**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?**
   1. Ensure the computer is plugged in to prevent electrostatic discharge.
   2. Wear an anti-static wrist strap to prevent damage from electrostatic discharge.
   3. Work on carpeted surfaces to prevent slipping.
   4. Use magnetic tools to handle components more easily.

**Ans.** Wear an anti-static wrist strap to prevent damage from electrostatic discharge.

1. **What is the purpose of thermal paste during CPU installation?**
   1. To insulate the CPU from heat.
   2. To provide mechanical support for the CPU.
   3. To improve thermal conductivity between the CPU and the heat sink.
   4. To prevent the CPU from overheating.

**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)?**
   1. Multimeter
   2. Screwdriver
   3. Pliers
   4. Hex key

**Ans.** Multimeter

1. **Which component is responsible for storing BIOS settings, such as date and time, even when the computer is powered off?**
   1. CMOS battery
   2. CPU
   3. RAM
   4. Hard drive

**Ans.** CMOS battery

**Section 2: True or**

1. **True or False: When installing a new hard drive, it is essential to format it before use.**

**Ans.** True,

We have to format the hard disk because it may occur any virus or anything that may have error in the system.

1. **True or False: A POST (Power-On Self-Test) error indicates a problem with the CPU.**

**Ans.** True**,**

Becauseit starts the beeps when any error indicates in OS.

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

**Ans.** True, but when we adding data or transferring any file into USB drive on that time it is not safe.

**Section 3: Short Answer**

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

**Ans.** Here is the steps we have to follow while installing a new graphics card in a desktop.

1. We have to open the case, then we have to find the slot for Graphic card into motherboard.
2. After that we have to place the card in that slot and then press it inside normally.
3. When it gets lock automatically inside the slot.
4. Then we have to screw or fit the VGA Port or HDMI Port with the desktop for Graphics.
5. Then we close the Case and start the System and Its Done.
6. **What is RAID, and what are some common RAID configurations?**

**Ans.** RAID stands for Redundant Array of Independent Disks. It combines multiple physical disk drive into a logical unit to increase the speed or performance. There are mainly three types:

1. RAID 0 (Striping): It split across multiple disks and performance but no redundancy.
2. RAID 1 (Mirroring): In this data is duplicated to another disks as a backup, like when one disk get corrupted or get fail then the data remains in the another disk, where we have backup.
3. RAID 5 (Striping and Parity): It has the good read performance and redundancy.

It also has data and parity information distributed across to their drives.

1. RAID 1+0 (0+1): It is any Combination of RAID 0 and RAID 1 like striping the high-level performance and data across the mirrored.

**Section 4: Practical Application**

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

**Ans.**

1. First of all, we have to turn off and remove all the cables of Computers.
2. Then we have to open the case of the computer and find out the CPU fan.
3. Then we have to remove the CPU fane and check the processer.
4. After that we have to install the New fan and fit it properly and then we have to fit it.
5. And close the case and start it Computer again.

**Section 5: Essay**

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

**Ans.** It has some regular maintenance for computer hardware in serval reason including the enhancing performance, extending lifespan and improve the security.

**Examples of Maintenance: -**

1. **Cleaning:** In this Dusting and Cleaning the Desktop or Laptop from outside and also from the inside.
2. **Components Check-up:** In this we have to check that all components are working properly or not then. We have to check all the cables is in good condition or it may get damaged, So we have to change it.
3. **Software Updates:** Update Drives is like the regular update of software system and applications for their performances. It also has hardware updates like installing firmware and updates the firmware devices like RAM, SSD, HDD, Graphic Card and etc. to improving the performances and to fix the bugs.
4. **System Backup:** Backup from important data and use safe guard against the Hardware failure or data corruption.
5. **Thermal Management:** In this management we have to check the fans that all he cooling fans is performing properly and also, we have replace the noise and non-operational. And older system we also have to apply the thermal paste on CPU fan.
6. Disk Maintenance: In this we have to check the Disk Drive SSD and HDD. In which it had be defragmentation to improve the access time.