Unit 10: Problem Set 1

Chapter 15 worksheet

1. Why does water bend towards a comb charged with static electricity (electrons)?
2. Describe hydrogen bonding and draw it:
3. How does hydrogen bonding effect vapor pressure (water becoming a gas)?
4. Why is a water droplet round? Explain.
5. What is a surfactant and how does it affect the surface tension of water?
6. What is the difference between the structure of liquid water and ice? How does this explain why ice floats on water?
7. Kool-aid is a type of solution. Identify the parts (solute vs solvent) that make up this solution.
8. How is carbonated water an aqueous solution? Explain.
9. What does “like dissolves like” mean?
10. Gasoline is poured into a glass of oil. Explain why the two substances mix (#9).
11. Which of these substances will dissolve in water? Explain in terms of bonding (ionic-metal+nonmental, covalent-nonmental+nonmetal bond. Note covalent polar share unequally and dissolve in water and covalent nonpolar share electrons evenly and dissolve in oil)

a. CH4

b KCl

c. N2

d. MgSO4

e C12 H22O11 (sugar)

1. Why does sodium chloride (NaCl) conduct electricity while sugar (Cl2H22011)does not? Identify each as an electrolyte or nonelectrolyte.
2. What is a better electrolyte: NaCl or K2S and why?
3. What will happen to the mass of a hydrated crystal (crystal of hydration) when

it is heated? Explain.

1. Many shoes are sold with hygroscopic odor eaters inside. Explain how odor eaters work.
2. How is a colloid different from a suspension? How can you make an emulsion of oil and water?
3. When driving in the fog you can see the beam of your headlights. Why?

What type of mixture is this?