**Tutorial 13**

**Instructions:**

• Submit a scanned copy of the handwritten assignment

• Write Student code on the top right of each page

1. Write down the algorithms for following operations regarding Arithmetic Expression Tree

a. Tree traversal

i. Inorder traversal

ii. Preorder traversal

iii. Postorder traversal

b. Tree creation from

i. Inorder and Preorder sequence

ii. Inorder and Postorder sequence

c. Expression Evaluation from given

i. Preorder sequence

ii. Postorder sequence

iii. Inorder sequence

**Example:**

|  |  |
| --- | --- |
|  | Inorder output: 3 + ( ( 5 + 9 ) \* 2 ) |
| Preorder output: + 3 \* + 5 9 2 |
| Postorder output: 3 5 9 + 2 \* + |

2. Write down the algorithms and implement the following heap operations by assuming max-heap structure

a. Build max heap

b. Heapify procedure

c. Insert a new element in the existing heap

d. Extract max or delete an element from the max heap

e. Heap Sort