## Honors Biology- Properties of Water and Solutions Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How do polar molecules form hydrogen bonds?

2. Circle all hydrogen bonds in the picture below. Indicate the δ+ and δ- ends of the water molecule.

 

3. What are three unique properties of water?

4. Complete the chart below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Substance** | **Acid, Base, Neutral** | **Substance** | **Acid, Base, Neutral** |
| pH=2.5 |  | High concentration of OH- |  |
| low concentration of H+ |  | Low concentration of OH- |  |
| pH = 7 |  | pH =12 |  |
| pH=10 |  | Equal amounts of H+ and OH- |  |

5. Identify the solute and the solvent in the following scenarios.

 a. Suzy makes lemonade by adding lemon juice, sugar and water together.

 Solute:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Solvent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. Ben makes seltzer water with his new Soda Stream machine.

 Solute: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Solvent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_