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ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION, 2012

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 one of the following is not a type of computer?

- A. Desktop computer
- B. Laptop computer
- C. Mainframe computer
- D. Spreadsheet computer

**Correct answer: D. Spreadsheet computer**

A spreadsheet computer is not a recognized type of computer. Desktop, laptop, and mainframe computers are actual types of computers. A spreadsheet is a software application, not a computer type.

ii) The process of putting a computer back into its initial state is called:

- A. Rebooting
- B. Hibernating
- C. Formatting
- D. Installing

**Correct answer: C. Formatting**

Formatting a computer or its storage media restores it to its original state by erasing all data and reinstalling the system. Rebooting only restarts the computer without erasing data, hibernating saves the current state to disk, and installing is the process of setting up software.

iii) Which of the following is a component of a computer's Central Processing Unit (CPU)?

- A. RAM
- B. Motherboard
- C. Hard disk
- D. Arithmetic Logic Unit (ALU)

**Correct answer: D. Arithmetic Logic Unit (ALU)**

The ALU is a core component of the CPU responsible for performing arithmetic and logical operations.

RAM and hard disks are memory and storage, while the motherboard is the main circuit board that houses the CPU and other components.

iv) The illegal copying and distribution of software is known as:

- A. Hacking
- B. Piracy
- C. Phishing
- D. Spamming

**Correct answer: B. Piracy**

Software piracy involves copying or distributing software without permission from the copyright owner. Hacking involves unauthorized access, phishing is fraudulent information theft, and spamming is sending unsolicited messages.

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

- A. Microsoft Windows
- B. macOS
- C. Linux
- D. Chrome OS

**Correct answer: C. Linux**

Linux is an open-source operating system whose source code is freely available and can be modified. Windows and macOS are proprietary, and Chrome OS, while partially open-source, is primarily proprietary.

vi) A network that connects computers within a specific, small geographical area is a:

- A. WAN
- B. MAN
- C. LAN
- D. Internet

**Correct answer: C. LAN**

A Local Area Network (LAN) connects computers within a small area like a building or school. WAN covers larger areas, MAN covers cities, and the Internet is a global network.

vii) What is a collection of related data stored in a file called?

- A. A database
- B. A record
- C. A field
- D. A table

**Correct answer: A. A database**

A database is an organized collection of related data stored in files for easy retrieval. A record is a row, a field is a column, and a table is a structured set of rows and columns.

viii) The term **URL** stands for:

- A. Uniform Resource Locator
- B. Universal Resource Link
- C. Universal Remote Link
- D. Uniform Remote Locator

**Correct answer: A. Uniform Resource Locator**

A URL is the address used to access resources on the internet. The other options are incorrect as they do not reflect the standard definition.

ix) Which of these is a form of malware designed to spy on a user's activity?

- A. Worm
- B. Trojan horse
- C. Spyware
- D. Virus

**Correct answer: C. Spyware**

Spyware is malicious software that secretly monitors and collects user data. Worms and viruses are designed to replicate and damage systems, while Trojan horses disguise themselves as legitimate programs.

x) A physical cable used to connect a computer to a network is called a:

- A. USB cable
- B. Ethernet cable

- C. Power cable
- D. Printer cable

**Correct answer: B. Ethernet cable**

Ethernet cables are specifically used for wired network connections. USB is for peripherals, power cables supply electricity, and printer cables connect printers.

**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. Mouse
- ii. Monitor
- iii. Printer
- iv. Scanner
- v. CPU

**COLUMN B**

- A. The brain of the computer.
- B. A device used to produce a soft copy output.
- C. An input device used to control the cursor on the screen.
- D. A device used to produce a hard copy output.
- E. A device that converts an image or text from paper to digital format.
- F. The main circuit board.
- G. An application that handles numbers.

**Answers:**

- i - C: A mouse is an input device used to control the cursor on the screen.
- ii - B: A monitor produces a visual soft copy output from the computer.
- iii - D: A printer produces a hard copy of documents or images.
- iv - E: A scanner converts images or text from paper into digital format.
- v - A: The CPU is the brain of the computer responsible for processing and executing instructions.

**Section B: (75 Marks)**

Attempt ALL questions from this section.

**3.**

a) Define **computer generations**.

b) State the main technology used in the first, second, and third generations of computers.

c) Mention one (1) characteristic of computers from the fourth generation.

a) Computer generations refer to the stages of computer development, each defined by the major technological advancement used in building computers. Each generation reflects improvements in speed, size, cost, and efficiency.

b) The main technologies for each generation are:

➤ First generation: Vacuum tubes

➤ Second generation: Transistors

➤ Third generation: Integrated circuits

c) One characteristic of fourth-generation computers is the use of microprocessors, which integrate thousands of transistors on a single chip, making computers faster, smaller, and more energy-efficient.

**4.**

a) What is a **web browser**?

b) List three (3) popular web browsers.

c) Explain the difference between a **web browser** and a **search engine**.

a) A web browser is a software application that allows users to access and view websites on the Internet by interpreting HTML and other web content.

b) Three popular web browsers are Google Chrome, Mozilla Firefox, and Microsoft Edge.

c) A web browser is a tool to display websites and web pages, while a search engine is an online service that helps users find websites or information by entering keywords. For example, Google Chrome is a browser, and Google Search is a search engine.

**5.**

- a) State three (3) advantages of using a laptop computer over a desktop computer.
- b) Give two (2) disadvantages of a laptop computer.
- c) Briefly explain the term **portability**.

a) Advantages of laptops:

- They are portable and can be used anywhere.
- They consume less power than desktop computers.
- They combine CPU, monitor, keyboard, and storage in a single unit, saving space.

b) Disadvantages of laptops:

- They are more expensive than desktops with similar specifications.
- They are harder to upgrade or repair because of compact design.

c) Portability refers to the ease with which a computer can be moved from one location to another. Laptops are designed for mobility, unlike desktops.

**6.**

- a) What is a **file extension**?
- b) Give two (2) examples of file extensions for each of the following:
  - i) Text documents
  - ii) Image files
- c) Briefly describe the purpose of a **folder** in a computer system.

a) A file extension is the suffix at the end of a file name that indicates the type of file and which program can open it. For example, .docx indicates a Word document.

b) Examples:

i) Text documents: .docx, .txt

ii) Image files: .jpg, .png

c) A folder is a digital container used to organize files on a computer. It helps group related files together, making data easier to manage, access, and back up.

**7.**

a) Define the term **computer ethics**.

b) State any three (3) ethical issues related to the use of computers.

c) Give two (2) ways of promoting ethical computer use.

a) Computer ethics refers to the moral guidelines and principles that govern the proper use of computers, software, and digital data to avoid harm or illegal activity.

b) Ethical issues:

➤ Unauthorized access to data (hacking)

➤ Software piracy

➤ Cyberbullying or harassment online

c) Promoting ethical computer use:

➤ Educating users on responsible digital behavior and legal consequences.

➤ Implementing strong security policies and access controls to prevent misuse.



**8.**

- a) What is the main difference between **e-learning** and a traditional classroom method?
- b) State two (2) advantages of using e-learning.
- c) Mention two (2) disadvantages of e-learning.

a) E-learning is the process of learning using electronic technologies, typically online, allowing students to access content remotely, while traditional classroom learning involves face-to-face teaching in a physical location.

b) Advantages:

- Flexibility to learn anytime and anywhere.
- Access to a wider range of resources and courses.

c) Disadvantages:

- Lack of personal interaction with teachers and peers.
- Dependence on technology and internet connectivity.

**9.**

- a) Explain what a **computer program** is.
- b) Differentiate between **application software** and **system software**.
- c) Give one (1) example of each.

a) A computer program is a set of instructions written in a programming language that a computer executes to perform specific tasks.

b) Application software is designed to perform user-specific tasks like word processing or graphic design, while system software manages the computer hardware and provides a platform for applications to run, such as operating systems.

c) Example of application software: Microsoft Word.

Example of system software: Windows OS.

**10.**

a) What is a **computer virus**?

b) Explain two (2) types of computer viruses.

c) State three (3) ways to prevent a computer virus.

a) A computer virus is a malicious program designed to damage, disrupt, or gain unauthorized access to a computer system.

b) Types:

- File-infecting viruses attach themselves to executable files and spread when files are run.
- Boot sector viruses infect the startup sector of a storage device, affecting the boot process.

c) Prevention methods:

- Install and regularly update antivirus software.
- Avoid downloading files from unknown sources.
- Keep the operating system and software patched and updated.

### **Section C: (10 Marks)**

Attempt ONLY ONE (1) question from this section.

**11.**

a) Define the term **spreadsheet**.

b) Explain the following terms as used in a spreadsheet:

i. Cell

ii. Row

iii. Column

c) Provide a formula to calculate the total sum of the values in cells A1, A2, A3, and A4.

d) What is the purpose of a **formula bar**?

a) A spreadsheet is a computer application that organizes data in rows and columns, allowing calculations, analysis, and visualization of data.

b) i. **Cell**: The intersection of a row and a column where data is entered.

ii. **Row**: A horizontal series of cells, typically numbered.

iii. **Column**: A vertical series of cells, typically labeled with letters.

c) Formula to calculate total sum: =SUM(A1:A4)

d) The formula bar displays the contents of the selected cell and allows users to enter or edit data and formulas.

## **12.**

a) What is **networking**?

b) Differentiate between **peer-to-peer** and **client-server** networks.

c) Give two (2) advantages of a **Local Area Network (LAN)** in a business.

d) What is the main difference between a **Hub** and a **Switch**?

a) Networking is the process of connecting two or more computers and devices to share resources such as files, printers, and internet access.

b) Peer-to-peer networks connect computers directly, allowing each to act as both client and server. Client-server networks have dedicated servers that provide resources and services to clients.

c) Advantages of LAN:

- Facilitates resource sharing such as files and printers.
- Enables communication between employees via email or chat.

d) Difference between Hub and Switch:

A hub broadcasts data to all connected devices, while a switch directs data only to the intended recipient, making switches more efficient and secure.