Module -1: Understanding of Hardware and Its Components

Section 1: Multiple Choice

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

-> RAM

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

-> RAM stores data and instructions temporarily that the CPU is currently using.
It helps the computer work faster.
When the computer is turned off, the data in RAM is lost.

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

-> RAM is a primary storage device, but it is not listed in the option

4. What is the purpose of a GPU?

-> A GPU is used to handle graphics and display images on the screen.

Section 2: True or False

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

-> True

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

-> True

7 An expansion card is a circuit board that enhances the functionality of a component.

-> True

Section 3: Short Answer

8. Explain the difference between HDD and SSD.

HDD (Hard Disk Drive)	SSD (Solid State Drive)
-> HDD uses spinning disks to store data	-> SSD uses flash memory
-> HDD is slow (mechanical)	-> SSD is fast (flash memory)
-> HDD has moving parts and can fail easily	-> SSD is more durable (no moving parts)
-> HDD is cheaper with larger storage	-> SSD is more expensive but smaller capacity for the price.

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

-> BIOS (Basic Input/Output System) is a program in your computer that starts it up. It checks all the hardware is working properly and then loads the operating system so you can use the computer.

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

-> Keyboard – Used to type letters, numbers, and commands into the computer.

Mouse – Used to click, point, and move things on the screen.

Microphone – Used to give voice or sound input to the computer.

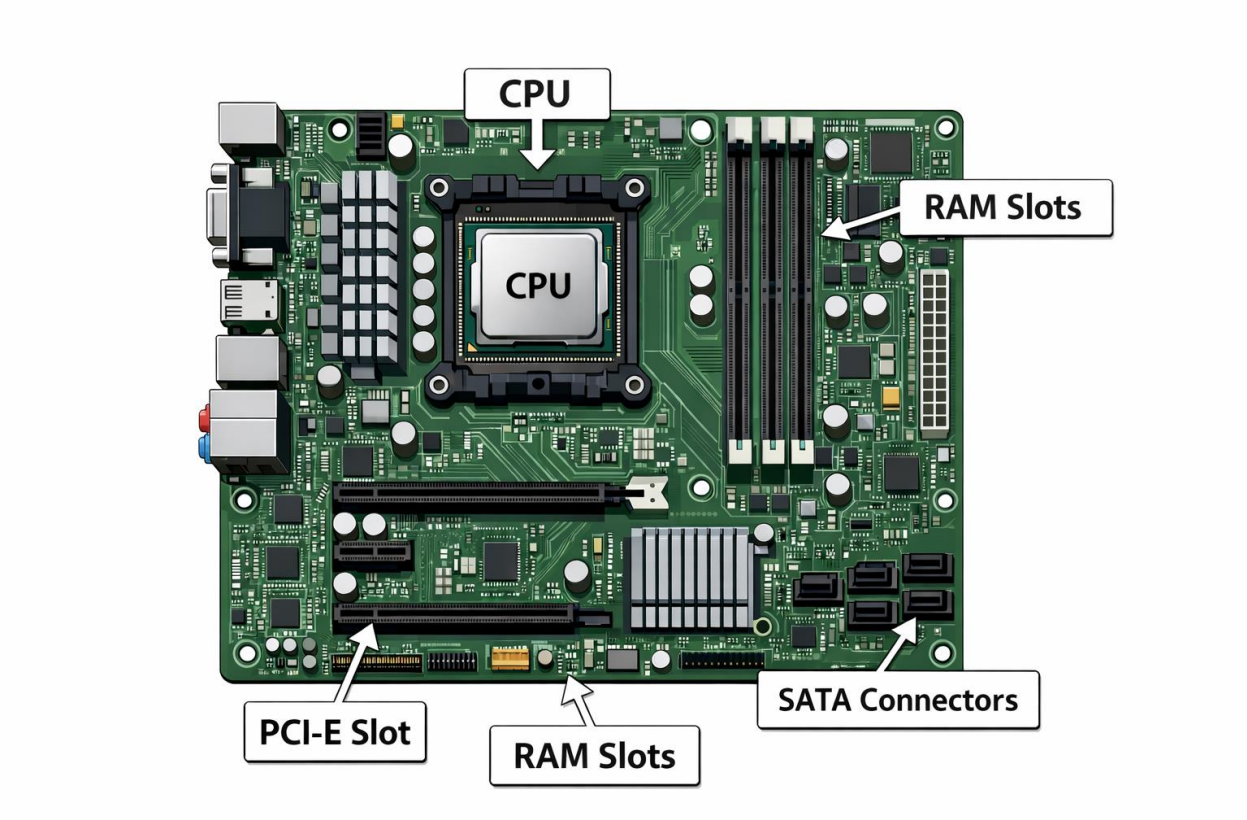
Section 4: Practical Application

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

● CPU

● RAM slots

● SATA connectors



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

-> Turn off the computer and unplug it.

Open the case and find the RAM slots near the CPU.

Open the clips on the RAM slot.

Align the RAM stick and push it in until it clicks.

Close the case, plug in, and turn on the computer.

Section 5: Essay

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

->Computers produce heat when they run, especially the CPU, GPU, and other components. Too much heat can slow down the computer, cause crashes, or damage parts permanently. That's why proper cooling is very important to keep the system safe and working efficiently.

Cooling Methods and Effectiveness:

1. Air Cooling – Uses fans to blow air over components. Simple, cheap, and works well for normal computers.
2. Liquid Cooling – Uses water or coolant to take heat away. Very effective for gaming PCs or high-performance systems.
3. Heat Sinks – Metal pieces attached to chips that absorb and release heat. Works well with fans to keep components cool.

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

-> Bus Width:
A bus is like a highway inside the computer that carries data between components (CPU, memory, etc.). Bus width is the number of bits the bus can carry at one time. For example, a 32-bit bus can carry 32 bits of data at once.

Significance:

- More data at once: A wider bus can move more data at a time, making the computer faster.

- Better performance: Wider buses improve the speed of memory access and overall system performance.