Module 1: Understanding of Hardware and Its Components

Section 1: Multiple Choice

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

2. What is the function of RAM in a computer?
Answer: RAM temporarily stores data and instructions currently in use by the CPU, allowing for quick access and processing.

3. Which of the following is a primary storage device?
Answer: 1 and 2 both (HDD and SSD)

4. What is the purpose of a GPU?
Answer: To handle complex graphics and visual computations, relieving the CPU of image-rendering tasks.

Section 2: True or False

5. The motherboard is the main circuit board of a computer where other components are attached.
Answer: True

6. A UPS (Uninterruptible Power Supply) provides emergency power when the input power fails.
Answer: True

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

Section 3: Short Answer

8. Difference between HDD and SSD
Answer: HDD (Hard Disk Drive): Uses spinning magnetic disks to store data; slower, cheaper, more storage capacity.
SSD (Solid State Drive): Uses flash memory; faster, quieter, more durable, but costlier per GB.

9. Function of BIOS
Answer: BIOS (Basic Input/Output System) initializes and tests hardware during startup and loads the operating system from storage into memory.

10. Three common input devices
Answer: Keyboard: For text input.
Mouse: For pointing and selecting.
Scanner: For digitizing physical documents or images.

Section 4: Practical Application

11. Label components on a motherboard diagram
Answer: CPU: Central socket, usually with a fan or heat sink.
RAM slots: Long slots near the CPU.
SATA connectors: Small L-shaped ports for hard drives/SSDs.
PCI-E slot: Long horizontal slots for expansion cards (GPU, sound card, etc.).

12. Demonstrate how to install RAM
Answer: 1. Power off and unplug the PC.
2. Open the case and locate RAM slots.
3. Open the retaining clips.
4. Align the RAM module with the slot notch.
5. Firmly press until it clicks into place.
6. Close clips and reassemble.

13. Importance of cooling mechanisms
Answer: Prevents overheating and extends hardware life.
Examples:
- Air cooling (fans, heat sinks)
- Liquid cooling (radiators, coolant)
- Thermal paste for better heat transfer between CPU and heat sink.

14. Concept of bus width
Answer: The number of bits transmitted simultaneously across the system bus.
Significance: Wider bus width = more data transferred per clock cycle → higher performance.