Question Paper Code: R22A22CS03

R22

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech II Semester Regular Examinations, June/July – 2024

OPERATING SYSTEMS

(COMPUTER SCIENCE AND ENGINEERING & INFORMATION TECHNOLOGY)

Time: 3 Hours **Max. Marks: 60**

Section – A (Short Answer type questions) (10 Marks)

Answer All Questions		Course Outcome	B.T Level	Marks
1.	Define thread?	CO1	L1	1M
2.	Define distributed system?	CO1	L1	1M
3.	What is average turn around time?	CO2	L1	1M
4.	Define deadlock?	CO2	L1	1M
5.	Define counting semaphore?	CO3	L1	1M
6.	List out different IPC techniques?	CO3	L1	1M
7.	Define Virtual address space?	CO4	L1	1M
8.	Define segmentation?	CO4	L1	1M
9.	Give the Syntax of close System call	CO5	L1	1M
10.	What are the most common attributes that are associated with an opened file?	CO5	L1	1M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	Write short notes on following i) Multi programming ii) Distributed systems iii)Time shared operating systems	CO1	L2	10M
	OR			
B)	Explain in detail about Process scheduling?	CO1	L2	10M
12. A)	Given below are the burst times of four processes P1, P2 p3 and P4. draw the gantt chart using Round Robin scheduling and determine the average waiting time, average turnaround time and average response time. Quantum = 5 ms.	CO2	L3	10M

Process	Burst Time
P1	30
P2	6
P3	8
P4	14

	OR			
B)	Explain about Dead Lock Detection and recovery methods?	CO2	L2	10M
13. A)	Illustrate how Inter Process Communication is implemented using Shared Memory?	CO3	L2	10M
	OR			
B)	What is semaphore? Why it is important? Suggest the solution for producer consumer problem with semaphores.	CO3	L2	10M

14. A)	Consider the reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1 for a memory with three frames. Compare and contrast FIFO and optimal, page replacement algorithms.	CO4	L3	10M
	OR			
B)	Explain the difference between External fragmentation and Internal fragmentation. How to solve the fragmentation problem using paging.	CO4	L2	10M
15. A)	Discuss the importance of directory structure in a file system. Describe at least two different types of directory structures and provide examples of scenarios where each type would be most suitable.	CO5	L2	10M
	OR			
B)	Explain about the following System calls i) open ii) create iii) lseeek iv) close	CO5	L2	10M