ASSIGNMENT

{MODULE 1: Understanding of Hardware and Its Components}

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

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

ANS: RAM makes the computer run faster by allowing quick access to active programs and data.

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

1. HDD

2. SSD

3. SD card

4. 1 and 2 both

ANS: **(None of these)** because primary storage device is RAM & ROM And HDD, SSD, SD Card is called a secondary storage is like that permanent data saver.

4. What is the purpose of a GPU?

ANS: The purpose of a GPU (**Graphics Processing Unit**) is to process and render images, videos, and animations so they can be displayed on the computer screen.

{Section 2: True or False}

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

ANS**:** Motherboard is the backbone of the computer where all parts are attached and communicate. **TRUE**

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

ANS: Emergency power backup for computers. **TRUE**

7. 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)	**SSD (Solid State Drive)**
Technology	Uses spinning magnetic disks & read/write head	Uses flash memory chips, no moving parts
Speed	Slower (long boot & load times)	Much faster (quick boot & file access)
Noise	Makes noise due to spinning parts	Completely silent
Power Usage	Consumes more power	Uses less power
Cost	Cheaper per GB	More expensive per GB
Storage Size	Available in larger sizes (up to TBs, cheap)	Smaller sizes, but increasing
Best For	Bulk storage (movies, backups)	Fast performance (OS, apps, gaming)

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

ANS: The **BIOS (Basic Input/Output System)** is a small program stored on the motherboard of a computer.

- It starts the computer when you power it on (called the boot process).
- It checks and tests hardware like RAM, keyboard, storage, etc. (through POST Power-On Self-Test)

- It loads the operating system from the storage device into memory

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

ANS: **Keyboard** – Used to enter text, numbers, and commands into the computer.

Mouse – A pointing device that controls the movement of the cursor and is used to select, drag, and click items on the screen.

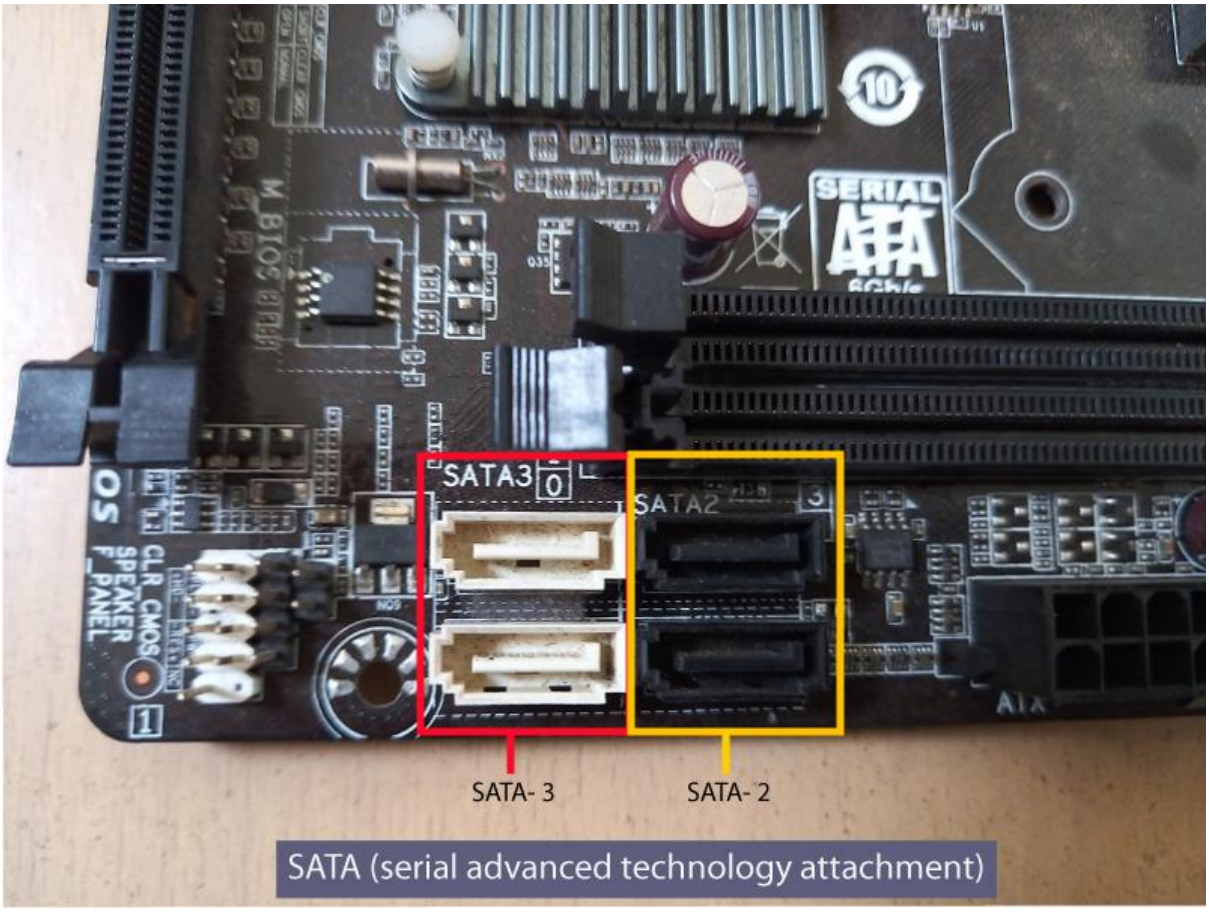
Scanner – Captures images or text from paper and converts them into a digital format for the computer.

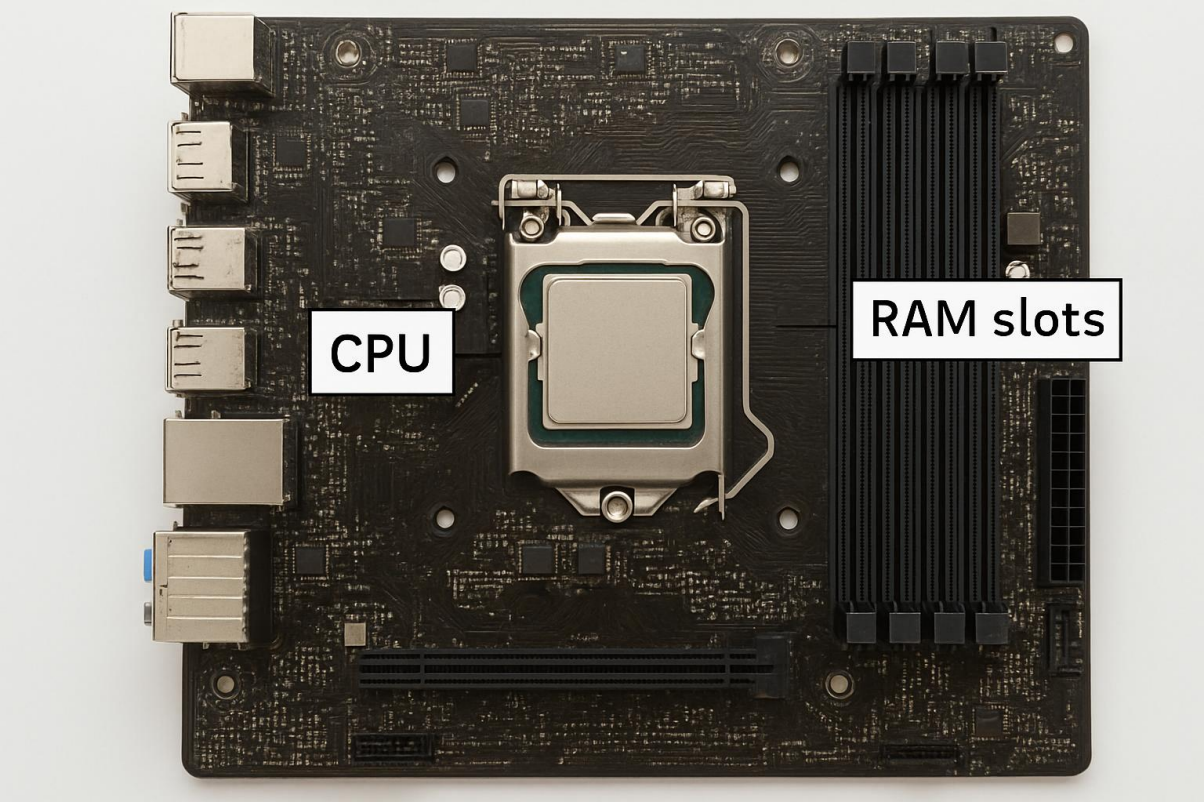
{Section 4: Practical Application}

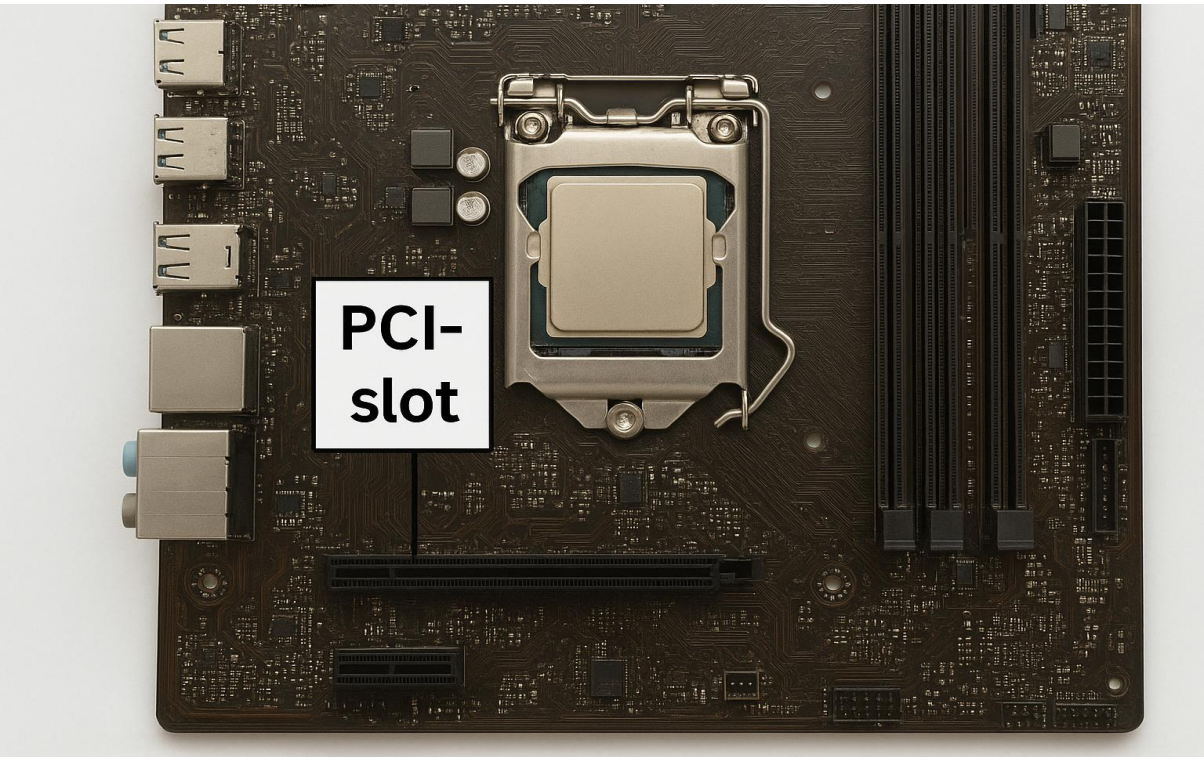
11. Identify and label the following components on a diagram of a motherboard:

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

ANS:




CPU
RAM slots


PCI-
slot

Section 5: Essay

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

ANS: Cooling is one of the most important aspects of a computer system because every component, especially the CPU and GPU, generates heat while working. If this heat is not controlled, the computer may overheat, slow down, or even get damaged.

One of the most common cooling methods is air cooling, which uses heat sinks and fans to remove heat. This method is affordable and works well for normal computers. For more powerful systems, such as gaming PCs or servers, liquid cooling is often used. It transfers heat more efficiently with the help of water or coolant and is better at keeping high-performance parts cool. Another important part of cooling is thermal paste, which is applied between the CPU and heat sink to improve heat transfer. Along with this, good airflow in the case using intake and exhaust fans helps to remove hot air and bring in fresh air.

In conclusion, proper cooling is essential for keeping a computer safe, stable, and efficient. Without it, overheating can cause performance issues, crashes, or permanent damage. Therefore, choosing the right cooling method is necessary for maintaining both performance and durability of the computer.

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

The width of the data bus indicates how much data can be transferred during each memory read/write operation.