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Chapter Six Reading Study Guide

1. Give an example of a common chemical reaction from the reading: _____

   _____.
2. Dissolving or change of state are known as a _____.
3. When a candle burns, molecules in the _____ react with _____ in the air.
4. Molecules made of only _____ and _____ are called

   _____.
5. The chemical formula for methane is CH_4. This means that it is made of _____

   _____.
6. The left side of the equation are called _____.
7. The right side of the equation are called _____.
8. The atoms in the _____ come from the atoms in the _____.
9. The same _____ and _____ of atoms are in the reactants as are in the _____.
10. The _____ tells how many of a particular type of _____ there are.
11. The _____ tells how many of a certain type of _____ are in a molecule.
12. The atoms in the _____ end up in the _____ and that no _____ atoms are created and no _____ are destroyed.
13. If you want to change the amount of _____ formed in a chemical reaction, you need to change the _____ of reactants.
14. In general, using more of _____ reactants will result in more of _____ _____ products.
15. Since the _____ was produced from mixing a _____ (baking soda) and a _____ (vinegar), the gas is a _____ _____ formed by the reaction.
16. Another clue that a _____ reaction has taken place is a _____ is formed when two _____ are mixed.
17. When this happens, the solid is called a _____.

18. When two _____ are mixed and a _____ change results, this color change can also be _____ that a chemical _____ has taken place.
19. A _____ change can mean that new molecules have been _____ in a chemical reaction with different _____ that produce different _____.
20. Another _____ that a chemical reaction has occurred is a change in _____ of the reaction mixture.
21. The _____ of a chemical reaction is a _____ of how _____ the reactants are _____ into products.
22. This can be _____ by _____ the temperature of the reactants.
23. For reactant _____ to react, they need to _____ other reactant molecules with enough _____ for the atoms or group of atoms to come apart and _____ to make the products.
24. A _____ which helps _____ up a chemical reaction in this way but does not become a product of the reaction is called a _____.
25. A single molecule of _____ can catalyze the breakdown of a million hydrogen peroxide _____ every second.
26. If you _____ different substances with a particular _____ to see how the substances react, each would _____ in its own characteristic way.
27. Chemical reaction involve _____ bonds in the reactants and _____ new bonds in the products.
28. If a reaction is _____, that means that it takes less _____ to break the bonds of the reactants than is released when the bonds in the products are _____.
29. If the reaction is _____, it takes more energy to break the _____ in the reactants than is _____ when the products are formed.
30. The _____ scale is a way to measure whether the water is _____ or _____.
31. When two _____ molecules bump into each other and _____, a proton from a _____ atom in one of the water molecules gets _____ to the other water molecule.

32. So in the reaction between the two _____ molecules, the one that _____ the extra _____ has one more proton than _____ and changes from H_2O to become the ion H_3O^+.
33. So the water _____ that lost the proton has one more _____ and changes from H_2O to become the ion OH^-.
34. The concentration of the _____in water determines how _____ or _____ a solution is.
35. Pure water is _____ and measures a _____ on the pH scale.
36. If a solution has a _____ concentration of H_3O^+ than OH^-, it is considered an _____.
37. An acid measure _____ then _____ on the pH scale.
38. If a solution has a _____ concentration of H_3O^+ than OH^-, it is considered an _____.
39. A base measures _____ than _____ on the pH scale.
40. Acids are sometimes called " _____ _____".
41. This means that when an _____ is added to _____, the acid molecule _____ a proton to the water molecules forming more H_3O^+.
42. Bases are sometimes called "_____ _____".
43. This means that when a _____ is added to _____, the base molecule _____ a proton from water forming more OH^-.
44. An acid can _____ a base and a base can _____ an acid.
45. This makes sense because if an _____ is a proton _____ and a _____ is a proton _____, they have the opposite effect on water and can cancel each other.
46. There are _____ acids, _____ acids, and _____ in-between.
47. A stronger acid produces a lot of _____in water, while the same amount of a _____ acid produces a smaller amount of H_3O^+ .
48. _____ has to do with the _____ of acid added to a certain amount of water.
49. It is the combination of the _____ and the _____ of an acid that determines the amount of _____ in the solution.

50. Carbon dioxide _____ goes into the ocean and reacts with water to form a weak acid called _____ acid.
51. This extra carbonic _____ affects the _____ of the ocean.
52. The change in ocean _____ has an effect on _____ in the ocean, particularly ones that build shells like _____.
53. The extra _____ from the _____ interacts with the carbonate _____ and changes it so that it can't be used for making _____.