

**Bharat badgujar**

**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. 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. The purpose of thermal paste during CPU installation is 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 is used to measure voltage, current, and resistance, making it ideal for checking the output voltage of a power supply unit (PSU).

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

## Section 2: True or

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

Ans: true When you install a new hard drive, it typically needs to be formatted before you can use it.

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

Ans: false POST errors can relate to various components, such as RAM, graphics card, motherboard, or other hardware issues.

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

Ans: **False.** It is not safe to remove a USB flash drive without ejecting it first. Ejecting the drive ensures that all data transfers are complete and prevents data corruption.

## Section 3: Short Answer

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

Ans.

1. Power off computer

2. Open the case
3. Locate the PCIe Slot
4. Remove the Old Card
5. Install the New Graphics Card

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

Ans. RAID, or Redundant Array of Independent Disks, is a data storage virtualization technology that combines multiple physical disk drive components into one or more logical units.

RAID configurations:

1. **RAID 0 (Striping):**  
Data is split across multiple disks.
2. **RAID 1 (Mirroring):**  
Data is duplicated on two or more disks.
3. **RAID 5 (Striping with Parity):**  
Data and parity information are striped across three or more disks.
4. **RAID 6 (Striping with Double Parity):**  
Similar to RAID 5 but with an additional parity block.
5. **RAID 10 (or 1+0):**  
Combines RAID 1 and RAID 0.

#### Section 4: Practical Application

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

Ans.

- Step.1 Power Down and Unplug the Computer.
- Step.2 Open the Computer Case.
- Step.3 Locate the CPU Fan and Heatsink Assembly.

- Step.4 Disconnect the CPU Fan Cable.
- Step.5 Remove the Old Fan and Heatsink Assembly.
- Step.6 Clean the CPU and Heatsink.
- Step.7 Apply New Thermal Paste.
- Step.8 install the New Fan or Fan-Heatsink Assembly.
- Step.9 Reconnect the CPU Fan Cable.
- Step.10 Close the Computer Case and Power On.

## Section 5: Essay

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

Ans.

Regular maintenance is essential for computer hardware to ensure smooth operation, prevent overheating, and extend the overall lifespan of components.

Here are some key maintenance tasks that help keep hardware in top condition:

1. **Dusting Fans and Vents:** Dust accumulates on fans and inside vents, hindering airflow and causing the system to overheat
2. **Reapplying Thermal Paste:** Over time, thermal paste between the CPU and its cooler can dry out, reducing heat transfer.
3. **Replacing Worn-Out Fans:** Fans wear out over time, causing noise and reducing cooling effectiveness
4. **Cleaning the Keyboard and Mouse:** Keyboards and mice collect dust, food particles, and germs.
5. **Cable Management:** Properly organizing cables within the case prevents airflow blockages, helping to keep the system cooler and reducing wear on the cables.
  
6. **Updating BIOS/Firmware:** Updating the BIOS and other firmware improves hardware compatibility, security, and performance, especially after hardware upgrades.

7. **Running Disk Cleanup:** Disk cleanup tools remove temporary and junk files, freeing up space and improving the system's responsiveness.