

1. Go through the steps that must take place in a context switch. Make sure that you give the conditions under which a context switch could actually occur. Give two scenarios, one that is the result of a program action, one that is not.
2. Define the term "System Call." Give a list of the various system calls that could be performed by a program.
3. Define the term "Context." What does a context contain?
4. Explain the steps that must occur when a new process is created. Explain both for "fork" style process creation, and creation of processes directly from an executable module.
5. Explain the difference between preemptive and non-preemptive scheduling. What is the danger of non-preemptive scheduling?
6. What is SJF? Give an example of several processes scheduled using SJF and compute the average wait time.
7. Same as question 4, except this time use FCFS.
8. What is Starvation, and how can it occur in SJF scheduling? What about Shortest Remaining Time First?
9. Can Starvation occur in FCFS scheduling? What about priority scheduling.
10. Explain the concept of memory protection, and why it is needed.
11. Explain the terms: CPU Utilization, Throughput, Turnaround Time, Waiting Time, Response Time.
12. Explain the concept of a critical region. Show how a variable can be updated incorrectly if critical regions are not protected.
13. Explain the term "Busy Waiting." Show how busy waiting occurs in the two-process Bounded Buffer problem.
14. Write the code for the bounded buffer problem.