

## Assignment:

### Understanding of Hardware and Its Components

#### Assignment: 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.
  - 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.
    - 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.
    - 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
    - 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
    - CMOS battery.

## 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.
  - You need to: check compatibility, power down your computer, open the case, remove the old graphics card, insert the new card into the PCIe x16 slot, secure it with screws, connect power cables, close the case, and install the latest graphics drivers.
9. What is RAID, and what are some common RAID configurations?
  - A RAID 5 configuration is a Redundant Array of Independent Disks (RAID) that uses disk striping with parity.
  - Data distribution: Data is divided into blocks and striped across multiple disks in the array. Each drive stores a portion of each block.

## Section 4: Practical Application

10. Demonstrate how to replace a CPU fan in a desktop computer.
  - Identify the CPU fan.
  - Turn off and unplug the computer.
  - Open the case and locate the fan.
  - Remove the fan and clean the processor.

- Install the new fan and apply thermal paste.
- Close the case and test the fan.

### **Section 5: Essay**

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

- Dusting and cleaning internal components like fans and heat sinks can help prevent overheating.
- Update your operating system, drivers, and firmware.
- Replace worn parts.
- Identify and fix any issues.
- Check your computer's performance for any signs of problems.
- Back up your important files to a secure location.
- Run regular scans with antivirus software to protect against viruses and malware.
- Defragment your hard drive.
- Run a disk cleanup to free up space on your hard drive.
- Remove any programs you no longer use.

