

## ASSIGNMENT 2

### 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) Ensure the computer is plugged in to prevent electrostatic discharge.
- B) Wear an anti-static wrist strap to prevent damage from electrostatic discharge.
- C) Work on carpeted surfaces to prevent slipping.
- D) Use magnetic tools to handle components more easily.

**ANS: B) 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 insulate the CPU from heat.
- b) To provide mechanical support for the CPU.
- c) To improve thermal conductivity between the CPU and the heat sink.
- d) To prevent the CPU from overheating.

**ANS: C) 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) Multi meter
- b) Screwdriver
- c) Pliers
- d) Hex key

**ANS: A) Multi meter**

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

- a) CMOS battery
- b) CPU
- c) RAM
- d) Hard drive

**ANS: A) CMOS battery**

## **SECTION 2: TRUE OR FALSE**

5. When installing a new hard drive, it is essential to format it before use.

**ANS: TRUE**

6. A POST (Power-On Self-Test) error indicates a problem with the CPU

**ANS: FALSE**

7. It is safe to remove a USB flash drive from a computer without ejecting it first

**ANS: FALSE**

## **SECTION 3 : SHORT ANSWER**

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

**ANS: 1 Turn off the computer** – Shut down the system completely and unplug it from the power source to ensure safety.

**2 Open the computer case** – Remove the side panel of the CPU cabinet using a screwdriver.

**3 Locate the PCI-E slot** – Find the PCI Express (PCI-E x16) slot on the motherboard where the graphics card will be installed.

**4 Remove the old card** – If there is an existing graphics card, unscrew it and gently pull it out from the PCI-E slot.

**5 Insert the new graphics card** – Align the gold connectors of the new graphics card with the PCI-E slot and press it down firmly until it clicks into place.

**6 Secure the card** – Use screws to fasten the graphics card bracket to the case to keep it stable.

**7 Close the case** – Reattach the side panel of the computer case.

**8 Reconnect and power on** – Plug in the computer and monitor, then turn it on.

9. What is RAID, and what are some common RAID configurations?

**ANS: RAID (Redundant Array of Independent Disks) is a system that uses two or more hard drives to work together for better speed or data safety.**

Common RAID Configurations:

**1. RAID 0 (Striping)**

- Data is split across two or more disks.
- Advantages: Faster performance.
- Disadvantages: No data protection—if one drive fails, all data is lost.

**2. RAID 1 (Mirroring)**

- Data is duplicated (mirrored) on two drives.
- Advantages: High data protection—if one drive fails, data is safe on the other.
- Disadvantages: Storage capacity is halved.

**3. RAID 5 (Striping with Parity)**

- Data and parity (error-checking information) are spread across three or more drives.
- Advantages: Good balance between performance and fault tolerance.
- Disadvantages: Slower write speeds; needs at least three drives.

**4. RAID 10 (Combination of RAID 1 and RAID 0)**

- Combines mirroring and striping.

- Advantages: Fast performance and strong data protection.
- Disadvantages: Requires at least four drives; expensive due to redundancy.

## Section 4: Practical Application

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

Under they define step-by-step explanation of how to replace a CPU fan in a desktop computer:

**1 Turn off the computer** – Shut down the PC and unplug it from the power source.

**2 Open the computer case** – Remove the side panel using a screwdriver.

**3 Locate the CPU fan** – Find the fan mounted on top of the CPU heat sink on the motherboard.

**4 Disconnect the fan cable** – Unplug the CPU fan's power connector from the motherboard

**5 Remove the old fan** – Unscrew or unclip the fan carefully from the heat sink.

**6 Clean the heat sink and CPU surface** – Use a soft cloth or tissue with a little rubbing alcohol to remove old thermal paste if needed.

**7 Attach the new fan** – Place the new CPU fan on the heat sink and secure it with screws or clips.

**8 Connect the fan cable** – Plug the new fan's connector into the CPU\_FAN socket on the motherboard.

**9 Close the case** – Put the side panel back and screw it tightly.

**10 Power on and test** – Turn on the computer to make sure the new fan spins and the system runs quietly.

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

**ANS :** Regular maintenance of computer hardware is very important to keep the system running smoothly, prevent damage, and extend its lifespan. It helps avoid unexpected failures and improves overall performance.

**Importance:**

1. **Prevents overheating** – Cleaning dust keeps air flowing properly inside the computer.
2. **Improves performance** – Regular updates and checks keep hardware working efficiently.
3. **Reduces repair costs** – Early maintenance helps detect problems before they get serious.
4. **Increases lifespan** – Well-maintained parts last longer.
5. **Ensures reliability** – The computer runs smoothly without sudden crashes.