Solutions Study Guide

1. What's the difference between a 1M solution and a 1m solution? How were they made differently?

2. What do ionic compounds form in solution? Covalent compounds?

3. What 3 factors affect solubility? Explain the effects.

4. How does soap work?

5. What is the most important solvent in the world?

6. What 4 factors affect the rate of solubility?

7. How does road salt work?

8. How do nerve impulses work?

9. Use the solubility table on page 443 in your book
    a. some lines curve up, what does this mean?

    b. some lines curve down, what does this mean?

    c. What do you notice is different between the lines that go up and those that go down (phase)

10. Know all of your vocab words!

Molarity Problems

11. Determine the mass of the solute in a 0.326 L sample of 0.51 M solution of sucrose and water.

12. What is the molarity of a 1.5L solution containing 102 g of NaCl?

13. 550 mL of a 9.4 M solution of $CaCl_2$ contains how many moles $CaCl_2$ were used to make this. When placed in water, it will dissociate into its ions. How many moles of Ca^{2+} and Cl^- ions will be made?

14. You have 0.90 moles of Sucrose ($C_{12}H_{22}O_{11}$), and add 1.00 Kg of H_2O. A). What is the molality of the solution you made? B). What would the boiling point of the solution be afterward?

15. Find the boiling points *and* freezing points of the following solutions, assuming you have 950 mL of water.
    1. 1.88 mol Sucrose

2. 1.88 mol NaCl

3. 1.88 mol $Al(C_2H_3O_2)_3$

16. Calculate the volume of 0.400 M NaOH required to react with 30.0 grams of acetic acid. The equation is:
_____NaOH(aq) + _____$HC_2H_3O_2$(aq) -------> _____$NaC_2H_3O_2$(aq) + _____H_2O

17. Calculate the number of grams of AgCl formed when 0.100 L of 0.250 M $AgNO_3$ reacts with an excess of $CaCl_2$. The equation is:
_____$AgNO_3$(aq) + _____$CaCl_2$(aq) -------> _____AgCl(s) + _____$Ca(NO_3)_2$(aq)

18. Calculate the mass of $BaSO_4$ formed when excess 0.700 M Na_2SO_4 solution is added to 0.850 L of 0.550 M $BaCl_2$ solution
_____Na_2SO_4 + _____$BaCl_2$ --> _____BaSO4 + _____NaCl

19. How are hygroscopic and deliquescent similar/different?