Acid/Base Lab

Pre-lab ?’s:

1. Compare and contrast the properties of an acid and base reference chapter 18 and 19. Make a table to organize your findings.
2. What does pH stand for?
3. What is the pH scale? Draw a pH scale below and label specific examples of weak and strong acids, weak and strong bases, and something neutral.
4. What are pH indicators? Reference the table of pH indicators in your textbook (CH18/19). What is the color and range of litmus paper? What is the color and range of phenolphthalein?
5. What are the products when an acid reacts with a base in equal quantities?
6. Write out the chemical equation for the reaction of sulfuric acid and lithium hydroxide.
7. What are the nomenclature rules for acids?
8. What type of bond does an acid have?
9. Give the formula for a strong base.
10. What type of compound is sodium hydroxide?
11. Write out the chemical equation for the reaction of ammonia and water.

Purpose of the lab:

To determine the pH range and colors indicated by Universal indicator. Support your conclusions with lab data.

Procedure:

Wear safety glasses and a lab apron.

1. Clean the glass tube and stoppers with tap water
2. Fill 3/4 glass tube with distilled water using your wash bottle.
3. Add approximately 1mL of universal indicator to each end of the glass tube and mix thoroughly by inverting the tube back and forth.
4. Record the color of the universal indicator in distilled water.
5. Add one drop of hydrochloric acid to one end of the tube, record observations, invert the tube and add one drop of sodium hydroxide to the other end invert the tube and record observations. Do not mix!
6. Think analytically and determine the pH range with color indicated for universal indicator. Share your results with the teacher.
7. Test your hypothesis by adding a drop of acid or base to the tube. Record results and determine if the results support your hypothesis.
8. Clean up by emptying your tube into the sink and flushing the tube and stoppers with tap water.
9. Wash your hands.

Post-lab ?’s:

1. Make a data table to record the results of the lab.
2. Record the color and pH range of Universal indicator.
3. Write the chemical equation for the acid and base used in the lab. What are the products of this reaction?
4. Create a list of uses for universal indicator.