Prim's Algorithm

- Prim, is a greedy algorithm that finds a minimum spanning tree for a connected weighted graph.
- It finds a tree of that graph which includes every vertex and total weight of all the edges in the tree is less than or equal to every possible spanning tree.

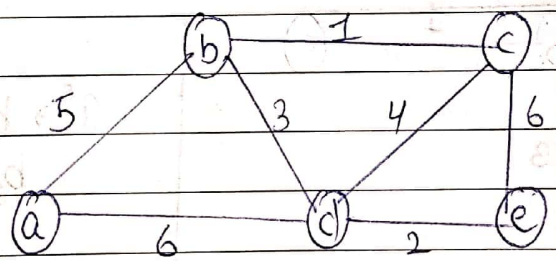
Algorithm

+ The tree starts from a vertex 'r' and grows until the tree spans all the vertex in V.

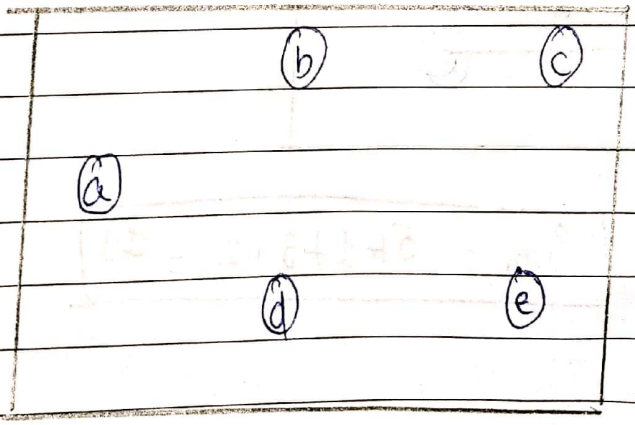
→ Select an edge with minimum weight.

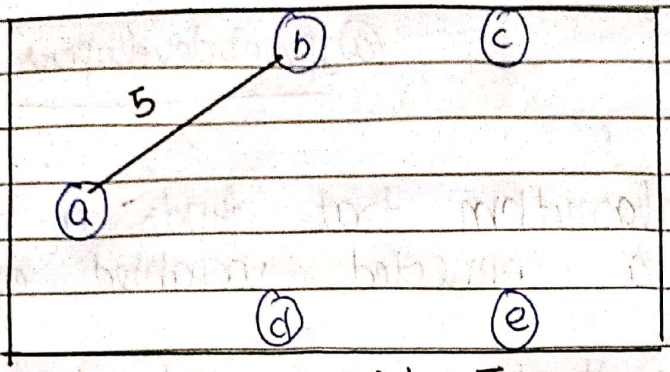
→ Keep Selecting adjacent edges with minimum weight

Example

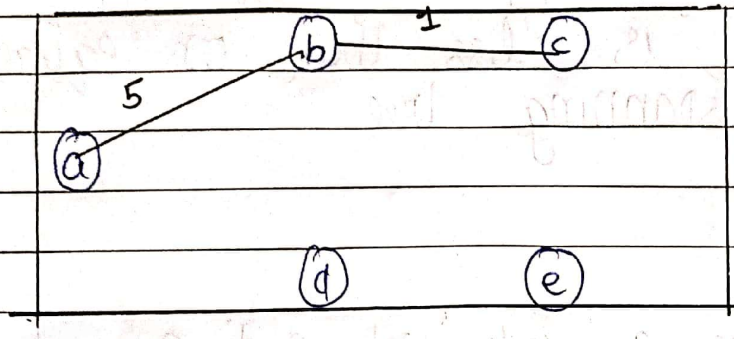


Sol

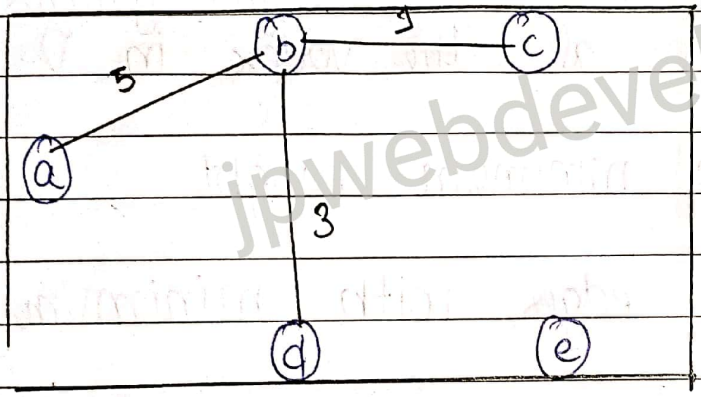




$a \to b = 5$

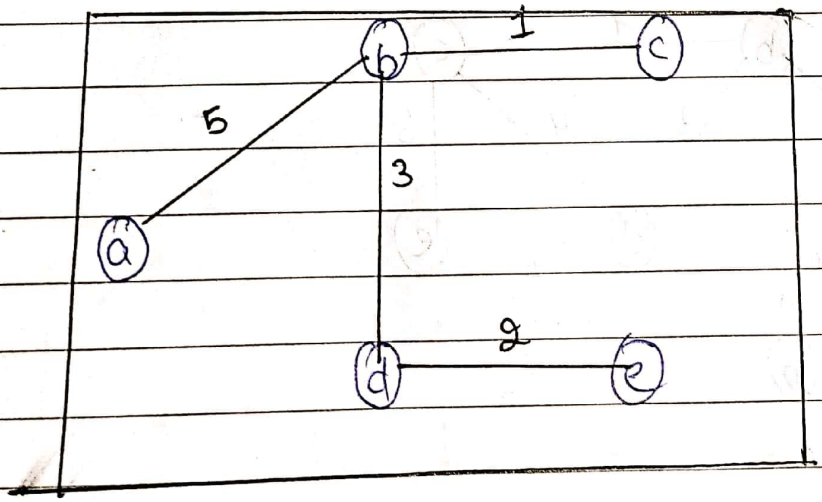


$a \xrightarrow{5} b \xrightarrow{1} c$



$a \xrightarrow{5} b \xrightarrow{1} c$

$b \xrightarrow{3} d$



$a \xrightarrow{5} b \xrightarrow{1} c$

$b \xrightarrow{3} d \xrightarrow{2} e$

Sum : 5 + 1 + 3 + 2 = 11