Assignment module 2:

**Installation and Maintenance of Hardware and Its**

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Assignment-2

Section 1: Multiple Choice

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

Ans: **Wear an anti-static wrist strap to prevent damage**

**From electrostatic discharge**.

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

Ans**: To improve thermal conductivity between the CPU**

**And the heat sink.**

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

Ans**: Multimeter**

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

Ans**: CMOS battery**

Section 2: True or False

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

Ans: **True**

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

Ans: **False**

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

Ans**: False**

Section 3: Short Answer

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

Ans**: Installing a new graphics card:**

1. **Shut down and unplug computer.**
2. **Ground yourself.**
3. **Remove old card (if applicable).**
4. **Locate PCIe slot.**
5. **Install new card, securing with screws.**
6. **Connect power cables.**
7. **Reconnect other components.**
8. **Configure BIOS/UEFI (if necessary).**
9. **Install drivers.**

**10.Test graphics performance.**

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

Ans: **RAID (Redundant Array of Independent Disks) combines multiple disks for improved performance, capacity, reliability, and fault tolerance**.

Common RAID configurations:

1. **RAID 0 (Striping): Fast performance**
2. **RAID 1 (Mirroring): Data redundancy**
3. **RAID 5 (Striping with Parity): Balance performance and redundancy**
4. **RAID 6 (Striping with Dual Parity): Enhanced redundancy**
5. **RAID 10 (Mirroring and Striping): High performance and redundancy**

Section 4: Practical Application

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

Ans: 1. Turn Off and Unplug the Computer

2.**Open the Case**

🡪Remove the side panel of the computer case using a screwdriver or by releasing any clips.

3.**Locate the CPU Fan**

🡪Identify the CPU fan, which is attached to the heat sink on top of the CPU.

4.**Disconnect the Fan Cable**

🡪Find the cable connecting the CPU fan to the motherboard

5.**Remove the Old CPU Fan and Heat Sink**

🡪Lift the fan and heat sink assembly off the CPU.

6.**Install the New CPU Fan and Heat Sink**

🡪Reconnect the CPU fan cable to the motherboard header.

Section 5: Essav

1. Discuss the importance of regular maintenance for computer hardware and provide example of maintenance tasks.

Ans: Consequences:

1. **Reduced performance**
2. **Increased downtime**
3. **Data loss**
4. **Hardware failure**
5. **Security vulnerabilities**

Importance of Maintenance:

1. **Prevents overheating**
2. **Reduces dust buildup**
3. **Identifies potential issues**
4. **Extends hardware lifespan**
5. **Ensures data integrity**

Examples of Maintenance Tasks:

Hardware Maintenance:

1. Cleaning dust from:

- Fans

- Heat sinks

- Ventilation grills

1. Checking and replacing:

- Thermal paste

- CPU coolers

- Power supplies

1. Upgrading:

- RAM

- Hard drives (to SSDs)

- Graphics cards

**Software Maintenance:**

1. Updating:

- Operating systems

- Drivers

- Firmware

1. Running:

- Disk cleanups

- Disk defragmentation

- Virus scans

1. Backing up data:

- Regularly

- To external drives or cloud storage

Scheduled Maintenance:

1. Daily: Check for updates, run virus scans
2. Weekly: Clean dust, check disk space
3. Monthly: Run disk cleanups, defragmentation
4. Quarterly: Update drivers, firmware
5. Annually: Upgrade hardware (if necessary)