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5-CSE-10

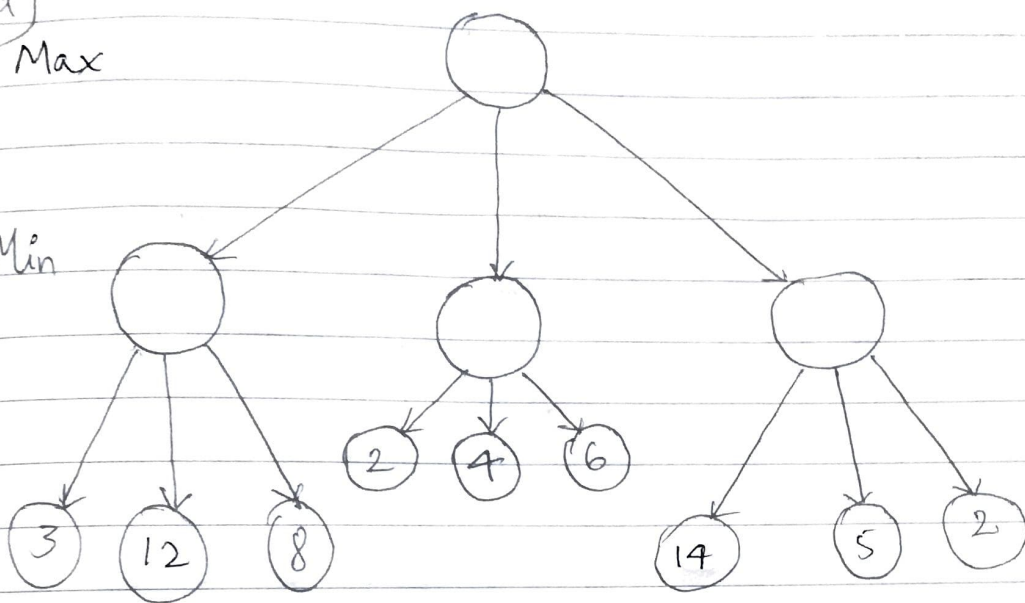
Part - C.

Q.1] a)

Max

Min

Max



Initial conditions:-

- We denote α for max & β for min.

- $\alpha = -\infty$ & $\beta = \infty$

- We traverse towards the depth & update each value of α and β .

- We also alternatively assign a value of max & min for the levels.

Hence level 1 = max

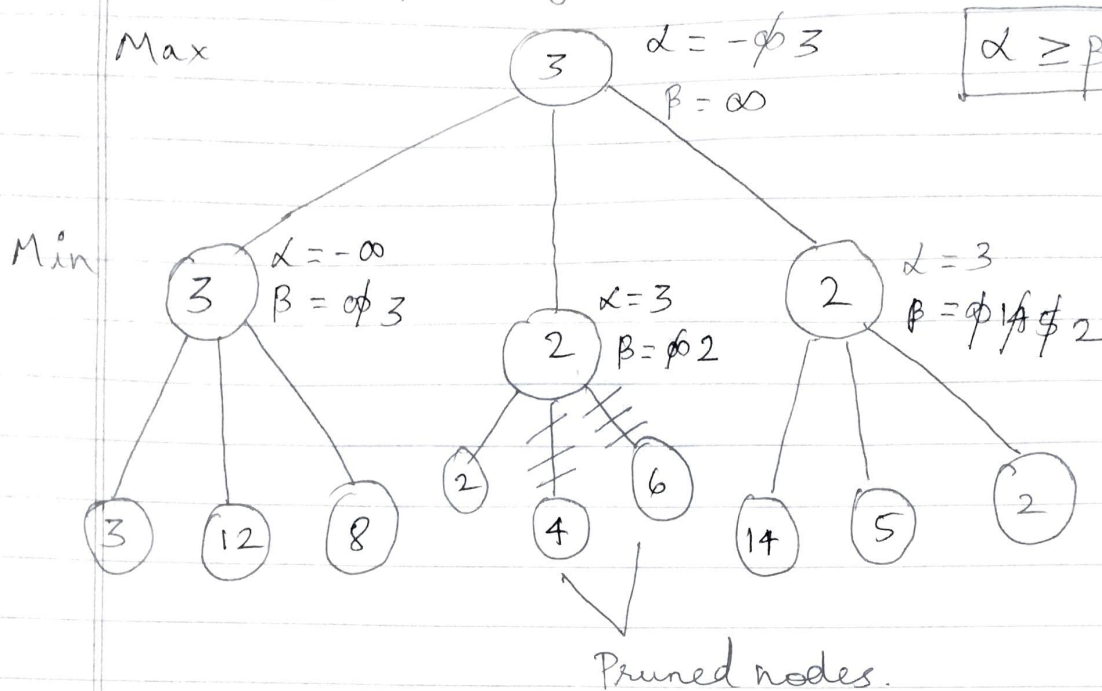
level 2 = min.

level 3 = max.

→ Performing pruning :-

Condition :-

$$\alpha \geq \beta$$



* We observe that $\alpha = 3$ and $\beta = 2$ which means $\alpha \geq \beta$ leading to the paths being pruned based on our condition $\alpha \geq \beta$.

* Pruned Branches :- 2-4
2-6

Alpha-Beta values :- $\alpha = 3$; $\beta = 2$.

b) Alpha Beta pruning is a modified version of min max algorithm. It is an optimization technique.

- In min max we observe that we need to traverse to all nodes to the depth. In order to reduce the traversal we use the alpha beta pruning.
- Condition for pruning is that alpha should be greater than beta.

$$\text{i.e. } \alpha \geq \beta$$