

Chemistry 12 – Mid Year Review Exam concepts

Reaction Kinetics

- Interpret, draw, and label PE vs. time graphs
- Explain how the following factors affect the rate of a reaction: temperature, pressure, concentration, surface area, phase, catalysts, and inhibitors
- Understand how Collision Theory explains what factors affect reaction rate
- Be able to look at a reaction mechanism and identify the reaction intermediate, catalyst, and the rate determining step
- Understand how activation energy of a reaction relates to the rate of a reaction
- Understand what an activated complex is

Dynamic Equilibrium

- Be able to understand how increasing/decreasing the following factors will (a) shift an equilibrium and (b) affect the forward and reverse reaction rates
 - Temperature
 - Pressure of a container
 - Volume of a container
 - Concentration
- Determine whether enthalpy and entropy favour reactants or products
- Write a K_{eq} expression and perform equilibrium calculations with or without an ICE table
- Determine whether product or reactants are favoured by interpreting K_{eq}
- Predict which way an equilibrium will shift by calculating trial K_{eq}

Solubility Equilibria

- Write a K_{sp} expression
- Calculate the solubility of a salt
- Calculate the concentration of ions in a solution
- Predict the effect on solubility when _____ is added to a solution
- Predict whether a precipitate will form and justify using calculations