1. (a) What is an operating system? Why is it referred to as a resource manager? Discuss.

(b) What are the objectives of scheduling policies? Discuss the effect of quantum size on the performance of Round Robin scheduling.

2. Write merits and demerits of the following scheduling policies:

(a) FCFS scheduling

(b) Round Robin (RR) scheduling

(c) Least Completed Next (LCN) scheduling

3. (a) What do you understand by thrashing? What are the factors causing it? Explain.

(b) A worst fit allocator always splits the largest free memory area while making an allocation. Compare its performance with the first fit and best fit allocators.
4. (a) The entire disk scheduling algorithms except First Come First Serve may cause starvation and hence not truly fair. Explain why? Why is fairness an important goal in a time-sharing system?

(b) What do you understand by Access Control List (ACL)? What are its advantages over Access Control Matrix (ACM)? Explain.

Unit-III

5. (a) What is deadlock? What are the essential conditions for deadlock? Explain.

(b) What is resource allocation graph? Explain using suitable example.

6. What do you understand by deadlock avoidance? Discuss the Banker’s algorithm for it.

Unit-IV

7. Explain the mechanism for managing virtual memory in Unix.

8. (a) Write a detailed note on file system in DOS.

(b) What are the different states of processes in Unix? Explain with the help of state transition diagram.