

Q # 1 Sort list using insertion sort.  
List = 65, 70, 56, 51, 54, 66.

Ans:-

$$n = 6$$
$$\text{Steps} = n - 1 = 6 - 1 = 5$$

Step 1:- Element = 70  
(65), (70), 56, 51, 54, 66.  
sorted.

Step 2:- Element = 56  
65, (70), (56), 51, 54, 66.  
= 65, 56, 70, 51, 54, 66.

Step 3:- Element = 51  
56, 65, (70), (51), 54, 66.  
= 56, 65, 51, 70, 54, 66.  
56, (65), (51), 70, 54, 66.  
~~56, 65, 70, 54, 66.~~  
= 51, 56, 65, 70, 54, 66.

Step 4 Element = 54

51, 56, 65, 70, 54, 66

= 51, 56, 65, 54, 70, 66

= 51, 56, 54, 65, 70, 66

= 51, 54, 56, 65, 70, 66

Step#5 Element = 66

51, 54, 56, 65, 70, 66

Sorted list => [ 51, 54, 56, 65, 66, 70 ]

Q#2. Binary Tree

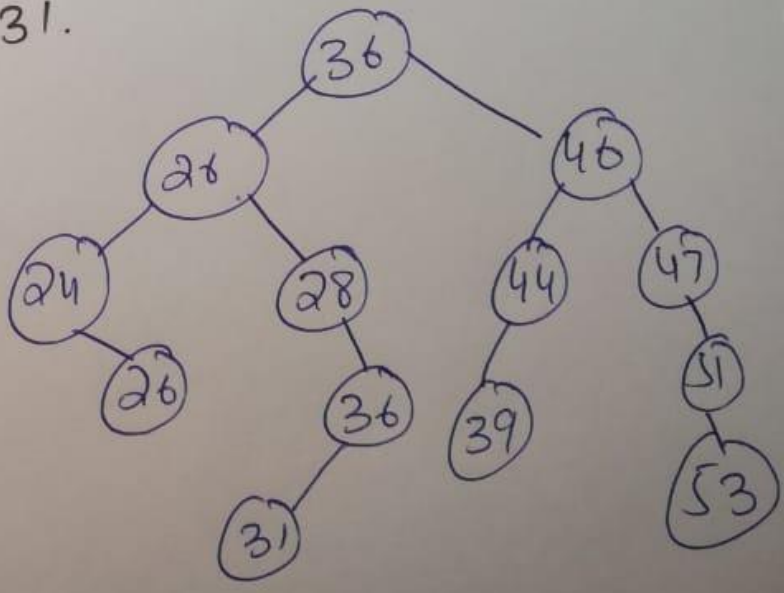
list = 36, 26, 46, 28, 44, 47, 36, 24, 26, 51, 39, 53, 31

Verification:-

24, 26, 26, 28, 31,

36, 36, 39, 44,

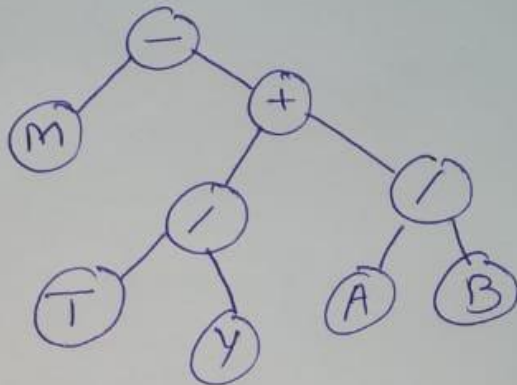
46, 47, 51, 53



Q #3

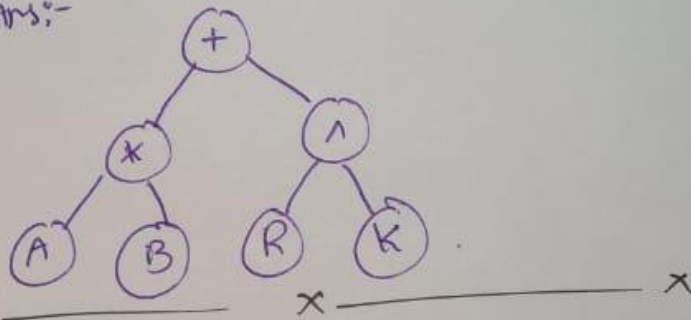
i)  $M - T / Y + (A / B)$

Ans:-



ii)  $A * B + R \wedge K$

Ans:-



Q4 Tree Traversal:-

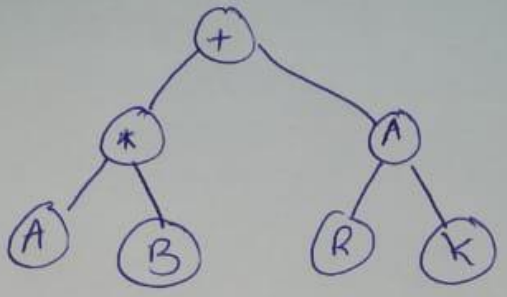
i)  $M - T / Y + (A / B)$

Inorder:-  $M - T / Y + A / B$

Preorder:-  $- M + / T Y / A B$

Postorder:-  $M T Y / A B / + -$

ii)  $A * B + R \wedge K$ .



In order :-

$A * B + R \wedge K$

Pre order :-

$+ * A B \wedge R K$

Post order :-

$A B * R K \wedge +$

\_\_\_\_\_ x \_\_\_\_\_ x \_\_\_\_\_