M. Sc. DEGREE END SEMESTER EXAMINATION - NOVEMBER 2025

SEMESTER 1: COMPUTER SCIENCE (ARTIFICIAL INTELLIGENCE)

COURSE: **24P1CAIT01: COMPUTER ORGANISATION AND OPERATING SYSTEM**

(For Regular 2025 Admission & Improvement/Supplementary 2024Admission)

Time: Three Hours   Max. Weightage: 30

PART A

Answer any 8 Questions   **Weight: 1**

1. Differentiate Longterm Scheduler and short term scheduler?   (A, CO3)

2. Discuss about threads?   (U, CO2)

3. Explain different file operations?   (U, CO4)

4. Differentiate critical section and remainder section?   (U, CO2)

5. What is a Semaphore? Also give the operations for accessing semaphores?   (U, CO2)

6. Discuss about demand pagi   (A, CO3)

7. Explain Resource allocation graph?   (A, CO3)

8. Differentiate the single level and two level directory structures?   (U, CO4)

9. What are the three types of bus in microprocessor?   (U, CO1)

10. Explain about different   addressing modes?   (U, CO1)

(1 x 8 = 8 weight)

PART B

Answer any 6 Questions   **Weight: 2**

11. Differentiate multiprogramming and multiprocessing   (U, CO1)

12. Explain about disk scheduling algorithms?   (U, CO4)

13. Differentiate Process creation and Process termination?   (U, CO2)

14. Explain Bankers algorithm with example?   (A, CO3)

15. Explain different functions of OS?   (U, CO1)

16. Explain about dining philosophers problem?   (U, CO2)

17. Compare different page replacement algorithms?   (U, CO4)

18. Compare SJF and RR scheduling algorithms   (A,CO3)

(2 x 6 = 12 weight)

PART C

Answer any 2 Questions   **Weight: 5**

19. Define system calls? Explain about different types of system calls?   (U, CO1)

20. What is deadlock? What are the necessary conditions of deadlock?

     Explain deadlock detection and recovery methods.   (A, CO3)

21. Explain segmentation and paging in detail?   (U, CO4)

22. Explain shared memory and message passing?   (U, CO2)

                                                              (5 x 2 = 10 weight)

CO No.	Course Outcome	CL	Questions	Total Wt
1	Understand the theory and architecture of central processing and introduction to an operating system	U	9,10,11,15, 19	11
2	Analyse the concepts of process management, parallel processing and interprocessor communication.	U	2,4,5,13, 16,22	12
3	Understand the better way the I/O and memory organization, CPU scheduling, scheduling algorithms and deadlocks	A	1,6,7,14, 18,20	12
4	Understand the foundational concepts, memory management, virtual memory, file systems and I/O management	U	3,8,12,17, 21	11