1. Describe how multithreading improve performance over a singled-threaded
2. What is thread ? Explain different between user level thread and kernel level thread
3. Explain advantages of thread and thread models
4. Diffrencitate between process and thread
5. What is racing in operating system ? why execution of critical section must be mutual exclusive
6. How mutual exclusion helps to process synchronization explain in details
7. Explain how Peterson’s solution helps to achieve process synchronization
8. Explain producer consumer problem
9. What is Semaphore and how mutual exclusion is achieved using Semaphore and its types
10. Explain role of monitor to achieve mutual exclusion
11. Explain message passing and types of message passing
12. Explain Dining philosopher problem and sleep barber problem.
13. What are CPU scheduling criteria in scheduling algorithm
14. Explain different types of Schedulers in operating system
15. Explain difference between preemptive scheduling and Non preemptive scheduling algorithm
16. Explain context switch in OS.

Deadlock

1. What is deadlock? Explain different conditions for deadlock
2. Explain different methods to handle deadlock in details
3. What is resource allocation graph in deadlock detection
4. Explain single and multiple instances resource allocation graph
5. Explain deadlock recovery methods in details.
6. Explain between deadlock detection and avoidance

Memory management

1. What is function of memory management unit in OS
2. Difference between logical and physical address
3. What is swapping in memory management
4. Expain mono and multi-programming in memory management
5. Explain contiguous and non-contiguous memory allocation mechanism.
6. Expain fixed and variable memory partition method.
7. What is fragmentation in memory explain internal and external memory fragmentation.
8. Explain coalescing and compaction .
9. What is virtual memory ? advantages of virtual memory
10. Explain paging concept and how mapping in done from virtual memory to physical memory
11. Explain function of page table
12. Explain segmentation memory
13. What is thrashing in memory management
14. Explain paging with segmentation .

Device management