1.Which of the following precautions should be taken before working on computer hardware?

-->b) Wear an anti-static wrist strap to prevent damage from electrostatic discharge.

2. What is the purpose of thermal paste during CPU installation?

-->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

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

a) CMOS battery

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

-->True

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

-->False

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

-->False

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

-->Power Off & Unplug: Turn off the computer and unplug it from the power source.

Open the Case: Remove the side panel of the PC case.

Remove Old GPU (if applicable): Unscrew and gently pull out the old graphics card.

Insert the New GPU: Align the new graphics card with the PCIe slot and press it in firmly. Secure it with screws.

Connect Power Cables: Some GPUs require additional power connectors from the PSU (6-pin/8-pin).

Close the Case & Power On: Reassemble the case, plug in the power, and boot the system.

Install Drivers: Download and install the latest drivers from the manufacturer's website (NVIDIA/AMD).

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

-->RAID (Redundant Array of Independent Disks) is a data storage virtualization technology that combines multiple drives for redundancy, performance, or both.

Common RAID Configurations:

RAID 0 (Striping): Splits data across multiple drives for speed but offers no redundancy.

RAID 1 (Mirroring): Duplicates data on two drives for redundancy.

RAID 5 (Striping with Parity): Uses at least three drives to improve speed while providing redundancy.

RAID 10 (1+0): Combines RAID 1 and RAID 0 for both speed and redundancy but requires at least four drives.

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

-->Power Off & Unplug: Ensure the computer is powered down and disconnected from power.

Remove the Side Panel: Open the computer case to access the CPU fan.

Unplug the Fan Connector: Disconnect the fan from the motherboard.

Unscrew & Remove the Old Fan: If attached to a heatsink, remove it carefully.

Install the New Fan: Secure it in place, ensuring proper airflow direction.

Reconnect the Fan to the Motherboard: Plug it into the CPU fan header.

Close the Case & Power On: Test the system to ensure the fan is working correctly.

11. Discuss the importance of regular maintenance for computer hardware

and provide examples of maintenance tasks.

-->Regular maintenance helps extend the lifespan of components, improves performance, and prevents overheating or failures.

Examples of Maintenance Tasks:

Cleaning Dust: Use compressed air to clean fans, heat sinks, and vents to prevent overheating.

Checking Connections: Ensure cables and components are securely connected.

Updating Drivers & Firmware: Keeps hardware running efficiently and securely.

Reapplying Thermal Paste: Helps maintain CPU cooling efficiency.

Monitoring Storage Health: Use tools like CrystalDiskInfo to check SSD/HDD health.

Backup Data: Prevents data loss in case of hardware failure.