.**ABSTRACT**

SEMINAR TOPIC : OPTICAL STORAGE TECHNOLOGY

**INTRODUCTION**

Optical techniques for data storage have advanced rapidly during the last decade. Optical data storage presents many unique advantages, notably the high storage density and low access time, not attainable by conventional recording techniques. The special features of optical recording, the proposed materials and techniques, the components for optical storage as well as some representative optical bit-by-bit and holographic recording systems are reviewed. It is noted that in spite of the lack of widespread commercial success of the optical recording at the present, some unique devices have been successfully demonstrated. The knowledge accumulated in the development of optical data storage should be useful for many recent Applications such as video recording. It is expected that when the conventional magnetic memory technology reaches its limit, optical storage technology should be a competitive contender for the next generation data storage.

**ADVANTAGES**

**1. Cost**

The manufacturing costs are significantly lower in Optical disks since only aluminium foils and plastics are involved in the production. Hence, the users can be benefited from the cost of purchasing optical disks in bulk. And many computers include Optical Disk Drive from its respective manufacturer so that the users don't need to purchase them separate.

**2. Durability**

Optical disks are more durable than both Volatile and Non-Volatile memories. It is not subjected to wear and no any power failures can cause data losses. Therefore, it should last long for many years. However it is not completely protected against scratching, heat and other forms of physical damages.

**3. Simplicity**

The process of backup is made much easier using Optical disks. Whatever the data that needs to be burnt should be placed inside the drive icon. And then with just clicking on **'' Burn Disk ''**the users can backup the data.

**4. Portability**

Al though Optical disks are fairly large enough, they are still portable. They can be placed inside bags and other small objects so that it can be transported to various places and used in different computers and devices.

**5. Stability**

Optical disks offer very high level of Stability. This is because unlike magnetic disks, it is not vulnerable to electromagnetic fields and other forms of environmental influences.

**DISADVANTAGES**

**1. Security**

When the Optical disks are used for backup purposes, it should be kept safe from the hands of thieves. Due to its size, the optical disks are more prone to loss and theft.

**2. Capacity**

Optical disks cost more per GB/TB than any other forms of storage drives. And it too have very little storage capacity compared to them. Unless it is a Blu-ray disk, the maximum storage the Optical disks can offer is 4.7GB.

**3. Reliability**

Unlike flash drives, Optical disks are not protected by any plastic casings. Therefore, they are prone to scratching which makes the disk unreadable. The data on it cannot be recovered anymore.

**4. Duplication**

Making a duplicate copy using a optical disk is not easier as it seems on a USB flash drive. For the process of burning there should be a separate software and hardware. Even though there are many third party programs for this purpose, latest versions of windows comes equipped with a writing software.

**5. User Friendliness**

Al though it takes very low cost to manufacture Optical disks, it is actually not in the case of backup. Networks and Online backups require some significant amounts for the services. Additionally, Optical drives are known to posses high failure rates. Therefore, it needs a replacement frequently if is under heavy use.

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