

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2025
(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. What are the objectives of an OS design?
2. Give a note on the hardware support utilized for enforcing mutual exclusion.
3. Write a note on priority inversion.
4. Explain RPC with appropriate diagram.
5. List the advantages of ULTs over KLTs.
6. Give a note on Overlays with example.
7. How can the circular wait condition be prevented? **(4 × 2 = 8 weightage)**

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

8. Give a note on simple segmentation and virtual memory segmentation.
9. Describe real-time scheduling with examples.
10. Explain service-oriented architecture in detail.
11. Give a note on process control block and its representation.
12. Explain the solution to readers writers problem (where writers have priority) using semaphores.
13. Describe the implementation of virtual memory using paging.
14. Explain SJF and multilevel feedback queue scheduling with appropriate examples.

(4 × 3 = 12 weightage)

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

15. Discuss the process and thread management in Linux environments.
16. Explain solution to dining philosophers' problem with monitors.
17. Write a detailed account on the demand paging and various page replacement algorithms with suitable examples.
18. Give a note on the features of any two mobile operating systems.

(2 × 5 = 10 weightage)