Question Paper Code: R22A21CS07

R22

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech I Semester Regular/Supplementary Examinations, December – 2024

OPERATING SYSTEMS

(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

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 Kernel?	CO1	L1	1M
2.	List Objectives of Operating System.	CO1	L1	1M
3.	Define Turnaround time?	CO2	L1	1M
4.	What is a Scheduler?	CO2	L1	1M
5.	What is Binary Semaphore?	CO3	L1	1M
6.	What is Inter Process Communication?	CO3	L1	1M
7.	List the Page replacement algorithms?	CO4	L1	1M
8.	What is External fragmentation?	CO4	L1	1M
9.	What is Access Control List (ACL)?	CO5	L1	1M
10.	What are the various File Operations?	CO5	L1	1M

Section B (Essay Questions)

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

11. A)	Explain the layered structure of operating system and provide the suitable diagram.	CO1	L3	10M
	OR			
B)	Examine about Multiprogramming and Timesharing Systems?	CO1	L3	10M
12. A)	Apply Round Robin CPU Scheduling Algorithm for given Problem.	CO2	L3	10M

Time slice=3ms.

Process	P1	P2	P3	P4
Process Time	10	5	18	6
Arrival Time	5	3	0	4

	OR			
B)	Illustrate Deadlock detection algorithm with an example?	CO2	L2	10M
13. A)	Demonstrate critical section problem. Give software based solution (Peterson's) for critical section problem.	CO3	L2	10M
	OR			
B)	What are the main types of IPC Mechanism? Explain in detail?	CO3	L3	10M
14. A)	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 Apply Optimal page replacement algorithm and determine how many page faults would occur. Assume three frames are initially empty.	CO4	L3	10M
	OR			

	B) What is virtual memory? Discuss the benefits of virtual memory techniques.	CO4	L3	10M
15.	A) What are the objectives of file management system? Explain file system architecture.	CO5	L3	10M
	OR			
	B) Inspect about different file allocation methods.	CO5	L3	10M