

## ★ File Protection:

File protection refers to providing a protection system to computer system resource i.e. file. Security is also provided to resources such as CPU, memory, disk, S/W program, data/information.

Unauthorized user may cause severe damage to computer or data stored on it.

Protection is provided against unauthorized access, malicious access, virus, worms etc.

Authentication can be provided using passwords to provide security.

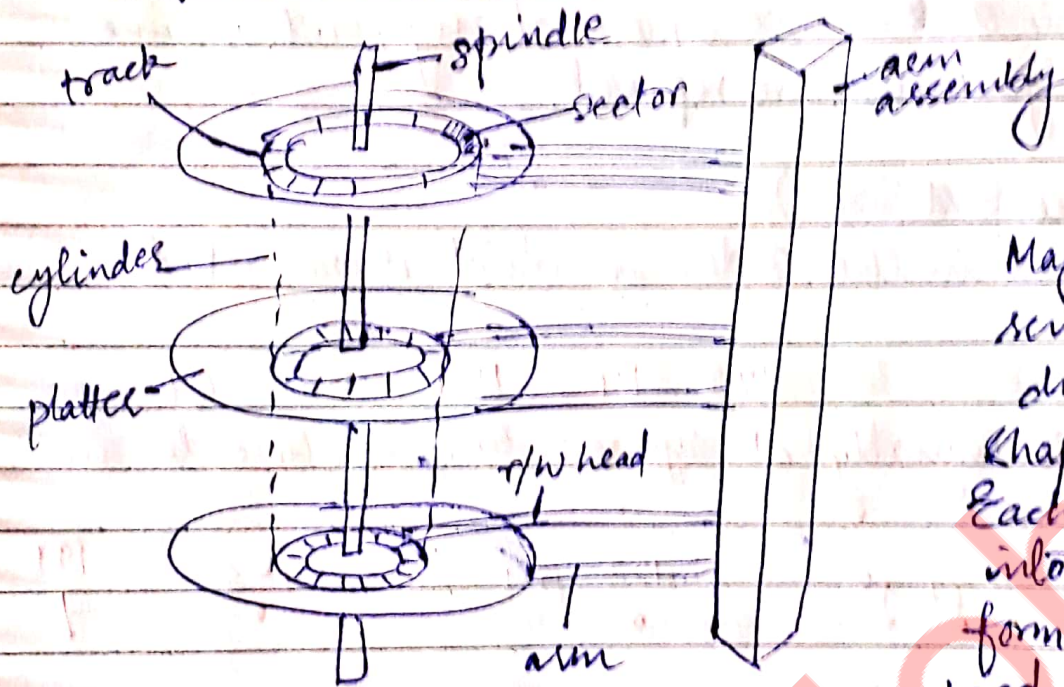
## ★ Secondary Storage Structures

They are those devices whose memory is non-volatile (stored data will be intact even if system is turned off).

- Also called Auxiliary storage.
- less expensive
- speed lesser as compared to primary storage.
- Data less frequently accessed is kept in secondary storage.
- ex. magnetic disks, magnetic tapes, removable thumb drives etc.



## \* Magnetic Disk Structure:



Magnetic disk contains several platters which are divided into circular shaped tapes, tracks. Each track further divided into sectors. Tracks form a cylinder. Read/write head used to read data from a sector of magnetic disk.

Sseek time: Time taken by the arm to move to the required track.

Rotational latency: Time taken by arm to reach the required sector in the track.

Transfer rate: Rate at which data moves from disk to computer.

Random Access time: It is the sum of seek time & rotational latency.

Modern disk drives are addressed as large one-dimensional arrays of logical blocks, logical block is smallest unit of transfer. Size of logical block is usually ~~512 bytes~~ 512 bytes.