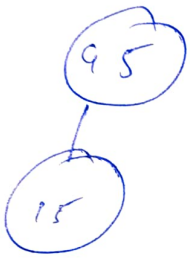
TARUN DUMKA st.id = 20711071
MCA 3rd

Q2

1) BST for data ele 95, 15, 179, 90, 10, 55, 12, 20, 50

i) First ele will be root.

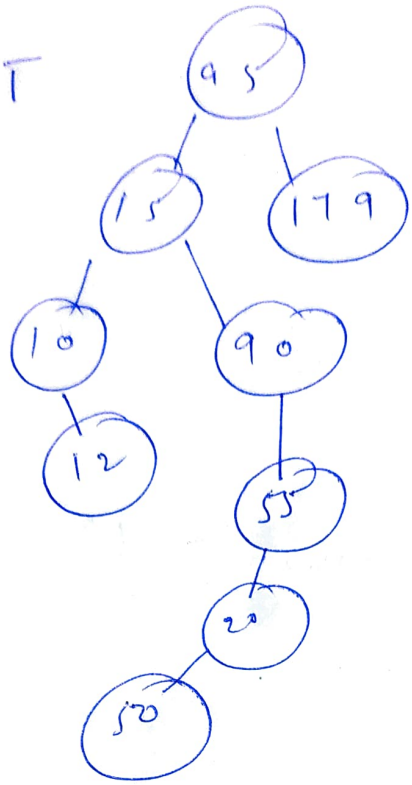
2) then 15 < 95 will come ~~off~~ left



(3) 179 > 95 but > 95

TARUN ① Umkm

Final BST



Algo for post order traversal

step 1: Repeat steps 2 to 4 while Tree != NULL
step 2: post ORDER (TREE → LEFT)
step 3: post ORDER (TREE → RIGHT)
step 4: write TREE → DATA
[END of LOOP]
step 5: END

RUN DUMKA 7

TARUN DUMKA

2.1

Analysis of POST ORDER

The tree completely of post order traverse is $O(n)$ where. n is the size of Binary tree.

whereas the space complexity of post order traverse is $O(n)$.

TARUN DUMKA
MCA 3B
std = 2071075

Q(2) c) A fibonacci heap is a data structure that consist of a collection of trees which follow min heap or max heap property.

In a fibonacci heap, a node can have more than two children or no children at all. The fibonacci heap is called fibonacci heap because the trees are constructed in a way such that a tree of order n has at least f_{n+2} nodes in it, where f_{n+2} is the $(n+2)^{th}$ fibonacci no.

~~Algo~~ Algorithm for insertion -

1) Create a new nodes 'x'
2) Check whether Heap H is empty or not
3) if H is empty then make H(new) point for X
4) else insert X into root list & update

union - to fibonacci heaps union H1 & H2

1. Join root list of fib heap U1 & U2 & make single fibonacci Heap H

2. if $U_1(min) < U_2(min)$ then
   $U(min) = U1(min)$

3. Else
   $U(min) = U1(min)$