11/09/25
9:30 AM

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

M.Tech-I Semester (CSE/IT)

COURSE CODE (CREDITS): 10M11CI111 (3) MAX. MARKS: 15

COURSE NAME: Advanced Data Structures

COURSE INSTRUCTORS: Saurav Kumar Singh 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

Q.No	Question	CO	Marks
Q1	Write an algorithm to reverse a Circular Singly Linked List.	CO1	3
Q2	How can stacks be used in **Infix to Postfix conversion**? Convert the given Infix expression into Postfix. ((A + B) * (C - D)) / (E + F * (G - H)) + I ^ J	CO1	3
Q3.	Write an algorithm to **insert and delete elements in a circular queue** using arrays.	CO1	3
Q4.	Given the following traversals of a binary tree: • **Inorder**: D B E A F C • **Postorder**: D E B F C A Construct the **binary tree** from these traversals.	CO2	3
Q5	Insert the keys 10, 20, 30, 15, 25, 5, 1 into an initially empty red-black tree. Show the tree after each insertion with rotations / recoloring.	CO2	3