

Mr CA Bridge course
Month's Feb-25

Date: 5/2/25
Winter-2024

(3 Hours)

Total marks: 80

(Second Half - 2024)

Note:

1. Q1 is compulsory
2. Attempt any three from remaining questions
3. Answers to sub questions should be answered together
4. Illustrate answers with diagram wherever necessary

- 1 a) What is Process Scheduling? Differentiate between preemptive and non-preemptive scheduling. 10
b) What is deadlock? What are the necessary and sufficient conditions for deadlock occurrence? 10
- 2 a) What is Protection. Explain the concept of access matrix with the help of an example 10
b) Suppose a disk drive has 200 cylinders, numbered 0 to 199. The queue of pending request in FIFO order is: - 98, 183, 37, 122, 14, 124, 65, 67
Starting Head = 53
Starting from the head position, what is the total distance in cylinders that the disk arm moves to satisfy all pending request for each of the following disk scheduling algorithm?
1) FCFS 4) SSTF 10
- 3 a) Explain what Operating System is with the Component of Computer System. 10
b) What is Semaphore? Explain the concept of Producer Consumer Problem. 10
- 4 a) For the process listed in the table, draw Gantt Chart and calculate average waiting time using Round Robin Scheduling Algorithm. Note: Quantum : 3 10

Process	Arrival Time (ms)	Burst Time (ms)
P1	0	5
P2	1	3
P3	2	8
P4	3	6

b) Discuss any two File allocation techniques in detail. 10
- 5 a) How many page faults will occur for the following page replacement algorithm assuming three frames?
7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1
1. Optimal
2. LRU 10
b) What is system call? Explain different types of system calls. 10
- 6 Write a short note on any 4 of the following 20
a) Demand Paging
b) Distributed Operating System
c) Clock Hardware
d) Context Switching
e) Multithreading