Indian Institute of Engineering Science & Technology, Shibpur

Department of Computer Science & Technology.

8th Semester Artificial Intelligence Laboratory.

ASSIGNMENT- 6

(Trees in Prolog)

Duration- 5 periods. **Full Marks (including Viva Voce)-15**

Write Prolog programs

1. *To determine whether an element is a member of a binary tree.
2. *To determine whether an element is a member of a binary search tree.
3. *To determine whether an object is a binary tree.
4. To find whether an object is a binary search tree.
5. *To find maximum element from a binary search tree.
6. To find the height of a binary tree.
7. To find the preorder traversal of a binary tree, storing the result in a list.
8. *To find the inorder traversal of a binary tree, storing the result in a list.
9. To find the postorder traversal of a binary tree, storing the result in a list.
10. *To insert an element in a binary search tree.
11. *To delete a leaf node from a binary search tree.
12. To delete a node from a binary search tree.
13. To sort an unordered list into an ordered list using a binary search tree and inorder traversal.
14. To sort an unordered list into an ordered list using insertions in a binary search tree and subsequent deletions of minimum elements.
15. Given preorder and inorder traversals of a binary tree in two lists, obtain its postorder traversal in another list.
16. Given postorder and inorder traversals of a binary tree in two lists, obtain its preorder traversal in another list.

*marked problems are done in the class.