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Class :- BE-IT

Roll No :- 48

Subject :- IS Lab

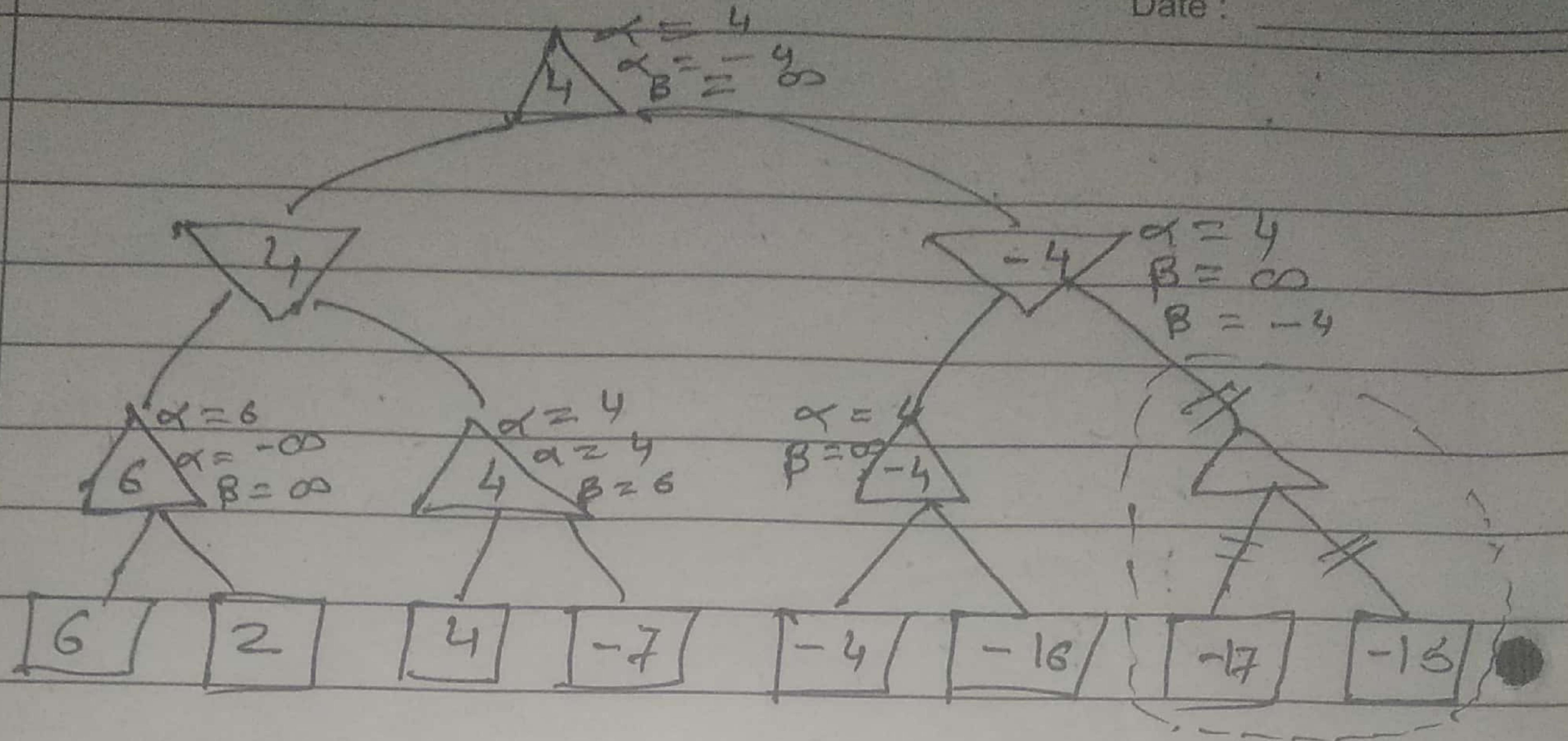
D.O.P	D.O.A	Remark	Sign

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 (α) = The test (Highest - Value)
 \Rightarrow Initial Value of alpha is $-\infty$
- Beta (β) = The test (Highest Value)
 \Rightarrow initial Value is Beta is $+\infty$
- Rules & Condition :-
 - 1) The Max player will only update the value of alpha
 - 2) The min player will only update the value of β
 - 3) We will only the alpha beta values to the Child nodes.
 - 4) Node Value will be passed to upper node instead of value of alpha & beta.
- Condition to : $a \geq b$ or $b \leq a$
- when alpha is greater than or equal to beta.

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$$1) \alpha(-\infty, 6) = 6$$

$$\alpha(-\infty, 2) = 2$$

$$\alpha(6, 2) = 6$$

-Max (Bottom left)

$$2) \beta(\infty, 6) = 6$$

-Min (left)

$$3) \alpha(-\infty, 4) = 4$$

$$\alpha(-\infty, -7) = -7$$

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

-Max (Bottom left)

(left node)

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

-Top (Max)

$$5) \beta(6, 4) = 4$$

-Min (right)

$$6) \beta(-\infty, 4) = 4$$

-Max (Bottom right)
(right node)

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

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

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

$$8) \beta (\infty, -16) = -16 \quad \text{--- Min (right)}$$

$$\alpha = 4$$

$$\beta = 4$$

$$\alpha \geq \beta$$

$$9) \alpha = 4$$

Max

$$\beta = \infty$$

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

Solution :

