Unit 1

1. Explain the process states in detail.
2. Describe various types of system calls in detail.
3. Write a short note on multithreading models.
4. Write Operating System Services.
5. What is file management? Write the activities of operating system in regard to file management.
6. Write a short note on client to server computing and peer-to-peer computing.
7. What is operating system? Explain various functions of operating system.
8. Explain process control block.
9. What are single and multithreaded processes? Write the benefits of multithreaded programming.
10. What are single and multithreaded processes? Write the benefits of multithreaded programming.
11. What are the Categories of system calls? Explain any 4 of them.
12. Write a short note on interprocess communication.

Unit 2

1. Define the following:
    a. CPU utilization
    b. Throughput
    c. Turn-around-time
    d. Waiting time
    e. Response time

2. What is Deadlock? What are the necessary and sufficient conditions for deadlock?
3. Write a short note on critical section problem.
4. Write short note on Semaphore.
5. Consider following set of processes with length of CPU arrival time and Burst time given in Milliseconds.Calculate wait time, Average wait time, turnaround time and average turnaround time of each process, also draw the Gantt chart.

6. Write a solution for dining philosopher problem.
7. Explain the following concepts:
    a. Turn-around-time
    b. Waiting time
    c. Response time
    d. Starvation
    e. CPU utilization.
8. Explain FIFO page replacement with example.
9. Explain characteristic of deadlock.
10. Write a solution for dining philosopher problem.
11. Write short note on Semaphore.
12. Write note on deadlock prevention.
13. Write a short note on critical section problem
14. Explain LRU page replacement with example.
15. Explain Optimal page replacement with example.

Unit 3

1. Write a short note on paging.
2. Explain the concept of virtual file systems.
3. Define the following terms:
   a. Seek time
   b. Rotational latency
   c. Access time
   d. Page Fault
   e. File
4. For the following page reference string calculate number of page faults with LRU algotithm with frame size=03
   a. Reference String: a,b,c,d,b,e,f,b,c,d
5. Explain in short the Segmentation technique.
6. Explain Allocation methods
7. For the following page reference string calculate number of page faults with LRU and FIFO algorithm with frame size=03
   i. Reference String: c, d, e, d, e, f, c, e, d, f
8. State and explain different attributes of file.
9. Explain different file operations
10. Explain the concept of file system mounting.
11. Write a short note on disk scheduling and explain any one algorithm with example.
12. What are the basic requirements of page replacement Explain below page replacement or page removal algorithm
    i. FIFO
    ii. LRU
    iii. MRU
    iv. OPTIMAL Replacement
13. For the following page reference string calculate number of page faults with LRU and OPT algorithm with frame size=03
    a. Reference String: 5,3,2,1,3,4,5,1,2,3,4,5,3,2,4
14. Write a note on BOOT block and BAD block.
15. Write a short note on paging.
16. Explain the concept of virtual file systems.
17. Explain different file operations
18. Write a short note on disk scheduling and explain any one algorithm with example.