Assignment:

Understanding of Hardware and Its Components

Section 1: Multiple Choice

1. Which of the following is NOT a component of the CPU?
    1. ALU
    2. RAM
    3. CU
    4. **1 and 3 both**
2. What is the function of RAM in a computer?
   Ans: Temporary data storage for quick access.
3. Which of the following is a primary storage device?
    1. HDD
    2. SSD
    3. SD card
    4. **1 and 2 both**
4. What is the purpose of a GPU?
   Ans:Processing graphics and visual data.

Section 2: True or False

5. The motherboard is the main circuit board of a computerwhere other components are attached.

   Ans:true
6. A UPS (Uninterruptible Power Supply) is a hardware device that provides emergency power to a load when the input powersource fails.

   Ans:true
7. An expansion card is a circuit board that enhances thefunctionality of a component.
   Ans:true

Section 3: Short Answer

8. Explain the difference between HDD and SSD.
   Ans:HDD: Magnetic storage, slower. SSD: Flash storage, faster.
9. Describe the function of BIOS in a computer system.
   Ans: Boots system, manages hardware.
10. List and briefly explain three input devices commonly used with computers.

**Ans: Keyboard: Typing input.
        Mouse: Pointer control.
        Scanner: Digitizes documents.**

Section 4: Practical Application

11. Identify and label the following components on a diagram of a motherboard:

- CPU
- RAM slots
- SATA connectors

- PCI-E slot

Ans: CPU, RAM slots, SATA connectors, PCI-E slot.

12. Demonstrate how to install a RAM module into a computer.
Ans: Align RAM with slot, press firmly.

Section 5: Essay

13. Discuss the importance of proper cooling mechanisms in a computer system. Include examples of cooling methods and their effectiveness.

Ans: **Prevents overheating, extends lifespan.**
Fans: Common, effective.
Liquid cooling: Better for high performance.

14. Explain the concept of bus width and its significance in computer architecture.

ANS: **Data pathway size, affects speed.**

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 electrostaticdischarge.
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.
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)?
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?
a) CMOS battery
b) CPU
c) RAM
d) Hard drive

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: Power off, open case, insert card, secure, connect power.

9. What is RAID, and what are some common RAID configurations?
   - **Redundant Array of Independent Disks.**
   - **RAID 0: Striping. RAID 1: Mirroring. RAID 5: Parity.**

Section 4: Practical Application

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

    Power off, remove old fan, clean CPU, apply thermal paste, attach new fan, connect power.

Section 5: Essay

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

    - **Prevents failures, prolongs life.**
    - **Cleaning dust, checking cables, updating software.**

Assignment: Troubleshooting and Helpdesk

Section 1: Multiple Choice

1. What is the first step in the troubleshooting process?
   a) Implementing a solution
   b) Identifying the problem
   c) Testing the solution
   d) Documenting the solution

2. Which of the following tools is commonly used to diagnose hardware issues by testing electrical connections?

a) Loopback plug
b) Toner probe
c) Multimeter
d) Cable tester

3. Which of the following best describes the purpose of a VPN (Virtual Private Network)?
a) Encrypting network traffic to prevent eavesdropping
b) Connecting multiple LANs (Local Area Networks) over a wide area network (WAN)
c) Authenticating users and controlling access to network resources
d) Reducing latency and improving network performance

4. Which Windows utility can be used to view system logs, monitor performance, and diagnose hardware and software issues?
a) Task Manager
b) Device Manager
c) Event Viewer
d) Control Panel

Section 2: True or False

5. Safe Mode is a diagnostic mode in Windows that loadsonly essential system services and drivers, allowing users to troubleshoot and fix problems with the operating system.

Ans:true

6. A system restore point is a snapshot of the computer'ssystem files, registry, and configuration settings at a specific point intime, which can be used to revert the system to a previous state if problems occur.

Ans:true

7. Ping is a command-line utility used to test network connectivity by sending ICMP echo requests to a target device andwaiting for ICMP echo replies.

Ans:true

Section 3: Short Answer

8. Describe the steps involved in troubleshooting a computer that fails to boot into the operating system.

Ans: • **Check power supply: Ensure the computer is receiving power.**
• **Check hardware connections: Verify all cables and components are properly connected.**
• **Access BIOS/UEFI: Ensure the boot order is correct.**
• **Safe Mode: Attempt to boot in Safe Mode.**
• **Last Known Good Configuration: Try using this option.**

Section 4: Practical Application

9. Demonstrate how to troubleshoot network connectivity issues on a Windows computer using the ipconfig command.

Ans: • **Open Command Prompt: Type `cmd` in the search bar and press Enter.**
• **Run ipconfig: Type `ipconfig /all` and press Enter to view network configuration.**
• **Check IP Address: Ensure the device has a valid IP address.**

> • **Release and Renew IP: Type `ipconfig /release` followed by `ipconfig /renew` to refresh the IP address**.

Section 5: Essay

10. Discuss the importance of effective communication skills in a helpdesk or technical support role.

Ans• **Understanding Problems**: Clear communication helps in accurately understanding user issues.

• **Providing Instructions**: Helps in giving clear and concise instructions to resolve issues.

• **Building Rapport**: Effective communication builds trust and rapport with users.

• **Reducing Misunderstandings**: Minimizes the chances of misinterpretation and errors.