

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?

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?

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)?

Ans: - a) Multimeter

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

Section 2: True or Fales

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: -

To install a new graphics card, first you have prepared your computer by uninstalling old drivers and download the new ones, to ensuring enough power supply. Then, carefully remove the old card by disconnecting old cables, releasing the slot latch, and removing mounting screws. After that, insert the new graphics card into the PCIe slot, secure it, connect power cables and display cables, and install the new drivers.

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

Ans: -

RAID (Redundant Array of Independent Disks) is a data storage technology that combines multiple physical hard drives into one unit to improve performance, redundancy, or both.

RAID 0 (Striping):

- Data is split and written across multiple disks to improve performance.
- Offers high read/write speeds and maximum storage capacity.
- **No redundancy:** If one disk fails, all data is lost.

RAID 1 (Mirroring)

- Data is duplicated on two drives.
- Provides data redundancy, but no performance gain.

RAID 5 (Striping with Distributed Parity):

- Stripes data across multiple disks and uses parity information for redundancy.
- Balances performance and redundancy.
- Can tolerate one drive failure.

RAID 10 (1+0)

- Combines mirroring and striping.
- Requires at least four drives.
- Provides high performance and redundancy.

Section 4: Practical Application [Done]

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

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 key for ensuring optimal performance, extending lifespan, and preventing costly repairs. This includes tasks like cleaning internal components, updating software, and addressing overheating issues. Examples of maintenance tasks include dust removal, software updates, and regular system checks.

Key Reasons for Hardware Maintenance:

1. **Improved Performance:** Cleaning dust from fans, heat sinks, and vents helps maintain proper cooling, preventing overheating that slows down components.
2. **Prevention of Failures:** Regular checks can identify failing parts such as hard drives, power supplies, or RAM before they cause system failure.
3. **Enhanced Longevity:** Keeping components clean and cool extends their usable life.

Examples of Maintenance Tasks:

- **Cleaning Dust:** Use compressed air to remove dust from fans, vents, and inside the case.
- **Checking and Replacing Thermal Paste:** Ensure good heat transfer between CPUs/GPUs and their heat sinks.
- **Updating Firmware and Drivers:** Keep BIOS, firmware, and device drivers up to date for better compatibility and security.
- **Checking Connections:** Ensure cables and components are securely connected.