ASSIGNMENT

Q1 ans-

A computer is a programmable electronic device that can process and store data. It is capable of performing a wide range of operations, from simple calculations to complex tasks, following a set of instructions called programs or software. Computers are an integral part of modern society and play a significant role in various domains, including business, education, entertainment, research, and communication.

Here are some key components and characteristics of a computer:

- **Input**: Computers can receive data and instructions through various input devices, such as keyboards, mice, touchscreens, scanners, and microphones.
- **Processing**: The central processing unit (CPU) is the "brain" of the computer. It executes instructions, performs calculations, and manages data flow within the system.
- **Memory**: Computers have two main types of memory: RAM (Random Access Memory) for temporary storage of data and programs currently in use, and secondary storage (e.g., hard drives, solid-state drives) for long-term data storage.
- **Output**: After processing the data, the computer produces results through output devices like monitors, printers, speakers, and projectors.
- **Software**: Software refers to the programs and data that instruct the computer's hardware on what tasks to perform. It includes operating systems, applications, and utilities.

Q2 ans-

RAM stands for Random Access Memory. It is a type of computer memory that is used to temporarily store data and program instructions that the CPU (Central Processing Unit) needs to access quickly. RAM allows the computer to perform tasks efficiently and enables multitasking.

Key features of RAM:

- **Volatility**: RAM is volatile memory, which means that its contents are lost when the computer is powered off or restarted. It is different from non-volatile memory like hard drives or SSDs, which can retain data even when the power is turned off.
- **Speed**: RAM is much faster than secondary storage devices like hard drives or SSDs. This speed allows the CPU to quickly access and process data, leading to better overall performance.
- **Random Access**: The term "random access" in RAM's name implies that the CPU can access any location in RAM directly, without having to go through the data sequentially. This quick access time is crucial for fast data retrieval.
- **Storage Capacity**: RAM is typically smaller in capacity compared to secondary storage devices. It is used for holding the data and instructions that the CPU is actively working on.
- **Temporary Storage**: RAM is used to hold data and instructions that are actively used by the CPU during program execution. Once the computer shuts down or the program ends, the data in RAM is erased.

Q3 ans-

Data in a computer is stored in various types of memory, each serving different purposes based on its characteristics and functionality. The primary locations where data is stored in a computer are:

- **Random Access Memory (RAM)**: As mentioned earlier, RAM is a type of volatile memory that temporarily holds data and program instructions that the CPU is actively using. It allows the computer to quickly access and manipulate data during program execution. However, when the computer is powered off or restarted, the data in RAM is lost.
- **Secondary Storage Devices**: Secondary storage devices provide non-volatile memory, meaning the data stored on them is retained even when the power is turned off. The two most common types of secondary storage devices are:
- a. **Hard Disk Drives (HDD)**: HDDs use magnetic storage to store data on spinning disks. They have larger storage capacities and are commonly used to store the operating system, software applications, documents, multimedia files, and other data that needs to be preserved even when the computer is powered off.
- b. **Solid-State Drives (SSD)**: SSDs use flash memory to store data, making them faster and more reliable than traditional HDDs. They are increasingly popular due

to their speed and efficiency and are used for similar purposes as HDDs, providing both the operating system and user data storage.

- **Read-Only Memory (ROM)**: ROM is another type of non-volatile memory. Unlike RAM, the data in ROM cannot be easily modified by the computer user. ROM stores essential firmware and software that boot up the computer when it's turned on. Examples include BIOS (Basic Input/Output System) and UEFI (Unified Extensible Firmware Interface).
- **Cache Memory**: Cache memory is a high-speed memory located on the CPU or between the CPU and RAM. Its purpose is to store frequently accessed data and instructions, allowing the CPU to access them quickly, which boosts overall system performance.
- **External Storage Devices**: In addition to internal storage components like HDDs and SSDs, computers can also use external storage devices like USB flash drives, external hard drives, and memory cards to store data that can be easily transported and accessed on multiple devices.

Q4 ans-

The input device used to type text and numbers on a document in a computer system is called a "Keyboard." The keyboard is one of the most essential and common input devices used to interact with computers.

Keyboards come in various designs and layouts, but the standard keyboard typically consists of a set of alphanumeric keys, function keys, navigation keys (e.g., arrow keys), and additional special keys (e.g., Enter, Backspace, Delete, Shift, Ctrl, Alt). Modern keyboards may also have multimedia keys and shortcut keys for specific functionalities.

When you type on a keyboard, the keystrokes are sent as electrical signals to the computer, and the CPU processes the input. The characters and numbers you type appear on the screen in the active application, whether it's a word processor, text editor, spreadsheet program, web browser, or any other software that accepts text input.

Keyboards are versatile and widely used in various computing tasks, including writing documents, composing emails, coding, browsing the internet, playing games, and much more. Their design has evolved over time, with advancements like wireless keyboards, ergonomic layouts, and backlit keys becoming common in modern computer systems.

Q5 ans-

Output devices in a computer system are used to display or present information processed by the computer to the user. They convert electronic data into a human-readable form, allowing users to interact with the computer and understand the results of their actions. Here are some common output devices:

- **Monitor / Display**: Monitors or displays are the most common output devices. They present visual information, including text, images, videos, and graphical user interfaces (GUIs). Monitors can be CRT (Cathode Ray Tube), LCD (Liquid Crystal Display), LED (Light Emitting Diode), or OLED (Organic Light Emitting Diode) based.
- **Printer**: Printers produce hard copies of digital documents on paper or other media. There are various types of printers, such as inkjet printers, laser printers, dot matrix printers, and 3D printers, each with its specific use cases.
- **Speakers / Headphones**: Speakers and headphones are audio output devices. They convert electronic audio signals into sound, allowing users to hear music, sound effects, and any audio produced by the computer.
- **Projector**: Projectors are used to display computer-generated content on a larger screen or projection surface, such as a wall or projector screen.
- **Plotter**: Plotters are specialized output devices used in engineering and design fields. They draw vector graphics on paper or other materials using precise pens or cutting tools.

Q6 ans-

The input device that allows a user to move the cursor or pointer on the screen is called a "Mouse." The mouse is a common pointing device used with most desktop computers and laptops.

A typical computer mouse consists of buttons and a scroll wheel, along with a sensor at the bottom that detects movement. When the user moves the mouse across a flat surface, the sensor detects the movement and relays the information to the computer, which moves the cursor accordingly on the screen.

The buttons on the mouse serve various functions:

- **Left-click**: This is the primary button and is used for selecting items, clicking on icons, opening files, and interacting with software applications.
- **Right-click**: The right-click button opens context menus, providing access to various options and settings related to the item or area being clicked.

- **Scroll Wheel**: The scroll wheel allows the user to scroll vertically through documents, web pages, or other content displayed on the screen.

Q7 ans -

The language directly understood by a computer without the need for a translation program is called "Machine Language" or "Machine Code." Machine language is a low-level programming language that consists of binary code, which is a series of 0s and 1s representing specific instructions that the computer's central processing unit (CPU) can execute directly.

Machine language is specific to the computer's hardware architecture, and each type of CPU has its own unique machine language. It provides the most fundamental level of communication between software and hardware, allowing the computer to execute operations at the lowest level of abstraction.

Q8 ans-

Input devices are devices or peripherals used to input data, commands, and instructions into a computer system. They allow users to interact with the computer and provide data for processing. Input devices enable users to input various types of information, such as text, numbers, audio, video, and commands. Here are some common examples of input devices:

- **Keyboard**: The keyboard is one of the primary input devices that allows users to type text, numbers, and other characters into the computer. It is widely used for data entry, text editing, programming, and interacting with software.
- **Mouse**: The mouse is a pointing device that allows users to move the cursor on the screen and select items by clicking buttons. It is commonly used to navigate graphical user interfaces (GUIs), interact with applications, and play games.
- **Touchscreen**: Touchscreens are interactive displays that detect and respond to touch gestures, such as tapping, swiping, and pinching. They are commonly found in smartphones, tablets, laptops, and some desktop computers.
- **Trackpad**: Trackpads are touch-sensitive input devices commonly integrated into laptops. They function similarly to a mouse, allowing users to move the cursor and perform various actions through gestures.
- **Graphics Tablet / Digitizer**: Graphics tablets, also known as digitizers, are input devices used by graphic designers and artists. They allow users to draw or write

directly on the tablet's surface with a stylus, with the results displayed on the computer screen.