**Assignment**

**Module -1: Understanding of hardware and its**

**Components**

**Section 1: Multiple Choic**

**01. Which of the following is NOT a component of the CPU?**

**Ans**-. RAM

**02. What is the function of RAM in a computer?**

**Ans-**RAM is a random access memory, volatile memory, primary data stored devise, small memory chips that from a memory module, hard-drive to open data memory

**03. Which of the following is a primary storage devices**

**Ans**-1 and 2 both

**04. What is the purpose of a GPU?**

**Ans-**  The main purpose of gpu is rendering graphics ,accelerating computing tasks, video playback and encoding ext.

**Section 2: True or False**

**05. The motherboard is the main circuit board of a computer**

**where other components are attached.**

**Ans-**True

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

**source fails.**

**Ans-**True

**07.True or False: An expansion card is a circuit board that enhances the**

**functionality of a component.**

**Ans-**True

**08.Explain the difference between HDD and SSD.**

|  |  |
| --- | --- |
| **HDD** | **SSD** |
| Slower speed drive. | Faster speed drive. |
| Noisier and vibration Slightly. | **Silent** and No vibration. |
| More pwer ues | Less power ues |
| Larger storeg size | Smaller storeg size |

**9. Function of BIOS in a Computer System**

**The BIOS (Basic Input/Output System) in a computer system performs several critical functions:**

* **Loading the Operating System: BIOS initializes the system and loads the operating system from the storage device.**
* **Hardware Initialization: It checks and initializes hardware components during the boot process.**
* **BIOS Setup: Users can access the BIOS setup utility (often by pressing keys like F2, DEL, ESC, F10, F11, or F12) to configure hardware settings.**
* **Booting the Computer: BIOS manages the boot sequence and ensures the system starts correctly.**

**10. Three Input Devices Commonly Used with Computers**

1. **Mouse: A pointing device that allows users to interact with the computer's graphical user interface by moving a cursor on the screen.**
2. **Keyboard: A device used for typing text and commands into the computer, consisting of keys for letters, numbers, and functions.**
3. **Microphone: An audio input device that captures sound, allowing users to record audio or communicate through voice commands.**

**11. Components of a Motherboard**

* **CPU: Central Processing Unit (Socket)**
* **RAM Slots: Memory Slots**
* **SATA-Hard Disk Connectors: SATA Cable Connectors**
* **PCI-E Slot: PCI Express Slot**

**Diagram Representation:**

**[ CPU Socket ]**

**|**

**| [ RAM Slot ] [ RAM Slot ] |**

**|**

**| [ PCI-E Slot ] |**

**|**

**| [ SATA ] [ SATA ]**

**12. Installing a RAM Module into a Computer**

1. **Turn Off the Computer: Ensure the computer is powered down and unplugged.**
2. **Open the Computer Case: Remove the side panel to access the internal components.**
3. **View the RAM Slots: Locate the RAM slots on the motherboard.**
4. **Prepare and Insert RAM Module: Align the RAM module with the slot and gently press it down until it clicks into place.**
5. **Close the Case: Reattach the side panel and secure it.**
6. **Check RAM Recognition: Power on the computer and verify that the RAM is recognized in the system settings.**

**13. Importance of Proper Cooling Mechanisms in a Computer System**

**Proper cooling mechanisms are crucial for preventing overheating, which can lead to hardware damage and reduced performance. Effective cooling methods include:**

* **Air Cooling: Utilizes fans and heatsinks to dissipate heat from components. It is cost-effective and widely used.**
* **Thermal Paste: Applied between the CPU and heatsink to improve heat transfer efficiency.**
* **Liquid Cooling: Involves circulating coolant through a system of tubes and radiators, providing superior cooling performance, especially for high-performance systems.**
* **Heat Pipes and Vapor Chambers: Advanced cooling technologies that efficiently transfer heat away from critical components.**

**14. Concept of Bus Width and Its Significance in Computer Architecture**

**Bus width refers to the number of bits that can be transmitted simultaneously over a bus. There are three types of buses:**

1. **Data Bus: Carries data between the CPU, memory, and other components.**
2. **Address Bus: Carries addresses from the CPU to other components, determining where data is read from or written to.**
3. **Control Bus: Carries control signals from the CPU to other components.**

**The significance of bus width includes:**

* **Data Transfer Rate: A wider bus can transfer more data per cycle, leading to faster performance.**
* **Memory Support: A wider address bus can access a larger memory space, allowing for more RAM and better multitasking capabilities.**

**Overall, bus width is a critical factor in determining a computer's performance and capability.**