

Water and Solutions
Section Review

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The Big Idea!

Life processes depend on the properties of water and the characteristics of solutions.

Concepts

- Life’s chemical reactions all occur in water solutions. Because water is a polar molecule, it can dissolve many kinds of molecules.
- For an organism to function properly, the degree of acidity, or pH, of internal fluids such as blood must be maintained within a narrow range.

Words

solution acid base pH value

PART A

1. What is a solution?

2. What is a solute? A solvent?

3. Why is water often called the “universal solvent”?

4. What is cohesion?

5. What role does cohesion play in transporting water molecules to the leaves high up in tall trees?

6. Why does ice float in water?

7. How do acids, bases, and salts differ?

8. What is the pH scale used for?

PART B Use Figure 2.22 to complete the following table.

Substance	pH of Standard Solution	Acid or Base	Ion Produced in Water	Relative Strength
Lime water	9.4	1.	OH^-	2.
Vinegar	3.	4.	H^+	5.
Saliva	6.2	acid	6.	weak
Bleach	7.	8.	OH^-	9.
Battery acid	10.	acid	11.	12.

PART C Match each term or phrase in Column A with the phrase in Column B that best describes it. Write the letter of the correct response on the line provided.

COLUMN A

- _____ 1. strong acid
- _____ 2. weak base
- _____ 3. neutral substance
- _____ 4. a base
- _____ 5. water
- _____ 6. cohesion
- _____ 7. solution
- _____ 8. solvent
- _____ 9. salt
- _____ 10. acid rain

COLUMN B

- a. has a pH of 7
- b. uniform mixture of two or more substances
- c. results from the burning of fossil fuels
- d. substance with a pH of 8
- e. substance with a pH of 1
- f. produces neither H^+ nor OH^- ions when dissolved in water
- g. the "universal solvent"
- h. produces OH^- ions in water
- i. "sticking together"
- j. substance in which solute dissolves