Assignment 01:- Understanding of Hardware and Its Components.

Section 1: Multiple Choice

1. Which of the following is NOT a component of the CPU?
Ans :- 2. RAM

2. What is the function of RAM in a computer?
Ans :- Ram temporary Store Data and CPU Processes While the PC is On or Working. It Works fast And Perform Smooth.

3. Which of the following is a primary storage device?
Ans :- 4. 1 and 2 both
(HDD and SSD)

4. What is the purpose of a GPU?
Ans:- A GPU (Graphics Processing Unit) is used to render images, videos, and animations.
- It Allows to Process Task like Playing Games, Video Editing, Animation, ETC.

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 :- *HDD

-HDD stands for hard disk drive.
-random access time 5-10ms.
-read letency time is high.
-HDD have moving parts and subject to sudden failure.

*SSD

-SSD stands for solid state drive.
-random access time 0.1ms.
-read letency very low.
-SSD have no moving parts to fail.

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

Ans :- there are 3 commonly input device used with computer

1. keyboard
2. mouse
3. microphone

1- keyboard :-It is the most commonly used input device

-It is used mainly for typing text,numbers and characters that can be seen on the screen

-A keyboard consist of 104 keys.

2- mouse :- A mouse is a small pointing device that contains one or more buttons for pointing and selecting items on the computer screen.

- The pointer of the mouse is called a cursor
- They are two maouse 1.optical mouse 2.Scroll mouse

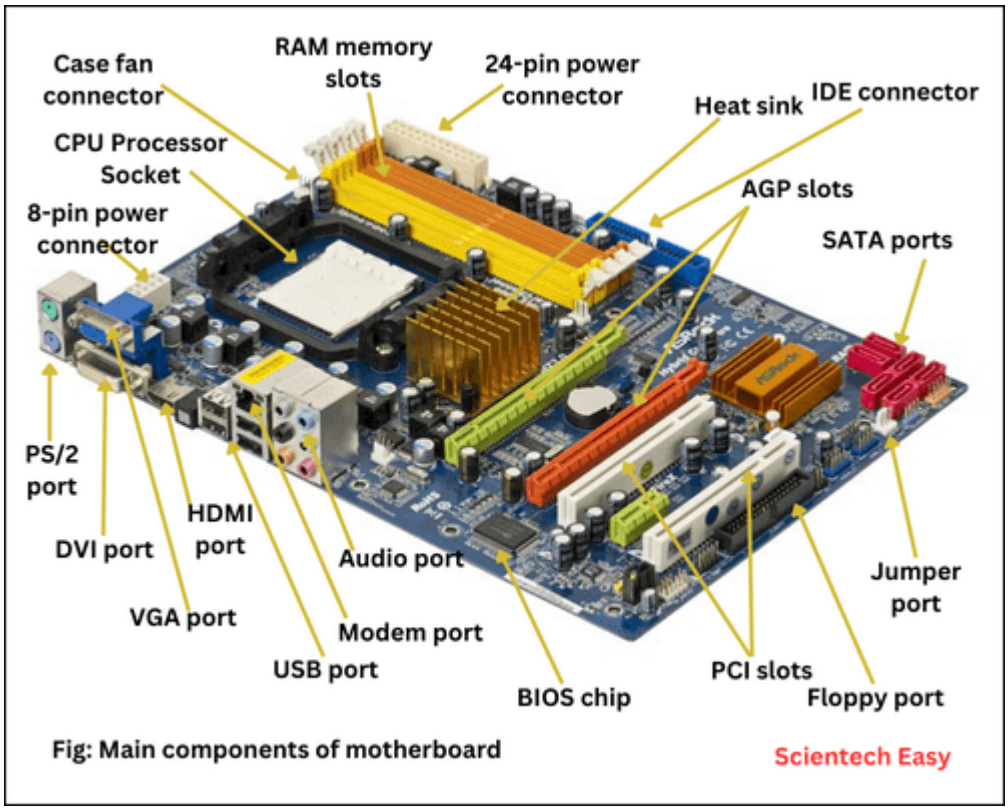
3- Joystick:- It is a pointing device.

- It moves in all directions and controls the movement of a pointer or some other display symbols .

Section 4: Practical Application

11. Identify and label the following components on a diagramof a motherboard: • CPU • RAM slots • SATA connectors • PCI-E slot

Ans :-



1. CPU (Central Processing Unit):
   - The CPU is the "brain" of the computer, responsible for executing instructions and calculations.
   - It's typically found in a square or rectangular socket area on the motherboard, often with a heatsink and fan attached for cooling.

2. RAM (Random Access Memory) slots:
   - These are usually a row of slots, often in a similar color (e.g., black or blue)
   - that are used to insert RAM sticks. RAM is where the operating system and running programs are stored.

3. SATA connectors:
   - These are typically small,
   - 7-pin connectors that connect to hard drives or SSDs.
   - They are used to transfer data and power to the storage devices.

4. PCI-E (Peripheral Component Interconnect Express) Slots:
   - Found in a vertical row, often near the top or middle of the motherboard.

12:- Demonstrate how to install a RAM module into a computer

Ans :- To install RAM:-
- power off your computer,

- open the case,
- ground yourself,
- locate the RAM slots,
- and insert the new RAM modules,
- ensuring they click into place.

13:- Discuss the importance of proper cooling mechanisms in a computer system. include exampples of cooling methods and their effectiveness.

Ans :- Proper cooling mechanisms are crucial in computer systems because excessive heat can lead to component damage, reduced performance, and ultimately, system failure.

Importance of Cooling:
- Component Protection
- Performance
- System Stability

- Longevity:-If your components are cool, you extend their lifespan and reduce the risk of premature failure.

- There are three types of common colling methods and their effectiveness:
  1. Air Cooling
  2. Liquid Cooling
  3. Passive cooling

1. air cooling :- Air cooling is effective and cost-efficient,
   - especially for less demanding systems,
   - However, it can be noisy and less effective for high-performance systems.

2. liquid cooling:- Liquid cooling is generally more efficient than air cooling and can keep components cooler under heavier loads.
   - It's quieter and more efficient but also more expensive and complex.

3. Passive Cooling:- Passive cooling is the simplest and least expensive method, but it's also the least effective.
   - It's suitable for low-power components or systems where noise is a concern.

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

Ans :- There Are 3 Types of bus :-
1. Address Bus
2. Control Bus
3. Data Bus

1. Address Bus :-

-This Bus is Indentifies The Specific Location of the data in memory or I/O device.
- It carries the memory address from the cpu to other component.
- It's Unidirectional.

2. Control Bus :-

- It carries the Controal Signals from the cpu to other component.
- It's Bidirectional.
- Such as Read/Write signals.

3. Data Bus :-

- It bus carries the Acttual Data being transferred between the cpu and the other component.
- It's Bidirectional.