

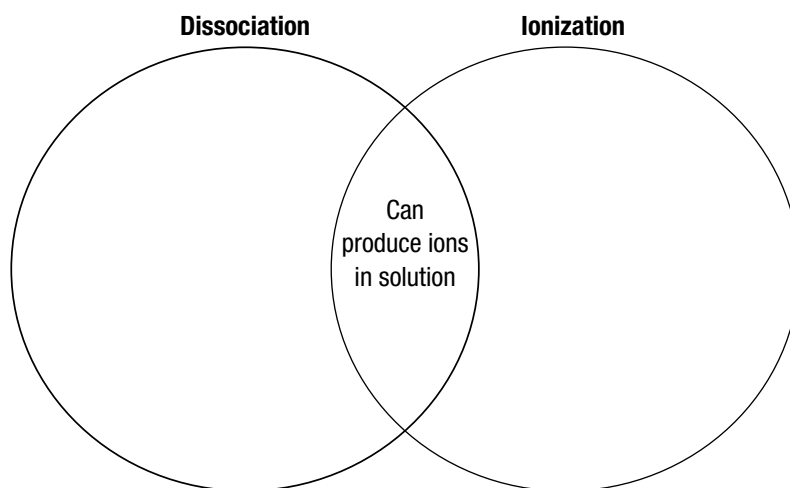
Chapter 8 Solutions, Acids, and Bases

Section 8.1 Formation of Solutions**(pages 228–234)**

This section explains the parts of a solution, the processes that occur when compounds dissolve, and how the properties of a solution compare with those of its solvent and solute.

Reading Strategy (page 228)

Comparing and Contrasting Contrast dissociation and ionization by listing the ways they differ in the Venn diagram below. For more information on this reading strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

**Dissolving (page 229)**

- Define a solution. _____

- Circle the letter that identifies a substance whose particles are dissolved in a solution.
 - solvent
 - solite
 - solid
 - ion
- Circle the letter that identifies the solvent in air.
 - oxygen
 - carbon dioxide
 - nitrogen
 - argon
- The process in which an ionic compound separates into ions as it dissolves is called _____.
- The process in which particles dissolve by breaking apart and scattering is called _____.
- A(n) _____ is transferred from each HCl molecule to a water molecule when hydrogen chloride gas dissolves in water.
- Is the following sentence true or false? Dissolving by ionization is a physical change. _____

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Properties of Liquid Solutions (page 231)

8. What physical properties of a solution can differ from those of its solute and solvent?
 - a. _____
 - b. _____
 - c. _____
9. Compare the conductivities of solid sodium chloride and saltwater. _____

10. Circle the letters that identify what happens to water as it freezes.
 - a. The water molecules become more organized.
 - b. The water molecules become more disorganized.
 - c. The water molecules ionize.
 - d. The water molecules arrange themselves in a hexagonal pattern.

Heat of Solution (page 232)

11. Dissolving sodium hydroxide in water is a(n) _____ process, as it releases heat.
12. Dissolving ammonium nitrate in water is a(n) _____ process, as it absorbs heat.
13. Is the following sentence true or false? Breaking the attractions among solute particles and the attractions among solvent particles releases energy. _____
14. Describe heat of solution. _____

Factors Affecting Rates of Dissolving (page 234)

15. How are rates of dissolving similar to rates of chemical reactions?

16. Why does powdered sugar dissolve in water faster than granulated sugar? _____

17. Heating a solvent _____ the energy of its particles, making them move faster on average, and _____ the rate at which a solid solute can dissolve in the solvent.
18. Explain how stirring or shaking a mixture of powdered detergent and water can affect the rate of dissolving. _____

