

Question 2 >

Answer A)

we know that

$$|E(G)| + |E(G')| = \frac{n(n-1)}{2}$$

$$56 + 80 = \frac{n(n-1)}{2}$$

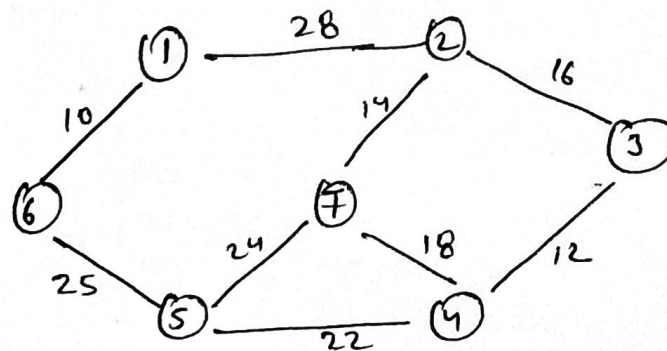
$$136 = \frac{n(n-1)}{2}$$

$$2 * 136 = n(n-1)$$

$$n^2 - n - 2 * 136 = 0$$

$$n = 17$$

Answer B)

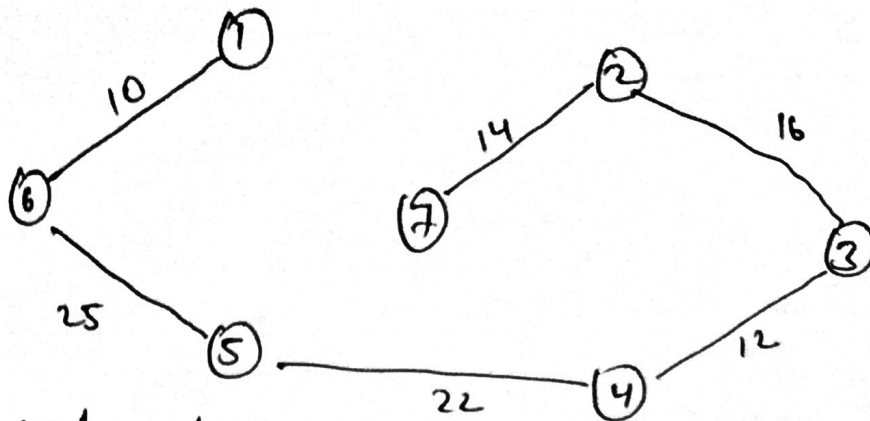


Steps :-

- i) Sort all the edge ~~for~~ in ascending order
- ii) Take the edge with lowest weight and use it to connect graph, if added edge form cycle then don't

choose it

(iii) Keep adding edges untill all vertices are connected



order of sort

10, 12, 14, 16, 18, 22, 24, 25, 28

$$\begin{aligned} \text{weight of MST} &= 10 + 25 + 22 + 12 + 16 + 14 \\ &= 99 \end{aligned}$$

Answer c)

no. of vertices = 100

no. of edges = 300

weight of MST = 500

we know, the edges in MST = $V - 1$

$$= 100 - 1 = 99$$

weights are increased by 5 units

$$\begin{aligned} \text{weights of Minimum Spanning Tree} &= 500 + 99 \times 5 \\ &= 500 + 495 = 995 \end{aligned}$$