LECTURE 9

EXEMPLAR PROBLEM

Q1

14. Rate law for the reaction A + 2B $\longrightarrow$ C is found to be

$$\text{Rate} = k\,[A][B]$$

Concentration of reactant 'B' is doubled, keeping the concentration of 'A' constant, the value of rate constant will be_____.

(i)   the same

(ii)   doubled

(iii)   quadrupled

(iv)   halved

ANSWER :

Ans. **(ii)**

Explanation: From the rate law expression, it is clear that the rate w.r.t to B is of first order.

When the concentration of A is kept constant and the concentration of B gets double than the rate will be twice.

Rate $\rightarrow$ $R_1 = k[A][B]$ ...(i)

Rate $\rightarrow$ $R_2 = k[A][2B]$ ...(ii)

Dividing eq. (i) by eq. (ii) = $R_2 = 2R_1$