Assignment module 2 : Installation and Maintenance of Hardware and Its Components Section

**Section 1: Multiple Choice**

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

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

1. What is the purpose of thermal paste during CPU installation?

⇒ c) To improve thermal conductivity between the CPU and the heat sink.

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

⇒ a) Multimeter

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

⇒ a) CMOS battery

**Section 2: True or false**

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

⇒ true.

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

⇒ false.

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

⇒ false.

**Section 3: Short Answer**

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

⇒ Here are the simple steps to install a new graphics card in a desktop computer:

### **Steps to Install a Graphics Card:**

1. **Turn off your computer** ➤ Shut down your PC and unplug the power cable.
2. **Open the case** ➤ Use a screwdriver to open the side panel of your computer.
3. **Remove old graphics card (if any)** ➤ Unscrew and take out the old card from the slot.
4. **Find the PCIe slot** ➤ It’s the long slot on the motherboard where the graphics card goes.
5. **Insert the new graphics card** ➤ Gently push the card into the slot until it fits properly.
6. **Screw the card in place** ➤ Use a screw to hold the card tightly to the case.
7. **Connect power cable (if needed)** ➤ Some cards need extra power. Plug the cable from the power supply to the card.
8. **Close the case** ➤ Put the side panel back on and screw it.
9. **Turn on the computer** ➤ Plug everything back in and start your PC.
10. **Install drivers** ➤ Download and install the latest drivers according to CPU..

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

⇒ **RAID** (Redundant Array of Independent Disks) is a data storage method that combines multiple hard drives to improve performance, reliability, or both.

**Common RAID configurations:**

* **RAID 0:** Data is split across drives (striping) – faster speed, no redundancy.
* **RAID 1:** Data is copied to two drives (mirroring) – high reliability.
* **RAID 5:** Data and parity (error checking) are spread across 3+ drives – balance of speed and reliability.
* **RAID 10 (1+0):** Combines mirroring and striping – high performance and redundancy.

**Section 4: Practical Application**

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

⇒ **To replace a CPU fan in a desktop computer:**

1. **Turn off** the PC and **unplug** it.
2. **Open the case** using a screwdriver.
3. **Disconnect** the CPU fan’s power cable from the motherboard.
4. **Unscrew or unclip** the old fan from the CPU heatsink or bracket.
5. **Remove** the old fan carefully.
6. **Install** the new fan in the same position.
7. **Reconnect** the fan’s power cable to the CPU\_FAN port on the motherboard.
8. **Close** the case and **power on** the PC to test.