CSPB 3753 - Fall 2024 - Knox - Operating Systems

Started on	Sunday, 13 October 2024, 11:19 AM
State	Finished
Completed on	Sunday, 13 October 2024, 11:57 AM
Time taken	37 mins 54 secs
Grade	**10** out of 10 (**100**%)

Question **1**

Correct

Mark 1 out of 1

Which of the following would accurately describe the term "response time"?

Select one:

- a. the time from 1st entry of process i into the ready queue to its final exit from the system (exits last run state)
- b. Sum up the gaps between time slices given to process i
- c. The time on the CPU required to fully execute process i
- d. The time from 1st entry of process i into the ready queue to its 1st scheduling on the CPU (1st run state) ✔

Your answer is correct.

Question **2**

Correct

Mark 1 out of 1

Which of the following would accurately describe the term "wait time"?

Select one:

- a. Sum up the gaps between time slices given to process i ✔
- b. the time from 1st entry of process i into the ready queue to its final exit from the system (exits last run state)
- c. The time on the CPU required to fully execute process i
- d. The time from 1st entry of process i into the ready queue to its 1st scheduling on the CPU (1st run state)

Your answer is correct.

Question **3**

Correct

Mark 1 out of 1

Which of the following reduces the average wait time for all the processes?

Select one:

- a. FCFS - First Come First Serve
- b. SJF - shortest job first ✔
- c. RR - round robin
- d. EDF - earliest deadline first

Your answer is correct.

Question **4**

Correct

Mark 1 out of 1

What is the difference (advantage) of Multi-level Feedback Queue Scheduling over Multi-level Queue Scheduling?

Select one:

- a. processes give the kernel feedback on its performance
- b. only processes that finish early are allowed to lower their priority
- c. once a process enters a queue it is there for its lifetime
- d. processes are moved to different priority queues depending on CPU usage ✔

Your answer is correct.

Question **5**

Correct

Mark 1 out of 1

CFS uses a ___ data structure to choose the next process to run, because it ____.

Select one:

- a. array, can be indexed
- b. singly linked list, is ordered
- c. r/b tree, is self-balancing ✔
- d. queue, can handle priorities
- e. binary tree, is hierarchical

Your answer is correct.

Question **6**

Correct

Mark 1 out of 1

Why does the CFS (completely fair scheduler) use vruntime (virtual run time) instead of actual run time?

Select one:

- a. to lower priority of high priority processes
- b. to favor processes with higher priority or use less CPU time ✔
- c. to allow new processes to be scheduled first for long timeslices
- d. to support context switching of processes quickly

Your answer is correct.

Question **7**

Correct

Mark 1 out of 1

The name associated with the concept where each CPU core is self-scheduling?

Select one:

- a. asymmetric multi-processing
- b. CPU affinity
- c. multi-core migration
- d. load balancing
- e. symmetric multi-processing ✔

Your answer is correct.

Question **8**

Correct

Mark 3 out of 3

Please place a process number or "idle" into each time slot based upon the given data (the circle on the upper left of the items MUST be in the square). The time slot ends at the time in the heading (e.g. first column is tick 1-10, second column 11-20). The IO blocking format for a task that runs 20 ticks, blocks for 10 ticks, runs 10 ticks, blocks for 30 ticks, and finally runs 20 ticks to completion would be written as follows: 20 <10> 10 <30> 20

Consider the following table showing execution parameters for given processes. Using this information, answer each of the question below.

Process	Arrival Time	Execution Time	I/O Blocking (time, length)
P1	0	40	20 <40> 10 <10> 10
P2	30	20	20
P3	35	30	20 <10> 10

Place the process number (or idle) into each time slot

10	20	30	40	50	60	70	80	90	100	110
P1	P1	idle	P2	P2	P3	P3	P1	P3	P1	idle

P1 P2 P3 P4 idle

Your answer is correct.