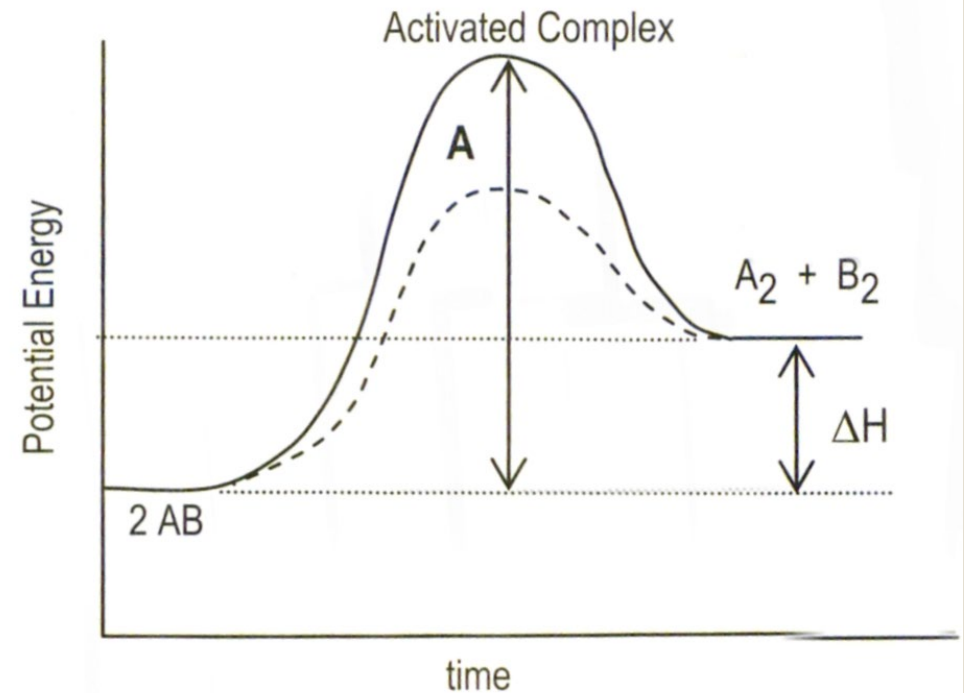
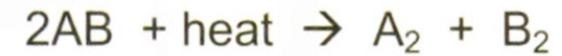
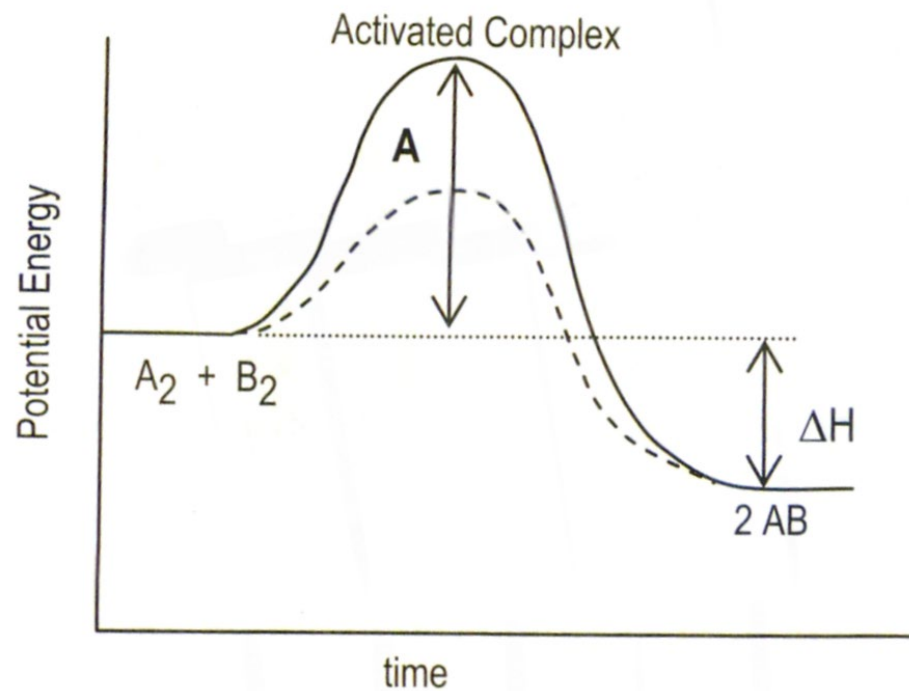


RATES OF CHEMICAL REACTIONS

EXOTHERMIC AND ENDOTHERMIC REACTIONS



REACTION RATE

- The change in concentration of reactants or products per unit of time.

- Rate = $\frac{\Delta c}{\Delta t}$

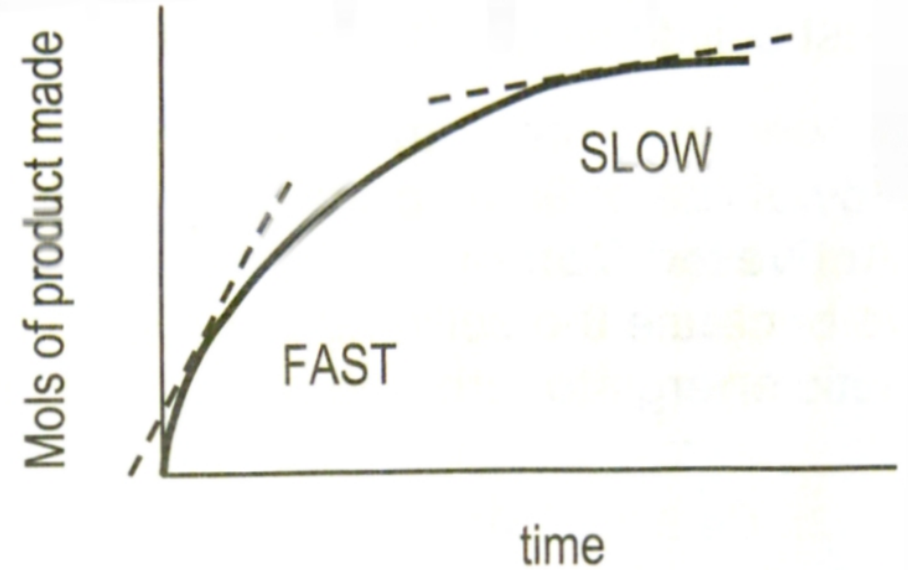
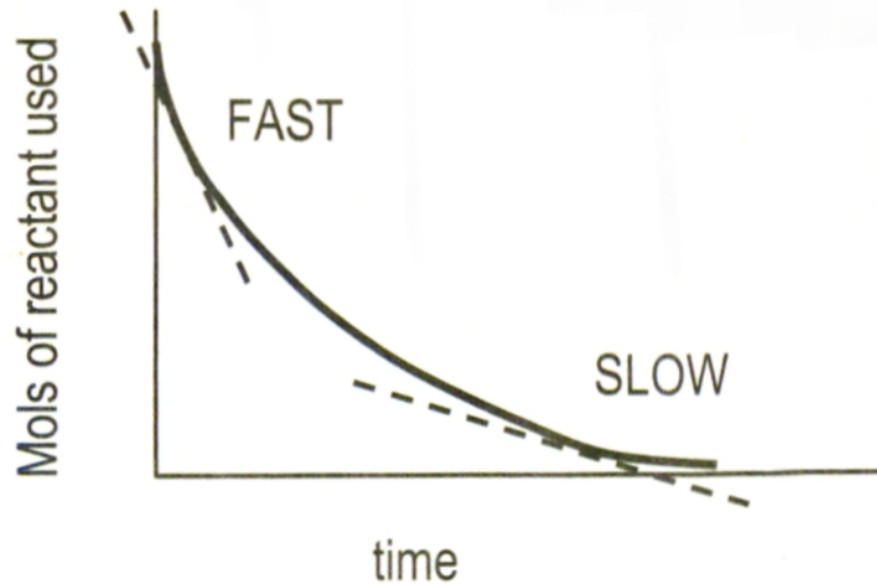
- Rate = $\frac{\Delta n}{\Delta t}$

- Rate = $\frac{\Delta m}{\Delta t}$

- Rate = $\frac{\Delta V}{\Delta t}$

RATE OF CHEMICAL REACTIONS

- The rate of a reaction is the amount reactant used or of the products produced in a given time.



COLLISION THEORY

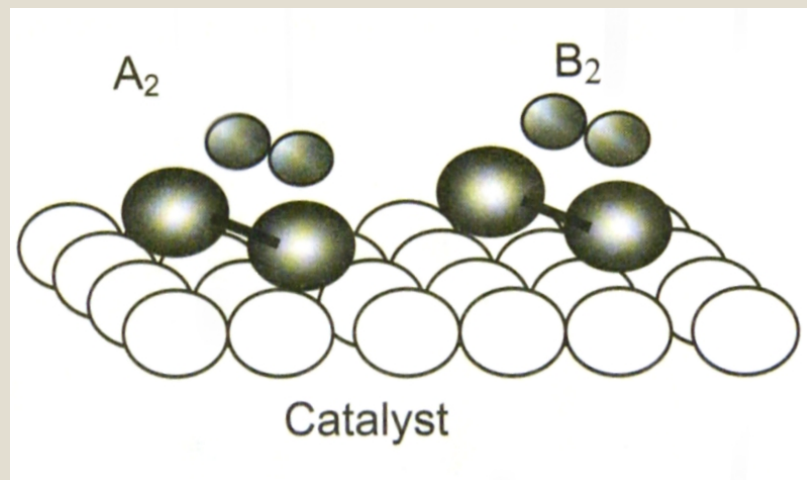
- Orientation of collisions
- Energy of molecules

FACTORS AFFECTING THE RATE OF A REACTION

- Need to explain these factors in terms of collision theory
- Nature of substance
- Surface area of reactants
- Concentration of reactants
- Pressure in a gas
- Temperature
- Use of a catalyst

USE OF CATALYSTS

- Catalyst: a substance that speeds up the reaction without undergoing any permanent change.
- They lower activation energy by holding particles onto their surface and pointing them into correct direction for a product to form.



MAXWELL-BOLTZMANN DISTRIBUTION OF MOLECULAR ENERGY

