

Kinetics Chemistry

- 1- Write a report about how can rate of reaction be increased and How does the rate of reaction affect activation energy and How do you calculate rate of reaction?
- 2 – Write a report about Collision Theory illustrating how are collision theory and temperature related?
- 3 – Write a report about Potential Energy Diagrams illustration meaning of potential energy and how does the activation energy affect reaction rate?
- 4- Write a report about Rate Law and how can the rate law be determined illustrating How do catalysts affect rates of reaction?
- 5- Write a report about enzymes and how do enzymes speed up rates of reaction?
- 6 – Write a report about Parallel or Competing Reaction illustrating the meaning of Steady State Approximation and Opposing Reactions, Equilibrium.
- 7- Write a report about Kinetic Isotope Effects illustrating it's Types.
- 8 – Write a report about reaction mechanism including the following points
 - a) The **reaction mechanism** describes the sequence of elementary reactions that must occur to go from reactants to products.
 - b) **Reaction intermediates** are formed in one step and then consumed in a later step of the reaction mechanism.
 - c) The slowest step in the mechanism is called the **rate determining** or **rate-limiting step**.
 - d)The overall reaction rate is determined by the rates of the steps up to (and including) the rate-determining step.
- 9 - Write a report about types of catalysts including the following points
 - a) A catalyst is a substance that can be added to a reaction to increase the reaction rate without getting consumed in the process.
 - b) Catalysts typically speed up a reaction by reducing the activation energy or changing the reaction mechanism.
 - c) Enzymes are proteins that act as catalysts in biochemical reactions.
 - d) Common types of catalysts include enzymes, acid-base catalysts and heterogeneous catalysts
- 10- Write a report about Arrhenius theory illustrating the relation between the theory and speed of reaction for exothermic and endothermic reaction

