Solutions Quiz

1. You need to make a 1.0 M solution of copper (II) sulfate in 100 mL of water. Explain how you would make this solution in the lab. Include the math you need to do and the proper tools required at each step.

2. The solution made in question 1 is your stock solution. Now you need to dilute this stock solution to 0.5 M in 50 mL. Explain how you would make this solution in the lab. Include the math you need to do and the proper tools required at each step.

3. Using Table G, are the following solutions saturated, unsaturated, or supersaturated?

a.) A solution with 50.0 g of KNO3 (per 100 g H2O) at 10 C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.) A solution with 90 g of sodium nitrate (per 100 g H2O) at 40 C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c.) A solution with 10.0 g of NH3 (per 100 g H2O) at 90 C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Determine if the following substances are ionic, polar, or nonpolar. (Note: it may be helpful to draw Lewis dot diagrams)

HCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

O2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CCl4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CO2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

MgCl2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Circle two substances in question 4 that will form a solution when mixed together.