1.What is a computer? What are the components of computer?

Sol. A computer is a machine that can be programmed to carry out sequences of arithmetic or logical operations automatically.

- Motherboard : All components of a computer communicate through a circuit board called the motherboard
- CPU : Full form of CPU is central processing unit. It is often called the "brain" of a computer. It is direct plugged to the motherboard, and communicates with all of the other components.
- GPU : Full form of GPU is Graphical processing unit. GPU is responsible to handle any graphic intensive task for ex. generating high-end visuals for games or 3D image rendering.
- RAM : Full form of RAM is Random Access Memory. It is a volatile memory that stores data regarding frequently accessed programs and processes.
- Storage : All computers need somewhere to store their data. Modern computers either use a Hard Disk Drive (HDD) or Solid State Drive (SSD)

2.What is input and output?

Sol. Input/output is the communication between an information processing system, such as a computer, and the outside world, possibly a human or another information processing system. Inputs are the signals or data received by the system and outputs are the signals or data sent from it.

3. What is input and output devices?

Sol. Input, used to interact with, or send data to the computer (mouse, keyboards, etc.)
Output, which provides output to the user from the computer (monitors, printers, etc.)

4.What is system software and application software? Give some examples
Sol.
- System Software : System software are designed to provide a platform to other softwares. They are medium of communication between hardware and application software. They are mandatory for proper functioning of a system. For ex. OS, BIOS
- Application software : Application software are designed to perform a particular set of instructions or Tasks according to user desire. They are not mandatory for functioning of a system. For ex. Chrome, excel.

5.What is a keyboard? How many keys we have.

Sol. A computer keyboard is an input device that allows a person to enter letters, numbers, and other symbols into a computer.
A standard windows keyboard have 104 keys.

6.What is computer cluster?

Sol. A computer cluster is a set of connected computers (nodes) that work together as if they are a single (much more powerful) machine.

7.What are the types of memory?
Sol.
- **Primary memory** includes ROM and RAM, and is located close to the CPU on the computer motherboard, enabling the CPU to read data from primary memory very quickly indeed. It is used to store data that the CPU needs imminently so that it does not have to wait for it to be delivered.

- **Secondary memory** by contrast, is usually physically located within a separate storage device, such as a hard disk drive or solid state drive (SSD), which is connected to the computer system either directly or over a network.

8. What is a CPU?
Sol. Full form of CPU is central processing unit. It is often called the "brain" of a computer. It is direct plugged to the motherboard, and communicates with all of the other components.

9.What is motherboard? It's function? It's components?
Sol. Motherboard is a printed circuit board that is the foundation of a computer and allows the CPU, RAM, and all other computer hardware components to function and communicate with each other.
- It has different pins to connect components for example 4 pin CPU Fan or 24 pin ATX Power.
- BIOS is a chip located on all motherboards that contain instructions and setup for how your system should boot and how it operate.
- CMOS BATTERY To keep the clock chip running even when power is of.
- SOUTH BRIDGE A Southbridge chipset handles all of a computer's I/O functions, such as USB, audio, serial etc.
- NORTH BRIDGE The Northbridge is a chip inside a computer that connects the central processing unit (CPU) to other primary components in the system.
- PCI SLOT Provides a medium to expand the capabilities of the PC, by adding like modems cards, audio cards, Ethernet cards
- Ports like USB, VGA, AUDIO, LAN

10. What is USB?
Sol. Short for universal serial bus, USB is a plug and play interface that allows a computer to communicate with peripheral and other devices.

11. What are the steps to disassemble assemble the pc?
Sol.
- Unplug every cable that's plugged in to your computer
- Unscrew the four screws on the back of the computer and remove Outer Shell/Casing
- Remove power Supply
- Remove CPU fan and CPU
- Remove GPU
- Remove CD/DVD drives
- Remove RAM
- Remove Card reader and expansion cards
- Finally remove motherboard.

12. Steps for the installation of windows

13. What is Operating system?
Sol. An operating system (OS) is system software that manages computer hardware, software resources, and provides common services for computer programs.

14. What are PCI slots? BIOS? Booting process?
Sol.

- **PCI :** Peripheral Component Interconnect slot is a built-in slot on a device that allows for the attachment of various hardware components such as network cards, modems, sound cards, disk controllers and other peripherals.

- **BIOS** : Basic Input/Output System and also known as the System BIOS, ROM BIOS or PC BIOS) is firmware used to perform hardware initialization during the booting process (power-on startup), and to provide runtime services for operating systems and programs.

- **BOOTING PROCESS:**

1. BIOS and setup program
2. The Power-on-Self-test (post) : series of tests conducted on the computer's main memory**,** input/output devices, disk drives, and the hard disk.
3. The operating System loads
4. System configuration
5. System Utility loads
6. Users authentication

16. How many expansion slots your computer can have?
Sol. Depending on the form factor of the motherboard and case, around one to seven expansion cards can be added to a computer system
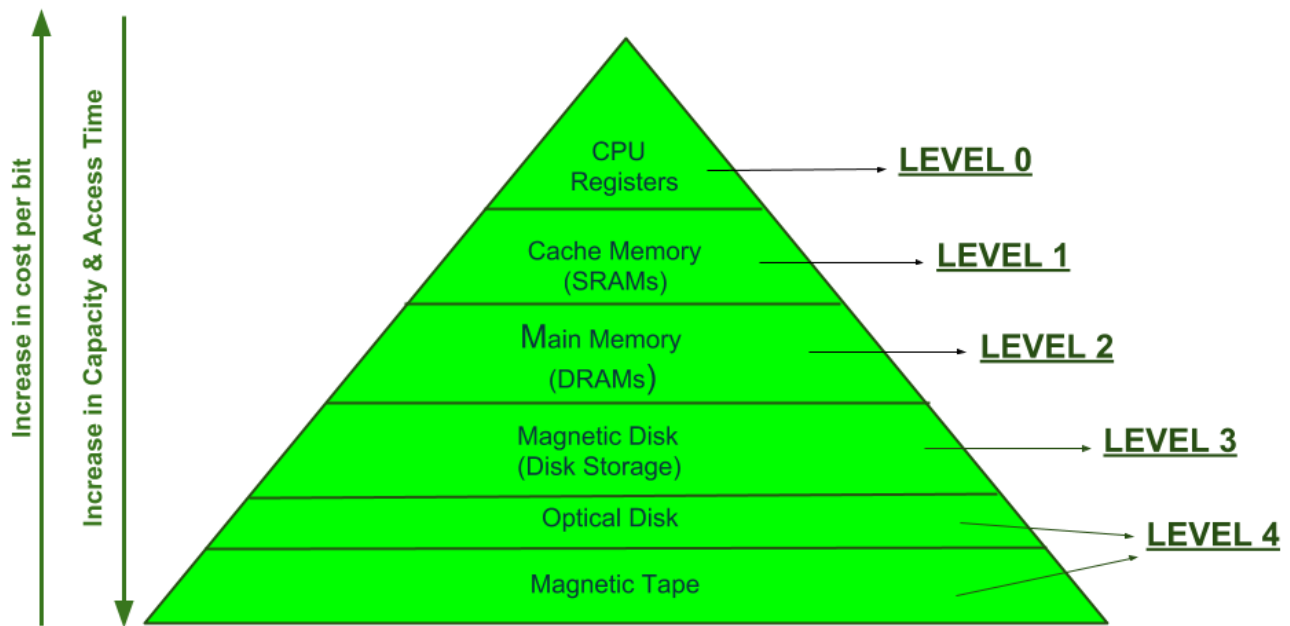
17.CPU Socket
Sol. A CPU socket uses a series of pins to connect a CPU's processor to the PC's motherboard. If a CPU is connected via a CPU socket, it is not soldered and can therefore be replaced.

18. SATA cable
Sol. Serial Advanced Technology Attachment is a computer bus (a bus is a communication system that transfers data between components inside a computer, or between computers.) interface that connects host bus adapters to mass storage devices such as hard disk drives, optical drives, and solid-state drives.

19. Memory hierarchy

CPU Registers — LEVEL 0
Cache Memory (SRAMs) — LEVEL 1
Main Memory (DRAMs) — LEVEL 2
Magnetic Disk (Disk Storage) — LEVEL 3
Optical Disk — LEVEL 4
Magnetic Tape — LEVEL 4

Increase in cost per bit
Increase in Capacity & Access Time

MEMORY HIERARCHY DESIGN

Sol. In computer architecture, the memory hierarchy separates computer storage into a hierarchy based on response time

20.Modifiers keys
Sol. A modifier key is a special key on a computer keyboard that temporarily modifies the normal action of another key when pressed together. For ex. Shift, Function, Control, Alt, Command, and Option

ALU- Arithmetic logical unit
CU- Control Unit
RAM- Random Access Memory
ROM- Read only memory
CMOS - complementary metal oxide semiconductor
ATX - Advanced technology xtended .1994, Intel, 20-24 pin power connector

Volatile ,data will lose after turning of pc
Non volatile, No data loss after turning off pc, usage- in the firmware or BIOS