Academic Year: 2021-2022   **Batch: 2020-2024**

Assignment Date: 13.11.2021

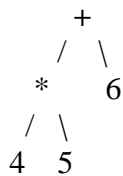**Exercise 7: Expression Tree & its applications**

[CO2,K3]

Create a node that consists of a character, address to the left and right children. Convert the StackADT into AddrStackADT to store the address of node. Create Expression Tree ADT with the member S of type AddrStackADT. It has the following operations.

        void construct(ExpTree *t, char *postfixexp)
        void inorder(ExpTree *t)
        void preorder(ExpTree *t)
        void postorder(ExpTree *t)

1. Demonstrate the ADT with the following test case
   Input: 45*6+
   Output: Address of node + in S

```
      +
     / \
    *   6
   / \
  4   5
```

Inorder: 4*5+6
Preorder: +*456
Postorder: 45*6+
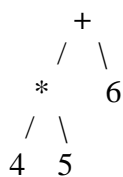
2. Write an application to use the Expression ADT
        • To evaluate the expression

Test the application with the following test case
Input: 45*6+
Output: Address of node + in S

```
      +
     / \
    *   6
   / \
  4   5
```

Value: 26