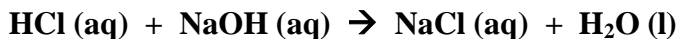


## Experiment: Acids, Bases and Buffers

### *Pre-lab exercise* KEY

1. In a balanced molecular/formula equation, describe the neutralization reaction that takes place between hydrochloric acid solution and sodium hydroxide solution. Include physical states of all substances.



2. Which indicator will be used in this lab activity?

**THYMOL BLUE WILL BE USED AS AN INDICATOR IN THIS LAB ACTIVITY.**

3. What colors would one expect to see if the indicator specified in Q#2 were present in the following solutions:

- a. A basic solution      **BLUE**
- b. A neutral solution    **YELLOW**
- c. An acidic solution    **PINK**

4. When reading a volume using a burette, how many decimal places should be used?

**TWO DECIMAL PLACES**

5. As sodium hydroxide is added to hydrochloric acid, what would one expect to happen to the pH of the mixture? Will it increase, decrease, or remain unchanged?

**THE pH SHOULD INCREASE, AS THE SOLUTION BECOMES MORE BASIC/LESS ACIDIC DUE TO THE ADDED BASE.**

6. What is molarity? How is it determined?

**MOLARITY IS ONE WAY OF EXPRESSING THE CONCENTRATION OF A SOLUTION. IT IS DETERMINED BY DIVIDING THE NUMBER OF MOLES OF THE SOLUTE BY THE VOLUME, IN LITER, OF THE SOLUTION.**

7. Provide a definition for a buffered solution.

**A BUFFERED SOLUTION IS RESISTANT TO CHANGE IN ITS pH, EVEN WHEN A STRONG ACID/BASE IS ADDED TO IT.**

8. What should be done with the wastes from this lab?

**WASTES CAN BE DISPOSED OF IN THE SINK, FOLLOWED BY FLUSHING WITH WATER.**