Section 1: Multiple Choice

1. Which of the following is NOT a component of the CPU?

Ans: - ALU & CU

2. What is the function of RAM in a computer?

Ans: - RAM (Random Access Memory) is the computer's temporary memory, which is used to immediately store data and programs while the computer is working.

3. Which of the following is a primary storage device?

Ans: - HDD & SD Card

4. What is the purpose of a GPU?

Ans: - The purpose of a GPU is to play high-graphic games, perform 3D modeling work, and handle any kind of graphics-related tasks. It also helps reduce the workload on the CPU by taking care of these tasks, so the CPU does not get overloaded.

Section 2: True or False

5. The motherboard is the main circuit board of a computer where 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 power source fails.

Ans: - True

7. An expansion card is a circuit board that enhances the functionality of a component.

Ans: - True

Section 3: Short Answer

8. Explain the difference between HDD and SSD.

Ans: -

HHD

- HHD (Hard Dick Drive)
- It uses magnetic disk to rotate.
- It is very slower than SSD due to the moving parts.
- It is not durable because of moving pats.
- It consumes more power than SSD.
- More affordable than SSD.

SSD

- SSD (Solid Dick Drive)
- It uses flash memory cells to store data electronically.
- It is very faster than HHD because of using electronic storage.
- It is durable and resistant to physical shock more than HDD.
- It consumes less power than HDD.
- SSD are more expensive than HHD.

9. Describe the function of BIOS in a computer system.

Ans: -

- Post (Power on self-test): - check all post computer components.
- Bios' setup (Date & Time).
- Bios create Inventory of your all computer components.
- Bootstrap code (Locate & Load OS) 5. Booting is a process of loading OS from HHD and SSD to Ram.

10. List and briefly explain three input devices commonly used with computers.

Ans: -

- **Keyboard**: - Keyboard is manly used to input text, number, symbols, commands.
- **Mouse**: - Mouse works as pointer for user to move cursor on screen. Mouse can be used for click [Right-left], drag, scrolling.
- **Scanner**: - Scanner can be used for scan documents, images and convert them into digital format so they can see and view and edited.

Section 4: Practical Application

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

Ans: -

- **CPU: -** The processor is installed here; it is located at the canter of the motherboard
- **RAM slots: -** There are long and narrow slots. RAM memory is installed here.
- **SATA connectors: -** It is used to connect storage devices like hard disks or SSDs.
- **PCI-E slot:** - The PCI-E Slot (or PCI Express Slot) is a special slot on the motherboard used to connect external cards such as:"

Examples of external cards:

- **Graphics Card (GPU)** – for improved visual performance
- **Sound Card** – for enhanced audio capabilities
- **Network Card (LAN/Wi-Fi card)** – for internet connectivity
- **Capture Card** – for video capturing and streaming
- **TV Tuner Card** – for watching television on the computer

12. Demonstrate how to install a RAM module into a computer.

Ans: -

- **Turn off the computer and unplug the power cable.**
- **Open the case (for desktop) or RAM panel (for laptop).**
- **Discharge static electricity by touching a metal object.**
- **Locate the RAM slots on the motherboard.**
- **Align the RAM module with the notch in the slot.**
- **Press the RAM firmly on both sides until the clips click into place.**
- **Check that the RAM is properly seated.**
- **Close the case and power on the computer.**

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

Ans: -

- **Why Cooling is Important:**

1. Prevents Overheating.

2. Improves Performance.

3. Extends Hardware Lifespan.

4. Increases System Stability.

- **Types of Cooling Methods**

1. Air Cooling (Most Common)
2. Liquid Cooling (Water Cooling)
3. Thermal Paste
4. Passive Cooling
5. Phase Change and Other Advanced Cooling

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

Ans: -

- **What is Bus Width?**

  Bus width is the number of bits a computer can transfer at one time between components (like CPU, memory, etc.).

- **Significance:**

- More bus width = more data moves at once
- Increases data transfer speed
- Improves overall system performance
- Allows access to more memory

- **Example:**

- A 32-bit bus transfers 32 bits at a time
- A 64-bit bus transfers 64 bits at a time (faster and more powerful)