

[illegible]

class :- BE-IT

ROM NO :- 37

Sub :- IS LAB

DOP

DOC

Sign

Blanko

[illegible]

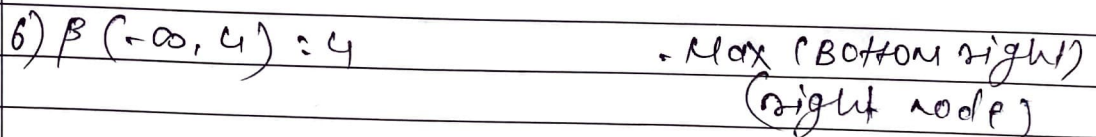
### Alpha - Beta planning :-

Alpha-beta planning  $\Rightarrow$  Alpha beta planning is a modified version of the min max algo.

It is an optimization technique for the minmax algo.

- Alpha ( $\alpha$ ) : The test (high - value)  
: Initial value of alpha is  $-\infty$
- Beta ( $\beta$ ) : The test (highest value)  
: Initial value is Beta is  $+\infty$
- Rules and conditions :
  - 1) The max player will only update the value of alpha
  - 2) The min player will only update the value of  $\beta$
  - 3) we will only the alpha, beta values to the child nodes
  - 4) Node values will be passed to upper node inserted of values of alpha and beta
- Condition to :  $a \geq b$  or  $b \leq a$
- when alpha is greater than or equal to beta.





[illegible]

$$7) \times (4, -4) = 4$$

$$d(4, -16) = 4$$

$$\alpha(-4, -16) = -4$$

8)  $\beta(\infty, -16) = -16$

- min ('digit')

$$\alpha = 4$$

$$\beta = -4$$

$$\alpha \geq \beta$$

9)  $\alpha = 4$

$$\beta = \infty$$

Max

$$d(4, -4) = 4$$

Solution.

Start Animation

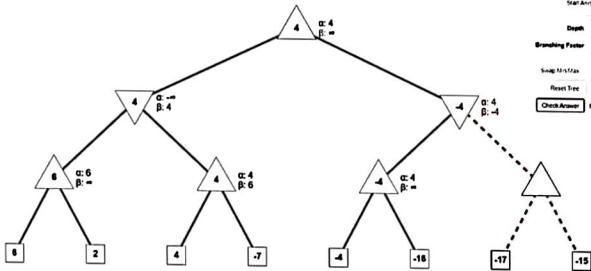
Depth - +

Branching Factor - +

Swap Min/Max Regenerate Tree

Reset Tree Show Solution

Check Answer Correct



Nodes are pruned when  $\alpha \geq \beta$