**Chapter #5:**

12)

22)

31)

a) The disks are serviced in the following order: 10, 22, 20, 2, 40, 6, and 38. As a result, you end up needing the following seek time: 6\*(10 + 12 + 2 + 18 + 38 + 34 + 32) = 6\*146 = 876 msec.

b) The disks are serviced in the following order: 20, 22, 10, 6, 2, 38, and 40. As a result, you end up needing the following seek time: 6\*(0+2+12+4+4+36+2) = 6\*60 = 360 msec.

c) The disks are serviced in the order of 20, 22, 38, 40, 10, 6, and 2. As a result, you end up needing the following seek time: 6\*(0+2+16+2+30+4+4) = 6\*58 = 348 msec.

37) There are 2 msec for every clock tick. There are 60Hz clock cycles, which means 60 cycles per second.

40)

**Chapter #7:**

4)

10)

15)

16)

21)

**Chapter #8:**

3)

12)

18)

20)

34)