B.M.A. College Bakeri

Chemistry.

C. CHAUDHARY CHEMISTRY.

CHEMICAL KINETICS

Topic :- Rate of Chemical reaction

Change in Concentration of Reactant or product per unit time is called rate of chemical reaction

$$A \longrightarrow B$$

If dx amount of A Changes into B in time dt then rate of reaction $= \frac{dx}{dt}$

If C is the molecular Concentration of A at any instant then

$$\frac{dx}{dt} \propto C \text{ or } \frac{dx}{dt} = kc$$

where k : Sp. rate Constant.

Molecularity of a Chemical reaction

Total no. of molecules taking part in rate determining step of a chemical reaction is called Molecularity of reaction.

$CH_3COOC_2H_5 + H_2O$

$\downarrow T$

$CH_3COOH + C_2H_5OH$

In the above reaction two molecules one is ethyl acetate and other is H_2O therefore molecularity of the reaction is 2 & we can say it is bimolecular reaction.

H_2O_2

$\downarrow$

$H_2O + \frac{1}{2}O_2$

Since in dissociation of Hydrogen peroxide one molecule is participating therefore it is Unimolecular reaction

ORDER OF CHEMICAL REACTION.

No. of reacting molecule whose Concentration alters as a result of Chemical Change is called orders of the reaction. $nA + mB \rightarrow Pc +$

$$\frac{dx}{dt} = k[A]^n[B]^m$$

order $= n + m$

Sum of the powers of Conc. terms in rate expression is called ORDER of Reaction.