**1** State three advantages of placing functionality in a device controller, rather than in the kernel. State three disadvantages.

**2**What are the various kinds of performance overhead associated with servicing an interrupt?

**3、**Suppose that a disk drive has 5,000 cylinders, numbered 0 to 4,999. The drive is currently serving a request at cylinder 2,150, and the previous request was at cylinder 1805. The queue of pending requests, in FIFO order, is:

2069, 1212, 2296, 2800, 544, 1618, 356, 1523, 4965, 3681

Starting from the current head position, what is the total distance (in

cylinders) that the disk arm moves to satisfy all the pending requests

for each of the following disk-scheduling algorithms?

a. FCFS

b. SSTF

c. SCAN

d. LOOK

e. C-SCAN

f. C-LOOK

注意（The drive is currently serving a request at cylinder 2,150, and the previous request was at cylinder 1805.）磁头运动有方向的

4、假定磁盘的磁臂现在处于第10柱面，由外向内运动（柱面号由小到大）。现有一组磁盘请求以60、8、15、4、20、40柱面的次序到达磁盘驱动器，磁臂移动一个柱面需要6ms，请完成下面的问题：

（1）访问磁盘所需的时间由哪几部分构成？

（2）采用SSTF算法和SCAN算法进行磁盘调度，请分别给出柱面访问序列，计算平均寻道时间。