

Name _____ Date _____ Period _____

Acids & Bases Ws #2: Introduction to Acids and Bases

Properties of Acids and Bases (page 562-565)

Acids were first recognized as substances that taste _____. The acid found in lemons and limes is _____ acid. Vinegar is a dilute solution of _____ acid. The stomach produces _____ to aid in digestion. Bases have a _____ taste. Dilute bases feel _____. You encounter this property of aqueous bases whenever you wash with _____.

According to the Arrhenius model of acids and bases, Acids are substances that produce _____ ions in solution. Bases are substances that produce _____ ions in solution.

In the Brønsted-Lowry model, an acid is a proton (H^+) _____, and a base is a proton _____. A conjugate acid-base pair consists of two substances related to each other by the _____ and _____ of a single proton. The conjugate acid is the substance formed when a proton is added to the _____. The conjugate base is the remaining substance when a proton is lost from an _____. When a water molecule accepts a proton it becomes a _____ ion (H_3O^+). The conjugate base for $HClO_4$ is _____ and the conjugate base for H_3PO_4 is _____.

Water as an acid and a base (page 569)

Water is an _____ substance. This means that it can behave as either an _____ or a _____. In the self ionization of water, a proton is transferred from one water molecule to _____. This creates a hydronium ion (_____) and a _____ ion (OH^-). In pure water, only a tiny amount of the water molecules self ionize. The concentration of these ions in pure water, at $25^\circ C$ is _____.

To simplify the notation involving H_3O^+ , we often write the ion as just _____. In any aqueous solution, the product of the $[H^+]$ and $[OH^-]$ must always equal _____. This means that if the $[H^+]$ goes up the $[OH^-]$ must go _____.

There are three possible situations we might encounter in an aqueous solution. If we add an acid to the water, we get an _____ solution because we have a greater _____ than $[OH^-]$. If we add a base to water, the $[OH^-]$ will be greater than the _____. This is a _____ solution. If we have an equal concentration of H^+ and OH^- ion, then we have a _____ solution.

The pH scale (page 573)

To express small numbers conveniently, chemists often use the "p scale" which is based on common _____ or base 10 _____. Because the $[H^+]$ in an aqueous solution is typically quite small, using the _____ scale is a convenient way to represent acidity. The pH scale, which has a range from _____ to _____, On this scale 0 is strongly _____, 14 is strongly _____, and 7 is _____.

Measuring pH scale (page 579)

The traditional way of determining the pH of a solution is by using _____. These are substances that exhibit different _____ in acidic and basic solutions. Indicator papers are strips of paper coated with a combination of _____ that turn specific colors for each _____ value. A pH _____ contains a probe that is very sensitive to the $[H^+]$ in a solution and produces a _____ that appears as a pH reading on the meter.