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

Reason: The wrist strap grounds you, preventing static buildup that could harm sensitive electronics

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.

Reason: - Thermal paste improves heat transfer between the CPU and heat sink, so the CPU stays cool.

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

Reason: - A multimeter is used to measure 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

Reason :- CMOS battery stores BIOS settings like date and time even when the computer is off.

## Section 2: True or False

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

Reason :- POST error can indicate issues with RAM, motherboard, or other components -not just CPU

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

Ans :- False

Reason :- Removing a USB without ejecting can cause data loss or file corruption.

# Section 3: Short Answer

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

Ans :-

* Turn off the computer and unplug it.
* Open the CPU case (side panel).
* If there is an old graphics card, remove it.
* Insert the new graphics card into the PCIe slot.
* Connect the power cable if required.
* Close the case and connect the monitor to the new graphics card.
* Turn on the computer and install the graphics card driver.

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

Ans :- **RAID** is a system that uses multiple hard drives together to increase **speed**, **data protection**, or **both**.

* Common RAID Types:

* RAID 0 (Striping):

Data is split across drives.

Fast, but no backup.

If one drive fails, all data is lost.

* RAID 1 (Mirroring):

Same data is saved on two drives.

Safe, but uses more space.

If one drive fails, data is safe on the other.

* RAID 5 (Striping with Parity):

Needs at least 3 drives.

Combines speed and backup.

If one drive fails, no data is lost.

Slower write speed than RAID 0.

* RAID 10 (1+0):

Needs at least 4 drives.

Mix of RAID 0 and 1.

Very fast and very safe, but uses more storage.

## Section 4: Practical Application

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

Ans :-

* Shut down the PC and unplug the power cable.
* Open the cabinet and locate the old CPU fan.
* Unplug the fan cable and unscrew the fan.
* Clean old thermal paste and apply new paste if needed.
* Place the new fan and screw it tightly.
* Connect the new fan’s cable to the motherboard.
* Close the cabinet, power on the PC, and check the fan.

## Section 5: Essay

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

Ans :- Regular maintenance of computer hardware is important to keep the system running smoothly and safely. Just like any machine, a computer also needs care to work properly and last longer.

When we do not clean or check hardware, Dust collects inside the CPU and on fans. This causes overheating and slows down performance. Regular cleaning helps in keeping the computer cool and fast. Checking cable and connection also prevents sudden.

Updating drivers, checking hard disk health, and replacing thermal paste are also part of good maintenance. These small tasks protect the computer from big problems.

* Common Maintenance Tasks:

* Cleaning dust from fan and CPU
* Checking cables and connections
* Updating drivers
* Disk cleanup and scan
* Replacing thermal paste if needed