Module 2 : Installation and Maintenance of Hardware and Its Co

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.

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.

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

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

Section 2: True or False

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

Answer :- True

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

Answer :- False

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

Answer :- False

Section 3: Short Answer

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

Answer :-

- Turn off the computer.
- Open the CPU cabinet.
- Put the graphics card into the slot on the motherboard.
- Fix it with a screw and connect power cable.
- Close the cabinet, turn on the computer, and install the driver.

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

Answer :- Raid is a technology that used to manage multiple disk together to improve performance and keep data safe.

Some common RAID configurations are:-

- **RAID 0 (stripe volume)**
  - Minimum 2 disk.
  - Very fast but no data safety.
  - If 1 disk fails, all data is lost.
  - no failover / no backup.
- **RAID 1 (mirror volume)**
  - Minimum 2 disks.
  - Normal speed, data safety
  - If 1 disk fails, data remains safe.
  - Failover exists.
- **RAID 5 (Stripe with parity)**
  - Minimum 3 disk
  - Good performance and high data safety
  - Data is safe if one disk fails.
  - Commonly used in servers.

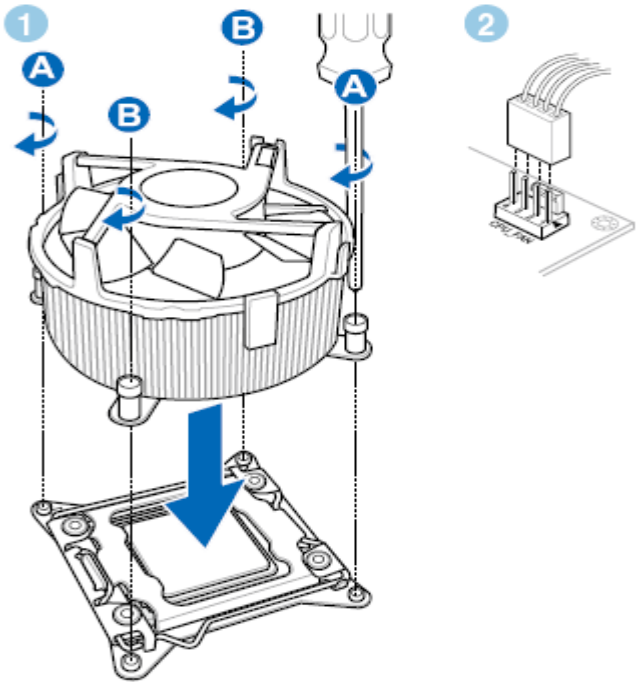
Section 4: Practical Application

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

Answer :-

Steps to Replace a CPU Fan in a Desktop Computer

- Turn off the computer and unplug the power cable.
- Open the CPU cabinet carefully.
- Take out the motherboard and put it on a soft surface.
- Clean dust from the motherboard.
- Unlock the CPU fan and unplug its cable from the motherboard.
- Check the old CPU fan:
    - If it is working, clean the CPU and fan area, apply thermal paste if needed, and put the fan back.
    - If it is broken, remove the old fan completely.
- Clean the CPU surface after removing the fan.
- Install the new CPU fan and apply thermal paste if needed.
- Lock the CPU fan properly and make sure it fits properly with no gap.
- Close the cabinet and turn on the computer to see if the fan is working.



Section 5: Essay

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

Answer :-

Importance of regular maintenance for computer hardware :-

- Improve the system performances.
- Increase hardware lifespan.
- Prevent overheating.
- Protects data from loss.
- Save repair and replacement cost.
- Keeps system safe and stable.

Examples of maintenance tasks :-

- Clean CPU fan, keyboard, and cabinet to avoid overheating.
- Checking cobles.
- Check CPU fan are working properly.
- Check Hard disk / SSD.
- Replace old Thermal paste to keep CPU cool.
- Regularly backup of important files.
- Update drivers.