



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (UG & PG)

Second Year, 4<sup>th</sup> Semester

2 Marks Question and Answer

Subject Code & Name: 19CSB201- OPERATING SYSTEMS

1. **Define MTBF**

The reliability of a hard disk drive is typically described in terms of a quantity called **Mean Time Between Failures (MTBF)**. MTBF is actually measured in drive-hours per failure.

2. **Robotic Jukebox**

It enables the computer to change the removable cartridge in a tape or disk drive without human assistance.

MAJOR USES:

Backups

Hierarchical storage systems

3. **Define RAID**

A Variety of disk organization techniques collectively called **Redundant Arrays of Inexpensive Disks (RAID)**. RAID is commonly used to address the performance and reliability issues of the storage medium. Now, I in RAID stands for “independent”, instead of “inexpensive”.

4. **Main goal of swap spac:**

The main goal of swap space is to provide best throughput for virtual memory system.

5. **Define streams**

Streams enable an application to assemble pipelines of driver code dynamically. It is a full duplex connection between a device driver and a user level process. STREAM consists of a stream head, stream modules and driver end.

**6. Benefits of streams**

It provides a frame work to a modular and incremental approach to writing device drivers and network protocols.

**7. Define low level formatting**

Before a disk can store data, it must be divided into sectors that the disk controller can read and write. This process is called low-level formatting. Low level formatting is defined as that fills the disk with a special data structure for each sector. It is also known as **Physical Formatting**.

**8. Define Error Correcting Code**

Low level formatting is defined as that fills the disk with a special data structure for each sector. The data structure for sector consists of a header, data area and a trailer. The header and trailer contain information used by the disk controller, such as a sector number and an ECC. When the controller writes a sector of data during normal I/O, the ECC (Error Correcting Code) is updated with a value calculated from all the bytes in the data area.

**9. Define**  
**i)Sector Sparing**  
**ii)Sector Slipping****Sector Sparing:**

The controller can be told to replace each bad sector logically with one of the spare sectors. This scheme is known as sector sparing or forwarding.

**Sector Slipping:**

As an alternative to sector sparing, some controllers can be instructed to replace a bad block by sector slipping. (Also refer page no. 501 last para).

**10. Comparision Between Bit Level Striping And Block Level Striping****Bit Level Striping:**

Data striping consists of splitting the bits of each byte across multiple disks.

**Block-Level Striping:**

In block level striping blocks of a file are striped across multiple disks.

**11. Difference Between Buffering and Caching Buffering**

A buffer is a memory area that stores data while they are transferred between two devices or between a device and an application. Buffer may hold only existing copy of a data item. This is known as Buffering. Buffering is done for three reasons.

1. Speed mismatch.
2. Different data-transfer sizes.
3. Support copy semantics.

**Caching:**

Cache holds a copy on faster storage of an item that resides elsewhere. This is known as caching. **Caching and buffering are distinct functions, but sometimes a region of memory can be used for both purposes.**

**12. Define spooling**

A spool is buffer that holds output for a device, such as a printer, that cannot accept interleaved data streams.

**13. What blocking and non-blocking I/O?**

Another aspect of the system-call interfaces to the choice between blocking I/O and non-blocking I/O. when an application issues a blocking system call, the execution of the application suspended. Most operating system use blocking system calls for the application interface, because blocking application code is easier to understand than non blocking application code. Some user-level processes need non-blocking I/O. An example for non blocking I/O is a user interface that receives keyboard and mouse input while processing and displaying data on the screen.

**14. What is polling or busy-waiting?**

The host is busy-waiting or polling: it is in a loop, reading the status register over and over until the busy bit becomes clear.