NAME :- MEWADA PAVAN

ASSIGNMENT

MODULE –1 UNDERSTANDING OF HARDWARND ITS COMPONENTS

SECTION 1: MULTIPLE CHOICE

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

1. ALU 2. RAM 3. CU 4. 1 and 3 both

ANSWER : 2} RAM

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

ANSWER : RAM (Random Access Memory) is a **temporary, fast memory** that stores data and programs while the computer is running, so the CPU can access them quickly. It is **volatile** (data is lost when power is off).

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

1. HDD 2. SSD 3. SD card 4. 1 and 2 both

ANSWER : 4} 1 and 2 both

4. What is the purpose of a GPU?

ANSWER : GPU means { Graphics Processing Unit} The purpose is to process graphics [ videos, gaming, 3d videos, images, animations, etc] on screen and heavy parallel tasks faster than cpu.

SECTION 2: TRUE OR FALS E

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

ANSWER : TRUE , BECAUSE MOTHERBOARD ALLOWS TO COMMUNICATE BETWEEN [ CPU, GPU, RAM, HDD, SSD, POWER SUPPLY, INPUT AND OUTPUT OF PORTS ].

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.

ANSWER : TRUE

7. True or False: An expansion card is a circuit board that enhances the functionality of a component

ANSWER : TRUE

SECTION 3: SHORT ANSWER

8. Explain the difference between HDD and SSD.

ANSWER :

HDD SSD

1. low cost 1. High cost

2. low speed 2. Speed is also high

3. less reliable 3. More reliable

4. more cpu power 4. Less cpu power

5. power consumption is more 5. Less power consumption

6. size is large 6. Size limit

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

ANSWER : BIOS { basic input/output system } .

\*function of bios :----

1. power-on-self test [post] : when the computer is switched on, BIOS checks the essential hardware [ cpu, keyboard, ram, display, etc] are work properly or not.

2. Boot Loader : BIOS loads bootloader/ operating system into RAM to start the computer

3. Hardware initialization : Its initialize and hardware like { keyboard, mouse, harddisk , moniter } prepare them for ready to use.

4. CMOS SETUP : BIOS provide set up system setting such as date & time , order boot, etc

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

ANSWER : 1- KEYBOARD : Used to enter text, numbers and command to the computer.

2- MOUSE : A pointing device used to control the crusor, select, drag and drop objects on the screen.

3- SCANNER : Capture image or documents and convert them into digital form for storage and editing.

SECTION 4: PRACTICAL APPLICATION

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

• CPU • RAMslots • SATAconnectors • PCI-E slot

ANSWER :

IMAGE LINK------ <https://www.google.com/search?q=Motherboard+parts+CPU+RAM+slots+SATA+connectors+PCI-E+slot>

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

ANSWER : Steps to Install RAM Module:

1. Power Off and Unplug the Computer

-> Disconnect the power cable and all peripherals (keyboard, mouse, etc.).

2. Open the Computer Case

-> Remove the screws or side panel of the CPU cabinet to access the motherboard.

3. Locate the RAM Slots on Motherboard

-> Identify the long slots (DIMM slots) usually near the CPU.

-> If upgrading, remove the existing RAM by pressing the small side clips outward.

4. Align the RAM Module

-> Hold the RAM by the edges.

-> Match the notch on the RAM module with the key in the slot (it only fits in one direction).

5. Insert the RAM Module

-> Place the RAM module into the slot.

-> Apply firm, even pressure until both side clips click into place and hold the RAM securely

6. Close the Case and Reconnect Power: Verify Installation

-> Enter BIOS or check in the operating system to ensure the new RAM is detected

SECTION 5 : ESSAY

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

ANSWER : WHY COOLING IS IMPORTANT?

* When computer works, , parts like CPU and GPU get hot.
* If they become too hot, the computer can slow down, hang, restart, or even get damaged.
* Cooling keeps the computer safe, fast, and long-lasting.

-----------Cooling Methods--------------

* Air Cooling – Fans and heat sinks blow hot air away. (Cheap and common)
* Liquid Cooling – Water pipes absorb heat. (Powerful, used in gaming PCs)
* Thermal Paste – Paste between CPU and heat sink to transfer heat better.
* Immersion Cooling – Computer kept in special cooling liquid (used in big data centers).
* Effectiveness: Air cooling is enough for normal use, liquid/immersion cooling is better for high-performance systems.

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

ANSWER : What is Bus?

* A bus is like a road inside the computer that carries data, instructions, and signals between CPU, memory, and devices.

What is Bus Width?

* Bus width means how many bits can travel together at one time.
* Example:
  + 32-bit bus → 32 bits move in one go.
  + 64-bit bus → 64 bits move in one go (faster and more powerful).

-------Why it is important?

1. Speed – Wider bus moves more data in one cycle → computer works faster.
2. Memory Limit – Address bus width decides how much RAM can be used.
   * 32-bit → up to 4 GB RAM
3. Performance – Modern computers use 64-bit bus for faster processing.