Chandigarh College of Engineering and Technology, (Degree Wing) Chandigarh
Department of Computer Science and Engineering
CS-301: Data Structures Assignment: 09 Date: 15.10.2024

S. No.	**Note:** Start answer of a fresh question from fresh page only. Direct answer to a question will not be entertained.	course outcome (CO)
1.	Differentiate between the following trees. Wherever possible use suitable example in support of your answer. (a) Binary Search Tree (BST) (b) M-Way Search Tree (c) B-Tree	CO301.1
2.	Consider the following prime numbers data set which are falling between 1 and 100– 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97. You are required to build the following trees of degree 5. (a) M-way search tree (b) B-tree	CO301.4
3.	Construct a B-tree of degree 6 for the following sorted data set- 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50.	CO301.4
4.	Delete the following keys-45, 13, 25 from the B-tree produced in Question 3.	CO301.4
5.	A tree has 2n vertices of degree 1, 3n vertices of degree 2, and n vertices of degree 3. Determine the number of vertices and edges in the tree.	CO301.1
6.	The number of leaf nodes in a binary tree of n nodes, with each node having 0 or 2 children is?	CO301.1
7.	How many binary trees will be formed with 10 nodes?	CO301.1
8.	The number of leaf nodes in a ternary tree of n nodes, with each node havir 0 or 3 children is?	CO301.1