

Module 2 : Installation and Maintenance of Hardware and Its

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

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

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

Ans. Steps :

- 1) Open the CPU case using screwdriver.
 - 2) Find the graphics card slot cover where the card will fit.
 - 3) Insert the graphics card into the graphics card slot until it sounds like click.
 - 4) Connect power cables from the SMPS if the card needs more power.
 - 5) Close the CPU and screw it back.
 - 6) Plug in monitor to the new graphics card port.
 - 7) Turn on PC and install drivers if needed.
9. What is RAID, and what are some common RAID configurations?

Ans. **RAID :**

- RAID stands for Redundant Array of Independent Disks.
- Combined of multiple hard drives to improve speed, data storage & safety.
- Mostly used in servers and advanced computer setups.

Common Configurations :

1) RAID 0(Stripping) :

- Splits data across devices.
- Faster speed, but with no backup option.
- If in case one drive fails, then all data is lost.

2) RAID 1(Mirroring) :

- Copies data to two drives.
- Good backup option, but uses double of space.

3) RAID 5 :

- At least 3 drives needed.
- Speed and Safety is combined using parity.
- Can handle failure of one drive.

4) RAID 10(1 + 0) :

- Mixing of RAID 1 and RAID 0.
- At least 4 drives needed.
- Faster and safe, but more drives are needed.

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

Ans. Steps :

- 1) Turn off the PC and unplug power cable.
 - 2) Open the CPU case using a screwdriver.
 - 3) Find the CPU fan.
 - 4) Unplug the fan's power cable from motherboard.
 - 5) Unscrew the fan from CPU socket.
 - 6) Remove the old fan.
 - 7) Attach new fan to the CPU Socket.
 - 8) Plug new fan's cable into the same fan header.
 - 9) Close the CPU case and tight the screws.
 - 10) Turn on PC and check in BIOS that new fan is spinning properly.
11. Discuss the importance of regular maintenance for computer hardware and provide examples of maintenance tasks.

Ans. **Importance of Regular Maintenance :**

- It keeps computer running smoothly, lasting longer, and helps to system failures.
- It improves system performance, cooling and stability.

Example of Maintenance Tasks :

- 1) Dust Cleaning
 - Use compressed air to clean fans and components.
 - Prevent overheating and noise of fan.
- 2) Cables and Connections Checking
 - Check that all cables are secure and not damaged.
 - Loose cable connections can cause system errors or crash the system.
- 3) Updating Drivers Regularly
 - Keeps hardware more compatible.
 - Improves system performance and security.
- 4) Use of Antivirus
 - Protects hardware from malicious software.
 - Prevent from losing of data and slowdowns.

5) Hard Drive Health Check

- Use of command like CHKDSK etc.
- Helps to catch signs of drive failure early.

6) Reapplying Thermal Paste

- Keeps CPU and GPU cool if temperature rises.
- Needed every few years.