Q. 2. Ans:

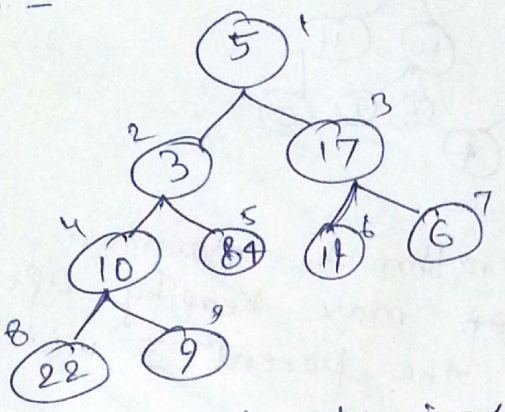
Here, the given array is

$$A = \{5, 3, 17, 10, 84, 19, 6, 22, 9\}$$

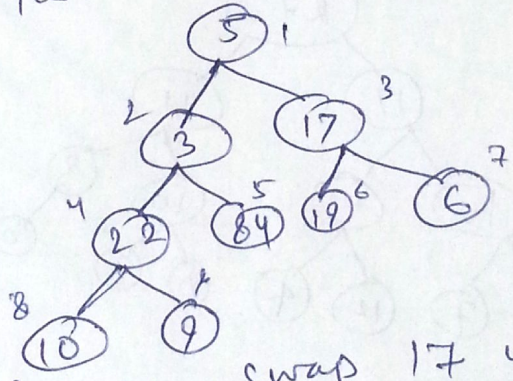
$\therefore n = 9$

$\therefore \lfloor n/2 \rfloor = \lfloor \frac{9}{2} \rfloor = 4$

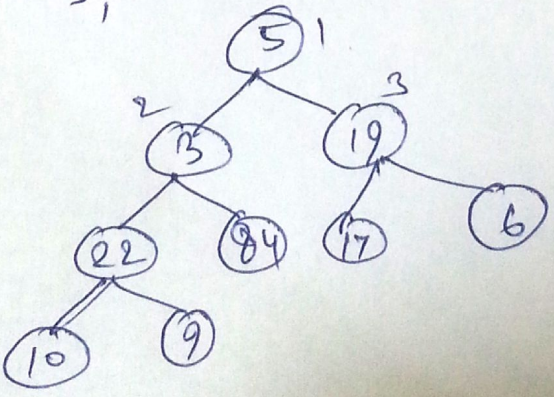
First construct a tree from the given array A, as below -



Now, start from node at $i = 4$, we need to swap 10 with the largest child, i.e., 22, so

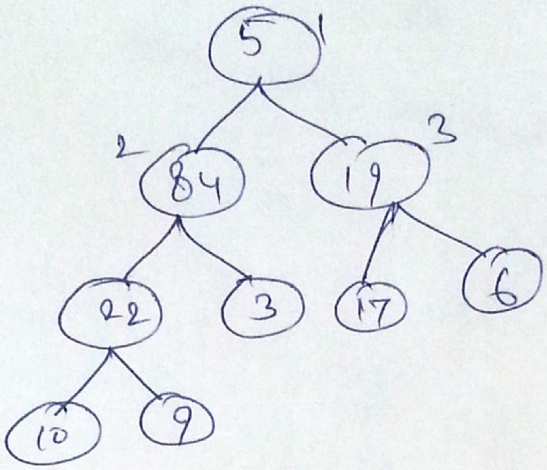


Again, at $i = 3$, we swap 17 with 19, so

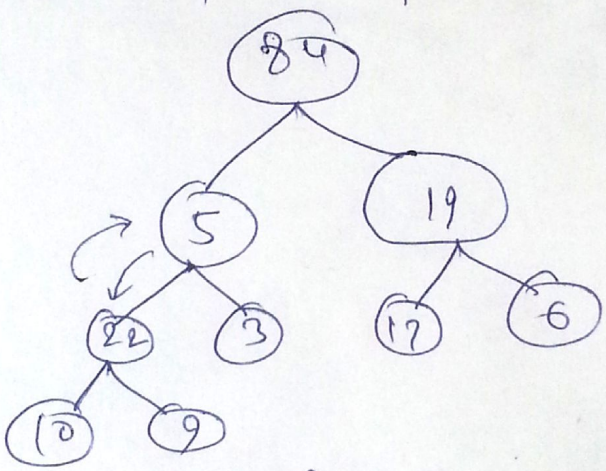


Lab-09

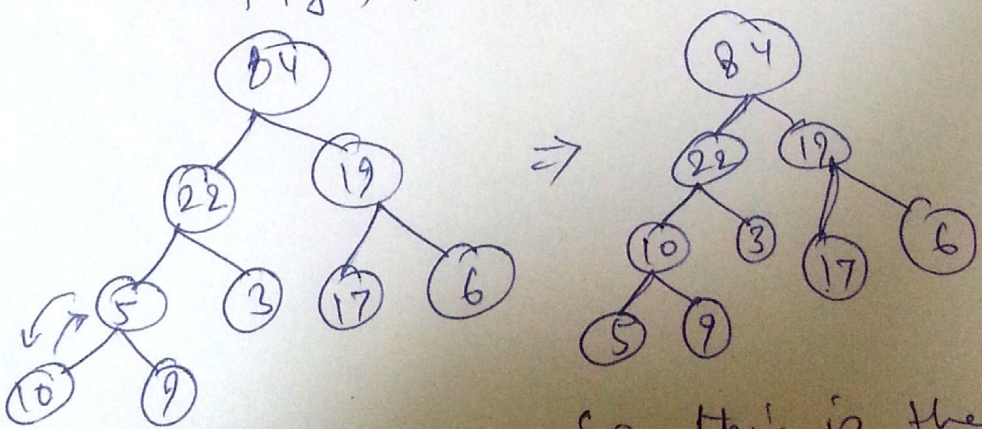
Again, at i=2, we swap 3 with 84, so we will have,



At the root node, i.e., i=1, we swap 5 with 84, so, the final heap tree will be



Now, we use heapify() for 5 and we will get-



So, this is the final heap tree.