Assignment:

Module -1: Understanding of Hardware and Its Components

Section 1: Multiple Choice

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

A) RAM

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

A)It temporarily stores the data and programs the CPU is currently using so they can be accessed quickly, making the system run faster and smoother.

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

A) 1 and 2 both

4. What is the purpose of a GPU?

A) The purpose of a GPU is to process and render graphics by handling complex visual calculations, which improves the performance of games, videos, and graphic-intensive applications.

Section 2: True or False

5. True or False: The motherboard is the main circuit board of a computer where other components are attached. (Answer) 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. (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.
   A) HDD stores data on rotating magnetic disks and is slower with more power usage.
   SSD stores data on flash memory, making it much faster, quieter, and more durable.
9. Describe the function of BIOS in a computer system.
A) BIOS initializes and tests hardware components when the computer starts.
   It loads the operating system from storage into memory.

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

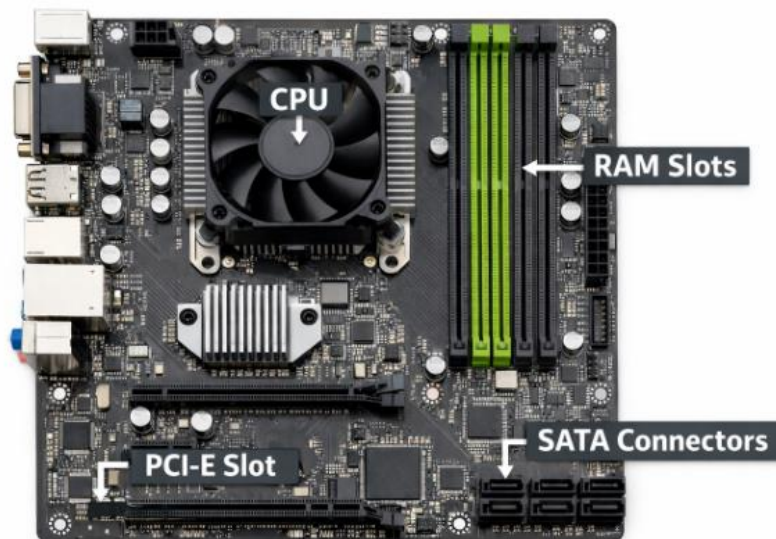A) • **Keyboard:** Used to enter text, numbers, and commands.

• **Mouse:** Used to point, click, and interact with graphical elements.

• **Scanner:** Converts physical documents or images into digital form.

Section 4: Practical Application

11. Identify and label the following components on a diagram of a motherboard:
    - CPU
    - RAM slots
    - SATA connectors
    - PCI-E slot

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

- A) Power off the computer and unplug it from the power supply.
- Open the computer case and locate the RAM slots on the motherboard.
- Push the clips on both ends of the RAM slot outward.
- Align the notch on the RAM module with the slot and insert it firmly.
- Press down evenly until the clips lock the RAM in place.
- Close the case and power on the computer.

Section 5: Essay

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

A) Proper cooling prevents overheating of components like the CPU and GPU, which can cause system crashes and hardware damage.
Cooling improves performance, stability, and increases the lifespan of components.

Examples of cooling methods:

- **Air cooling:** Uses fans and heat sinks; cost-effective and suitable for most systems.
- **Liquid cooling:** Uses coolant to absorb heat; more effective for high-performance systems.
- **Thermal paste:** Improves heat transfer between CPU and heat sink; essential but not a cooling method alone.

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

A) Bus width refers to the number of bits that can be transferred simultaneously between components in a computer.
A wider bus allows more data to be transferred at once, improving system speed and performance.

Significance:-

A) Increases data transfer rate
B) Enhances CPU and memory communication
C) Improves overall system efficiency

B) Assignment module 2 : Installation and Maintenance of Hardware and Its

Section 1: Multiple Choice

1. Which of the following precautions should be taken before working on computer hardware?

   a) Wear an anti-static wrist strap to prevent damage from electrostatic discharge.

2. What is the purpose of thermal paste during CPU installation?
   a) To improve thermal conductivity between the CPU and the heat sink.

3. Which tool is used to measure the output voltage of a power supply unit (PSU)?
   a) Multimeter

4. Which component is responsible for storing BIOS settings, such as date and time, even when the computer is powered off?
   a) CMOS battery

5. True or False: When installing a new hard drive, it is essential to format it before use. (Answer) True
6. True or False: A POST (Power-On Self-Test) error indicates a problem with the CPU. (Answer) False
7. True or False: It is safe to remove a USB flash drive from a computer without ejecting it first. (Answer) False

Section 3: Short Answer

8. Describe the steps involved in installing a new graphics card in a desktop computer.

- A) Power off the computer and unplug all cables.
  - Open the case and locate the PCI-E slot.
  - Remove the slot cover and insert the graphics card firmly.
  - Secure the card with screws and connect power cables if required.
  - Close the case, power on the system, and install drivers.

9. What is RAID, and what are some common RAID configurations?
   A) RAID (Redundant Array of Independent Disks) combines multiple hard drives to improve performance or data safety.

A) RAID 0: Data striping; high speed, no fault tolerance.
B) RAID 1: Data mirroring; good data protection, lower storage efficiency.
C) RAID 5: Striping with parity; balance of performance and fault tolerance.

Section 4: Practical Application

10. Demonstrate how to replace a CPU fan in a desktop computer.

    A) Shut down the computer and unplug it.

    Disconnect the fan cable from the motherboard.

    Unscrew or unlock the old fan and remove it carefully.

    Clean old thermal paste and apply new paste.

    Mount the new fan, connect the cable, and power on.

Section 5: Essay

11. Discuss the importance of regular maintenance for computer hardware and provide examples of maintenance tasks.

A) Regular maintenance prevents overheating, hardware failure, and performance loss.

Examples of maintenance tasks:

- Cleaning dust from fans and vents
- Checking and replacing thermal paste
- Updating BIOS and drivers
- Inspecting cables and power supply