**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_**

**Molarity & Solution Practice**

1 a. What is the molarity of a solution made by dissolving 2.0 mol of solute in 6.0 L of solution?

1b. Determine the molarity of a solution prepared by dissolving 141.6 g of citric acid C3H5O(COOH)3 in water and then diluting the rest of the solution to 3500.00 mL and identify the solute and solvent.

1c. What is the molarity of a salt solution made by dissolving 280.0 mg of NaCl in 2.00 mL of water and identify the solute and solvent.

1d. What is the molarity of a solution that contains 390.0 g of acetic acid CH3COOH, dissolved in enough acetone to make 1000.00 mL of solution and identify the solute and solvent.

1e. What is the molarity of a solution that contains 63.0 g of HNO3 in a 0.500 kg H2O?

1f. What is the molarity of a solution that contains 0.500 mol HC2H3O2 in 0.125 kg H2O?

1g. What mass of water is required to dissolve 100. g NaCl to prepare a 1.50 m solution?

1h. What mass of H2SO4 must be dissolved in 2.40 kg H2O to produce 1.20 m solution?

2a. Explain how you would make 450 mL of a 0.250 M NaOH solution.

2b. How many grams of calcium chloride will be needed to make 750 mL of a 0.100 M CaCl2 solution?

2c. Explain why this experimental procedure is incorrect: To make 1.00 L of a 1.00 M NaCl solution, I will dissolve 58.5 grams of sodium chloride in 1.00 L of water

*Use attached solubility graph for the following.*

3a. When the temperature is 70˚C and there is 40 grams of potassium chlorate dissolved in 100 mL of water, is the solution unsaturated, saturated, or supersaturated? How do you know?

3b. What substance’s solubility does not appear to increase greatly as the temperature increases?

3c. Which substance is most soluble at 0˚C?

3d. Which substance is least soluble at 0˚C?

3e. Which two substances have the same solubility at 71˚C?

3f. What is the most potassium nitrate that can be dissolved in 100 g of water at 70˚C?



Selected Answers:

1. a. 0.33 M b. 0.2106 M c. 2.40 M d. 6.497 M e. 2.00 M f. 4.00 m g. 1.14 g H2O

h. 282 g H2SO4 2. b. 8.32 grams