

2 JEE Main 2020 (Online) 5th September Morning Slot

MCQ (Single Correct Answer)

A survey shows that 73% of the persons working in an office like coffee, whereas 65% like tea. If x denotes the percentage of them, who like both coffee and tea, then x cannot be :

A 63

B 36

C 54

D 38

Explanation

$C \rightarrow$ person like coffee

$T \rightarrow$ person like Tea

$$n(C) = 73$$

$$n(T) = 65$$

$$n(C \cup T) \leq 100$$

$$n(C) + n(T) - n(C \cap T) \leq 100$$

$$73 + 65 - x \leq 100$$

$$x \geq 38$$

$$73 - x \geq 0 \Rightarrow x \leq 73$$

$$65 - x \geq 0 \Rightarrow x \leq 65$$

$$\therefore 38 \leq x \leq 65$$

Once again basic set theory concepts are used here.