**What is the pH of common solutions?**

**Virtual Lab**

**Objectives**

The pH of a solution is a measurement of how acidic (or basic) the solution is. One way to measure pH is to use pH paper. The range of pH values is from 0 to 14. A solution which is acidic has a pH below 7. A solution which is neutral has a pH of 7. A solution which is basic has a pH above 7. When pH paper is dipped into a solution, the paper changes colour depending on the degree of acidity.

In this virtual lab, you will:

* Predict the pH value of common solutions
* Use pH paper to determine the pH value of the solutions
* Determine whether a solution is acidic, neutral or basic

**Procedure:**

1. Open Virtual Lab by going to class website and click on hyperlink underneath "Virtual Lab 3", and then clicking on “Start Part 1”
2. On the Data Table (*next page*), record the 6 solutions you are given to test.
   1. Predict the pH value of each solution under the heading "Prediction"
3. Testing pH of solutions
   1. Click and drag a slip of pH the paper into the 1st test tube
      1. Match its colour on the scale of pH values
      2. Use up and down arrows on "pH Value Counter" to record the determined pH of the solution
   2. Repeat steps a.i) and a.ii) for the remaining five solutions
4. Verifying the pH of tested solutions
   1. Once all solutions have been tested and their pH values have been set in the "pH Value Counter", click the "Check" button at the bottom of the page.
   2. If the pH value of the solutions are incorrect, the pH value is highlighted in yellow.
      1. Re-test the solution with pH paper and re-record the data
      2. Click the "Check" button at the bottom of the page to verify re-tests
5. Once your data has been verified, determine whether the tested solutions are acids, bases or neutral

\*\***Note, you are printing/e-mailing PAGE TWO ONLY\*\***

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Data Table**

pH Values of Common Solutions

|  |  |  |  |
| --- | --- | --- | --- |
| **Solutions** | **Predicted pH Value** | **Actual pH Value** | **Type of Solution** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
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**Questions**

1. What facts did you use to predict the pH values of the solutions?

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1. How did your predicted pH values for each of the common solutions compare with the actual pH values for those solutions?

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1. Of the six solutions you tested, which was the most acidic?

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1. Of the six solutions you tested, which was the most basic?

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1. Of the six solutions you tested, which was the closest to neutral?

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1. Milk of magnesia is sometimes used as a remedy for an "acid stomach". Would you expect the pH of milk of magnesia to be less than 7, more than 7 or 7? Why?

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1. Think of two real-world applications in which pH is an important factor and explain why.

1st application: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reason: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2nd application: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reason: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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