Câu Hỏi Về Process scheduling

1. What is the difference between preemptive scheduling and non-preemptive scheduling? What is the issue with the latter?
2. Describe round robin scheduling. What is the parameter associated with the scheduler? What is the issue in chosing the parameter?
3. The traditional UNIX scheduler is a priority-based round robin scheduler (also called a multi-level round robin schduler). How does the scheduler go about favouring I/O bound jobs over long-running CPU-bound jobs?'
4. In a real-time system with a periodic task set,, how are priorities assigned to each of the periodic tasks?
5. What is an EDF scheduler? What is its advantage over a rate monotic scheduler?
6. Describe why the use of spinlocks might be more appropriate than blocking locks on a multiprocessor when compared to a uniprocessor. Is there a trade-off between spinning and blocking on a multiprocessor? Discuss.
7. Is a single ready queue on a multiprocessor a good idea? Why?
8. What are the advantages and disadvantages of using a global scheduling queue over per-CPU queues? Under which circumstances would you use the one or the other? What features of a system would influence this decision?
9. When does spinning on a lock (busy waiting, as opposed to blocking on the lock, and being woken up when it's free) make sense in a multiprocessor environment?
10. Why is preemption an issue with spinlocks?
11. What do the terms *I/O bound* and *CPU bound* mean when used to describe a process (or thread)?
12. What is the difference between cooperative and pre-emptive multitasking?
13. Consider the multilevel feedback queue scheduling algorithm used in traditional Unix systems. It is designed to favour IO bound over CPU bound processes. How is this achieved? How does it make sure that low priority, CPU bound background jobs do not suffer starvation?
14. Why would a hypothetical OS always schedule a thread in the same address space over a thread in a different address space? Is this a good idea?
15. Why would a round robin scheduler NOT use a very short time slice to provide good responsive application behaviour?
16. **What is the average waiting time for the following processes with non preemptive SJF (Shortes Job First).**

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

a. 6.5

b. 6.75

c. 7.5

d 7.75

17. **What is the average waiting time for the following processes with preemptive SJF (Shortes Job First).**

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1. 6.5 2. 6.75 3. 7.5 4. 7.75

18. **Which of the following is the amount of time to execute a particular process ?**

a. Throughput

b. Turnaround time

c. Waiting time

d Response time

19. **Which of the following is the number of processes that complete their execution per time unit?**

a. Throughput

b. Turnaround time

c. Waiting time

d. Response time

20. **Consider a system with 12 magnetic tape drivers (TD) and 3 processes (P0,P1 and P2). Suppose that, at time t0, process P0 is holding 5 TD, P1 is holding 2 TD and P2 is holding 2 TD and there are 3 free TDs.**

Process	Maximum Needs
P0	10
P1	4
P2	9

Provide the sequence which satisfies the safety condition (non-deadlock state).

a. P1, P0, P2

b. P2, P0, P1

c. P1, P2, P0

d. P2, P0, P1

21. **What Is Multitasking?**