

CS314 Operating System

Spring 2024

Exercise Question on April 23-A, 2024

Is each of the following statements true or false? Please choose either TRUE or FALSE (no “it depends”). It is your responsibility to clearly indicate which option you chose. For this question, you can answer TRUE or FALSE below (no need to provide answers/explanation in separate paper).

(1) If all the system interrupts are disabled, race condition can never occur.

[TRUE FALSE]

(2) ~~Swap files are for holding pages in a secondary storage device when a memory page fault happens.~~

[TRUE FALSE]

(3) Use of preemptive resources is a necessary condition for unbounded priority inversion to happen.

[TRUE FALSE]

(4) Rate-Monotonic real-time process scheduling performs the long-term and the short-term scheduling, but not medium-term scheduling.

[TRUE FALSE]

(5) Round-robin (RR) short-term process scheduling can behave in exactly the same way FCFS short-term process scheduling does if we are not careful for its (RR) tuning.

[TRUE FALSE]

(6) If the contents of a file should be read in its entirety, UNIX file system will be faster than MS FAT file system (if all the other conditions are the same between them).

[TRUE FALSE]

(7) ~~Fine-grain multi-processor scheduling can be implemented by a library.~~

[TRUE FALSE]

(8) If the physical capacity of a hard disk is increased (but nothing else changes), the utilization of the drive physical drive is expected to decrease if i-node file system is used. Assume that the pointer size is always large enough.

[TRUE FALSE]

- (9) ~~The timestamp used in Lamport's Logical Clock lets all the participating processes agree on the order of the events happened at the participating processes at any point of time.~~

[TRUE FALSE]

- (10) Short-term scheduling algorithms should allocate higher scheduling priority to I/O-bound programs for optimizing (maximizing) the throughput (the number of processes completed in a certain time interval).

[TRUE FALSE]