MAKING SOLUTIONS

NOTES

When making solutions start by weighing out the appropriate amount of solid. If you are using weigh paper, fold the paper into quarters so that it acts as a "weigh boat" on the balance. Then you can make the paper into a funnel and put the solid carefully into the container. Lastly, you can add distilled water up to the appropriate line for the amount of solution needed. Hint: do not trust the measurements on the sides of flasks or beakers. To be sure, you must measure each solution in a graduated cylinder.

To make a % (mass percent) solution...
>   **Remember mass solute/mass solution x 100**

To make a M (molar) solution...
>   **Remember moles solute in grams/Liter of solution**

To dilute solutions...
>   **Remember $C_1 V_1 = C_2 V_2$**

PROBLEMS—solve the following at the bottom of the page or on your own paper. You will need a periodic table.

1. a. How much NaCl do you need to make 1L of a 1M solution?
   b. How would you use that amount to make the solution? Describe in as much detail as possible.
   c. How would making a 5M solution be different? Explain.
   d. What % is that 1M solution? HINT: think about your solution in terms of g/ml. Then remember that % solution is #g/100ml.

2. a. How much glucose ($C_6H_{12}O_6$) would you need to make 1L of 5% glucose solution?
   b. Explain in detail how you would make the solution.
   c. How would making 100ml of that solution be different? Explain.
   d. What is the molarity of your solution? HINT: consider how many moles you have, and how many liters, and remember that molarity is mol/L.

3. a. If you have 5L of 10% NaCl, and you want to have a final concentration of 5% NaCl, how much of the final solution will you obtain if you use all of your starting solution?
   b. How much water will you need to add?
   c. What molarity is this solution?