Unit II Test Review: Dynamic Equilibrium

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| **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, 53Written 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, 56Written 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, 40Written Response:8 |