

Artificial Intelligence - 1

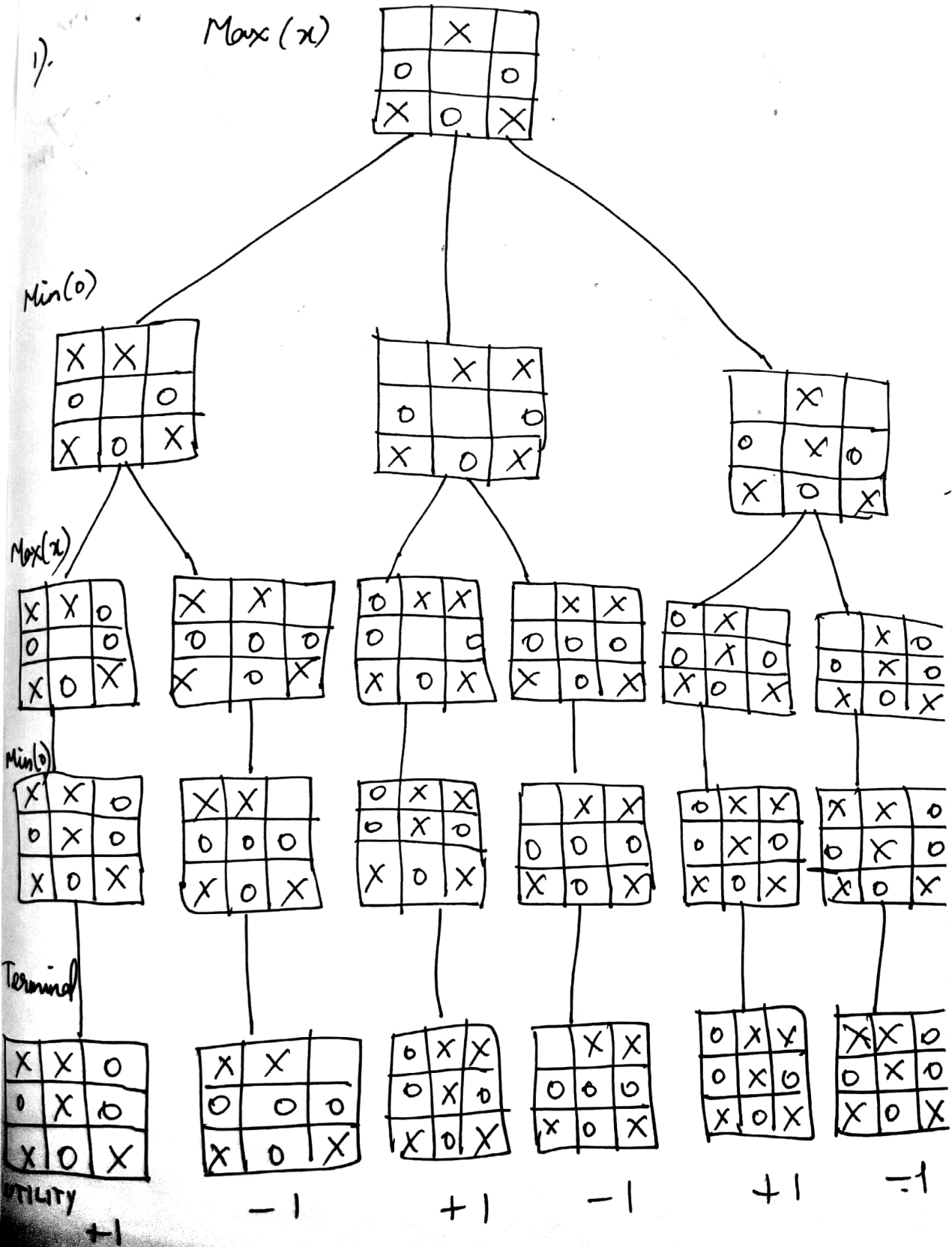
Assignment - 3

Pg ①

NAME: ESHAN DANAYAKAPURA JAGADEESH

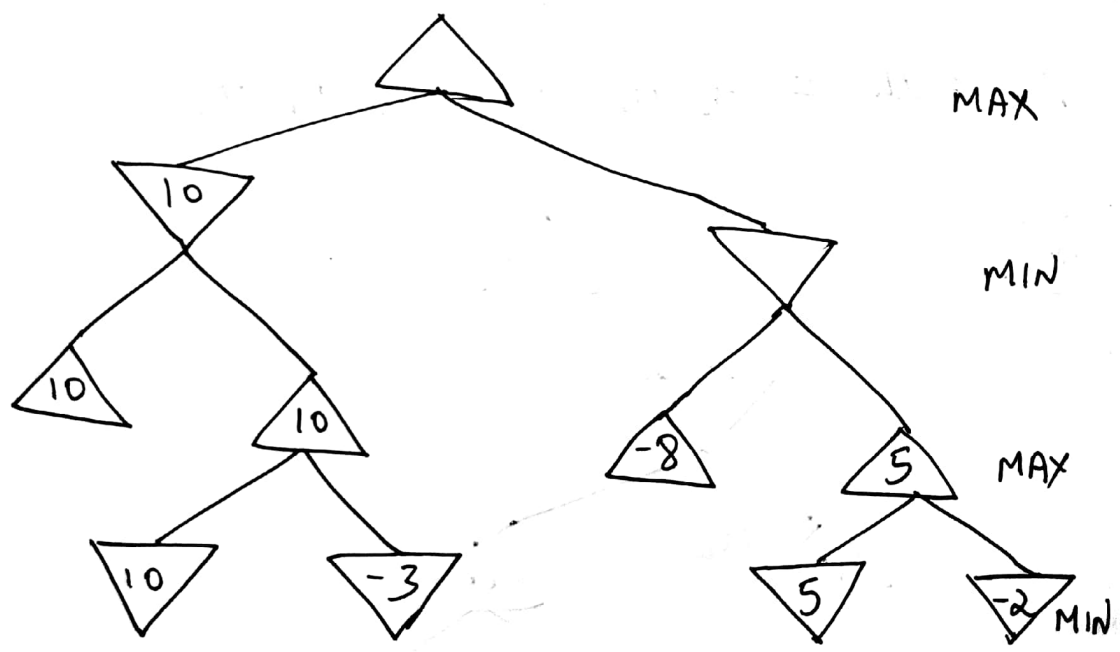
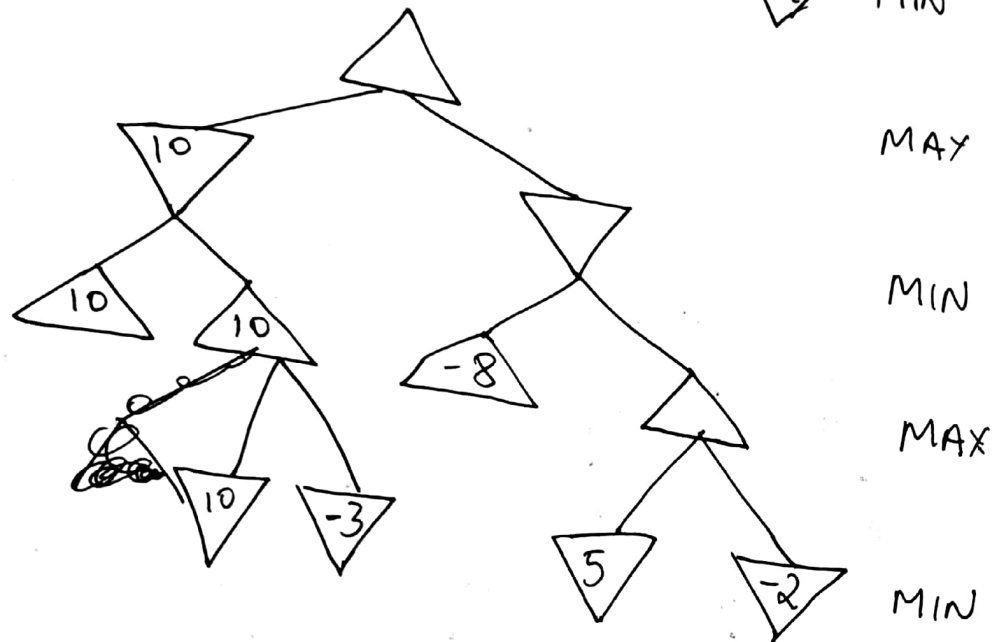
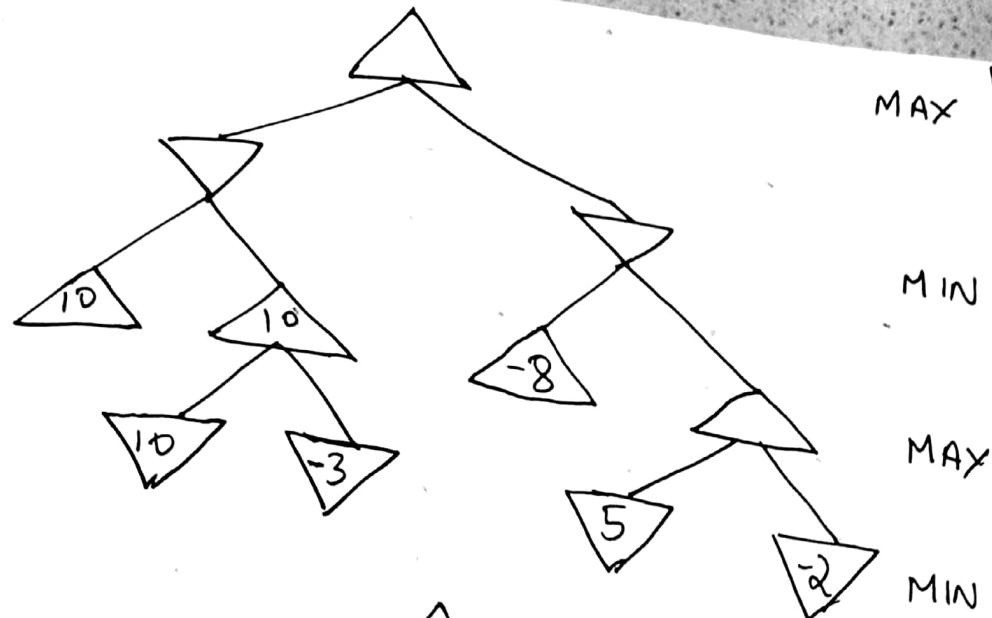
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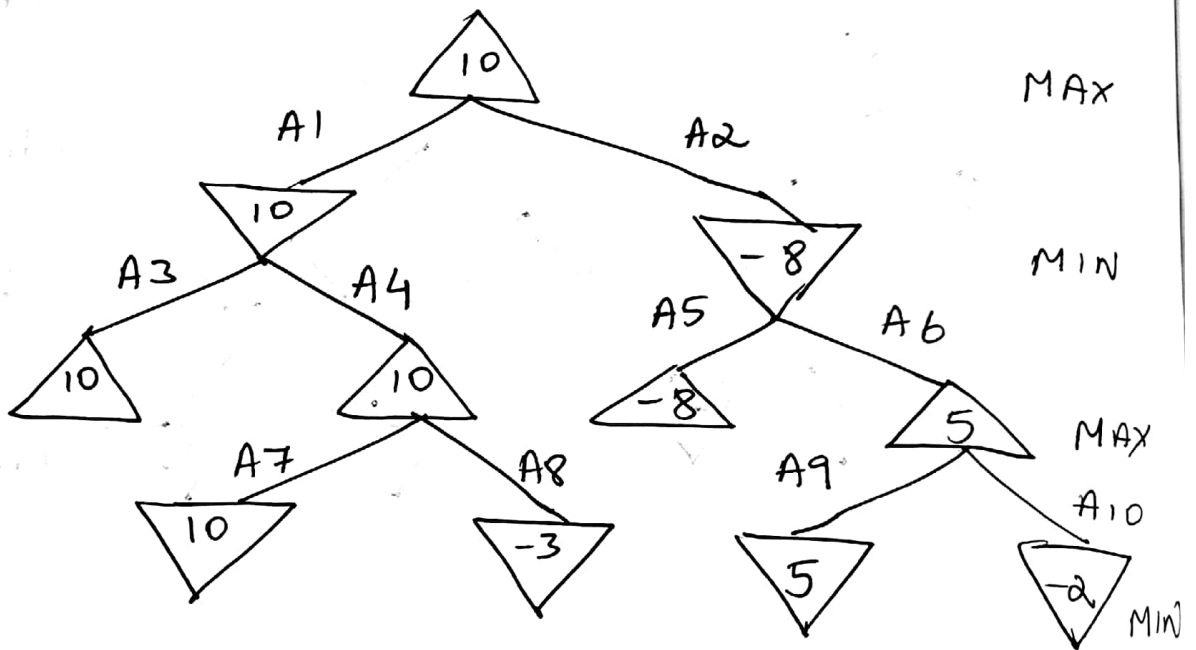
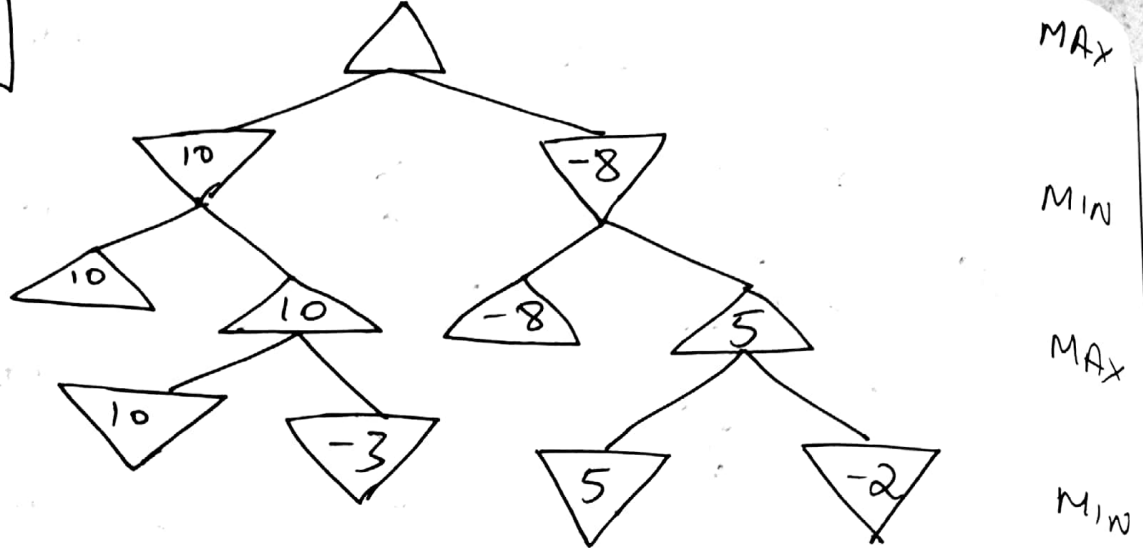
NET ID : EXD 7159



2].

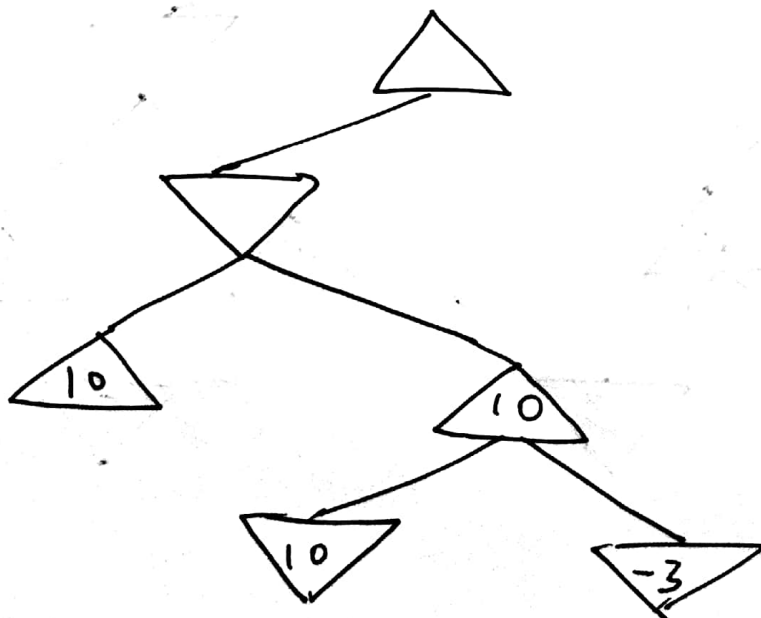
MAX Pg 2

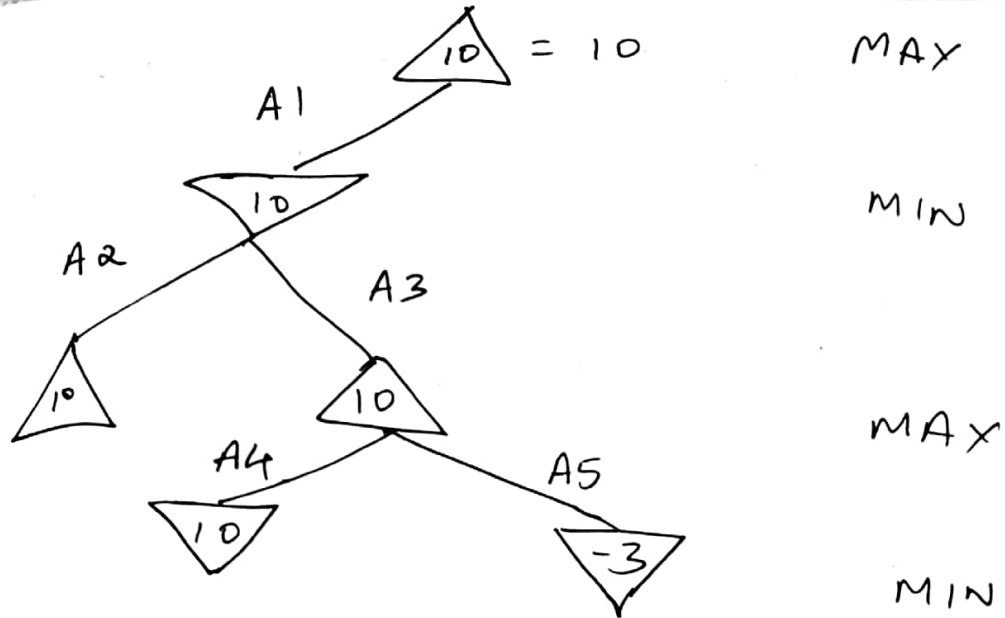




The Path = $A_3 A_1$ or $A_7 A_4 A_1$

b].

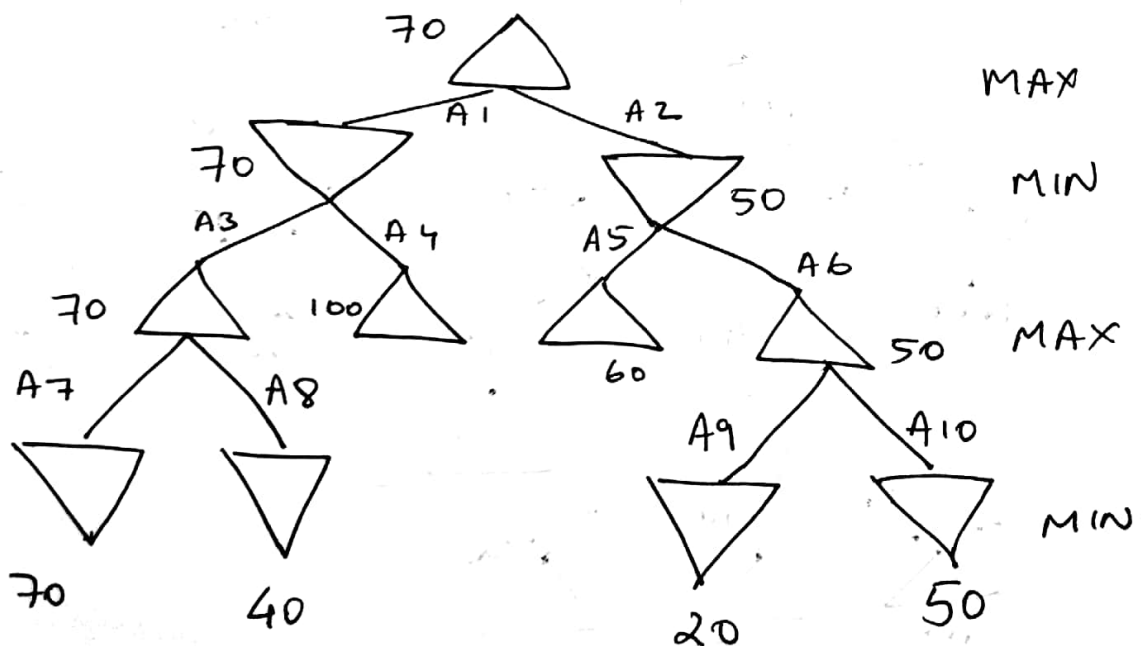




The Path = A_2, A_1 or A_4, A_3, A_1

→ We know that player cannot be able to get the value more than 10. So the maximum score a player will be able to get is 10. Once the max score is reached, alpha, Beta search stops expanding other nodes.

3].



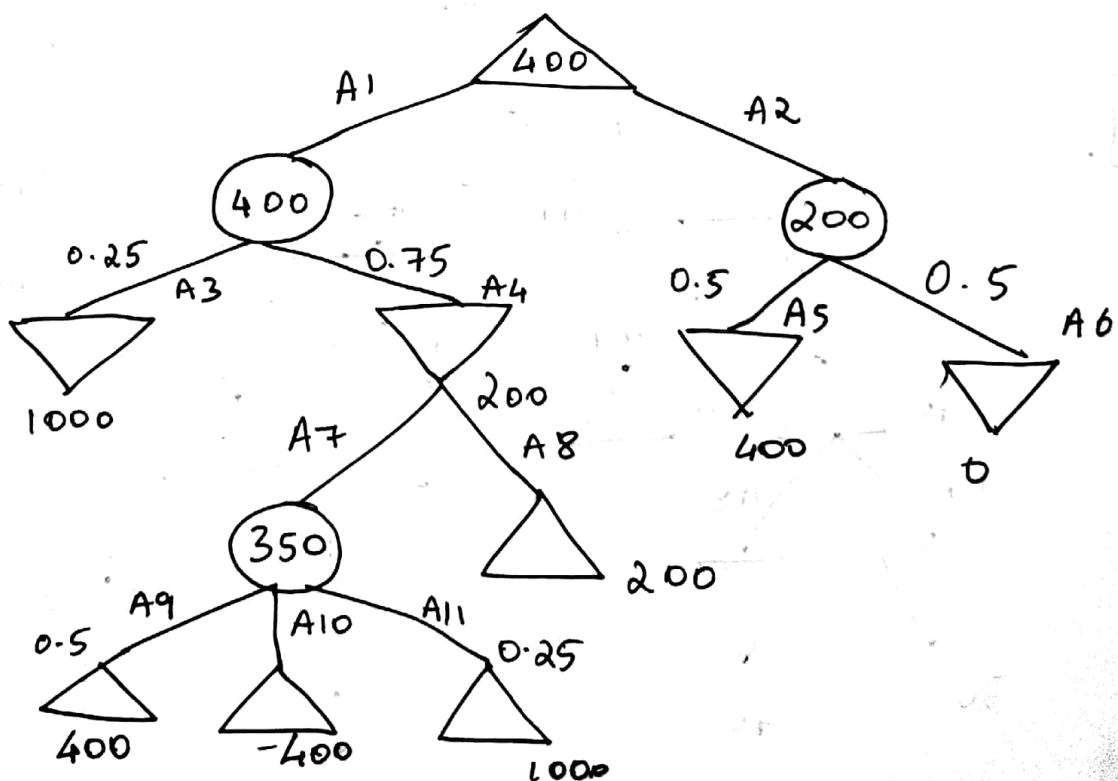
→ So the best possible outcome of playing the full game for the max player = 100

→ Worst possible available outcome for the max player is 70.

→ \therefore To get the best possible outcome for the maximum player, he should choose the path A_1, A_4 and gets 100 which is the best score if the opponent makes the worst move.

→ So to get the worst possible outcome for max player we should choose the path A_1, A_3, A_7 and gets 70 which is the worst score available if the opponent makes the best move.

4.



∴ The action which is performed by the algorithm is $A_9 A_7 A_4 A_1$.

5]. The MinMax will give the optimal sol, but we can always use the Deep Green move(s) to reduce the amount of work we have to do.

∴ We need to modify the Min value function.

Function Minvalue (state) returns a utility value
if Terminal-test (state) then returns utility (state)

$S \leftarrow \text{Deep Green Move (state)}$
returns Max_value (s)
