

## Section 2-2 Properties of Water (pages 40-43)



### Key Concepts

- Why are water molecules polar?
- What are acidic solutions? What are basic solutions?

### The Water Molecule (pages 40-41)

1. Is the following sentence true or false? A water molecule is neutral. \_\_\_\_\_
2. Why is a water molecule polar? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
3. Circle the letter of each sentence that is true about hydrogen bonds.
  - a. A hydrogen bond is stronger than an ionic bond.
  - b. The attraction between the hydrogen atom on one water molecule and the oxygen atom on another water molecule is an example.
  - c. A hydrogen bond is stronger than a covalent bond.
  - d. They are the strongest bonds that form between molecules.
4. Complete the table about forms of attraction.

#### FORMS OF ATTRACTION

Form of Attraction	Definition
Cohesion	
Adhesion	

### Solutions and Suspensions (pages 41-42)

5. What is a mixture? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
6. A mixture of two or more substances in which the molecules of the substances are evenly mixed is called a(an) \_\_\_\_\_.
7. The greatest solvent in the world is \_\_\_\_\_.
8. What is a suspension? \_\_\_\_\_  
 \_\_\_\_\_

9. Complete the table about substances in solutions.

**SUBSTANCES IN SOLUTIONS**

Substance	Definition	Saltwater Solution
Solute		
		Water

**Acids, Bases, and pH (pages 42–43)**

10. Why is water neutral despite the production of hydrogen ions and hydroxide ions?

\_\_\_\_\_

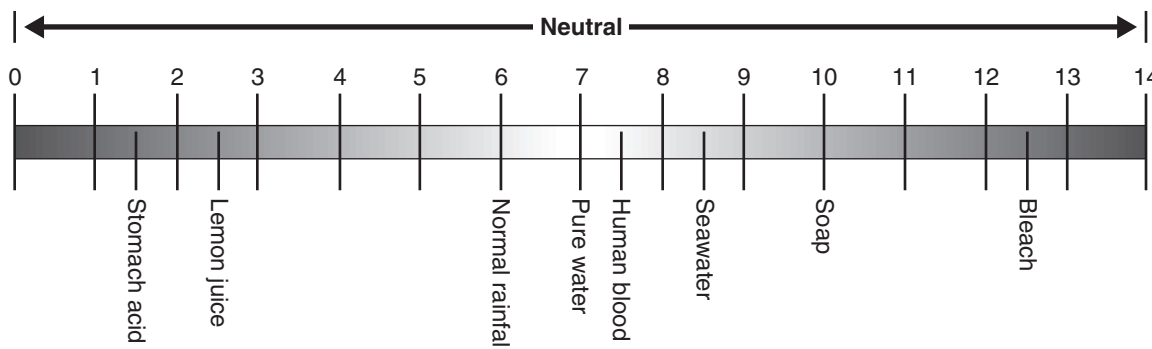
\_\_\_\_\_

\_\_\_\_\_

11. What does the pH scale indicate? \_\_\_\_\_

\_\_\_\_\_

12. On the pH scale below, indicate which direction is increasingly acidic and which is increasingly basic.



13. How many more H<sup>+</sup> ions does a solution with a pH of 4 have than a solution with a pH of 5? \_\_\_\_\_

14. What is an acid? \_\_\_\_\_

15. Is the following sentence true or false? Strong bases have pH values ranging from 11 to 14. \_\_\_\_\_

16. What are buffers? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_