Assignment module 2

Installation and Maintenance of Hardware and Its components

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.

Ans: 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.

Ans: 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)?

Ans: 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?

Ans: **a)** CMOS battery

b) CPU

c) RAM

d) Hard drive

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**

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

Ans: False

Section 3: Short Answer

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

Ans:

Here's installing a new graphics card:

1. **Turn off and unplug the computer.**
2. **Open the case** to access the inside.
3. **Locate the PCIe slot** on the motherboard (the long slot).
4. **Remove the metal cover(s)** from the back of the case (if needed).
5. **Insert the graphics card** into the PCIe slot and press down until it clicks.
6. **Secure the card** with screws to the case.
7. **Connect the power cables** from the power supply (if required).
8. **Close the case**, plug everything back in, and power on.
9. **Install drivers** from the manufacturer's website.
10. **Test the card** to make sure it works.

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

Ans:

RAID (Redundant Array of Independent Disks) is a way of using multiple hard drives together to improve:

Here's common RAID configurations:

1. **RAID 0 (Striping):**
   - **Speed:** Fast.
   - **Safety:** None (if one drive fails, all data is lost).
   - **Minimum Drives:** 2.
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2. **RAID 1 (Mirroring):**
   - **Speed:** Good.
   - **Safety:** High (data is copied on two drives).
   - **Minimum Drives:** 2.
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3. **RAID 5 (Striping with Parity):**
   - **Speed:** Good.
   - **Safety:** Can survive one drive failure.
   - **Minimum Drives:** 3.
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4. **RAID 6 (Double Parity):**
   - **Speed:** Fair.
   - **Safety:** Can survive two drive failures.
   - **Minimum Drives:** 4.
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5. **RAID 10 (1+0, Mirroring + Striping):**
   - **Speed:** Fast.
   - **Safety:** High (mixes RAID 1 and RAID 0).
   - **Minimum Drives:** 4.

Section 4: Practical Application

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

Ans:

Here's guide to replace a CPU fan:

1. **Turn off and unplug the computer.**
2. **Open the case** to access the CPU fan.
3. **Unplug the fan's power cable** from the motherboard.
4. **Remove the fan** by unscrewing or unclipping it.
5. **Clean the old thermal paste** off the CPU (optional).
6. **Install the new fan** and secure it with screws.
7. **Reconnect the fan's power cable** to the motherboard.
8. **Close the case**, plug the computer back in, and power it on to check if the fan wor

Section 5: Essay

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

Ans:

Regular maintenance for computer hardware is important to keep it running smoothly, improve performance, and extend its lifespan. Here are some key tasks:

1. **Cleaning:**
   - Dust off fans, vents, and components to prevent overheating.
2. **Check for Software Updates:**
   - Keep the operating system and drivers updated for better performance and security.
3. **Check Hard Drive Health:**
   - Run disk checks and defragment (for HDD) to keep it running efficiently.
4. **Monitor Temperature:**
   - Ensure the CPU and GPU temperatures stay within safe limits to avoid overheating.
5. **Backup Data:**
   - Regularly back up important files to prevent data loss.
6. **Check Cables and Connections:**
   - Inspect cables and connections to ensure everything is securely connected.