

Name \_\_\_\_\_ Chem 163 Section: \_\_\_\_\_ Team Number: \_\_\_\_\_

### *Measuring the pH of Salt Solutions Using a Computer pH Simulation*

#### Instructions:

1. To begin this activity go to click on the link "[Computer Simulation: pH of Acids, Bases and Salts](#)" located under ALE 13 at the Chem 163 website
2. To select a salt solution, at the bottom left-hand corner of the page select a salt solution from the list: salt I, salt II or salt III
3. Carryout the following 3 activities

#### **Activity 1. Comparing the pH of 0.50 M NaCl with 0.050 M NaCl**

Compare the pH of 100.0 ml of 0.500 M, NaCl pH = \_\_\_\_\_ to the pH of 100.0 ml of 0.0500 M, NaCl pH = \_\_\_\_\_. Does this seem right to you? Explain.

#### **Activity 2. Comparing the pH of 0.50 M NaNO<sub>3</sub> with 0.50 M Na<sub>2</sub>CO<sub>3</sub>(aq)**

Compare the pH of 50.0 mL 0.50 M sodium nitrate, NaNO<sub>3</sub> (aq) pH = \_\_\_\_\_ to the pH of 50.0 mL 0.500 M sodium carbonate, Na<sub>2</sub>CO<sub>3</sub> (aq) pH = \_\_\_\_\_. Which salt is more basic? Explain your finding.

#### **Activity 3. Predicting if a Salt Solution is Acidic, Neutral or Basis**

Use the computer simulation to design a series of experiments that will allow you to identify the following salt solutions using one of these terms: acidic, basic, or neutral. Write an equation that supports your answer showing how H<sup>+</sup>, OH<sup>-</sup> or neither is generated.

a. NaCN(aq)

b. Na<sub>3</sub>PO<sub>4</sub>(aq)

c. NH<sub>4</sub>Cl(aq)

d. NH<sub>4</sub>C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>(aq)

e. NaHCO<sub>3</sub>(aq)