Roll No: 2022MCS120009

1) Given recurrence

$$T(n) = \frac{n}{17} + \frac{16n}{17} + n$$

$$T(n) = \begin{cases} 1 & n=0 \\ \frac{n}{17} + \frac{16n}{17} + n & n>0 \end{cases}$$

$$= T(n) = T\left(\frac{n}{17}\right) + T\left(\frac{n}{16}\right) + T(n)$$

$$\frac{n}{17} + \frac{16n}{17} + \frac{n}{n}$$

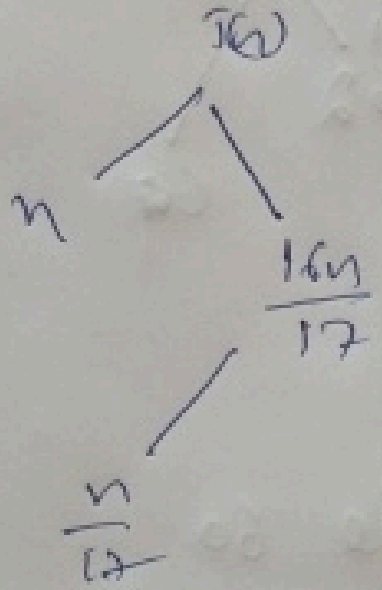
$$= \frac{17n}{17} + n$$

$$= n + n$$

$$= 2n$$

$$= 2n$$

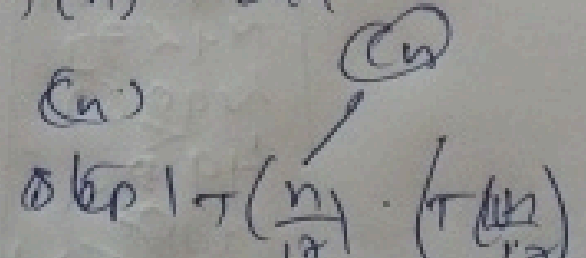
$$T(n) = \left(\frac{n}{17} + \frac{16n}{17} + n\right)$$



$$= n + 16n + 17n$$

$$17 \times T(n) = 34n$$

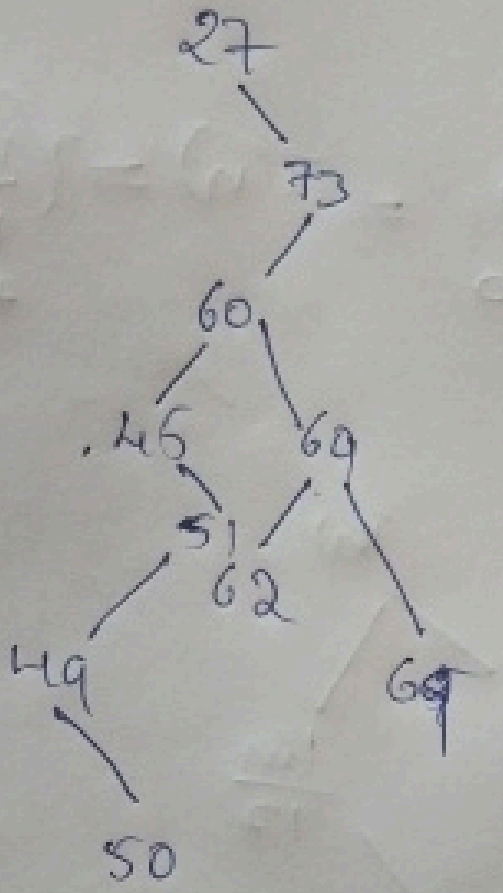
$$17\,T(n) = 34n$$



Here $\frac{17Cn}{17}$ is 'log n' times

Build Binary Tree

27, 73, 60, 45, 69, 62, 51, 49, 50, 70



27 < 73
60 < 73
60 > 27
60 < 73
45 > 27
45 < 73
45 < 60
69 > 27
69 < 73
69 > 60
62 > 27
62 < 73
62 > 60
62 < 69
51 > 27
51 < 73
51 < 60
51 > 45
49 > 27
49 < 73
49 < 60
49 > 45
49 < 51
50 > 27
50 < 73
50 < 60
50 > 45
50 < 51
50 > 49

70 > 27
70 < 73
70 > 60
69 <
70 <
69
70 > 69

2) Delete node 60

Here 60 > 27, move to 73. 60.