QUESTION BANK - UNIT I

1. What is real time task & Explain with example
2. What is importance of a 'timer' in a real time kernel?
3. Give two examples of systems which need real time capabilities.
4. What is Real time task and system? Give types of Real time tasks.
5. With the help of suitable example, differentiate between security & protection.
6. List low level software utilities that you have used.
7. List three reasons why an operating system is desirable for a computer system.
8. Why do I/O devices need the support of an OS?
9. List two criteria for selecting a scheduling algorithm.
10. Why is pre-emption of tasks sometimes done by an OS?
11. How are threads differentiate from task?
12. Is a priority inversion a serious problem? Why?
13. Name & Explain two IPC mechanisms
14. How do deadlock occur? How can they be avoided?
15. How is concurrency achieved in a system which has multiple tasks to perform?
16. Explain producer consumer paradigm.
17. What is device drivers? Explain classifications of device drivers?
18. Explain layers associated with device drivers?
19. Write a note on device drivers.
20. What is Operating system? List and explain types of operating systems.
21. What is task and process? Explain scheduling algorithms in GPOS (General Purpose
    Operating System)

22. List and Explain types of scheduling algorithms in RTOS.
23. Explain Rate Monotonic Algorithm for scheduling with example.
24. Explain Earlist Deadline first scheduling algorithm. List its advantages and disadvantages.
25. List and explain features of good RTOS.
26. Explain pre-emptive and non-preemptive scheduling algorithm technique with example.
27. What are the features of operating system.
28. Define embedded operating system and network operating system.
29. Write short notes on kernel and its types.
30. Explain different scheduling algorithm with examples.
31. Explain task or processes.
32. Write short notes on threads.
33. Explain interprocess communication in detail.
34. What is deadlock. Explain how to prevent deadlock.
35. What do you mean by device drivers. Explain with examples.
36. What is priority inversion and explain its solution.
37. What is race condition. Write in short its solution.
38. Distinguish between 'release time' & 'scheduling time' of a task.
39. Distinguish(with example) between aperiodic & sporadic tasks.
40. Under what condition would you say that static priority based preemptive scheduling is the same as 'rate monotonic' scheduling
41. Explain layered structure of Operating System
42. Write a note on Functions of Operating System
43. Explain the terms Boot loader, POSIX, API and Priority inversion

44. Compare state transition diagram of an operating system with state transition diagram of Real time Operating System.
45. List & explain qualities of good RTOS?
46. List & Explain types of Real Time Scheduling Algorithms
47. Three tasks T1,T2,T3, with service times 60,50,10 time units respectively enter the ready queue in the order T1,T2,t3. Task T4 with a service time of 15 time units, enter the queue after 40 time units. Calculate the average TAT & waiting time for the following algorithms
    1. Co-Operative
    2. Shortest Job Next
    3. Pre-emptive SJN(SRT)
    4. If they choose to use the round robin scheme with a slice time of 10 time units, how will the scheduling change
    5. If priorities of the T1,T2,T3,T4 are 2,3,5 & 1 respectively then calculate average TAT & waiting time for
    6. Non-preemptive Priority based scheduling
    7. preemptive Priority based scheduling
48. For the task set given in a table what is the CPU Utilization? Is it schedulable using
    1) RM Algorithm 2) EDF method. Show the Gantt charts if it is schedulable

Tasks	Period	CPU Burst
T1	8	1
T2	10	2

T3	15	3
T4	24	4
T5	12	3

49.For the task set given in a table what is the CPU Utilization? Is it schedulable using

1) RM Algorithm 2) EDF method. Show the Gantt charts if it is schedulable

Tasks	Period	CPU Burst
T1	10	5
T2	12	2
T3	15	3
T4	24	6

50. F or the task set given in a table what is the CPU Utilization? Is it schedulable using

1) RM Algorithm 2) EDF method .Show the Gantt charts if it is schedulable.

Tasks	Period	CPU Burst
T1	20	6
T2	60	20