Questions:-

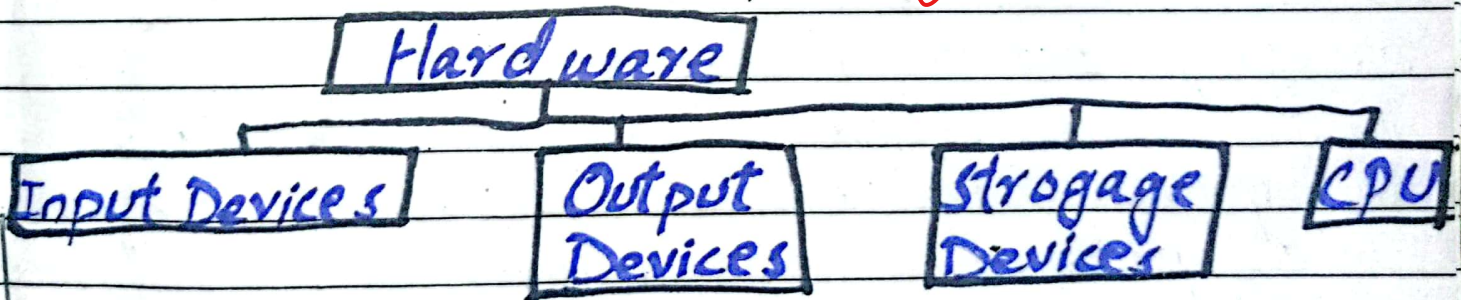**1. Define computer hardware with two example?**

Ans-

Definition:- Computer hardware refers to the physical components of a computer system that are tangible and can be physically touched.

These components work together to execute software instructions and perform computing tasks. Hardware includes input, output, processing, & storage devices.

Key points:

* Tangible part of a computer system.
* Works in combination with software.
* Enables data processing, storage, and output.

```
                    Hardware
     ┌──────────┬──────────┬──────────┬──────┐
Input Devices   Output     Strogage   CPU
                Devices    Devices
```

⇒ Bar graph

Hardware Type	Usage (%)
Input Devices	20%
Output Devices	20%
Processing Devices	30%
Storage Devices	30%

Examples:

1 CPU (Central Processing Unit):- The brain of the computer that performs calculations and executes instructions.

2 RM (Random Access Memory):- Temporary memory used by the computer to store data for active processes.

Conclusion:

In summary, computer hardware froms the backbone of any computer system, providing the physical means to execute software instructions and perform computing tasks.
Understanding hardware components, such as the CPU and RAM, is essential for grasping how computers function efficiently. Proper knowledge of hardware helps in system maintenance, troubleshooting, and optimizing performance.

No Need :3

Question

2: Differentiate between Primary memory (RAM, ROM) and Secondary memory (HDD, SSD)?

Ans:-

Primary Memory	Secondary Memory
The main memory Directly accessible by the CPU, used for temporary and immediate data storage. Examples: RAM, ROM.	Non-volatile storage used for long-term data storage, not directly accessible by CPU. Examples: HDD, SSD.

*Key Differences Table:

Feature	Primary memory (RAM/ROM)	Secondary Memory HDD/SSD
Volatility	RAM is volatile ROM is non-volatile.	Non-volatile
Access speed	very fast.	Slower than Primary memory.
Purpose	Temporary storage and active processing	Permanent storage and backup.

Feature	Primary Memory (RAM/ROM)	Secondary Memory (HDD/SSD)
Capacity	Small (GBs)	Large (~TBs)
Examples	RAM, ROM	HDD, SSD

A Access Speed vs Capacity

Memory Type	Speed	Capacity
RAM	High	low
ROM	Medium	low
HDD	low	High
SSD	Medium - High	High

This graph shows primary memory has higher speed but smaller capacity, while secondary memory has larger capacity but slower access speed.

Relax Copy

★ Conclusion:

In conclusion, primary memory (RAM/ROM) and "secondary memory" (HDD/SSD) complement each other in a computer system. Primary memory provides fast access for active processing, while secondary memory provides long-term storage for data and programs. A proper balance between the two ensures efficient computing performance.

Question:3

Explain the function of CPU in data processing?

Ans:-

(i) Definition of CPU:-

The central processing Unit (CPU) is the brain of the computer. It performs all arithmetic, logical, and control operations, enabling the computer to process data and execute programs.

ii) Functions of CPU in Data Processing.

Input Devices ⟶ CPU [1: Fetch data, 2: Process data, 3: Control flow] ⟶ out put Devices
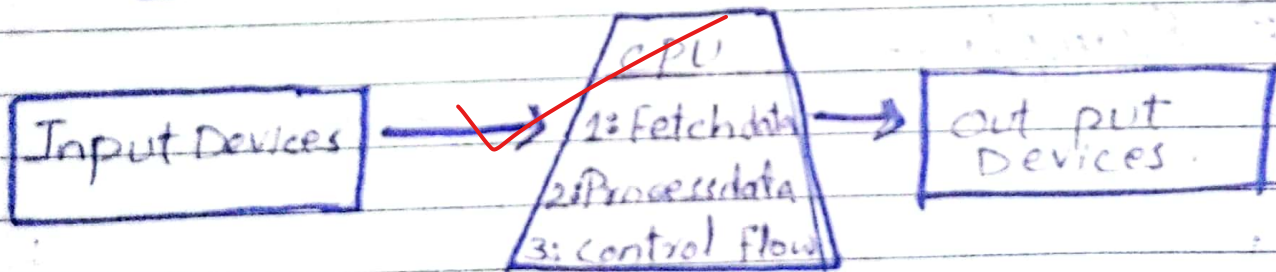
(i) Input Data Reception:

Receives raw data from Input devices like

keyboard or sensors.

ii) Data Processing:

* Performs arithmetic operations (addition, subtraction, etc.)
* performs logical operations (comparisons, decisions)

iii) Control Operations:

* Directs the flow of data between memory, input, and output devices.
* Ensures instructions are executed in the correct sequence.

iv) Output Generation:

* Sends processed data to output devices like monitor or printer.
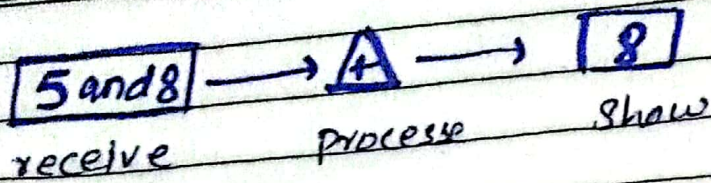
v) Storage Management:

* Stores data in registers and interacts with RAM for active processing.

iii) Example :-

- If you type "5+3" in a calculator (input device):
1. CPU receives 5 and 3
2. CPU processes addition operation
3. CPU sends result 8 to the output device (screen)

```
5 and 8 → (A) → 8
receive      process      show
```

iv) CPU Operation Cycle:

Operation	CPU Time(%)
Fetch	30%
Decode	20%
Execute	40%
store/write	10%

- This shows how CPU spends time in the data processing cycle.

(v) Conclusion:

The CPU is the central unit that drives all data processing in a computer system. It receives data, processes it using arithmetic and logical operations, controls the sequence of instructions, controls the sequence of instructions, and delivers output efficie-ntial to comprehend how computers process and manage information.

3/5

CONCLUSION AND INTROS ARE NOT WRITTEN IN
5 MARKS NOTE
WRITE MORE NEATLY
OVER ALL FINE