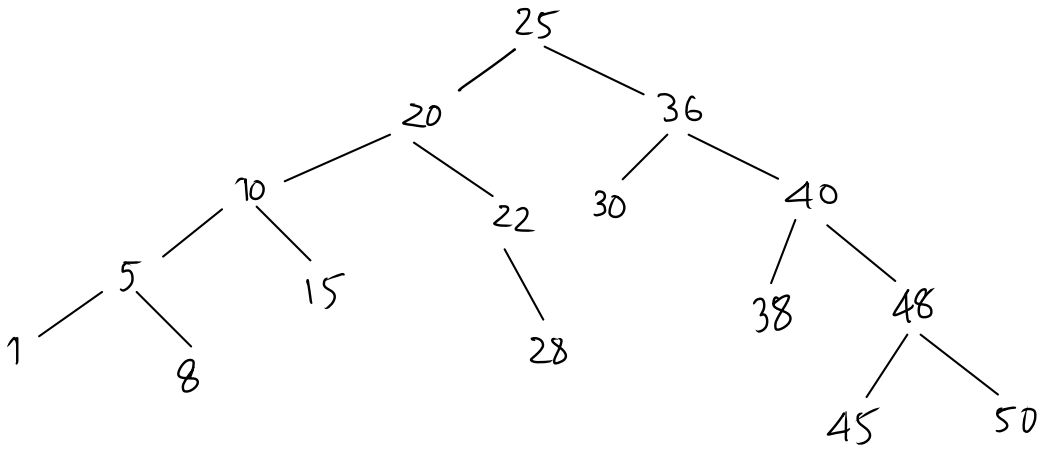
BRAC University (Department of Computer Science and Engineering)

CSE 220 (Data Structure) for Fall 2024 Semester

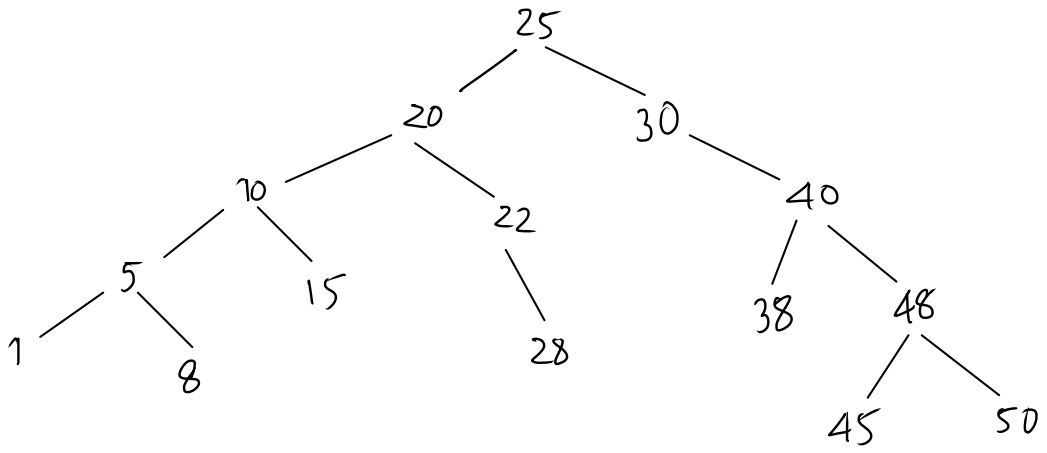
Makeup Quiz

Student ID:
Section: **Full Marks: 20**
Name: **Duration: 30 minutes**

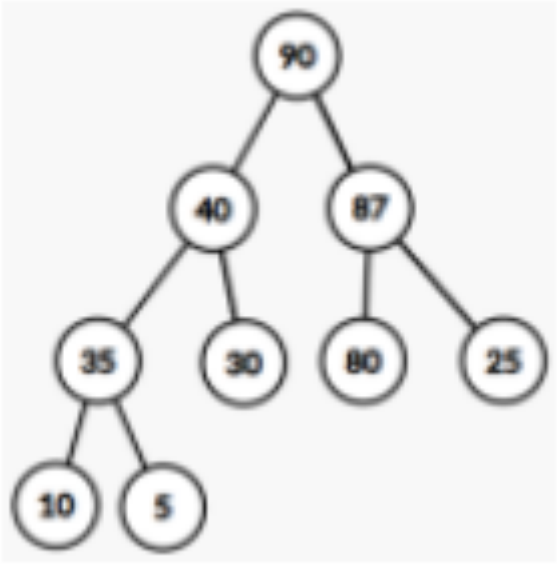
1.Insert the following values one by one in a BST and draw the resulting tree only.
25, 20, 36, 10, 30, 40, 22, 5, 28, 38, 48, 1, 8, 15, 45, 50 **[5]**



2. Delete Node 36 from the tree in question 1 using inorder predecessor **[5]**



3. Consider the following heap



Suppose you are doing a heap sort based on the given heap. Draw the trees associated with the heap after first 5 steps? **[10]**

None 90 40 87 35 30 80 25 10 5

None 5 40 87 35 30 80 25 10

87 40 5 35 30 80 25 10

None 87 40 80 35 30 5 25 10 ← after removing 1 item

None 10 40 80 35 30 5 25

80 40 10 35 30 5 25 ← 3 & 7

None 80 40 5 35 30 10 25 ← after 2nd step

None 25 40 5 35 30 10

40 25 5 35 30 10

None 40 35 5 25 30 10 ← after 3rd step

None 10 35 5 25 30

35 10 5 25 30

None 35 30 5 25 10 ← after 4th step

None 10 30 5 25

30 10 5 25

None 30 25 5 10 ← after 5th step

(Ans)

None 10 25 5

None 25 10 5 after 6th step

None 10 5 after 7th step

None 5 after 8th step

None after 9th step