Omkar R. Bhamitkar
1120160020   ECE.

DSA Lab 10: Theory.
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1. What is binary search tree?

→ A binary search tree (BST) is a binary tree where each node has a comparable key (an associated value) and satisfies the restriction that the key in any node is larger than the keys in all nodes in that node's left subtree and smaller than the keys in all nodes in that node's right subtree.

2. What are the members of structure of tree and what is the size of structure?

→ A tree structure is an algorithm for placing and locating files (called records or keys) in a database. The algorithm finds data by repeatedly making choices at decision points called nodes.
A node can have as few as two branches (also called children), or as many as several dozen. The structure is straightforward, but in terms of the number of nodes and children, a tree can

be gigantic.

Q3. What are the rules to construct Binary Search tree ?

→ i) Each parent node has at most 2 child

ii) left child node is always lesser than parent node.

iii) Right child node is always greater than parent node.

iv) left and right subtrees are also Binary Search tree.

v) There are no duplicate nodes.

Q4. How General tree is converted into Binary Search tree.

→ General tree can be converted into Binary tree using fallowing Algorithm :

→ Insert the edges conecting sibling from left to right at same level.

ii) Erase all edges of a parent to its child except to its left most offspring.

iii) Rotate the obtain tree 45° to make clearly left & right subtree.

Q6. What is the use of thread in traversal?

→ The idea to of threaded tree is to make inorder traversal faster and do it without stack and without recursion. A binary tree is made threaded by making all right child pointer that would normally be NULL point to the inorder successor of node (if exist).

Q5. What is binary threaded tree?

→ A threaded binary tree is binary tree in which all the null links are used to store reference of successor and predecessor so that it can be traversed without using extra data structure like queue, stack. Traversal in thread binary tree is faster compare to non threaded binary tree.