1. What is a computer? (1 mark)
2. State two types of system unit form factor (2marks)

* Tower
* Desktop

1. Give three examples of pointing input devices (3 Marks)

* Joystick
* Touchpad
* Mouse
* Stylus
* Digitizer/graphic tablet

1. State THREE component s of the CPU (3 marks)

* Main memory
* Arithmetic and logic unit
* Control unit

1. Classify computer software according to following factors (6marks)
2. Acquisition

* Vendor off-the-shelf
* In-house developed/Bespoke/tailor-made

1. Purpose

* System software
* Application software

1. EULA

* Proprietary software
* Open source
* Shareware
* freeware

1. Differentiate between system software and application software [2marks]

* System software - is software that governs the computer system.

Functions of a system software

* controls the hardware, including any peripherals
* allows other programs (applications) to run
* provides an interface for the user to interact with the computer
* maintains the system
* application software - a software that enable

1. Briefly explain the following categories of system software [4 marks]
2. Operating Systems
3. Firmware
4. Utility software
5. Network software
6. State and explain three characteristics of a computer (6marks)

1. State the physical parts of a computer (4marks)
2. State two examples of softcopy output devices and two examples of hardcopy output devices(4mks)
3. Distinguish the following computers: (4 marks)
4. Analogue and digital computers

1. Special purpose and general purpose computers
2. State and explain four areas where computers are used (4 marks)

1. Define the term computer system [1mark]
2. State the unit for measuring memory capacity [1mk]

* Bytes/gigabytes/terabytes/megabytes

1. State the unit for measuring the processing speed [1mk]

* Hertz

1. State three uses of Optical Mark Recognition Scanners (3marks)

* Marking of multiple choice questions
* Analyzing responses from questionnaires given during surveys
* Tallying of votes

1. State the interface cables used to connect fixed drives to the motherboard [2marks]

* Serial Advanced Technology Attachment
* Enhanced Integrated Drive Electronics

1. State two functions of the power supply unit in a computer [2marks]

* Converts ac to dc
* Regulate power

1. Give differences between serial and parallel cables [2marks]

* Serial cable transmit data sequentially one bit at a time using a single conductor/wire
* Parallel cables transmit multiple bits or 8 bits at a go using multiple conductors/lines /8 conductors
* Parallel cables transmit data faster than serial cables

1. Define the following: [3marks]
2. Port

* A connection point or interface between a computer and an external or internal device.

1. Interface cable

* **Data interface cables transmit data from a peripheral device to the CPU**

1. Power cable

* Transmit power

1. Give two advantages of USB interface cable [2 marks]

*Plug-and-Play:*

* USB cables are designed for easy plug-and-play functionality, meaning you can connect and disconnect devices without needing to restart or reconfigure the system.

*High Data Transfer Speeds:*

* USB cables support high-speed data transfer rates, especially with newer USB standards like USB 3.0 and USB 3.1

*Hot Swapping*

* One can connect or disconnect devices while the system is running.

*Power Delivery:*

* USB cables can deliver power alongside data transfer, making them capable of charging devices.

*Backward Compatibility*:

* USB cables and ports are generally backward compatible, meaning newer USB devices can be used with older USB ports and vice versa

1. State at least three tools that you may require while setting up a computer [3marks]

* Anti-static wrist member
* Tweezers
* Pliers
* Crimping tool/crimpers
* Screwdriver
* Power tester

1. State two examples of fixed storage media [2 marks]

* HDDs and SSDs

1. Distinguish between fixed and removable storage [2 marks]

* Removable devices:- removable devices are referred to those devices which are enclosed within the casing of system unit
* Fixed devices:- fixed devices are referred to those devices that enclosed and mounted inside the system unit

1. Describe three precautions you would take to avoid damaging removable storage media [3 marks]

* When not in use, keep your removable storage media in protective cases or sleeves to prevent physical damage and exposure to dust, moisture, and other environmental factors.
* Always eject or safely remove the removable storage media from the device before physically unplugging it.
* Do not place the devices on top of other electronics
* Do not bend, fold or scratch the surface of optical disks to avoid loss of data due to damaged surface
* **Avoid exposing devices to moisture**

1. Define the term multimedia and list down the components required to make a computer multimedia [2 marks]

* Is an integration of sound, video and text processing and output
* Components include: optical drive, speakers, sound adapters , VGA monitor

1. Explain the internal mechanism of the hard disk in reference to disk platters and the read/write head [2 marks]

* The drive is made up of several disk platters that are mounted on a common axis with read/write heads on both sides of the platter. The heads move in and out as they write/read data

1. Describe the structure of a hard disk platter in reference to cylinders, tracks and sectors [3marks]

* **Cylinders**:
  + A cylinder is a set of tracks that are at the same position on each platter's surface.
  + In a multi-platter HDD, all tracks that have the same track number on different platters form a cylinder.
* **Tracks**:
  + A track is a concentric ring on the surface of a platter.
  + Each platter has multiple tracks, and these tracks are aligned vertically across all the platters, forming a cylinder.
  + Data is read from or written to a track as the platters spin.
* **Sectors**:
  + A sector is the smallest unit of storage on a hard disk.
  + Each track is divided into multiple sectors, usually 512 bytes in size, which can be read from or written to individually.
  + Data is stored in sectors, and the file system manages how data is organized and stored across these sectors.

Differentiate between OCR and MICR scanners [2 marks]

* OCR (Optical Character Recognition/Reader) uses optical effects for character recognition, while an MICR (Magnetic Ink Character Recognition/Reader) uses magnetic effects for character recognition.
* OCR scanners are commonly used to digitize printed documents, books, magazines, and handwritten notes while MICR technology is primarily used in the banking and financial industry for processing cheques and other payment documents.

1. State with examples the various categories of keys on a computer keyboard [2marks]

* **Function Keys (F1 - F12)**: Examples: F1, F2, F3, ..., F12
* **Typing keys/Alphanumeric keys:** Examples: A, B, C, 1, 2, 3
* **Special PC keys /special purpose keys:** Examples: Ctrl, Alt, Shift
* **Cursor movement keys/navigation keys**: Examples: Arrow keys (Up, Down, Left, Right), Home, End, Page Up, Page Down
* **Editing keys**: delete key, insert key etc.

1. Explaining the following software considerations when selecting a computer (5marks)
2. Portability

* Portability refers to the ability of software to be easily moved and run on different devices and platforms without requiring extensive modifications

1. User-friendliness

* It refers to how intuitive and easy the software is for users to learn and operate

1. Authenticity

* Authenticity refers to the legitimacy and genuineness of the software you are purchasing

1. Documentation

* When purchasing software, consider the availability and quality of documentation to ensure that you have the resources you need to use the software effectively.

1. Compatibility

* Compatibility involves ensuring that the software is compatible with your existing hardware, operating system, and other software applications

1. State any five factors that ought to be considered selecting computer hardware (5marks)

* Capacity of the main memory
* Processor speed
* Compatibility
* Upgradability
* Storage capacity e.g. HDD or SSD size
* portability

1. Distinguish between secondary and primary storage devices (2 marks)

|  |  |
| --- | --- |
| Primary storage | Secondary storage |
| * is used to store data that the computer is actively using or processing. | * Used for long-term storage of data, files, and applications that are not currently in active use by the computer's CPU. |
| * are slower in terms of data access and retrieval compared to primary storage. | * are slower in terms of data access and retrieval compared to primary storage. |
| * Data in primary storage is volatile, meaning it is temporary and is lost when the computer is powered off or restarted. | * Data in secondary storage is non-volatile, meaning it remains stored even when the computer is powered off or restarted. |
| * Primary storage has limited capacity compared to secondary storage devices. | * Secondary storage devices typically have larger storage capacity compared to primary storage. |
| * Data stored in primary storage can be accessed directly by the CPU, allowing for fast and efficient data processing. | * Data stored in secondary storage is accessed sequentially or through file systems, and it requires more time for retrieval. |
| * It holds the currently executing programs, their instructions, and data being actively used by the CPU. | * It holds the operating system, applications, files, and data that are not currently being used actively. |
| * Primary storage is more expensive per unit of storage compared to secondary storage. | * Secondary storage is generally less expensive per unit of storage compared to primary storage. |

1. Distinguish the following compact disks: (3 marks)
2. CD-ROM - manufactured with the data already encoded onto the disc during the production process. It contains data that can only be read, not written or modified.
3. CD-RW - allows data to be written, erased, and rewritten multiple times.
4. CD-R -allows data to be written only once and cannot be erased or rewritten afterward.
5. Give three examples of operating systems (3marks)

* Microsoft Windows
* Apple OS X/Apple MacOS
* Linux
* Android
* Apple iOS

1. Name three examples of microcomputers (3 marks)

* **laptops**
* **desktops**
* **tablets**
* **notebooks**
* **single-board computers e.g. raspberry Pi and Arduino**

1. State four measures that should be put in place to protect computers in a computer laboratory (4 marks)

* Ensuring stable power supply by use of UPS
* Burglar-proofing the computer room by reinforcing windows , doors and roofing with metallic grills
* Controlling dust by occasional blowing dust from computers by use of blower, fitting the windows with curtains
* Avoid entering the computer lab with drinks as this may spill on computers causing corrosion of metallic parts
* Controlling dampness (humidity) by installing humidifiers and dehumidifiers. Maintain an optimum humidity helps prevent static electricity buildup and reduces the risk of moisture-related damage.
* Installing fire extinguishers

1. Write the following abbreviations in full: (8 marks)

HDMI - High Definition Multimedia Interface

VGA – video graphic array

UPS – uninterruptible Power Supply

CRT- Cathode Ray Tube

USB – Universal Serial Bus

RAM ­­­­­­­­­­­­­­-Random Access Memory

CPU – Central Processing Unit

ROM – Read Only Memory