JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-V Semester (IT)

COURSE CODE (CREDITS): 25B11CI516 (3) MAX. MARKS: 15

COURSE NAME: Operating Systems for Smart Technologies.

COURSE INSTRUCTOR: Shankar Kumar Jha. MAX. TIME: 1 Hour

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

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Q.No	Question	CO	Marks
Q1	Consider the following set of processes, with arrival time and CPU burst time given in milliseconds. All processes use the FCFS (First Come First Served) scheduling algorithm. Process Arrival Time (ms) Burst Time (ms) P1 0 5 P2 2 3 P3 4 1 P4 5 2 P5 7 4 Find: Completion time, turnaround time, and waiting time for each process.	1	3
Q2	Draw and discuss the process state diagram.	1	2
Q3	A system has a 32-bit Logical address , page size 4 KB, and each page table entry is 4 bytes. Find the size of the page table.	2	2
Q4	A Single processor system has 3 resource types X, Y, Z. Each has 5 units each. Find any possible safe sequence.	2	4

Process	Alloc X	Alloc Y	Alloc Z	Request X	Request Y	Request Z
P0	1	2	1	1	0	3
P1	2	0	1	0	1	2
P2	2	2	1	1	2	0

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Q5	A process is allocated 3 page frames (initially empty). Reference string: **1, 2, 1, 3, 7, 4, 5, 6, 3, 1** How many page faults occur with LRU page replacement policy?	2	4

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