

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2023
(Regular/Improvement/Supplementary)

COMPUTER SCIENCE
FCSS2C07- OPERATING SYSTEM CONCEPTS

Time: 3 Hours

Maximum Weightage: 30

Section A: Short answer questions. Answer any *four* questions. Each carries 2 weightage.

1. Discuss the design issues for which the concept of concurrency is relevant.
2. How can the circular wait condition be prevented?
3. Explain buddy system with example.
4. What do you mean by priority inversion? Explain the circumstances for adopting it.
5. Define jacketing.
6. What do you mean by three tier client/server architecture?
7. List three advantages of ULTs over KLTs.

(4 × 2 = 8 weightage)

Section B: Short essay questions. Answer any *four* questions. Each carries 3 weightage.

8. Write a note on PCB and the typical elements of a PCB.
9. Explain deadlock avoidance using Banker's algorithm.
10. Is it possible to combine global replacement policy and fixed allocation policy? Justify your answer.
11. Give a note on deadline scheduling with example.
12. Explain different classes of client server applications.
13. Give notes on the characteristics of mobile operating systems.
14. Explain thread scheduling with example.

(4 × 3 = 12 weightage)

Section C: Essay questions. Answer any *two* questions. Each carries 5 weightage.

15. Give a detailed note on Process Management in UnixSVR4.
16. Explain the solution to readers writers' problem using semaphores where writers have priority.

(P.T.O.)

17. Compare the efficiency of different page replacement algorithms with suitable examples.
18. Consider the following workload.

Process	Burst Time	Arrival Time	Priority
P1	25	0 ms	4
P2	20	20 ms	1
P3	20	30 ms	3
P4	10	20 ms	2

Show the scheduling using shortest remaining time algorithm and priority scheduling algorithm and calculate the average waiting time for these scheduling policies.

(2 × 5 = 10 weightage)