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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-IV Semester (CSE/IT)

COURSE CODE (CREDITS): 18B11CI411 MAX MARKS: 25

COURSE NAME: Operating Systems

COURSE INSTRUCTOR: Dr. Ruchi Verma MAX. TIME: 1 Hour 30 Min

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is not allowed

Q.No	Question	CO	Marks
Q1	Explain the scheduling criteria: CPU Utilization, Turnaround Time, and Response Time.	CO3	3
Q2	Compare FCFS and SJF scheduling. Which one is more efficient and why?	CO4	2
Q3	Consider the following processes with arrival time = 0: Process Burst Time P1 5 P2 3 P3 1 Apply Shortest Job First non-preemptive scheduling and calculate: a) Average Waiting Time b) Average Turnaround Time	CO3	4
Q4	What is a race condition? Explain with an example	CO3	2
Q5	How does Peterson's Algorithm ensure mutual exclusion?	CO4	2
Q4	Explain the Dining Philosophers Problem. Discuss one possible solution and its limitations.	CO3	4
Q5	Explain any three necessary conditions for deadlock with examples.	CO4	3
Q4	What is the difference between deadlock prevention and deadlock avoidance?	CO3	1
Q5	Given the following system snapshot: Process Allocation Maximum	CO4	4

	P1 1 3 P2 1 2 Available resources = 1 Using the Banker's Algorithm, determine whether the system is in a safe state. Show steps.		