Name: _____ Date: _____

# Chapter 3

1. one of the emergent properties of water; the holding together of hydrogen bonds in order to create a substance

2. the amount of heat that must be absorbed or lost for 1 gram of that substance to change its temperature 1 degree Celsius

3. a liquid that is a completely homogenous mixture of two or more substances

4. a solution in which water is the solvent; water is versatile as a solvent because of its positive and negative molecular structure

5. any substance that has an affinity for water

6. the sum of the weight of all atoms in a molecule

7. Measure of ion concentration in a aqueous solution

8. the clinging of one substance to another

9. energy of motion

10. a form of energy; the measure of matter's total kinetic energy, thus dependent somewhat on volume

11. the amount of heat it takes to raise the temperature of 1 gram of water by 1 degree Celsius; conversely, also the amount of heat that 1 gram of water releases when it cools by 1 degree Celsius

12. quantity of heat required to raise the temperature of 1 kilogram of water by 1 degree Celsius; 1000 of these = 1 calorie

13. occurs as a liquid evaporates when the surface that remains behind cools down; occurs because the molecules with the most kinetic energy are the most likely to leave as a gas; this prevents overheating and maintains stability

14. one of the emergent properties of water; occurs because the liquid form of water is more dense than the solid form of water (ice)

15. the dissolving agent of a solution

16. representative of an exact number (6.02x10^23) of objects

A. molecular weight

B. acid

C. solute

D. Molarity

E. Hydrophobic

F. mole

G. hydrophilic

H. specific heat

I. hydrogen ion

J. evaporative cooling

K. Calorie

L. base

M. adhesion

N. aqueous solution

O. PH

P. insulation by ice

17. atoms that, when combined, have an unequal distribution of electrons; the two ends of this conjunction have opposite charges

18. a measure of how difficult it is to stretch or break the surface of a liquid; water has a great amount of this due to the intricate patterns and layers of hydrogen bonds

19. a measure of heat intensity that represents the average kinetic energy of the molecules, regardless of volume

20. the substance that is dissolved in a solution

21. any substance that does not have an affinity for water; also, a substance that repels water, perhaps because of its inability to form hydrogen bonds

22. the number of moles of solute per liter of solution; unit of concentration most often used by biologists for aqueous solutions

23. a single gained proton of a water molecule with a charge of 1+

24. a substance that increases the hydrogen ion concentration of a solution; donates additional H+ to solutions when dissolved in water

25. a substance that reduces the hydrogen ion concentration of a solution; reduces H+ concentration by accepting H+ ions into itself OR by dissociation to form OH-

26. substances that minimize changes in the concentrations of H+ and OH- in a solution; these allow for a relatively constant pH in biological fluids by accepting H+ ions; most contain a weak acid and its corresponding base

Q. kinetic energy

R. heat

S. cohesion

T. surface tension

U. kcal kilocaorie

V. solvent

W. buffer

X. temperature

Y. solution

Z. Polar molecule