

Quiz for Video 5 – Thermodynamics

1. Entropy is described as a measure of the _____ of a system.
 - a. Disorder
 - b. Order
 - c. Bond Energy
 - d. Free Energy
2. Why is the mixing of two gas samples often associated with a positive entropy change?
 - a. Because the mixture has greater disorder
 - b. Because the energy of the mixture is more evenly distributed
 - c. Because gas samples do not “unmix”
 - d. All of the above
3. Which thermodynamic property of a reaction do we use to determine if it will occur spontaneously?
 - a. Enthalpy change (ΔH)
 - b. Entropy change (ΔS)
 - c. Internal Energy change (ΔE)
 - d. Free Energy change (ΔG)
4. What sign of the value stated in question 3 indicates a spontaneous reaction?
 - a. Positive (+)
 - b. Negative (-)
 - c. Zero
5. Headphones tangling or cards becoming disorganized is a good example of:
 - a. The entropy of the universe increasing
 - b. Spontaneous reactions
 - c. Enthalpic favorability
 - d. Non-spontaneous processes occurring naturally
6. A reaction with a negative enthalpy change ($\Delta H < 0$) and a positive entropy change ($\Delta S > 0$) is:
 - a. Always spontaneous
 - b. Never spontaneous
 - c. Sometimes spontaneous
 - d. Impossible to determine
7. A reaction with a positive enthalpy change ($\Delta H > 0$) and a negative entropy change ($\Delta S < 0$) is:
 - a. Always spontaneous
 - b. Never spontaneous
 - c. Sometimes spontaneous
 - d. Impossible to determine
8. A reaction with a positive enthalpy change ($\Delta H > 0$) and a positive entropy change ($\Delta S > 0$) is non-spontaneous at room temperature. What happens if we increase the temperature dramatically?
 - a. The equilibrium constant will become negative
 - b. The reaction is likely to become spontaneous
 - c. The reaction will slow down
 - d. No change
9. If a reaction is sometimes spontaneous, what external condition determines its spontaneity?
 - a. Air density
 - b. Surface tension
 - c. Temperature
 - d. Altitude