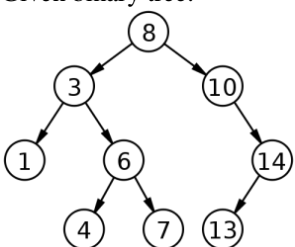# GIET UNIVERSITY, GUNUPUR – 765022
B. Tech –2nd Semester (2024-2025): ASSIGNMENT
BESBS 2040– Data Structures and Algorithms
ASSIGNMENT-IV

Date of issue:	SECTION: FOR ALL SECTIONS
Date of submission:	Each question carries 5 marks

SL NO	QUESTION	CO/PO
1	What is Height Balanced BST ? How to find the balance factor of a node? What are the rotations exist to balance a node?	CO1/PO1
2	What is a Binary Search Tree? Write the steps of algorithm for inserting an element into a BST.	CO1/PO2
3	Briefly elaborate the memory representation of a binary tree and their types with suitable example.	CO1/PO2
4	Write down the algorithm for Inorder traversal for a binary tree. When an inorder and preorder sequence of nodes given then how to construct a binary tree.	CO3/PO2
5	How to construct a binary tree when inorder and post order sequence of node given? Also write down the algorithm for preorder traversal of a binary tree.	CO3/PO2
6	Given an infix expression (A+B/C-D^E*F-G) Find its equivalent postfix notation and then using stack.	CO3/PO3
7	Write down all the 3 different recursive traversal methods for traversing nodes of a binary tree.	CO3/PO2
8	Given a sequence of elements: 70,20,10,30,40,50,60,25,35,45,75,95,10,52,92 Construct an AVL tree by inserting each element.	CO3/PO3

9	Construct a binary tree when the sequence of nodes given as:
	     Inorder : 10, 20, 25, 30, 35, 50, 60, 70, 90
	     Preorder : 50, 20, 10, 30, 25, 35, 70, 60, 90
		CO3/PO2

10	Given binary tree: What are the terminal nodes? What are the internal nodes? How many NULL pointers exist? What are the nodes available at level 2?	CO3/PO3