**Assignment 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) 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.

**Answer:- 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.

**Answer:-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) Multimeter

b) Screwdriver

c) Pliers

d) Hex key

**Answer:-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

b) CPU

c) RAM

d) Hard drive

**Answer:-a) CMOS battery**

Section 2: True or False

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**

**When a computer starts, it runs a process called POST (Power-On Self-Test). This checks if important parts like the RAM, keyboard, hard drive, and graphics card are working properly.If there is a problem with these parts, you might see a POST error message, or hear beep sounds.**

**But if the CPU (Central Processing Unit) is completely not working, the computer usually won’t even start or run POST at all — the screen stays blank, and nothing happens. That’s why POST errors usually don’t mean the CPU is bad.**

**True Statement : "A POST (Power-On Self-Test) error indicates a problem with hardware like RAM, motherboard, or display — not usually the CPU."**

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

**Answer:-False**

**True Statement: "It is important to eject a USB flash drive before removing it to avoid data loss or damage."**

Section 3: Short Answer

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

**Answer:-The process begins with powering off and disconnecting the system. The case is then opened to access the motherboard. The PCIe x16 slot is identified, and any obstructing expansion slot covers are removed. The graphics card is firmly inserted into the slot and secured with screws. Power connectors from the PSU are attached if required. Upon reassembly, the system is booted and the appropriate GPU drivers are installed to ensure proper functionality.**

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

**Answer:-RAID (Redundant Array of Independent Disks) is a data storage virtualization technology that combines multiple physical drives into one logical unit to improve performance, redundancy, or both. Common configurations.**

Section 4: Practical Application

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

**Answer:-Begin by disconnecting power and removing the side panel. Detach the CPU fan connector from the motherboard. Release the mounting mechanism (e.g., clips, screws, or a bracket) and carefully lift the old fan assembly. Clean the CPU surface with isopropyl alcohol to remove residual thermal paste. Apply a new, pea-sized amount of thermal paste. Install the new fan, secure it using the appropriate mechanism, and reconnect it to the CPU\_FAN header on the motherboard. After closing the case, power the system to verify that the fan is operational and temperatures remain stable.**

Section 5: Essay

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

**Answer:- Taking care of computer hardware through regular maintenance is very important. Just like we clean and maintain our homes or vehicles, computers also need care to work properly and last longer.**

1. **Preventing hardware damage – Dust and dirt can build up inside a computer and cause overheating or damage to parts like fans or the motherboard.**
2. **Improving performance – A clean and well-maintained computer works faster and more smoothly.**
3. **Reducing repair costs – If you take care of small problems early, you can avoid bigger and more expensive repairs later.**
4. **Extending the life of the computer – Maintenance helps your computer last longer without needing replacement.**

### **Examples of Maintenance Tasks**

**Here are some common tasks that help keep computer hardware in good condition:**

* **Cleaning the keyboard and mouse – Removing dust and dirt to keep them working properly.**
* **Dusting the CPU and inside the cabinet – Using a soft cloth or air blower to remove dust from the fan, motherboard, and power supply.**
* **Checking cables and connections – Making sure wires are connected properly and not damaged.**
* **Updating drivers and software – Keeping the system software up-to-date helps hardware work efficiently.**
* **Running antivirus scans – Protects the hardware from being affected by harmful software.**