UGANDA NATIONAL EXAMINATIONS BOARD

ORDINARY LEVEL EXAMINATION

COMPUTER STUDIES PAPER 1

INSTRUCTIONS:

Answer all questions.

Write your answers in the space provided.

Do not open the question paper until you are instructed to do so.

TIME ALLOWED: 2 HOURS

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

Choose the correct answer from the options given and write the letter of the correct answer in the space provided.

Which of the following is an input device?

A. Monitor

B. Keyboard

C. Printer

D. Speakers

Answer: B

What is the main function of an operating system?

A. Printing documents

B. Managing hardware resources

C. Sending emails

D. Creating spreadsheets

Answer: B

Which of the following is an example of secondary storage?

A. RAM

B. CPU

C. Hard Disk Drive (HDD)

D. Motherboard

Answer: C

What does CPU stand for?

A. Central Processing Unit

B. Computer Processing Unit

C. Central Printing Unit

D. Computer Programming Unit

Answer: A

Which of the following programming languages is used for web development?

A. Python

B. Java

C. HTML

D. C++

Answer: C

What is the purpose of a firewall in computer security?

A. To print documents

B. To protect against unauthorized access

C. To create folders

D. To format hard drives

Answer: B

What type of software is Microsoft Word?

A. Spreadsheet software

B. Word processing software

C. Presentation software

D. Graphic design software

Answer: B

Which of the following file extensions is commonly associated with image files?

A. .doc

B. .jpg

C. .exe

D. .mp3

Answer: B

Which key is used to perform the "undo" action in most software applications?

A. Ctrl

B. Alt

C. Esc

D. Shift

Answer: A

What does HTML stand for?

A. Hyper Text Markup Language

B. High-Tech Multimedia Language

C. Human-Technology Markup Logic

D. Hyperlink Text Management

Answer: A

SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

Answer the following questions in brief.

Define the term "software."

Answer: Software refers to a collection of programs, data, and instructions that enable a computer to perform various tasks and operations.

Explain the difference between RAM and ROM.

Answer: RAM (Random Access Memory) is a type of volatile memory used for temporarily storing data that is actively being used by the computer. It allows for fast data access and retrieval but loses its contents when the computer is powered off. ROM (Read-Only Memory) is non-volatile memory that contains firmware or permanent instructions essential for booting up the computer. It retains its data even when the computer is turned off and cannot be easily modified.

What is the purpose of an email attachment?

Answer: An email attachment is a file or document that is sent along with an email message. It allows the sender to share files, documents, images, or other data with the recipient. Email attachments are commonly used to share documents, photos, spreadsheets, and other digital files.

Name two programming languages commonly used for mobile app development.

Answer: Two programming languages commonly used for mobile app development are Java and Swift.

Briefly explain the concept of data backup.

Answer: Data backup is the process of creating copies of important data and storing them in a separate location or medium to prevent data loss in case of hardware failure, data corruption, or other unforeseen events. It ensures that data can be restored and accessed if the original data becomes inaccessible or is deleted.

SECTION C: LONG ANSWER QUESTIONS (50 MARKS)

Explain the role of an operating system in a computer. Provide examples of popular operating systems.

Answer: An operating system (OS) is a software program that serves as the core of a computer system. It manages and controls various hardware resources, provides a user interface, and facilitates the execution of software applications. The role of an operating system includes:

Hardware Management: The OS manages hardware components such as the CPU, memory, storage devices, and input/output devices. It allocates resources to different programs and ensures efficient resource utilization.

User Interface: Operating systems provide a user-friendly interface for users to interact with the computer. This includes graphical user interfaces (GUIs) in which users can perform tasks using icons, windows, and menus.

Process Management: The OS controls the execution of processes (programs) on the computer. It schedules processes, manages their execution, and provides mechanisms for inter-process communication.

File System Management: Operating systems manage files and directories, including tasks like file creation, deletion, copying, and organization. They also ensure data security and access control.

Device Management: The OS handles communication with hardware devices, such as printers, scanners, and network adapters. It provides device drivers to enable these devices to work with the computer.

Examples of popular operating systems include:

Microsoft Windows (e.g., Windows 10, Windows 11)

macOS (used on Apple Mac computers)

Linux (open-source OS with various distributions like Ubuntu, Fedora, and CentOS)

Android (for mobile devices)

iOS (for iPhones and iPads)

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

Which of the following is an example of an application software?

A. Windows operating system

B. Microsoft Excel

C. CPU

D. Hard Disk Drive (HDD)

Answer: B

What is the primary function of a computer's BIOS (Basic Input/Output System)?

A. Managing software applications

B. Displaying graphics on the screen

C. Starting up and initializing hardware components

D. Sending emails

Answer: C

Which of the following is NOT an example of a web browser?

A. Google Chrome

B. Mozilla Firefox

C. Microsoft Word

D. Safari

Answer: C

What is the purpose of a computer network?

A. Playing video games

B. Sharing resources and information between computers

C. Printing documents

D. Creating spreadsheets

Answer: B

Which programming language is commonly used for web development on the server-side?

A. JavaScript

B. HTML

C. Python

D. PHP

Answer: D

SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

Define the term "malware" and provide examples of malware types.

Answer: Malware stands for malicious software and refers to software programs designed to harm or compromise computer systems or data. Examples of malware types include viruses, worms, Trojans, spyware, and ransomware.

Explain the difference between a LAN (Local Area Network) and a WAN (Wide Area Network).

Answer: A LAN (Local Area Network) is a network that covers a small geographic area, such as a home, office, or school. It connects devices within a limited proximity. A WAN (Wide Area Network), on the other hand, covers a larger geographic area, often spanning cities, countries, or continents. WANs connect multiple LANs and provide long-distance communication.

What is the role of a web server in the context of the World Wide Web?

Answer: A web server is a software application or hardware device responsible for storing, processing, and serving web pages to users over the internet. It receives requests from web browsers, retrieves web pages and associated resources (such as HTML, images, and videos), and delivers them to users' devices for display.

SECTION C: LONG ANSWER QUESTIONS (50 MARKS)

Describe the components and functions of a typical computer system.

Answer: A typical computer system consists of several components, each with its specific functions:

Central Processing Unit (CPU): The CPU is the brain of the computer and performs data processing, arithmetic calculations, and executes instructions.

Memory (RAM): RAM (Random Access Memory) provides temporary storage for data and programs actively in use. It allows for quick data access by the CPU.

Storage Devices: These include hard disk drives (HDDs) and solid-state drives (SSDs) for long-term data storage. They store software, documents, and media files.

Input Devices: Input devices, such as keyboards, mice, and touchscreens, allow users to input data and commands into the computer.

Output Devices: Output devices, like monitors, speakers, and printers, display or produce results for users.

Motherboard: The motherboard is the main circuit board that connects and facilitates communication between all hardware components.

Operating System: The operating system (e.g., Windows, macOS) manages hardware resources, provides a user interface, and runs software applications.

Explain the concept of computer networking and its advantages.

Answer: Computer networking involves connecting multiple computers and devices to share resources and information. Advantages of computer networking include:

Resource Sharing: Users can share files, printers, and internet connections, reducing costs and improving efficiency.

Communication: Networking enables communication through email, video conferencing, and instant messaging.

Centralized Data Storage: Data can be stored centrally on servers, ensuring data consistency and accessibility.

Remote Access: Users can access network resources remotely, enhancing flexibility.

Scalability: Networks can be expanded to accommodate more devices and users as needed.
Which of the following is an example of an open-source operating system?
A. Microsoft Windows
B. macOS
C. Linux

D. Android

Answer: C

What does the acronym URL stand for in the context of the internet?

A. Universal Resource Locator

B. Uniform Resource Language

C. User Registration Link

D. Underlying Resource Location

Answer: A

Which programming language is commonly used for creating dynamic web pages?

A. C++

B. Java

C. HTML

D. JavaScript

Answer: D

Explain the purpose of an IP address in computer networking.

Answer: An IP (Internet Protocol) address is a numerical label assigned to each device connected to a computer network. It serves two primary purposes:

Host Identification: It uniquely identifies a device on the network, allowing data packets to be directed to the correct destination.

Location Addressing: It helps routers and switches determine the path to route data across the internet.

What is the significance of the "www" in a website's URL, such as "www.example.com"?

Answer: The "www" in a URL stands for "World Wide Web" and is a subdomain used to denote that the address is part of the World Wide Web, which is a system of interconnected hypertext documents accessible via the internet. It is commonly used but not always required in modern URLs.

SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

Differentiate between data and information.

Answer: Data consists of raw facts, numbers, or symbols, while information is processed and organized data that is meaningful and useful.

Explain the purpose of a firewall in network security.

Answer: A firewall is a network security device or software that monitors and controls incoming and outgoing network traffic. Its purpose is to establish a barrier between a trusted internal network and untrusted external networks, filtering traffic to prevent unauthorized access, cyberattacks, and the spread of malware.

SECTION C: LONG ANSWER QUESTIONS (50 MARKS)

Describe the process of booting up a computer, including the role of the BIOS.

Answer: Booting up a computer involves the following steps:

Power-On Self-Test (POST): When the computer is turned on, the CPU initiates a POST to check hardware components like RAM, CPU, and storage devices for functionality.

BIOS Initialization: The Basic Input/Output System (BIOS) is activated. It initializes hardware components, locates the boot device (e.g., HDD or SSD), and loads the bootloader.

Bootloader Execution: The bootloader is a small program that loads the operating system (OS) from the boot device into RAM.

Operating System Load: The OS is loaded into RAM and takes control of the computer, providing a user interface and managing software and hardware resources.

Explain the concept of computer programming and provide an example of a high-level programming language.

Answer: Computer programming involves writing instructions in a programming language to solve problems and perform tasks. High-level programming languages, like Python, are designed to be easily readable and writable by humans. An example of Python code to print "Hello, World!" is:

```python
Copy code
print("Hello, World!")
```

What are the advantages and disadvantages of cloud computing?

Answer: Advantages of cloud computing include scalability, cost-effectiveness, accessibility, and automatic updates. Disadvantages include security concerns, dependence on internet connectivity, and potential data privacy issues.