**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  
 Ans: Ram

Reason :- Not part of the CPU; it's a separate memory unit used to store data and instructions temporarily.

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

Ans : RAM (Random Access Memory) is a computer's short-term memory. It stores data and programs that are currently in use, so the computer can access them quickly. This helps your computer run faster and smoother.

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

1. HDD

2. SSD

3. SD card

4. 1 and 2 both  
 Ans:4. None of them   
4. What is the purpose of a GPU?

Ans: The purpose of a GPU (Graphics Processing Unit) is to handle and speed up graphics and image processing, especially for gaming, video editing, and 3D rendering.

Section 2: True or False  
5. True or False: The motherboard is the main circuit board of a computer where other components are attached.  
 Ans: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.  
 Ans:True

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

Section 3: Short Answer  
8. Explain the difference between HDD and SSD.  
Ans: HDD (Hard Disk Drive) uses spinning disks to store data, making it slower and more fragile.

SSD (Solid State Drive) uses flash memory with no moving parts, making it faster, quieter, and more durable than HDD.

9. Describe the function of BIOS in a computer system.  
Ans: The BIOS (Basic Input/Output System) initializes and tests hardware components during startup and loads the operating system from storage into memory.

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

Ans: (i) Keyboard - Text aur commands type karne ke liye.  
(iii) Scanner - Paper documents ko digital format mein convert karta hai.  
(iv) Webcam - Live video ya images capture karne ke liye.

Section 4: Practical Application

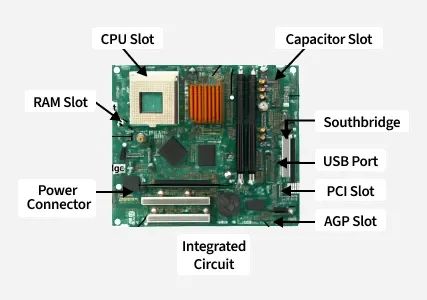
11. Identify and label the following components on a diagram of a motherboard:

● CPU

● RAM slots

● SATA connectors

● PCI-E slot



* CPU – Square socket in the middle (where the processor goes)
* RAM Slots – Long vertical slots next to the CPU
* SATA Connectors – Small ports on the side, used for hard drives and SSDs
* PCI-E Slot – Long horizontal slot for graphics card

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

Ans : Step-by-Step Process:

1. Turn off the computer

Shut it down and unplug the power cable.

2. Open the case

Remove the side panel to see the motherboard.

3. Find the RAM slots

Look for the long slots next to the CPU – usually 2 or 4.

4. Open the slot clips

Gently push down the small clips on both ends of the RAM slot.

5. Insert the RAM stick

Hold the RAM stick above the slot. Match the notch (cut) on the stick with the slot.

6. Press down firmly

Push the RAM straight down with both thumbs until the clips snap back into place.

7. Close the case and turn on the PC

Put the side panel back and power on your computer. The RAM should now be installed.

Section 5: Essay

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

Ans : Why Cooling is Important in a Computer.

1. Computers get hot

When your computer works (like playing games, using big apps), parts like the CPU and GPU become hot.

2. Too much heat is bad

If it gets too hot, the computer can:

* Slow down
* Crash or shut down
* Get damaged over time

Cooling Methods

1. Air Cooling (Fans)

* Uses fans to blow hot air out
* Good for everyday use
* Example: CPU fan, case fans

2. Heat Sinks

* Metal blocks that absorb heat from CPU/GPU
* Work with fans to cool down faster
* Simple and effective

3. Liquid Cooling

* Uses water or coolant to carry heat away
* Better than fans for high performance PCs
* Quieter but more expensive
* Used by gamers or video editors

4. Thermal Paste

* A special cream placed between CPU and heat sink
* Helps transfer heat better
* Small but important!

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

Ans : A bus in a computer is like a road that transfers data between parts of the computer .

Like :- CPU , Memory , Storage devices

Important:-

1. Faster Data Transfer
2. Better CPU-Memory Communication
3. Improves Overall Speed

Example:-

A 32-bit bus can transfer 4 bytes at once.

A 64-bit bus can transfer 8 bytes at once.