COP 4600 – Summer 2014

Introduction To Operating Systems

Exam #1 Review

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Material Covered On Exam

- Introductory Material. Overview of OS.

- Overview of Processes.

- Uni-processor Scheduling.

- Multi-processor Scheduling.

- Real-time Processor Scheduling.

Format of the Exam

- The exam consists of multiple choice and true/false questions plus some short answer/work problems.

- There will be a couple of problems dealing with the uniprocessor scheduling protocols similar to those on the homework assignment, so be sure to know various protocols that we covered (concentrate on FCFS, Round-Robin, SPN, SRT, HRRN – ignore feedback techniques for this type of problem).

- The remainder of the short answer problems deal with the various concepts we've covered in the notes.

Sample Questions:

1. Which of the following scheduling policies <u>cannot</u> result in starvation? *(circle all that apply)*

    a. FIFO
    b. LIFO
    c. SJN
    d. Priority
    e. Round Robin

2. Which of the following result in the same process ordering when drawn on a Gant chart? *(circle all that apply)*

    a. FIFO
    b. LIFO
    c. SJN (assume all jobs have the same CPU burst times and history)
    d. Priority (assume all jobs have same priority)
    e. Round Robin (assume the time quantum is less than the longest burst time)

Sample Questions:

3.   For the processes shown below, develop a Gantt chart and determine the average waiting time for a process under the FCFS scheduling protocol.

Process	Arrival Time	Service Time
A	0	8
B	2	4
C	4	11
D	6	3
E	8	6

4.   Every interrupt can be disabled.

True

False

Sample Questions:

5.   The uniprocessor scheduling protocol HRRN is preemptive.

 TRUE   FALSE

6.   The uniprocessor scheduling protocol SPN tends to penalize long processes by potentially increasing their waiting time.

 TRUE   FALSE

7.   It is possible for a process to move from the blocked/suspend state immediately to the ready state.

 TRUE   FALSE

Sample Questions: ANSWERS

1. Which of the following scheduling policies <u>cannot</u> result in starvation? *(circle all that apply)*
    a. FIFO
    b. LIFO
    c. SJN
    d. Priority
    e. Round Robin

2. Which of the following result in the same process ordering when drawn on a Gant chart? *(circle all that apply)*
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Sample Questions: ANSWERS

3. For the processes shown below, develop a Gantt chart and determine the average waiting time for a process under the FCFS scheduling protocol.

Process	Arrival Time	Service Time
A	0	8
B	2	4
C	4	11
D	6	3
E	8	6

A	B	C	D	E

0   8   12   23   26   32

Waiting times: A = 0, B = 6, C = 8, D = 17, E = 18

Average waiting time = (0 + 6 + 8 + 17 + 18)/5

= 49/5 = 9.8

4. Every interrupt can be disabled.

    True

    False

Sample Questions:

5.   The uniprocessor scheduling protocol HRRN is preemptive.

       TRUE   FALSE

6.   The uniprocessor scheduling protocol SPN tends to penalize long processes by potentially increasing their waiting time.

       TRUE   FALSE

7.   It is possible for a process to move from the blocked/suspend state immediately to the ready state.

       TRUE   FALSE