**Module 2: A+ - Peripherals and Power Supply**

**Section 1: Multiple Choice Question**

**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.**

**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.**

**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**

**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**

**Section 2: True or False**

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

Ans: True

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

Ans: False

**7. 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:**

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

**Ans:** RAID stand for Redundant Array of Independent Disks or Redundant Array of Inexpensive Disks. It is a storage configuration that combines the storage capacities and hardware properties of two or more hard drives into one big logical storage volume.

The primary purpose of Redundant Array Independent Disk is to improve data protection and system performance by either distributing data across drives or duplicating it. RAID configurations are commonly used in servers, data centers, and even in-home setups to safeguard against sudden hardware failures. RAID configuration combines multiple disks into one or more logical units to improve data storage performance, reliability or both.

**Section 4: Practical Application**

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

**Ans:**

**Section 5: Essay**

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

**Ans:** Regular maintenances of computer hardware are essential for ensuring reliability, extending the lifespan of components, and preventing costly repairs or downtime.

Computers, like any other machines, accumulate dust, wear out, and can experience performance degradation if not properly cared for. By maintaining hardware regularly, users can keep their systems running smoothly and efficiently.

Importance of regular maintenance

**1.Stop Overheating:** Dust often builds up inside the computer, especially around the fans. It blocks the airflow, causing the system to heat up. Too much heat can damage the CPU, graphics card, or even the power supply.

**2. Keeps the Computer Fast:** Cleaning and checking the parts helps the computer work at its best speed. When cooling systems or hard drives are dirty or failing, the computer becomes slow and unresponsive.

**3. Makes Parts Last Longer:** Taking care of the computer reduces stress on the hardware. This means components like fans, drives, and processors don’t wear out as quickly, so you won’t need to replace them as often.

**4. Prevents Interruptions:** Sudden breakdowns or crashes can stop your work and even lead to lost files. Regular maintenance lowers the risk of these unexpected problems**.**

**5. Keeps Your Data Safe**: A well-maintained computer is less likely to fail suddenly. This protects your files and reduces the chance of losing important information.

Key Maintenance Tasks

**1.Cleaning Hardware:** Use compressed air to blow out dust from vents, fans, and other components. Wipe down the keyboard, screen, and external surfaces with appropriate cleaning solutions. This should be done in every 3 to 6 months.

**2.Updating Software:** Check regularly installed updates for your operating system, drivers, applications. It is done by as update become available or monthly.

**3.Running Antivirus Scans:** To detect and remove malware or viruses, Schedule regular scans with antivirus software. It could be done by weekly.

**4. Backing up data:** Set automated backup to cloud services to ensure your data is safe. It is depends on the importance of data, it can be daily or weekly.

**5. Monitor systems health:** Use system monitoring tools to check for any signs of hardware failure or performance issues. It must be done by monthly.