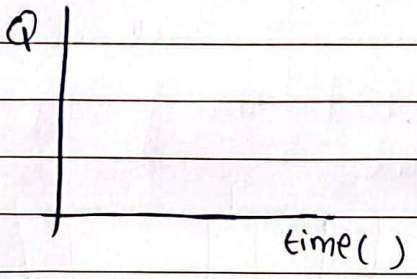
Rate of Reaction

Rate = $\frac{\text{change in a quantity}}{\text{change in time}}$

rate = $\frac{\Delta Q}{\Delta t}$

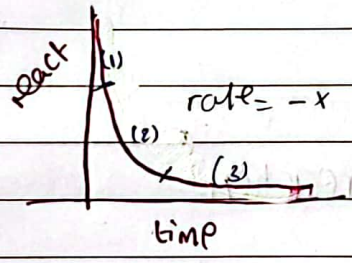


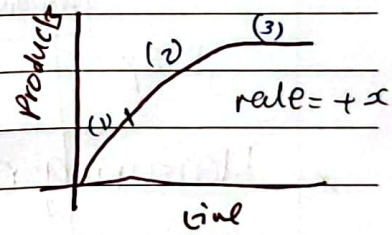
- $\frac{\Delta \text{mass}}{\Delta \text{time}}$
- $\frac{\Delta \text{conc.}}{\Delta \text{time}}$
- $\frac{\Delta \text{pH}}{\Delta \text{time}}$
- $\frac{\Delta \text{volume}}{\Delta \text{time}}$
- $\frac{\Delta \text{temp}}{\Delta \text{time}}$
- $\frac{\Delta \text{weight of ppt}}{\Delta \text{time}}$
- $\frac{\Delta \text{light intensity}}{\Delta \text{time}}$

Measure the rate of reaction

How fast the reactants consumed per unit time

How fast the products produced per unit time





region (1): fastest rate ⇒ from the graph (steepest)
- At the beginning of reaction:-
- more amount of reactants.
- more particles
- more effective collisions per unit time.

region (2): slower rate ⇒ from the graph (less steep)
- less no. of particles
- so less no. of effective collisions per unit time

region (3): reaction is over ⇒ gradient = 0 (horizontal)
- no more limiting factor.
- so no more effective collisions