Chemistry Name _____

Date _____ Per ____

#C36: Electrolytes and the Solubility Rules

I. When Things Dissolve. Log on to a computer and go to :

http://nobel.scas.bcit.ca/chem0010/unit9/9.4_solubilityionic.htm

1. What did whoever these people are learn in section 5.1.3 about electrolytes? _____

_____

_____

2. What must water molecules do to get an ionic solid to dissolve? _____

_____

3. In the space to the right, draw a picture of a hydrated ion.

4. Click on the blue "View an animation on Strong Electrolyte, Weak Electrolyte, Non-electrolyte " that's next to the moving chain animation. If you brought ear buds (totally optional) now would be the time to use them.

NOTE: Click the arrow button to get things going. The knowledgeable sounding voice will read the text and the slides will progress on their own. You can pause the presentation at any time by clicking on the button with the two vertical lines. Then you can make it continue by clicking on the arrow button.

a. What does it mean when the light bulb lights? _____

_____

b. To make the salt break apart, or dissolve in water, the _____ end of the water molecules is attracted to the _____ chloride ions and the _____ end of the water molecules is attracted to the _____ sodium ions.

c. To "dissociate" means to break apart into ions. Consider the chart that's on the side of the animation. Does sodium chloride completely dissociate in water? _____. NaCl is a _____ electrolyte.

d. Hydrofluoric acid, HF, is a _____ acid, which means it only _____

ionizes in water. What does the light bulb do when HF is poured in? _____

_____ . HF is a _____ electrolyte.

e. "At equilibrium" means all the dissolving that's going to happen has happened. When a solution of HF is at equilibrium, are there more HF molecules floating around that are still together or are there more HF molecules floating around that have dissociated? ("Conjugate base" just means a negative ion that used to be attached to an H ion. Don't worry about it.)

_____

f. Methanol (aka methyl alcohol) **does/does not** dissociate in water (circle one).

What does the light bulb do when methanol is poured in? _____

g. So how is it that methanol dissolves in water? _____

_____

_____

_____

5. Now go to
http://www.northland.cc.mn.us/biology/Biology1111/animations/dissolve.html
for a recap of the dissolving process with one new term:

a. What keeps the positive and negative ions from getting back together?

_____

6. Finally, one of my favorite animations. Go to:
http://www.chemistry.ohio-state.edu/betha/nealChemBal/

a. Write the balanced equation depicted by the animation:

_____

II. When Things May Or May Not Dissolve: The Solubility Rules

1. Go to **http://web.acsalaska.net/~ray.depalatis/** and click on the yellow "Five Types of Reactions Review" Button. That will take you to a great site called "Penn Manor Chemistry". Click on the blue "Rules" button to find the Solubility rules. Use those rules to complete worksheet # C37.