

练习8 (第12、13章)

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#1 Points possible: 2

Which of the following storage device does not belong to the tertiary storage structure?

- ☐ CD-ROM
 - ☐ DVD
 - ☒ Hard disks
 - ☐ Tapes
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#2 Points possible: 2

Which provides high reliability inexpensively?

- ☐ RAID 0
 - ☐ RAID 2
 - ☐ RAID 4
 - ☒ RAID 5
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#3 Points possible: 2

Which kind of swap space is fastest?

- ☐ A swap file on FAT
 - ☐ A swap file on ext3
 - ☐ A partition with sophisticated file system functions
 - ☒ A raw partition
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#4 Points possible: 2

UNIX treats I/O devices as _____.

- ☐ regular files
- ☐ directory files
- ☐ indexed files
- ☒ special files

#5 Points possible: 2

_____ present a uniform device-access interface to the I/O subsystem, much as system calls provide a standard interface between the application and the operating system.

- ☐ Kernel
- ☒ Device drivers
- ☐ Bus
- ☐ Operating system

#6 Points possible: 2

The I/O control of disk devices mainly adopt following method.

- ☐ polled
- ☐ interrupt
- ☐ channel
- ☒ DMA

#7 Points possible: 2

Disk access time does not include ____ .

- ☐ seek time
- ☐ rotational latency time
- ☐ read/write time
- ☒ CPU scheduling time

#8 Points possible: 2

_____ is used to cope with the speed mismatch between CPU and I/O devices.

- ☒ Buffering
- ☐ parallel
- ☐ caching
- ☐ semaphore

#9 Points possible: 2

In the disk scheduling algorithm, which algorithm may change the arm's movement direction at any moment?

- ☐ C-SCAN
- ☒ SSTF
- ☐ SCAN
- ☐ none of the above

#10 Points possible: 0

45、（7分）假设计算机系统采用CSCAN（循环扫描）磁盘调度策略，使用2KB的内存空间记录16384个磁盘块的空闲状态。

（1）请说明在上述条件下如何进行磁盘块空闲状态管理。

（2）设某单面磁盘旋转速度为每分钟6000转。每个磁道有100个扇区，相邻磁道间的平均移动时间为1ms。若在某时刻，磁头位于100号磁道处，并沿着磁道号增大的方向移动（如下图所示），磁道号请求队列为50、90、30、120，对请求队列中的每个磁道需读取1个随机分布的扇区，则读完这4个扇区总共需要多少时间？要求给出计算过程。

（3）如果将磁盘替换为随机访问的Flash半导体存储器（如U盘、SSD等），是否有比CSACN更高效的磁盘调度策略？若有，给出磁盘调度策略的名称并说明理由；若无，说明理由。

