1. Explain the difference between sequential and random access file, and give examples of each.

A sequential file is just like it sounds; it reads from one end to the other. If you were trying to access a chunk of memory at location 40,000 then you would have to go through the 39,999 other bits to reach that one. Random access is not like that and can access elements at any location.

2. Explain the purpose for file directories?

File directories provide a file that lists the hierarchy of data for an area. Usually, these directories will catalogue like files into the same directory utilizing the child and parent file structure.

3. What is the purpose of the File Allocation Table?

The File Allocation Table (FAT) is a file system structure that takes storage at time of format and puts it into clusters that point to each other and indicate reserved, and special areas in memory. The root cluster is the originating area and points to successive cluster until it reaches the end of the memory. This was originally used to improve the efficiency of file storage.

4. Explain why a small file block size would be bad for performance, but good for disk space utilization?

A smaller block size for performance would restrict the amount of processes that could be stored and executed thus slowing the system. However, if you were using virtually any algorithm for disk space utilization you would have small execution speeds because of the amount of space it has to deal with and will keep it nice and neat.

5. What causes file system inconsistency?

The most common cause of file inconsistencies are improper shut downs but what is actually happening is a lack of closure. Whenever a disk is improperly ejected or powered down, the drive could have still been writing files or had something opened without having saved it. This power down or improper closure of file system could cause inconsistency that are not accounted for causing errors.

6. What are the three options discussed in the text with regard to file system performance

The three options that were discussed were NTFS, FAT, and HPFS for file systems. As discussed above FAT uses clusters to section off pieces of data and is very simplistic. Fat has a limitation of 4 Gb of data movement at any time and can sometimes be very slow due to the table needing to be optimized. High Performance File System (HPFS) is a newer file system and is intended to be used for file systems between 200-400mb (super blocks). This system creates bands of data that are pointed to by the file manager as to ensure quick movement. This is not very useful out of this range. The last is the New Technology Filing System (NTFS) is best for large file systems above 400 mb which is becoming more of a standard. This arranges data into directories but unlike FAT or HPFS it doesn’t use special areas for allocation.

**Chapter 4 problems.** Answer problems 10, 11, and 27 at the end of chapter 4 on pages 325 to 328 .  Each problem is worth 3 points (9 points total).

I don’t have the text book.