**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:** Akeyboard 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 scannerconvert 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.