QUESTION

13. A reaction was found to be second order with respect to the concentration of carbon monoxide. If the concentration of carbon monoxide is doubled, with everything else kept the same, the rate of reaction will be

(1) remain unchanged

(2) tripled

(3) increased by a factor of 4

(4) doubled.

ANSWER :

Solution:

If concentration of [A] is doubled, then the rate will be doubled, so the order of A is 1.

Then again if the concentration of A and B both were doubled, the rate will increase 8 times. Rate = [2A] [2B]^2 = 8[A] [B]^2

So the order of B is two.

So, the overall order is 3.

Hence option (1) is the answer.