Related Questions with Solutions

Questions

Quetion: 01

Given the relation $R = \{(1,2),(2,3)\}$ on the set $A = \{1,2,3\}$, the minimum number of ordered pairs which when added to R it an equivalence relation is-
A. 5
B. 6
C. 7
D. 8

Solutions

Solution: 01

Q   A = {1, 2, 3}

∴ A × A = {[1, 1], [1, 2], [1, 3], [2, 1], [2, 2], [2, 3], [3, 1], [3, 2], [3, 3]}

For Reflexive

At least, [1, 1], [2, 2], [3, 3]∟ R

For symmetric,

If [1, 2]∟ R

Then [2, 1] Should be in R.

Similarly, for [2, 3]∟ R,

Then [3, 2] should be in R.

For Transitive

If [1, 2], [2, 3]∟ R,

Then [1, 3] should be in R.

For equivalence relation.

[1, 1], [2, 2], [3, 3],

[1, 2], [2, 1]

[2, 3], [3, 2]

[1, 3], [3, 1]

So, the minimum no of ordered pairs which when added to R to make it an equivalence relation = 9– 2 = 7

Correct Options

Answer:01
Correct Options: C