Practical 6

AIM:- To learn installation and configuration of HDD**.**

Procedure:

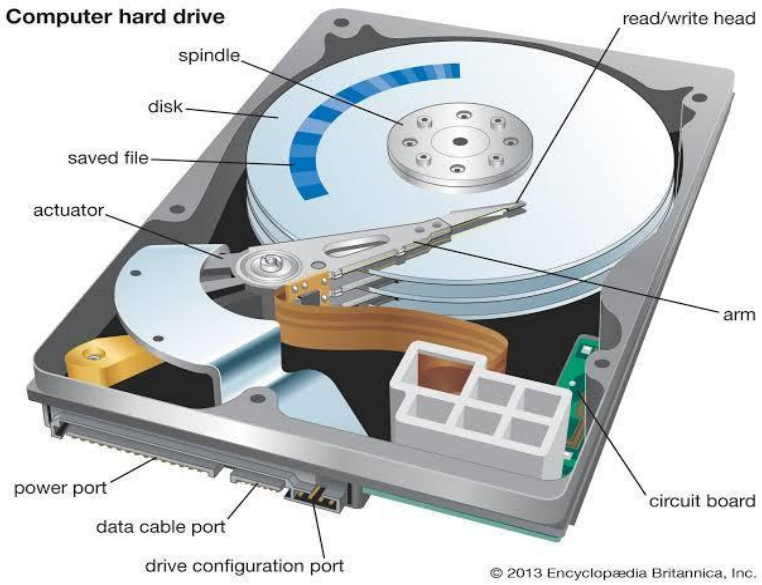

FIGURE 6.1 HDD

- **Parts of HDD**
- Power port
- Data cable port
- Drive configuration port
- Disk
- Spindle
- Actuator
- Arm
- Read/write head
- Circuit board

❖ What is a hard disk drive?

A computer hard disk drive (HDD) is a non-volatile data storage device. Non-volatile refers to storage devices that maintain stored data when turned off. All computers need a storage device, and HDDs are just one example of a type of storage device.

HDDs are usually installed inside desktop computers, mobile devices, consumer electronics and enterprise storage arrays in data centers. They can store operating systems, software programs and other files using magnetic disks.

More specifically, hard disk drives control the reading and writing of the hard disk that provides data storage. HDDs are used either as the primary or secondary storage device in a computer. They are commonly found in the drive bay and are connected to the motherboard via an Advanced Technology Attachment (ATA), Serial ATA, parallel ATA or Small Computer System Interface (SCSI) cable, among other formats. The HDD is also connected to a power supply unit and can keep stored data while powered down.

A hard disk drive – often shortened to hard drive – and hard disk are not the same things, but they are packaged as a unit and either term can refer to the whole unit.

❖ Why do computers need hard disks?

Storage devices like hard disks are needed to install operating systems, programs and additional storage devices, and to save documents. Without devices like HDDs that can retain data after they have been turned off, computer users would not be able to store programs or save files or documents to their computers. This is why every computer needs at least one storage device to permanently hold data as long as it is needed.

❖ How do hard disk drives work?

Most basic hard drives consist of several disk platters – a circular disk made of either aluminum, glass or ceramic – that are positioned around a spindle inside a sealed chamber. The platter spins with a motor that is connected to the spindle. The chamber also includes the read/write heads that magnetically record information to and from tracks on the platters using a magnetic head. The disks also have a thin magnetic coating on them.

The motor spins the platters at up to 15,000 rotations per minute. As the platters spin, a second motor controls the position of the read and write heads that magnetically record and read information on each platter.

❖ **Installing a Hard Drive**

1. Configure the drive as a master or slave device (PATA only).
2. Mount the drive in the chassis.
3. Connect the data cable to the drive and to the PATA or SATA interface.
4. Connect a power cable to the drive. Before you remove the case panels to install the hard drive:
5. Restart the system and run BIOS Setup. Note the current configuration which ATA and SATA ports are in use and the descriptions of the devices that are connected to them. Alternatively, use a diagnostic program such as Everest Home Edition to determine the current configuration of your drives and interfaces.
6. If you are also installing a PATA or SATA interface card or RAID adapter, configure that card per the maker's instructions and attach the cables to it. If that card will replace some or all of the embedded PATA or SATA interfaces, use CMOS Setup to disable those interfaces.