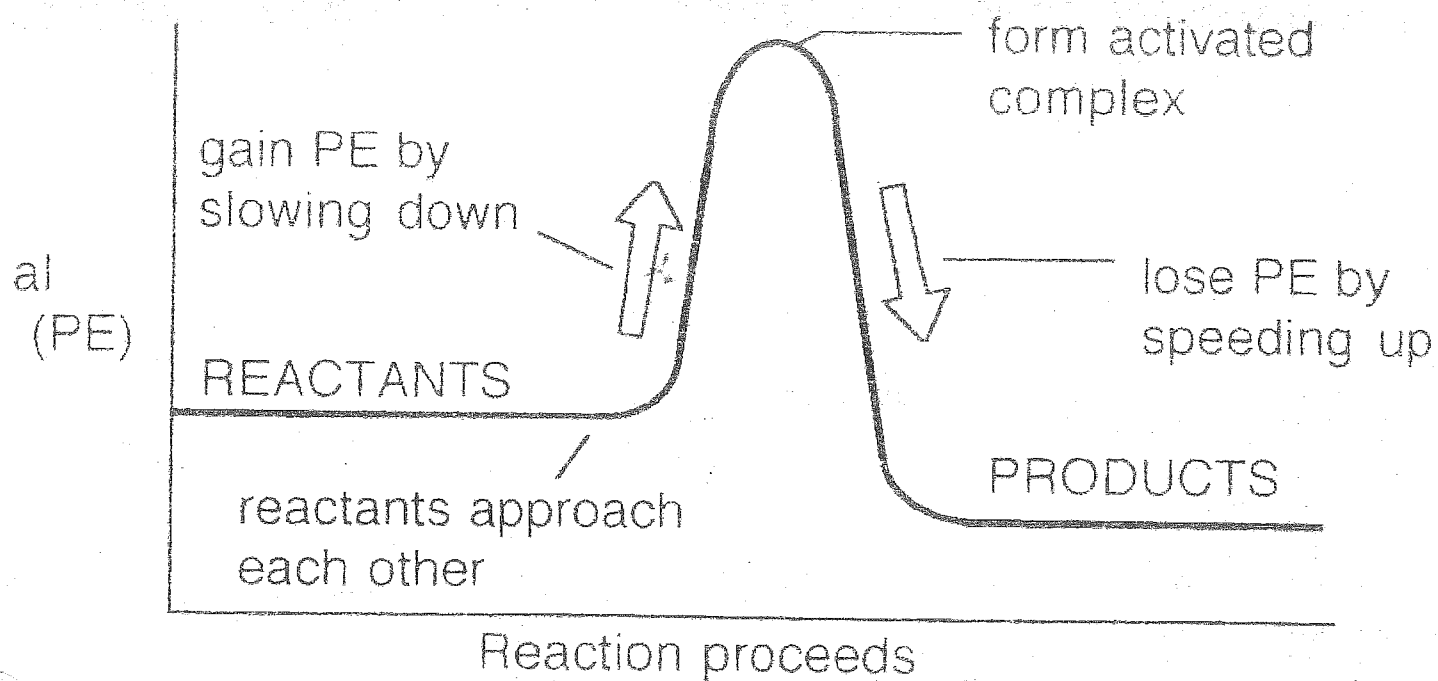


Potential Energy Diagrams



- All reactant molecules have the same amount of potential energy in them.
- As the molecules approach each other, there is an increase in potential energy due to the repulsion of the electron orbitals. (KE ∴ decreases)
- If the molecules are of opposite charges they will be attracted to each other and this type of reaction will be the fastest (ie/ precipitation).
- At the point of collision, the molecules form a short lived, high energy, unstable union called an **ACTIVATED COMPLEX**.
- The activated complex will then break old bonds and form new bonds (reaction) or reform old bonds (no reaction).
- Product molecules separate and the PE decreases (KE increases) until a new level is reached.
- If the products have more potential energy than the reactants then the reaction is **ENDOTHERMIC**. If they have less it is **EXOTHERMIC**.

- The difference in the energy of reactants and products is known as a change in enthalpy, ΔH .
- If the activation energy is high, the rate of reaction is slow because it takes more energy to overcome this energy and therefore more time.

PS#4
