

UNIT III NON-LINEAR DATA STRUCTURES

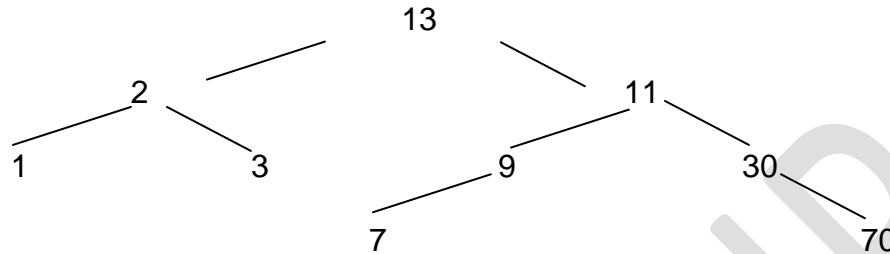
Part- A

1. What is B- Tree? Give example.
2. Give the expression tree for $(a + b) * ((c + d * e) * f)$
3. Write short notes on the application of trees.
4. Define non-linear data structure?
5. What is meant by traversing?
6. What is binary tree traversal?
7. What are the different types of traversing?
8. What are the two methods of binary tree implementation?
9. Define Degree of a tree.
10. Define Terminal node or leaf?
11. Define Non-terminal node?
12. Define binary tree?
13. Define path & Cycle.
14. Define Acyclic graph.
15. Explain about Weighted shortest path & depth first spanning tree.

Part – B

1. Write and trace the following algorithms with suitable example.
 - I. Depth first traversal
2. Write and trace the following algorithms with suitable example.
 - I. Breadth first traversal
3. Write functions to insert and delete a node form a binary search tree.
4. Make a binary search tree for the following sequence of numbers:
45, 36, 76, 23,89,115,98,39,41,56,69,48
Traverse the tree in Preorder, Inorder and Postorder.

5. Write an ADT for Inorder, Preorder , Postorder traversals. Traverse the given tree using Inorder, Preorder and Postorder Traversals.



6. Explain the operations of insertion of nodes into and deletion of nodes from, a binary search tree with code.
7. Narrate insertion deletion with example.
8. Give the analysis of insertion and deletion operations of nodes in binary search tree.
9. Draw the binary search tree for the following input list 60, 25,75,15,50,66,33,44. Trace an algorithm to delete the nodes 25, 75, 44 from the tree.
10. Explain the operations of insertion of nodes into and deletion of nodes from, a binary search tree with code.
11. Explain the two applications of trees with a neat example.
12. How do you insert an element in a binary search tree?
13. What are the graph traversal methods? Explain it with example.
14. Give an algorithm to find minimum Spanning tree, explain it with suitable example.
15. Write an algorithm for finding minimum spanning tree and explain application, illustrate the algorithm with typical data of yours own example.
16. Explain connected component.