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## **Assignment-2**

### **Module 2 : Installation and Maintenance of Hardware and Its Components**

#### **Section 1: Multiple Choice**

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

- a) Use an anti-static wrist strap to prevent electrostatic discharge.
- b) Wear an anti-static jacket to prevent damage from electrostatic discharge.
- c) Organize computer surfaces to prevent slipping.
- d) Use magnetic tools to handle components more easily.

**Ans:- a)** Use an anti-static wrist strap to prevent electrostatic discharge.

**Explanation:-** An anti-static wrist strap is important to prevent static electricity from damaging sensitive computer component. Using it helps in safety handling parts on during installation or maintenance.

**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.

**Explanation:-** Thermal pastes fills the microscopic gaps between the CPU and the heat sink, ensuring better heat transfer and helping to keep the CPU cool.

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

- a) Multimeter
- b) Screwdriver
- c) Heat sink
- d) Hex key

**Ans:- a) Multimeter**

**Explanation:-** A multimeter is a tool used to measure electrical properties like voltage, current, and resistance. It is essential for checking the output voltage of a PSU to ensure it is functioning correctly.

**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**

**Explanation:-** The CMOS (complementary metal-oxide semiconductor) battery powers the BIOS memory, allowing it to retain settings such as date and time when the computer is turned off.

## **Section 2: True or False**

**5. True or False: When installing a new hard drive, it is essential to format it before use.**

**Ans:- True**

**Explanation:-** Formatting a new hard drive prepares it for use by setting up the file system. Without formatting, the drive cannot store data correctly.

**6. True or False: A POST (Power-On Self-Test) error indicates a problem with the CPU.**

**Ans:-** False

**Explanation:-** A POST error can indicate issues with various hardware components, not just the CPU. It could be related to memory, storage devices, or other critical parts.

**7. True or False: It is safe to remove a USB flash drive from a computer without ejecting it first.**

**Ans:-** False

**Explanation:-** Ejecting a USB drive before removal ensures that all data transfers are complete and prevents potential data corruption.

### **Section 3: Short Answer**

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

**Ans:-** First, power off the computer and unplug it. Then, open the case and locate the PCI-E slot. Carefully insert the graphics card into the slot, ensuring it is seated properly. Secure the card with a screw and close the case. Finally, reconnect the power and boot the computer to install the necessary drivers.

**Explanation:-** Proper installation of a graphics card involves physically installing it and ensuring that the system recognizes the new hardware by installing appropriate drivers.

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

**Ans:** RAID (Redundant Array of Independent Disks) is a technology that combines multiple disk drives into a single unit for data redundancy or performance improvement. Common RAID configurations include RAID 0 (striping), RAID 1 (mirroring), and RAID 5 (striping with parity).

**Explanation:** RAID is used to either increase the performance of storage or to provide fault tolerance by duplicating data across multiple drives.

## **Section 4: Practical Application**

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

**Ans:** First, power off the computer and unplug it. Remove the case cover to access the CPU fan. Disconnect the fan's power cable and unscrew the fan from the heat sink or motherboard. Replace it with a new fan by securing it with screws and reconnecting the power cable. Replace the case cover and power on the computer to ensure the fan is working correctly.

**Explanation:** Replacing a CPU fan is necessary when it fails or becomes too noisy. Proper installation is crucial to ensure effective cooling of the CPU.

## **Section 5: Essay**

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

**Ans:-** Regular maintenance of computer hardware is essential to prevent failures, extend the lifespan of components, and ensure optimal performance. Maintenance tasks include cleaning dust from fans and vents, checking for and replacing failing components like hard drives or power supplies, updating firmware and drivers, and organizing cables to improve airflow.

**Explanation:-** Routine maintenance helps in keeping the computer running smoothly, preventing unexpected downtime and costly repairs.