Department of Computer Science and Engineering,
Anna University, Chennai- 600025
CS23302 – Data Structures and Algorithms
Practical
July – November 2026
Year/Sem/Batch : II/III/ N

Exercise: 07	Binary Tree and Threaded Binary Tree	14 – Aug - 2026

Observation (5 Marks)

1. Differentiate between a Full Binary Tree and a Complete Binary Tree.

2. Construct a Binary Tree using the following values:

    40, 20, 60, 10, 30, 50, 70

3. State one advantage of a Threaded Binary Tree over a normal binary tree.

4. Differentiate between Single Threaded and Double Threaded Binary Trees.

5. Develop a C program to implement an Inorder Threaded Binary Tree and perform the following operations:

1. Insert nodes.
2. Create Inorder Threads.
3. Perform Inorder Traversal without recursion and stack.
4. Display the nodes in sorted order.

Sample Input

    50 30 70 20 40 60 80

Expected Output

Inorder Traversal using Threads:

    20 30 40 50 60 70 80

Execution (15 Marks)

1. A library stores book IDs in a Threaded Binary Tree to facilitate fast traversal.

Write a program to:

1. Create an Inorder Threaded Binary Tree.
2. Insert book IDs.
3. Traverse the tree using threads without recursion or stack.
4. Display the inorder sequence.

Sample Input

50 30 70 20 40 60 80

Expected Output

Inorder Traversal using Threads:

20 30 40 50 60 70 80