Solutions, Water, and Acids/Bases Test Review KEY

1. What is a homogeneous mixture?

A mixture where two or more materials are evenly distributed and can not be separated by physical means.

1. What is a solution? Give an example?

A homogeneous mixture made of a solute dissolved in a solvent. Ex. Salt water, Kool-aid, food coloring in water.

1. Give an example of a gas solution?

Soda- Carbon dioxide is the solute, and is mixed evenly throughout the solvent of water and syrup.

1. What does dilute mean?

The opposite of concentrated, dilute refers to a mixture that doesn’t have much solute per volume of solvent. The solute particles are space out a lot in a dilute solution.

1. If you mix salt and water into salt water, which is the solvent and which is the solute?

Salt = solute; water = solvent

1. What is the way (ways) you can increase the dissolving rate?

Increase the temperature, stir or agitate the mixture, and/or grind up the solute to increase surface area

1. What increases the rate of solubility in a gas?

Increased pressure and decreased temperature

The opposite is when your soda goes flat. This is a *decrease* of gas solubility, and occurs when you open the can (decreased pressure) or leave it somewhere hot (increased temperature).

1. What type of solutes dissolves well in water?

‘Like dissolves like’- Water is polar, so it will dissolve polar solutes well.

1. What does unsaturated, saturated, and supersaturated mean?

* Unsaturated- You have dissolved some solute into the solution, but the solvent can hold more.
* Saturated- The solvent has dissolved all the solute it can. Any additional particles will be fall to the bottom.
* Supersaturated- This solution holds more solute that would typically be possible. It is created by heating a solution, adding the saturation amount of solute, and then cooling it back down. Ex. Super sweet tea.

1. What is the first step of the dissolving process?

Direct contact between the solvent and the solute. This is why increasing surface area helps.

1. Why is water considered the universal solvent?

It can dissolve a wide variety of solutes because its polar quality allows it to attract and separate ions of positive AND negative charges. This makes it useful in most situations.

1. What is a base?

A base is a substance that will accept a hydrogen after reacting with water, and form a hydroxide ion (-OH-1). Their properties include a slippery touch, bitter taste, and a pH of 8-14.

1. What is an acid?

An acid is a substance that will donate a hydrogen after reacting with water, and form a hydronium ion (H3O+). Their properties include a sour taste, and a pH of 0-6.

1. Draw the pH Scale and put an example for each area of the scale.

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0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

0-6 = acidic Ex. Lemon juice

7 = neutral Ex. Water

8-14 = basic Ex. Cleaners

1. What does the pH Scale measure?

The pH scale measure the number of hydrogen ions. 0 end contains the most, hence the acids are there. 14 end has the lowest concentration of hydrogen ions, so it’s the basic end.