data to all of them.

v. Bridge → A: A device that connects two LANs to create a single network.

**SECTION B (75 Marks)**

Attempt ALL questions from this section.

3.  a) Define computer hardware and computer software.

   Computer hardware refers to the physical components of a computer system, such as the CPU, monitor, and keyboard. Software refers to programs and instructions that tell the computer how to perform tasks.

   b) Give two (2) examples of each.

   Hardware: CPU, keyboard.

   Software: Microsoft Word, Linux operating system.

   c) Explain the relationship between hardware and software.

   Hardware requires software to function, while software relies on hardware to execute instructions. Together, they make a computer system operational.

4.  a) What is a user interface?

   A user interface is the medium through which a user interacts with a computer system.

   b) Briefly explain the purpose of a user interface.

   It allows users to communicate with and control the computer efficiently, making operations intuitive and accessible.

   c) Differentiate between GUI and CLI.

   GUI uses graphical elements like icons and menus for interaction, whereas CLI requires users to type commands to perform tasks.

5.  a) Explain what a computer peripheral is.

   A computer peripheral is an external device connected to a computer to enhance its functionality, such as input, output, or storage devices.

   b) State the main function of the following peripherals:

   i. Scanner – Converts physical documents into digital format.

   ii. Plotter – Produces large-scale graphics or engineering drawings.

c) Differentiate between an impact printer and a non-impact printer.

Impact printers print by physically striking the paper (e.g., dot matrix), while non-impact printers use non-contact methods like laser or inkjet.

6. a) What is online privacy?

Online privacy is the protection of a user's personal information and activities from unauthorized access while using the internet.

b) Explain two (2) reasons why it is important to protect your personal information online.

To prevent identity theft and fraud.

To maintain confidentiality and personal security.

c) Mention three (3) potential risks of not protecting your online privacy.

Cyberbullying, identity theft, and unauthorized access to sensitive data.

7. a) Briefly explain the concept of e-commerce.

E-commerce is the buying and selling of goods and services over the internet.

b) Give two (2) examples of e-commerce websites.

Amazon, Jumia.

c) State two (2) advantages and two (2) disadvantages of e-commerce.

Advantages: Convenience of shopping online; access to a global market.

Disadvantages: Risk of fraud; dependency on internet connectivity.

8. a) Define social media.

Social media refers to platforms that allow users to create, share, and interact with content or networks online.

b) Give two (2) examples of social media platforms.

Facebook, Instagram.

c) Analyze two (2) advantages and two (2) disadvantages of using social media.

Advantages: Enhances communication and networking; provides access to information.

Disadvantages: Risk of privacy breaches; potential for misinformation spread.

9. a) What is a network topology?

Network topology is the physical or logical arrangement of devices in a computer network.

b) Draw a simple diagram of a Star topology.

In a Star topology, all devices connect to a central hub or switch.

[Diagram description: Central hub in the middle with lines radiating to each device.]

c) State one (1) advantage and one (1) disadvantage of a Star topology.

Advantage: Easy to manage and troubleshoot.

Disadvantage: If the central hub fails, the entire network is affected.

10. a) What is data backup?

Data backup is the process of creating copies of important data to prevent loss due to system failure or accidental deletion.

b) State two (2) reasons for performing data backup.

To recover lost or corrupted data.

To protect against accidental deletion or malware attacks.

c) List two (2) types of external storage devices used for data backup.

External hard drive, USB flash drive.

## SECTION C (10 Marks)

Attempt ONLY ONE (1) question from this section.

11. A school treasurer uses a spreadsheet to track the monthly fees paid by students.

a) Write a formula to calculate the total fees paid by each student in column F.

=SUM(B2:D2)

b) What formula would you use in cell G2 to find the average fees paid by Sarah?

=AVERAGE(B2:D2)

c) What is the formula to find the highest amount paid in February?

=MAX(C2:C5)

d) Write a formula to calculate the total fees collected in the month of March.

=SUM(D2:D5)

12. a) Define the term web page.

A web page is a single document on the internet, typically containing text, images, and links, which can be viewed using a web browser.

b) Differentiate between a website and a web page.

A website is a collection of related web pages under a single domain, while a web page is a single document within that website.

c) Briefly explain the purpose of a Uniform Resource Locator (URL).

A URL specifies the address of a web page or resource on the internet, allowing users to locate and access it.

d) What is a homepage?

A homepage is the main or introductory page of a website, usually serving as the starting point for navigation.