

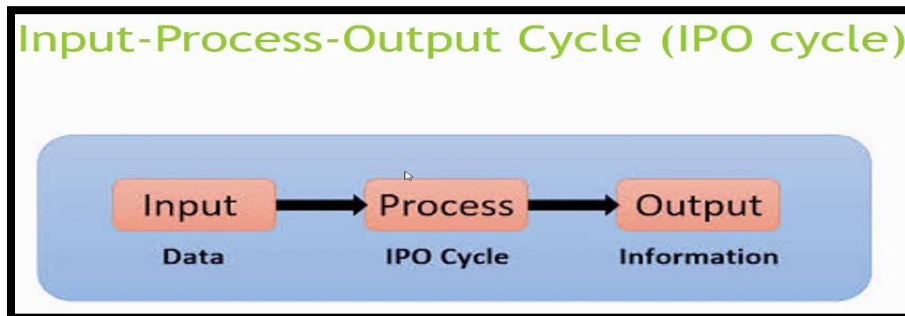
## Chapter- 1

# INPUT, OUTPUT, AND STORAGE DEVICE

## STUDY NOTES

- A computer is a smart machine that works on electricity.
- A computer is an electronic device that accepts data and instructions given by the user, processes them accordingly and gives meaningful result.

### Input-Process-Output Cycle (IPO cycle)



### Parts of a computer :

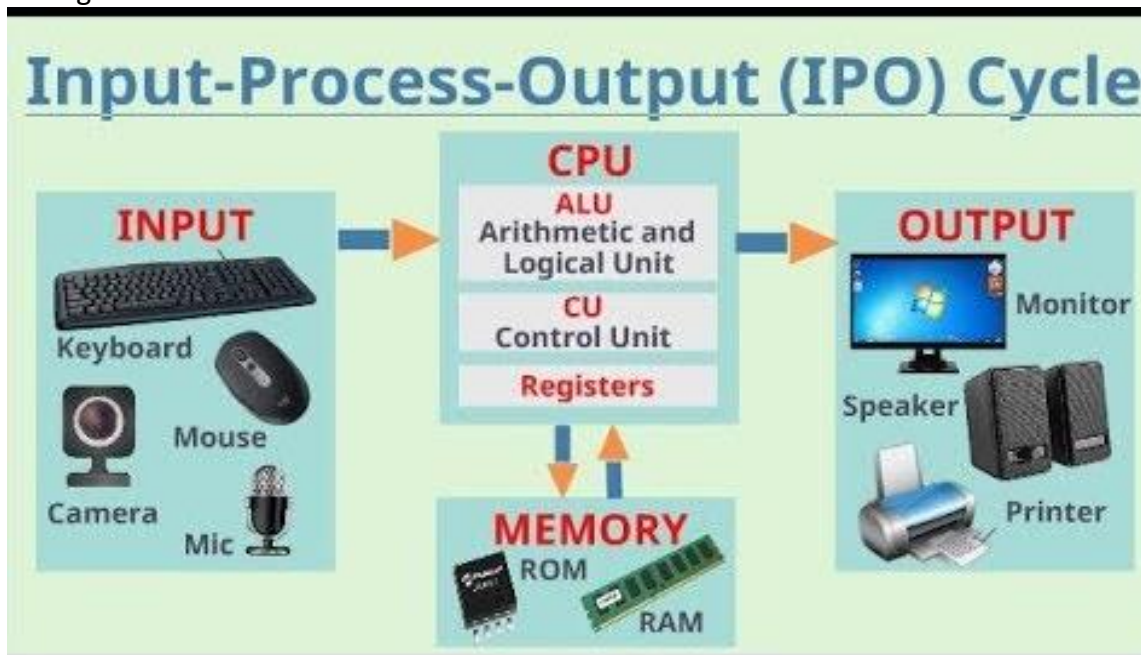
A computer system is made of four types of devices.

Input devices.

Processing devices .

Output devices.

Storage devices.



## INPUT DEVICES:

The device through which we enter data and instructions are called INPUT DEVICE.

Examples are – keyboard, mouse, trackball, light pen.

Trackball, mouse, light pen do not require typing of input data and are called pointing device.

### **Keyboard:**

- A keyboard is used to enter data and instructions into a computer.
- There are 104 keys present on the keyboard which can be divided into 4

Groups: typing keys (Alphabet and numeric keys), function keys (F1 – F12), navigation keys (arrow keys, home, end, page up, page down, etc), control keys (ctrl, alt, windows logo key and esc key).



### **Mouse:**

- A mouse is a handheld pointing device with two buttons on the top.
- It is used to control the movement of the pointer to select an object and open files/ folders.
- It is used to draw pictures.



### **Microphone:**

- It is used to record our voice, music and other sounds into the computer.
- Sound cards enable a computer to record sound from a microphone, which is connected to the computer.



### **Touchpad:**

On a laptop, a touch sensitive pad is used in place of mouse. We can control the movement of the pointer on the screen by moving the finger on the touch sensitive pad.



**Touch Screen:**

- It is a computer screen sensitive to the touch.
- By using Touch screen we can select objects directly by touching on them with fingers without using any pointing device.
- They are used in in Tablets, laptops, ATM, Cell phones

**Light pen:**

- It is a pointing device used to select and draw objects on the display screen.
- It looks like a pen and is used with CRT monitors.
- These days stylus which is a type of light pen, is used with a Tablet or Digitizer.

**Scanner:**

- Scanner reads text or pictures printed on a paper and transfer them into computer.
- There are 4 types of scanners but only two are commonly used.
- These are Flat bed scanners and hand held scanners.

**Web camera:**

- A web camera capture images and live videos which can be viewed on a computer
- It is used to chat live with friends and relatives using internet.

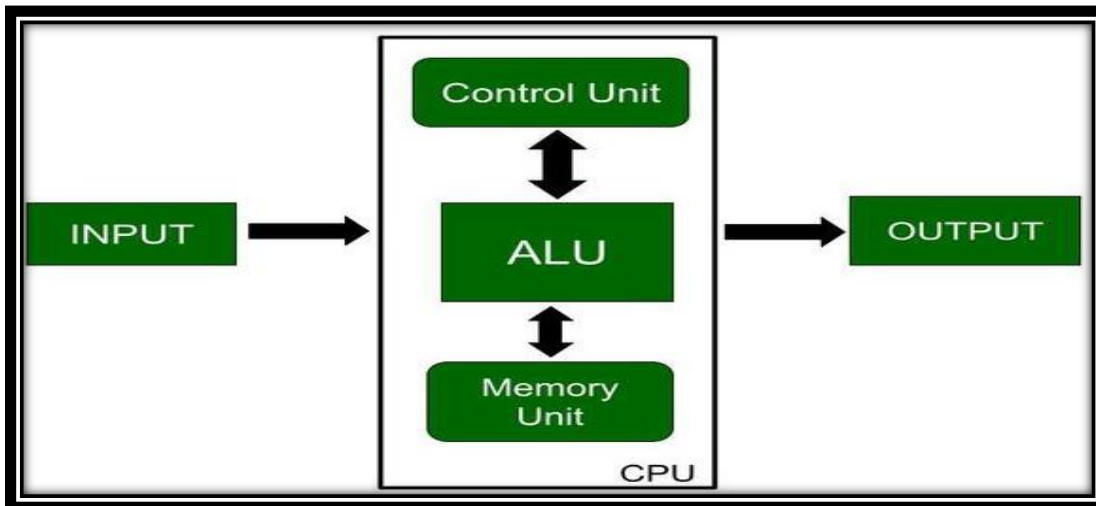
**Digital Camera:**

- A digital camera is used to take photographs and record videos.
- The photos/ videos taken with digital camera are stored in the memory chip inside the camera.
- The Images/ videos are transferred to the computer by plugging the camera into the computer.



**Processing device:**

- CPU is the brain of computer where it processes and stores the information performs calculations and send the result to the output devices.
- It is placed inside a box called CPU cabinet.

**CPU has mainly three parts:****ALU (Arithmetic and logical unit):**

It performs all arithmetic operations (addition, subtraction, multiplication and division and logical operations and other operations)

**MU (Memory Unit):**

It is used to store data temporarily or permanently for future reference to perform required processing.

**CU ( Control Unit ) :**

It controls the working of all the other units i.e MU, ALU, Input devices and Output devices. It works like a traffic policeman.

**OUTPUT DEVICE:**

The devices which are used to display the data that we enter into computer and the results after processing are called output devices.

**[INPUT, OUTPUT, AND STORAGE DEVICE]****Monitor:**

- ❖ Monitor looks like a television.
- ❖ The output that we get on monitor is called soft copy.
- ❖ There are three types of monitor:-

i) **CRT:** These are less expensive, but consume more electricity.



ii) **LCD:** These are thinner, lighter, and consume less electricity.

iii) **LED:** It looks like LCD monitors and has better picture quality.

**Speaker:**

It is used to listen music from computer.

**Printer:**

- It helps to take print out on the paper.
- The printed copy we get from computer is called Hard copy.
- Printer is classified as -

**Dot matrix printer:**

- It works like a typewriter .
- It is the slowest and cheapest printer .
- It is very noisy.
- It gives output in black and white and doesn't give good quality output.

**Inkjet printer:**

- This printer sprays droplet of ink on the paper to form the text and graphics.
- It prints both black and white as well as colored print.



- It produces high quality prints when used with special paper.

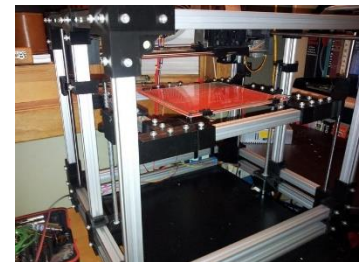
**Laser printer:**

- It uses laser beam and dry ink to produce printouts.
- It is used mainly in publishing houses.
- It gives good quality print us and prints at a very high speed.



**3D printers:**

- These are remarkable machines that can make everyday things in different materials in all forms.
- Various objects are created in 3D using additive processes.
- In this process an object is created by laying down successive layers of the material until an object is entirely made.



**Storage Devices**

The device that helps us in storing the data in the computer are called storage devices.

**Bits and byte**

- Computer can understand only two States ON (represented by 1) and OFF ( represented by 0). These two digits 0s and 1s called binary digit or bits.
- The data is stored in the computer in the form of bits and is measured in bytes. The memory capacity determined how much data and instructions can be stored in the computer either temporarily or permanently.

| UNIT      | SIZE            |
|-----------|-----------------|
| BIT       | 1 bit           |
| NIBBLE    | 4 bit           |
| BYTE      | 8 bit           |
| KILOBYTE  | 1024 bytes      |
| MEGABYTE  | 1024 kilobytes  |
| GIGABYTE  | 1024 megabytes  |
| TERRABYTE | 1024 gigabytes  |
| PETABYTE  | 1024 terrabytes |
| EXABYTE   | 1024 pettabytes |
| ZETTABYTE | 1024 exabytes   |
| YOTTABYTE | 1024 zettabytes |

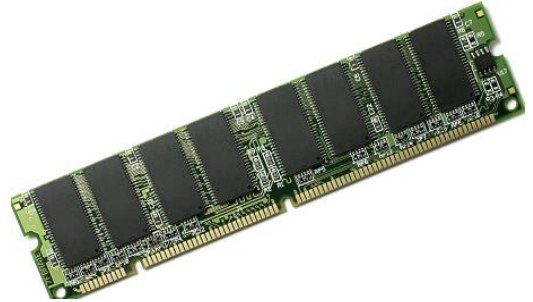
## INTERNAL MEMORY

- Internal memory is also called Primary Memory or Main Memory. It is the built-in-memory, designed to store data and instructions while the computer is working. The data stored in the internal memory is erased when the computer is turned off. It is always easier to access data or programs from the internal memory as it is the fastest of all forms of computer data storage.

Primary memory is of two types:

**Random Access Memory (RAM):** It stores the information temporarily and works like a blackboard that can be constantly over written with new data. The information stored in the memory is lost when you turn off the computer or the power goes off. That is why RAM is also called Volatile memory.

- Ram is like a calculator, where the information exists till the calculator is on. The moment you turn off the calculator, all the data disappears.



**Read Only Memory (ROM) :** It stores the start up instructions that prepare a computer for use. The instructions stored in the ROM cannot be changed, but can only be read. It retains the stored information even when the power is switched off. Therefore it is called non-volatile memory.

- ROM is like an audio disk that can be played, but we cannot record anything on it, except in special types of disks.



## EXTERNAL MEMORY

- It is used to store information for a long period. Data is not lost in the external memory even when the computer is turned off. It is also called the Secondary Memory. The external memory is essential, because the internal memory of a computer has limited storage capacity.
- A computer also uses various storage devices that vary in their storage capacity, e.g. hard disk, pen drive, CD, etc. These are permanent or non-volatile storage devices.
- When we run a program, it is copied from the secondary storage into the internal memory. It takes more time to access data from the secondary memory as compared to the internal memory.

### PORTABLE STORAGE DEVICES

- **Hard Disk** : It is the main storage component in a computer. It is fixed inside the CPU box. It can hold a large amount of data. Hard disks can store up to 16 TB of data. Now a days, external hard disks are also available, which are small in size and can be carried anywhere.



- **CD** : CD stands for Compact Disk. It is an optical storage device. A CD is a thin, shiny, circular disk that can store upto 700 MB of data and measures 4.7 inch in diameter. A CD can hold text, graphics, sound, images, and videos. It can be used for data backup and storing software.



- **DVD** : The full form of DVD is Digital Versatile Disk or Digital Video Disk. It is an optical storage device that is used for data storage and recording movies with high video sound and sound quality. The storage capacity varies from 4.7 GB to 17 GB.



- **Blue-Ray Disk** : it is a new optical disk format that can store upto 128 GB of Data. This disk is mainly used for storing high quality sound, games, and movie data. The name Blue-ray disk has been derived from the Blue-violet laser that is used to read and write data on it.



*Changing your Tomorrow*

- **Flash Drive** : It is popularly known as pen drive and the most popular data backup device. It is a plug and play device and can be connected to the Universal Serial Bus (USB) port. It is a small, light weight, and removable drive. It is used for copying and moving data from one computer to another. A flash drive can store upto 4TB of data.



- **Memory Card** : A memory card is a storage medium for portable devices, like mobiles, digital cameras, and music players. These devices transfer image and music files into a computer by using memory card reader that can be connected with a computer through a USB cable. Now a days, most of the laptops come with an in-built card reader port.



## BRAIN DEVELOPER

### SECTION - A

#### A. Fill in the blanks.

1. The **laser** printers give very high-quality output.
2. **Output** devices display the result that we get after processing.
3. the information in a computer it Stored in the form of **binary** digits.
4. **Internal and External** the two types of memories present in a computer.
5. A flash drive is popularly known as **Pen drive**.

#### B. State true or false.

1. Digital camera is used to share pictures and have live chat on the internet. **(False)**
2. The CPU manages all the jobs of a computer. **(True)**
3. A multifunction printer is also known as an all-in-one printer. **(True)**
4. Ram stands for random accept memory. **(False)**
5. 1 megabyte is equal to 1024gigabyte. **(False)**

#### C. Application based questions.

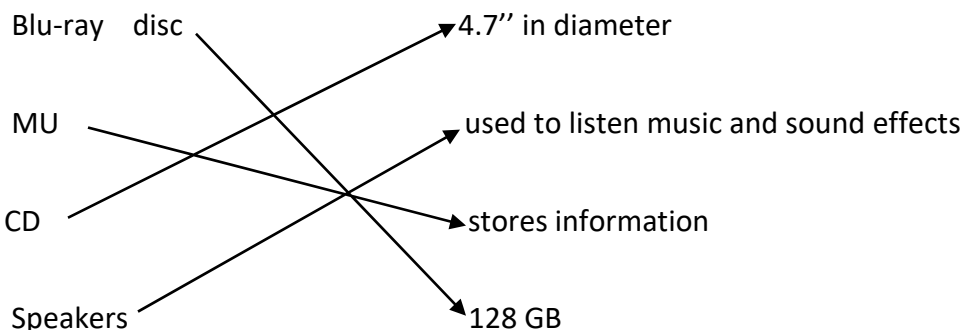
1. Smriti has lost the computer Notebook in the class and the next day she has to appear for a test. Which device will you suggest her to use so that she can take a photocopy of the chapters from friends notebook?

**Ans: Printer**

2. Sohail could not finish project work in the class, so he wants to carry the soft copy of the subject in order to finish it. which device you suggest him to fulfil the task?

**Ans: Pendrive**

#### D. Match the following



SECTION - B

A. Multiple choice questions

1. Which output device allows you to record sound?

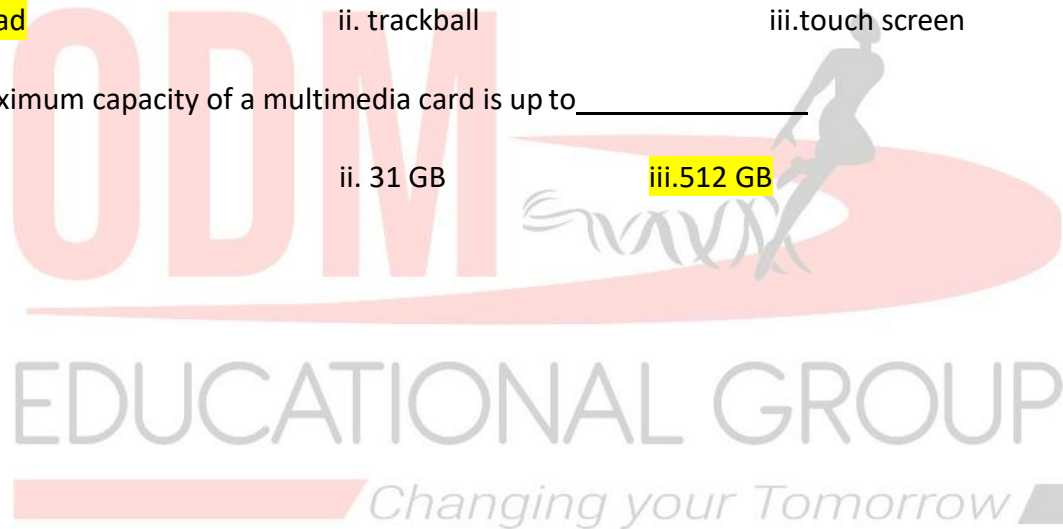
- i. Microphone                      ii. speakers                      iii. monitor

2. which device is used to control the movement of the pointer on the laptop?

- i. Touchpad                      ii. trackball                      iii. touch screen

3. The maximum capacity of a multimedia card is up to \_\_\_\_\_

- i. 223 GB                      ii. 31 GB                      iii. 512 GB



4.The storage capacity of a DVD varies from-----to -----

i.4.2 GB, 16GB

ii.4.7 GB, 17 GB

iii.4.7 GB, 17.1 GB

**B. Answer the following questions.**

**1. Define the term input device. Name any two.**

**Ans:** The device through which we enter data and instructions are called INPUT DEVICE.

Example: Trackball, mouse,

**2. What is the printer? Name the types of printers.**

**Ans:** Printer is an output device which helps to take print out on the paper. Types of printers are: Dot matrix printer, Inkjet printer, Laser printer, 3D printers.

**3. What do you understand by computer memory? Name its types**

**Ans:** The devices that help us in storing the data are called memory. Types of memory:

- 1) Internal memory
- 2) External memory

**4. How is hard disk useful?**

**Ans: Hard disk** is the main storage component in a computer. It is fixed inside the CPU box. Hard disks can store up to 16 TB of data. External hard disks are also available in small size and can be carried anywhere.

**5. what do you use the following devices? answer briefly**

**a) Digital camera:** A digital camera is used to take photographs and record videos.

- The photos/ videos taken with digital camera are stored in the memory chip inside the camera.
- The Images/ videos are transferred to the computer by plugging the camera into the computer.

**b) Light pen:** It is a pointing device used to select and draw objects on the display screen.

- It looks like a pen and is used with CRT monitors.