

CS471: Operating System Concepts

Fall 2006

(Lecture: TR 11:25-12:40 PM)

Homework #6

Points: 20

Due: October 12, 2006

Question 1 [Points 10] Exercise 12.2 with the following order of pending requests: 20, 3000, 550, 4900, 3700, 3200, 200, 4700, 3200, 250

Question 2 [Points 4] Consider a RAID Level 5

(<http://www.pcguide.com/ref/hdd/perf/raid/levels/singleLevel5-c.html>) organization comprising of 5 disks. File data is circularly distributed among these five disks, each strip consisting of one block. A single parity is computed for 4 (logically contiguous) blocks, and it is written on the 5th block. For example, if the 4 blocks are located on disks 2,3,4,5, then the parity for the 4 blocks together is written on disk 1.

How many blocks are accessed in order to perform the following?

- A. A read of one block of data.**
- B. A write of one block of data**
- C. A write of seven continuous (of a file) block of data**

(Hint: Parity is used to verify if the data has been corrupted or not before returning to the user.)

Question 3 [Points 2] Exercise 12.21

Question 4 [Points 2] 10.1

Question 5 [Points 2] 10.9