Module -1:

Understanding of Hardware and Its Components

Section 1: Multiple Choice

1. Which of the following is NOT a component of the CPU?

1. ALU
2. RAM
3. CU
4. 1 and 3 both

Answer :- 4

2. What is the function of RAM in a computer?

RAM :- Random Access memory

The function of RAM in a computer is store data temporarily when we work. RAM provides temporary storage to run application and software.

3. Which of the following is a primary storage device?

1. HDD
2. SSD
3. SD card
4. 1 and 2 both

Answer :- 4

4. What is the purpose of a GPU?

GPU:- Graphical Processing unit

The purpose of GPU is support to run High-quality image-video, editing, gaming etc..

Section 2: True or False

5. True or False: The motherboard is the main circuit board of a computer where other components are attached.

Answer: True

6. True or False: A UPS (Uninterruptible Power Supply) is a hardware device that provides emergency power to a load when the input power source fails.

Answer :- True

7. True or False: An expansion card is a circuit board that enhances the functionality of a component.

Answer:- False

Section 3: Short Answer

8. Explain the difference between HDD and SSD.

Answer :- HDD:- Hard Disk Drive

SSD:- Solid State Drive

Difference :-

- SSDs are faster than HDDs, It read and write speed is faster.
- HDDs have moving parts, while SSDs use flash memory and have no mechanical components.
- SSDs are more expensive then HDDs.
- SSD drives are lighter than HDD drives because they do not have the rotating disks, spindle and motor.

9. Describe the function of BIOS in a computer system.

Answer:- BOIS stand for basic input output system

Function of BOIS:-

- POST:- power on self test

The power-on self-test (POST) is an automated check a computer does when powered on to make sure all hardware components are working properly.

- Run Boot Strap code

The Bootstrap code is hlep for loading the Operating System and load the code in the boot sector typically located in which booting system like a hard drive disk.

- BIOS setup: We can configure our program and hardware setting in our system. This configuration includes system settings like time, date, and passwords.

10. List and briefly explain three input devices commonly used with computers.

Answer:- we can use most common input device is that Keyboard, Mouse, Joystick and Mic.

- Key board:- keyboard is a peripheral input device used to enter characters and functions into the computer system by pressing buttons, or keys.

Types of Keyboard:-

Mechanical Keyboards

Membrane Keyboards

Gaming keyboard

Wireless Keyboard.

Virtual Keyboards

- Mouse:- Mouse typically have two buttons, a scroll wheel and a laser sensor. They are used to move the cursor on the screen, select objects and click on buttons. A mouse typically controls the motion of a pointer in two dimensions in a graphical user interface (GUI).

Types of Mouse:-

Wired Mouse

Wireless Mouse

Optical Mouse,

Mechanical Mouse,

Laser Mouse, and

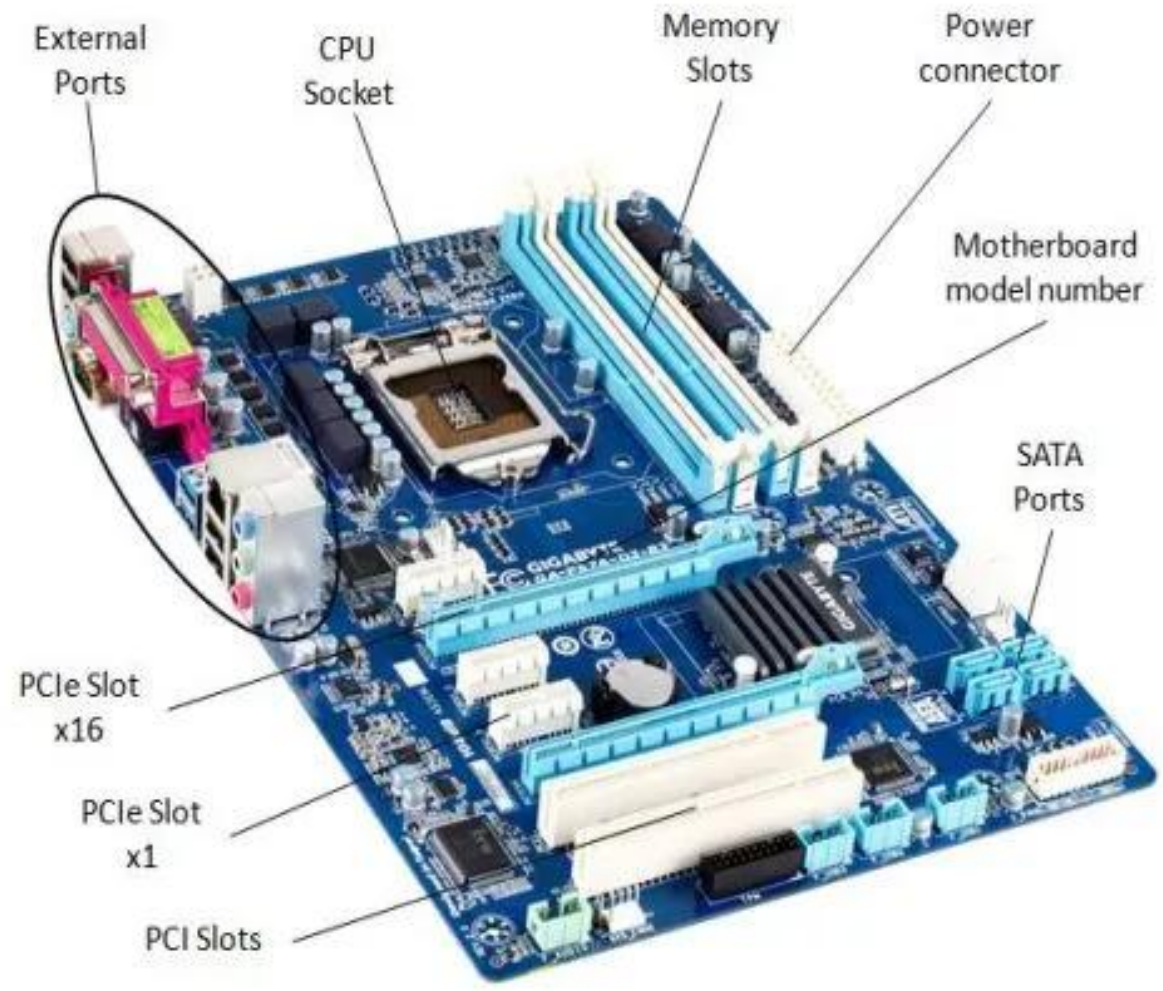
trackball.

- Mic :- A microphone is a device that converts sound waves into an electrical signal. It allows you to capture audio and transmit it to various devices, such as computers, amplifiers, or recording equipment.

Section 4: Practical Application

11. Identify and label the following components on a diagram of a motherboard:

- CPU
- RAM slots
- SATA connectors
- PCI-E slot



12. Demonstrate how to install a RAM module into a computer.

Answer:- Done

Section 5: Essay

13. Discuss the importance of proper cooling mechanisms in a computer system. Include examples of cooling methods and their effectiveness.

Cooling Mechanism:-

The cooling system is used to ensure that the heat generated by computer components is removed and a cooler environment is maintained.

Computer cooling mechanisms are essential for maintaining optimal performance and preventing overheating.

Air Cooling:

Air cooling involves the use of fans and heat sinks to dissipate heat.

Heat sinks are attached to heat-generating components like the CPU and GPU, and fans move air through the heat sinks, carrying heat away from the components.

Liquid Cooling : Liquid Cooling in Built from individual components like pumps, reservoirs, radiators, and tubing. They offer superior cooling performance and are ideal for extreme overclocking and high-end gaming or workstation setups.

Heat Sinks: Used in low-power device. That is Silent and maintenance-free but less effective for high-performance systems.

Thermal Paste: Thermal paste is most ueses in systems to ensure efficient heat transfer between components and coolers.

14. Explain the concept of bus width and its significance in computer architecture.

The bus is a communication channel.

The number of parallel lines or wires that make up the bus.

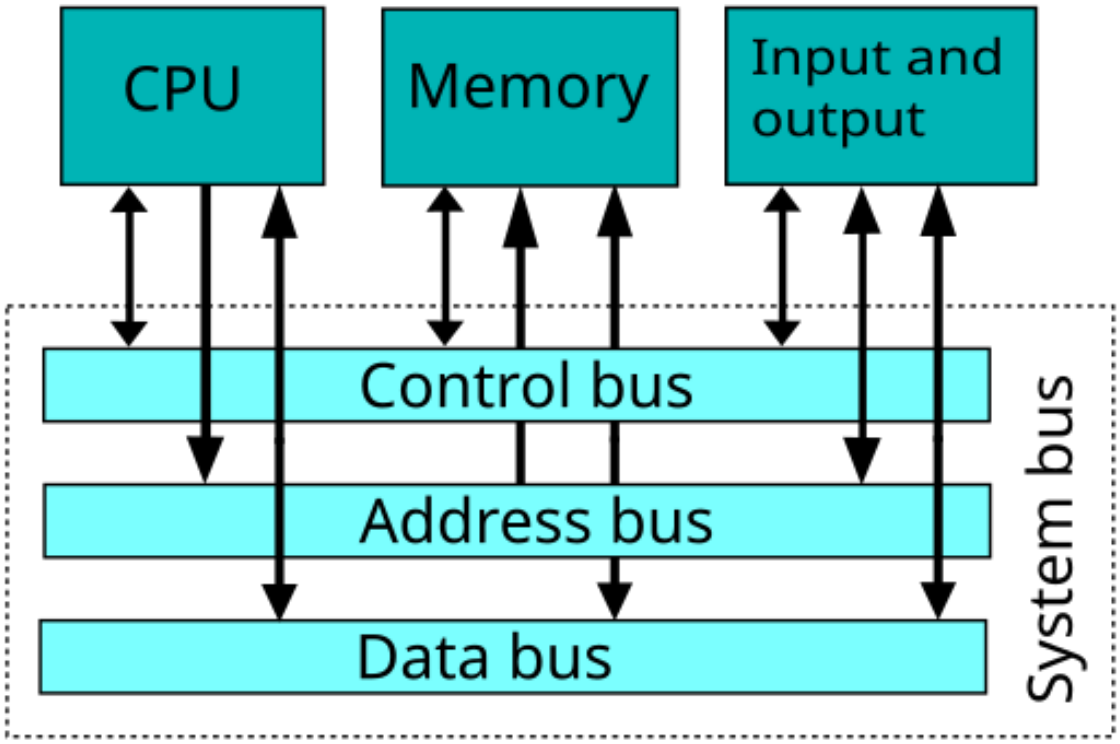
A bus is which is used to provide communication between the major component of computer is called system Bus.

Types of Buses:-

Data Bus: Transfers actual data between the CPU, memory, and peripherals.

Address Bus: Carries the addresses of memory locations where data is to be read from or written to.

Control Bus: Transmits control signals and commands, coordinating various parts of the computer.


CPU
Memory
Input and output
Control bus
Address bus
Data bus
System bus