Reaction Energy Physical Science

Randall Stewart Oct12

1. What is thermochemistry?
2. What are two types of energy? How are they different?
3. What is total energy?
4. What is the law of conservation of energy?
5. What is internal energy?
6. What are three systems of thermodynamics?
7. Describe:
   1. An open system
   2. A closed system
   3. An isolated system
8. What is heat?
9. How does heat affect thermal motion?
10. What is the S.I. unit of energy?
    1. What is a calorie?
11. What is the first law of thermodynamics?
    1. How do you know if energy enters or leaves a system?
12. Some energy can return to surrounding as \_\_\_\_\_\_\_.
13. What is enthalpy?
14. During a chemical reaction, what is used to break bonds?
15. What happens when new bonds are formed?
16. What is an exothermic reaction?
    1. What happens to enthalpy during an exothermic reaction?
    2. What outweighs the energy needed to break bonds during an exothermic reaction?
17. What is an endothermic reaction?
    1. What happens to enthalpy during an endothermic reaction?
    2. What outweighs the energy needed to make new bonds during an endothermic reaction?
18. What happens to heat during an exothermic reaction? During an endothermic reaction?
19. What is heat capacity?
20. What requires more heat? Raising the temperature of a small or a large sample of a substance?
21. What is specific heat capacity?
22. Describe the following in terms of energy supply and whether it is an endothermic or exothermic process.
    1. Vaporization
    2. Melting
    3. Freezing
23. All chemical reactions \_\_\_\_\_\_ or \_\_\_\_\_\_ energy.
24. In exothermic reactions, reactants go to \_\_\_\_\_\_ + \_\_\_\_\_\_.
25. In endothermic reactions, \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_ go to products.
26. What’s the difference between bond making and bond breaking?
27. What is lattice enthalpy?
28. a) In hydration, if the solid dissolves and the solution heats up, it is \_\_\_\_\_\_.

b) In hydration, if the solid dissolves and the solution cools down, it is \_\_\_\_\_\_\_.

1. Describe what happens during dissolving of a solid.
2. Describe what happens during enthalpy of a solution.
3. What is the second law of thermodynamics?
4. What is entropy?
5. What has to happen for dissolving to occur?
6. Describe the difference between freezing and boiling of water.
7. Describe a spontaneous change.
8. Describe a non-spontaneous change.
9. What has to happen for a chemical reaction to be spontaneous?
10. What is dynamic equilibrium?