

Name _____ SAMPLE _____

Last 4 digits of Student #: _____

GRADE: _____/100

CSE 3320, Operating Systems

Quiz 3, Fall 2012 © DL, UTA, 2012 (Thanksgiving)

Please read this:

This is a closed book, closed notes quiz. Use a dark ink (or pencil) and print answers on the test paper following the questions.

Please answer the questions in a **few keywords**, complete sentences are not necessary, **be brief! Write** your answers **legibly**. Unreadable answers will be counted wrong.

Please - no talking! You may write on back. Please turn in quiz promptly, when asked.

1. The following processes arrive to the scheduler in this order, with the memory size given: P1-size 6 MB, P2-size 10 MB, P3-size 2 MB, then P1 terminates, then P3 terminates. Then P4-size 1 MB arrives, then P5-size 6 MB. The total memory available for processes is 20 MB, processes remain in memory until they terminate, they can not be relocated. Assuming memory starts at location 0, For (a) First fit, and (b) best fit; describe which memory locations are occupied, in order. (for example: "First fit: P1-location 0; P2-location...")
2. In your file system programming assignment:
 - (a) What is the largest size a single file may be? (show calculations)
 - (b) What are the maximum number of files that may be stored in your file system?
 - (c) What are the maximum number of one byte files that may be stored in your file system?
3. For a CPU with 14 bit addresses:
 - (a) What is the maximum size of addressable real memory?
 - (b) If virtual memory is used, and addresses are split into a page (6 bits) and An offset (displacement, 8 bits)
 - (1) How large is a memory frame?
 - (2) How many entries (maximum) is the page table?
 - (c) If it takes 5 ms (5×10^{-3} sec) to read or write a page to disk and it takes 10 ns (10×10^{-9}) to read or write memory, and the hit rate of memory is 98%, what is the **average** memory access time (with VM)?