Unit II Test Review: Dynamic Equilibrium

|  |  |
| --- | --- |
| **Learning Intentions** | **Review Questions** |
| B1: Explain the concept of chemical equilibrium with reference to reacting systems.   * Describe the reversible nature of most chemical reactions and how it can be represented on a PE diagram. * Describe the dynamic nature of chemical equilibrium. * Relate the changes in rates of the forward and reverse reactions to the changing concentrations of the reactants and products as equilibrium is established. * Describe chemical equilibrium as a closed system at constant temperature: whose macroscopic properties are constant, where the forward and reverse rates are equal, that can be achieved from either direction, and where the concentrations of reactants and products are constant. * Infer that a system not at equilibrium will tend to move toward a position of equilibrium. | Multiple Choice:  29, 37, 46, 53  Written Response:  14, 16 |
| B2: Predict, with reference to entropy and enthalpy, whether reacting systems will reach equilibrium.   * Explain the significant of enthalpy and entropy. * Determine entropy and enthalpy changes from a chemical equation (qualitatively). * Predict the results when entropy factors: both favour the products, both favour the reactants, or oppose one another. | Multiple Choice:  22, 23, 30, 38, 54 |
| B3: Apply Le Chatelier’s principle to the shifting of equilibrium.   * Explain the term shift as it applies to equilibria. * Describe shifts resulting from the following: temperature change, concentration change, volume change of gaseous systems. * Explain equilibrium shifts using the concepts of reaction kinetics. * Identify the effect of a catalyst on dynamic equilibrium. | Multiple Choice:  1, 2, 15, 19, 24, 31, 32, 39, 45, 47, 48, 55, 56  Written Response:  6, 11, 18, 20 |
| B4: Apply the concept of equilibrium to a commercial or industrial process.   * Describe the Haber process for the production of ammonia (NH3) | Multiple Choice:  11, 13, 18, 40  Written Response:  8 |