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Assignment Module 2:

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.

→: Electrostatic discharge (ESD) can damage sensitive components, so grounding yourself using an anti-static strap is essential.

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.

->: Thermal paste fills tiny air gaps between the CPU and heat sink, allowing better heat transfer and cooling efficiency.

3Which tool is used to measure the output voltage of a power supply unit (PSU)?

Ans→a) Multimeter

->: A multimeter measures voltage, current, and resistance — it's used to test if a PSU outputs the correct voltages.

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

→ a) CMOS battery

-> The CMOS battery provides power to the BIOS/CMOS chip so that settings are saved when the computer is turned off.

Section 2: True or False

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

Section 3: Short Answer

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

→ Steps to Install a New Graphics Card:

1. Turn off the computer and unplug the power cable from the wall socket.
2. Open the computer case by removing the side panel (usually held by screws).
3. Discharge static electricity by touching a metal part of the case or wearing an anti-static wrist strap.
4. Locate the PCI Express (PCIe x16) slot on the motherboard — this is where the graphics card will be installed.
5. Remove the expansion slot cover from the back of the case to make space for the new card's display ports.
6. Align the graphics card with the PCIe slot and firmly insert it until it clicks into place.
7. Secure the card to the case using screws or a latch.
8. Connect the PCIe power connectors from the power supply (if required by the card).

9. Close the case and reconnect the power cable.
10. Power on the PC and install the latest graphics drivers (from NVIDIA, AMD, or Intel website).

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

→RAID 0 (Striping):

->Data is split across multiple drives for high performance, but there's no data protection — if one drive fails, all data is lost.

RAID 1 (Mirroring):

-> Data is duplicated (mirrored) on two drives. Offers data redundancy (safe from one drive failure) but uses double storage space.

RAID 5 (Striping with Parity):

-> Requires at least 3 drives. Provides a balance between speed and data protection by storing parity information across drives.

RAID 10 (1+0):

->Combines RAID 1 and RAID 0. Data is mirrored and striped — offering high performance and redundancy, but needs at least 4 drives.

4.

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

->Steps to Replace a CPU Fan:

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1. Power Off and Unplug

- Shut down the computer completely.
- Unplug the power cable and any connected peripherals.
- Press the power button for a few seconds to discharge any leftover electricity.

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2. Open the Computer Case

- Remove the side panel of the case (usually held by screws).
- Place the case on a flat, non-static surface (avoid carpets).
- Wear an anti-static wrist strap to prevent electrostatic damage.

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3. Locate the CPU and Fan Assembly

- The CPU fan is mounted directly on top of the CPU heat sink, which sits on the motherboard CPU socket.
- The fan's power cable is usually connected to the motherboard header labeled "CPU_FAN."

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4. Disconnect the Old Fan

- Gently unplug the fan's power connector from the motherboard.
- Unscrew or unclip the fan or heat sink assembly (depending on the CPU cooler design).

- Carefully remove the entire cooling unit from the CPU — do not use force.

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5. Clean the CPU Surface

- Use a soft cloth or cotton pad with isopropyl alcohol (90% or above) to clean off the old thermal paste from the top of the CPU and the bottom of the heat sink.

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6. Apply New Thermal Paste

- Place a small pea-sized drop of thermal paste at the center of the CPU.
- This helps in efficient heat transfer between the CPU and the new heat sink.

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7. Install the New Fan and Heat Sink

- Align the new fan/heat sink with the CPU socket and mount it carefully using the provided screws or clips.
- Tighten evenly on all sides to ensure good contact.

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8. Connect the Fan Power Cable

- Plug the new fan’s power connector into the CPU_FAN header on the motherboard.

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9. Close the Case and Test

- Reattach the side panel of the case.
- Plug the power cable back in and power on the computer.

- Enter the BIOS/UEFI or use monitoring software to check that the CPU fan is spinning and temperatures are normal.