Code: 20CS3401

II B.Tech - II Semester – Regular / Supplementary Examinations MAY - 2023

OPERATING SYSTEMS
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours   Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level   CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Distinguish User View and System View of an Operating system.	L2	CO1	8 M
	b)	Explain storage device hierarchy with neat diagram.	L2	CO1	6 M
OR					
2	a)	Describe different modes of operating system operations.	L2	CO1	7 M
	b)	Compare and contrast Multiprocessor systems with Clustered Systems.	L2	CO1	7 M
UNIT-II					
3		Draw the Gantt chart and calculate the average waiting time and average turnaround time for priority scheduling by considering the following information.	L3	CO2	14 M

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	4
P4	1	5
P5	5	2

OR

4	a)	Explain with neat sketch of Queueing-diagram representation of process scheduling.	L2	CO2	7 M
	b)	Discuss benefits of multithreaded programming.	L2	CO1	7 M

UNIT-III

5	a)	Explain Peterson's solution for critical section problem.	L2	CO3	7 M
	b)	Illustrate the mutex lock hardware solution for critical section problem.	L3	CO3	7 M

OR

6	Explain Bankers algorithm with an example for deadlock avoidance.	L2	CO3	14 M

UNIT-IV

7	Relate implementation of paging and segmentation with neat diagrams.	L3	CO4	14 M

OR

8	Consider the following page reference string: 1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6. Calculate the page faults would occur for the following replacement algorithms by assuming number of frames as three, four, five, six, and seven respectively. Remember that all frames are initially empty, so your first unique pages will cost one fault each. a) LRU page replacement b) FIFO page replacement c) Optimal page replacement	L3	CO2	14 M
	UNIT-V			
9	Explain any four disk scheduling algorithms with examples.	L2	CO2	14 M
	OR			
10	Compare various disk allocation methods.	L4	CO4	14 M