Unit III

Optical Storage Media & Retrieval Technologies

3.1 Basic Technology :-

What is Storage?

- A storage device is any computing hardware that is used for storing, porting and extracting data files and objects.
- It can hold and store information both temporarily and permanently, and can be internal or external to a computer, server or any similar computing device.
- There are various compression algorithms used to compress the Data, Video and audio etc.

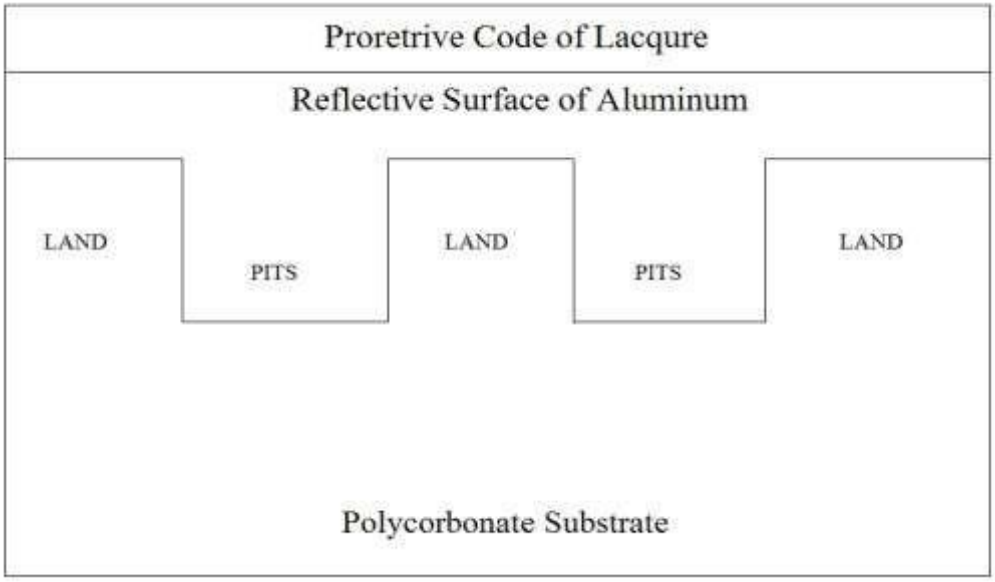
Storage Device :-

- Storage devices are one of the core components of any computing device. They store virtually all the data and applications on a computer.

- For Ex- RAM, Cache, a Hard Disk, an Optical Disk Drive and externally connected USB drives.

3.2 CD-ROM (Basic Technology) :-

- CD-ROM stands for Compact Disk Read Only Memory emerge as most cost effective medium for MM projects.
- CD-ROM can contain up to 84 minutes of videos of sounds or it can contain unique mixes if images, sounds, videos and animation.
- CD-ROM is used for different CD's
- CD-ROM can contain a physical construction supports to a disk.
- This is having 1.2 MM of thickness and 15 MM spindle whole at the center.
- A polycarbonate surface contains information about pit's and Land's.
- Pit's represented binary 0 and Land's represent binary 1.
- This is covered with Aluminum or gold that increases the reflectivity of recording surface.
- A polycarbonate subtracts a protective layer of Lacquer and information about pits and Lands represented by a physical layer of CD-ROM.
- The following figure of show a physical layer of CD-ROM



- A Polycorbonate Substrate provides the desc depth necessary to maintain layer focus on the metal and data layer.
- A CD-ROM contains a single track, which is start from inside and spirals outwards.
- This is an encoding the information in the form of pits and LAND's.
- Most of the personal computers sold today including CD-ROM players.

3.3 Multimedia Highway :-

- The telecommunication networks are global and when information provider and content of the owner determined the worth of the product and how to change money of them.
- Information elements will ultimately link up online as distributed resources on data highway.
- Where you will pay to acquire and used to multimedia based information
- Full text from books and margins will be accessible by modem and electronic thing.
- Feature movies will be played and report from their information gets it. - Lectures from participating university provides information for education credits
- Street maps of any city will be available.

3.4 Video Disks and Other WORM's :-

- The video disks, in the form of Laser vision serves as to output of motion pictures and audio.
- The data as stored in an analog coded format on a disk.
- A Laser vision disks has diameter of 30 cm and storage capacity is originally called as video long play disk (VLPD).
- It was described for first time in PHILIPS in 1973.
- Motion of a picture on the disk is imported with frequency modulation.
- The Audio signals mixes with Video signals.
- The video disk was designed as ROM that is Read Only Memory.
- Many differences write once storage media have came out, known as Write Once Read Many disks or WORM disk.
- In computer storage media, WORM(Write Once Read Many) is a data storage technology that allows information to be written to a disc a single time and prevents the drive from erasing the data.
- For Ex : In the interactive video disk one each side 30 minute of audio and so frames per sec. can be stored and retrieved.
- One can also store around 54000 studio quality images provide.
- The diameter of one disk has 3.5 to 14 inches.
- This type of disk has storage capacity as 600 MB to 8 GB and so on.

Advantages : -

- The main advantages of WORM as compared to other storage media, is the ability to store large amount of data.
- We can store data in a single time, so drive can prevents from erasing the data. We can not modify data in a drive.

Disadvantages : -

- Media overflow can occurs, when a WORM disk is a nearly full.
- Packaging refers to the block wise structures in WORM disk.
- For Ex : In the size of 2048 bytes only 1 byte is used for write and other 2047 bytes will be recorded without information contents.

3.5 DVD-ROM :-

- Digital Versatile Disk Read only memory (DVD-ROM) is a read-only digital versatile disc (DVD).
- Commonly used for storing large software applications.
- It is similar to a compact disk-read only memory (CD-ROM) but has a larger capacity.
- A DVD-ROM stores around 4.7 GB of data.
- A CD-ROM usually stores 700 MB of data.
- A DVD-ROM permanently stores data files which cannot be changed, written over or erased.
- A personal computer (PC) with a DVD-ROM or a DVD-RAM drive is designed to read a DVD-ROM disc.
- Generally a DVD-ROM disc is not equipped to be used with a DVD drive connected to a home theater system or television.
- But many DVD-ROM drives can generally read a DVD movie disc.
- A DVD-ROM is one of the various types of DVDs.
- A blank DVD is generally a DVD-R or DVD+R, which has a read-write format.
- The +R or -R references the format standards and is a rewritable or recordable DVD.
- Compared to a CD-ROM, a DVD-ROM has the same 5 inch diameter and 1.2 millimeter (mm) thickness.
- The smallest DVDROM can store approximately 7 times more data than a CD-ROM. This term is also known as digital video disc ROM.

Questions

Q.1 Explain Basic Tecnology. 5M

OR

Q.2 Explain Concept of CD-ROM . 5M

Q.3 Explain CD-ROM and Multimedia Highway. 5M

Q.4 Explain Video Disks and other WORMs. 5M

OR

Q.5 Write a Short Notes: (3/5 Marks Each)

1. Basic Technology (CD-ROM).
2. Video Disks .