

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

Department of Computer Science and Engineering

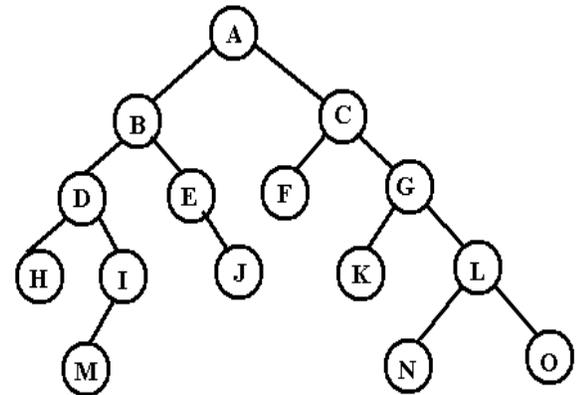
Guidelines for submitting the assignment:

1. The assignments should be handwritten with your signature and enrollment number on each page.
2. The assignment sheets should be scanned and converted into a PDF and the PDF should be named as per the Enrollment Number of the student.
3. Due date for Assignment 4 :
- 4, Assignment 4 should be emailed to : dar.aafaq6@gmail.com

1. [4] Convert the following postfix expression into an expression tree. Show all steps as shown in class lectures.

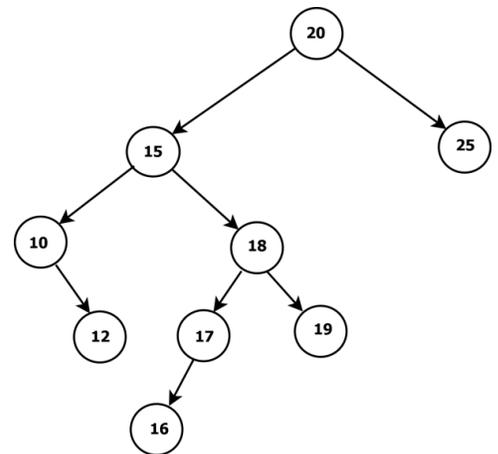
[a b c * + d e * f + g * +]

2. [6] Show in steps the output of traversing the following tree in Inorder, Preorder and Postorder



3. [5] Starting with the **binary search tree** given in figure below, perform the following operations and construct the resulting tree, **starting every time from the original tree given in figure.**

- a. Delete 15.
- b. Delete 17.
- c. Insert 23, 50 and 45 in this order.

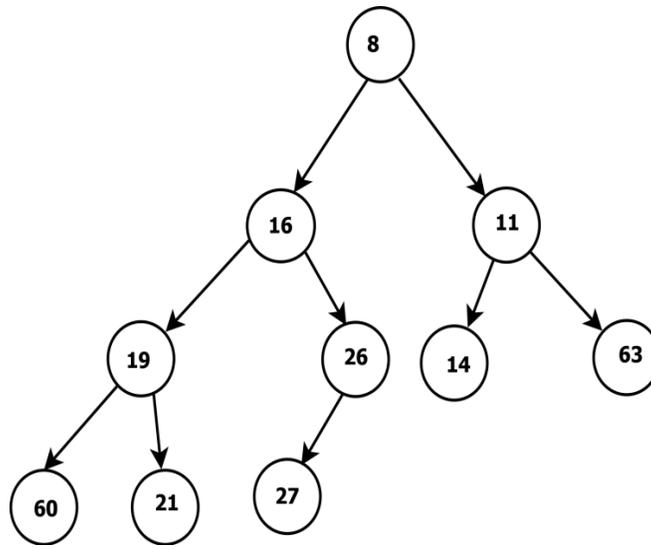


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4. [2.5 * 2] What are the two properties of a binary heap? For the following Heap, show how these properties are maintained:

- i. When 10 is inserted in the Heap.
- ii. When an element is deleted in the Heap.



- For both insertion and deletion, start with the original Heap given in figure.
- Give the sequence of events / changes in detail for the heap when element is inserted or deleted.