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Crash Course Chemistry #20: Entropy – Embrace the Chaos!

Name: _____ Date: _____

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1. The universe tends naturally toward _____.
2. The Second Law of Thermodynamics states that any spontaneous process increases the _____ of the universe.
3. A _____ process does not require outside energy to keep it going.
4. The scientific term for molecular randomness or disorder is _____.
5. The entropy of a system is a _____ function, meaning it doesn't depend on the path taken.
6. Entropy is denoted by the letter _____ in equations.
7. The change in entropy during a chemical reaction can be calculated similarly to the change in _____.
8. Gibbs Free Energy is represented by the symbol _____.
9. The formula for Gibbs Free Energy is $\Delta G = \Delta H - T\Delta S$.
10. If ΔG is negative, the reaction is said to be _____.
11. A reaction is _____-driven if the $T\Delta S$ term is larger than ΔH .
12. A reaction that increases the total number of gas and liquid molecules typically results in higher _____.
13. In thermodynamics, elements in their most stable form at standard state have a Gibbs Free Energy of formation equal to _____.
14. Reactions tend to move toward the lowest possible _____ state.
15. The units for entropy are typically in _____ per Kelvin.

Crash Course Chemistry #20: Entropy – Embrace the Chaos! KEY

1. The universe tends naturally toward **disorder**.
2. The Second Law of Thermodynamics states that any spontaneous process increases the **entropy** of the universe.
3. A **spontaneous** process does not require outside energy to keep it going.
4. The scientific term for molecular randomness or disorder is **entropy**.
5. The entropy of a system is a **state** function, meaning it doesn't depend on the path taken.
6. Entropy is denoted by the letter **S** in equations.
7. The change in entropy during a chemical reaction can be calculated similarly to the change in **enthalpy**.
8. Gibbs Free Energy is represented by the symbol **ΔG** .
9. The formula for Gibbs Free Energy is $\Delta G = \Delta H - T\Delta S$.
10. If ΔG is negative, the reaction is said to be **spontaneous**.
11. A reaction is **entropy**-driven if the $T\Delta S$ term is larger than ΔH .
12. A reaction that increases the total number of gas and liquid molecules typically results in higher **entropy**.
13. In thermodynamics, elements in their most stable form at standard state have a Gibbs Free Energy of formation equal to **zero**.
14. Reactions tend to move toward the lowest possible **energy** state.
15. The units for entropy are typically in **joules** per Kelvin.

15 Questions

Answer Key Included

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