2 MARKS QUESTIONS:

1. Define Open-Source Operating systems?

2. Define System Boot?

3. Write the differences between process and thread?

4. What is meant by race condition?

5. Define dispatcher?

6. What is Virtual Memory? Why is it required?

7. List out the methods for accessing the file?

8.What are the algorithms available for deadlock avoidance?

9. Write down the principles of protection?

10. Define system threats. What is known as DOS attack?

11. Define Debugging?

12. What is meant by system calls?

13. Define Message passing?

14. A counting semaphore was initialized to 10. Then 6 P (wait) operations and 4V (signal) operations were completed on this semaphore. Find the resulting value of the semaphore?

15.What is the purpose of paging the page tables?

16. Describe swapping?

17.A system has p processes and r resources are available each process need maximum of m resources. What condition must hold to make system deadlock free?

18. List the necessary conditions to occur the Deadlock?

19. Define Program threats.

20. Write short note on User authentication process.

10 MARKS :

Unit-1:

1. Explain the different functions of an operating system and discuss the various services provided by an operating system?
2. Illustrate User and Operating-System Interface in detail?
3. Define operating system? Elaborate the operating system operations with examples?

4. Describe Operating system structure in detail?
5. Explain the process of doing Operating system Debugging?
6. List out the various operating system services and explain it?
7. What is System call? Discuss major System calls of Operating Systems?
8. Enumerate Operating system Design and Implementation?

Unit-2:

9. Discuss in detail about the Dining –Philosophers solution using monitors?
10. What is multithreading? Explain the thread libraries in detail?
11. Illustrate the semaphore functions with examples?
12. Describe the actions taken by a thread library to context switch between user level threads?
13. Determine the average waiting time and average turnaround time for FCFS, SJF, non-preemptive priority and round robin scheduling algorithms for the given process, burst and priority given below.

Process	Burst	Priority
P1	8	4
P2	6	1
P3	1	2
P4	9	2
P5	3	3

14. Describe semaphores in detail?
15. Discuss readers/writers problem and give solution by using semaphores where readers have priority?
    Perform optimal page replacement on the following reference string:-
    7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1 find number of page faults and define optimal page replacement?
16. Explain in detail about segmentation on with paging technique?

Unit-3:

17. Define thrashing? Explain its causes and write any two solutions to increase CPU Utilization in case of thrashing?
18. What are the disadvantages of single contiguous memory allocation? Explain?
19. Explain about FIFO, LRU page replacement algorithms with example?
20. Discuss the hardware support required to support demand paging?
21. Given page reference string with 4 frames:
    1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6 Compare the number of page faults for LRU, FIFO and optimal page replacement algorithm?

Unit-4:

22. Explain the features and functionality of RAID in detail?
23. Describe free space management in file system implementation in detail?

24. How does deadlock avoidance differ from deadlock prevention? Write about deadlock avoidance algorithm in detail?
25. Explain the Banker's algorithm for deadlock avoidance with an example?
26. Explain the concept of a file. Discuss the different file access mechanisms in detail?
27. Explain the different Disk scheduling algorithms with their comparisons?
28. Elaborate Stable storage implementation with an example?

Unit-5:

29. Illustrate about revocation of access rights?
30. Discuss and compare various access matrix implementation techniques?
31. Discuss the strengths and weakness of implementing an access matrix using access list that are associated with objects?
32. Describe in detail the implementation methods of Access matrix?
33. Explain Capability-Based Protection system?
34. Discuss program threats, system and network threats of operating system in detail?
35. Write down the installation steps of Linux OS?