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) 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) Multimeter

b) Screwdriver

c) Pliers

d) Hex key

Ans:- 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

Ans:- 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.

Ans:- ✅ **True**

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

Ans:- ❌ **False**

7. True or False: 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:- Turn off and unplug the PC → Open the case → Remove old card (if any) → Insert new card into PCIe slot → Connect power cables (if required) → Close the case → Boot the PC → Install drivers.

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

Ans:- RAID (Redundant Array of Independent Disks) improves data performance and/or reliability by combining multiple drives.
 Common types:

- **RAID 0**: Fast, no backup.
- **RAID 1**: Mirror copy, safe.
- **RAID 5**: Speed + backup, needs 3+ drives.
- **RAID 10**: Speed + safety, needs 4+ drives.

Section 4: Practical Application

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

Ans:-

- **Power Off and Unplug** – Shut down the PC and disconnect all cables.
- **Open the Case** – Remove the side panel to access the CPU area.
- **Disconnect Old Fan** – Unplug the CPU fan cable from the motherboard.
- **Remove the Heatsink/Fan** – Unscrew or unclip the old fan and carefully lift it off.
- **Clean the CPU Surface** – Wipe off old thermal paste using isopropyl alcohol and a lint-free cloth.
- **Apply New Thermal Paste** – Place a small dot of thermal paste in the center of the CPU.
- **Install New Fan** – Attach the new fan/heatsink, align it properly, and secure it.
- **Connect Fan Cable** – Plug the new fan cable into the CPU fan header on the motherboard.
- **Close the Case and Reconnect** – Reattach the case panel and power on the PC.

Section 5: Essay

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

Ans:-

Regular maintenance helps extend the life of computer hardware, improves performance, and prevents unexpected failures.

Benefits:

- Prevents overheating and dust buildup
- Ensures stable performance
- Reduces risk of hardware failure
- Saves money on repairs

Examples of Maintenance Tasks:

- Cleaning dust from fans and components
- Checking and reseating cables and connections
- Updating drivers and firmware
- Running disk checks and defragmentation
- Replacing worn-out thermal paste or batteries (e.g., CMOS)