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

   Ans : 2.RAM

   3.CU

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

Ans :1. Speed ,Temporary Storage ,Multitasking ,Volatile.

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

1. HDD
2. SSD
3. SD card

Ans: 4. 1 and 2 both

4.What is the purpose of a GPU?

Ans: The purpose of GPU(Graphic Processor Unit) it is handle and accelerate the rendering of images, animation and video on a computer screen.

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: The difference between HDD and SSD

HDD	SSD
HDD More power consumes	SSD Less power consumes
It is cheaper	It is expensive
Minimum 500 GB and max at 2 TB,10 TB max for desktops	Less than 1 TB for notebooks and 4 TB max for desktops
Operating system boot time is 30-40 seconds	Operating system boot time is 10-15 seconds
Clicks and spinning can be heard	No moving parts, so no sound
Spinning platter results in vibrations	No vibrations
More heat generate	Little heat generate
File opening speed is slower	File opening speed is faster
Safe from magnetic effect	Magnates can erase data

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

Ans: Describing the functions of BIOS in computer systems

Bootstrap Loader: The BIOS locates and initializes the operating system. It identifies the boot device (like HDD, SSD, or USB drive) based on the configured boot order and loads the OS into memory to start the computer.

Hardware Initialization: The BIOS configures and initializes system hardware, such as the keyboard, mouse, and drives enabling the operating system

System Configuration: The BIOS retains hardware settings and configurations in a non-volatile memory (CMOS) so that they are preserved when the computer is powered off.

Interface for Hardware: It provides a basic interface between the operating system and the hardware, enabling communication between them.

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

Ans: Here are three commonly input device use for computers

1.Keyboard :

Function: A keyboard allows users to input by text, numbers, and commands into a computer

Uses: Essential for typing documents , coding and executing commands

2.Mouse:

Function: A mouse is a pointing device that enables users to interact with the computer's GUI (graphical user interface.

Uses: Commonly use for selecting items, navigating menus, and dragging and dropping files.

3.Scanner:

Function: A scanner convert physical documents and images into digital format. It captures the content and send it to the computer for processing and storage.

Uses: Useful for digitizing photographs, archiving documents and processing images for editing or sharing

Section 4: Practical Application

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

1. CPU

2. RAM SLOTS

3. SATA

4.PCI-E SLOT

ANS:

1. **CPU:** The central processing unit, which performs most of the processing inside the computer

2. **RAM SLOTS**: Where the memory modules are installed allowing the CPU to quickly access data

3. **SATA CONNECTORS** : Used to connect storage devices like hard drive and ssd.

4. **PCI-E SLOT** : a high speed expansion slot for adding components like a graphics card or network adaptor.

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

ANS :

To install RAM, align the module with the slot , ensuring the notches match, press it down evenly into place until the clips on both sides click into position.

Section 5: Essay

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

ANS :

Proper cooling prevents overheating, which can damage components and reduce performance.

Example : includes air cooling and liquid cooling, which are effective at maintaining stable temperature.

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

ANS :

Bus width refers to the numbers of bits that can be transmitted simultaneously through a bus. A wider bus allows for faster data transmission, improving overall system performance.