

## Assessment

**Acids and Bases****Section Quiz: Properties of Acids and Bases**

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- \_\_\_\_\_ 1. A strong acid
- ionizes completely in solution.
  - produces hydronium ions in solution.
  - reacts with metals that are more active than hydrogen.
  - All of the above
- \_\_\_\_\_ 2. When a solution of hydrochloric acid, HCl, reacts with zinc, which of the following substances is a reactant?
- $\text{Cl}^-$
  - $\text{H}^+$
  - $\text{H}_3\text{O}^+$
  - $\text{H}_2\text{O}$
- \_\_\_\_\_ 3. Which of the following characteristics describes a base?
- reacts with oils in the skin and converts them to acids
  - forms alkaline solutions
  - is a nonelectrolyte
  - None of the above
- \_\_\_\_\_ 4. Which of the following substances is a weak base?
- $\text{NH}_3$
  - KOH
  - $\text{K}_2\text{O}$
  - NaOH
- \_\_\_\_\_ 5. Strong acids are
- strong electrolytes.
  - weak electrolytes.
  - nonelectrolytes.
  - nonionized.

**Section Quiz, *continued***

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- \_\_\_\_\_ **6.** Hydroxides of Group 1 metals
- a.** are all strong bases.
  - b.** are all weak bases.
  - c.** are all acids.
  - d.** do not dissociate in solution.
- \_\_\_\_\_ **7.** Strong bases are
- a.** strong electrolytes.
  - b.** weak electrolytes.
  - c.** nonelectrolytes.
  - d.** also strong acids.
- \_\_\_\_\_ **8.** Which of the following is *not* a strong acid?
- a.** HCl
  - b.** H<sub>2</sub>SO<sub>4</sub>
  - c.** CH<sub>3</sub>COOH
  - d.** HBr
- \_\_\_\_\_ **9.** A highly polar molecule that contains a weak bond between a hydrogen atom and another element would be
- a.** a weak acid.
  - b.** unable to ionize completely.
  - c.** a nonelectrolyte.
  - d.** a strong acid.
- \_\_\_\_\_ **10.** An Arrhenius acid is a chemical compound that
- a.** does not conduct electricity.
  - b.** increases the concentration of H<sup>+</sup> ions in solution.
  - c.** reacts with water to remove H<sup>+</sup> ions.
  - d.** dissociates to release OH<sup>-</sup> ions in solution.

## 12 Solutions

### Section: Types of Mixtures

- |      |       |
|------|-------|
| 1. a | 2. b  |
| 3. c | 4. b  |
| 5. d | 6. c  |
| 7. a | 8. a  |
| 9. b | 10. c |

### Section: The Solution Process

- |      |       |
|------|-------|
| 1. d | 2. a  |
| 3. d | 4. c  |
| 5. a | 6. c  |
| 7. a | 8. d  |
| 9. d | 10. d |

### Section: Concentration of Solutions

- |      |       |
|------|-------|
| 1. c | 2. a  |
| 3. a | 4. d  |
| 5. c | 6. d  |
| 7. a | 8. d  |
| 9. b | 10. c |

## 13 Ions in Aqueous Solutions and Colligative Properties

### Section: Compounds in Aqueous Solutions

- |      |       |
|------|-------|
| 1. d | 2. a  |
| 3. a | 4. c  |
| 5. a | 6. d  |
| 7. c | 8. a  |
| 9. b | 10. b |

### Section: Colligative Properties of Solutions

- |      |       |
|------|-------|
| 1. b | 2. b  |
| 3. d | 4. b  |
| 5. c | 6. a  |
| 7. c | 8. b  |
| 9. c | 10. b |

## 14 Acids and Bases

### Section: Properties of Acids and Bases

- |      |       |
|------|-------|
| 1. d | 2. c  |
| 3. b | 4. a  |
| 5. a | 6. a  |
| 7. a | 8. c  |
| 9. d | 10. b |

### Section: Acid-Base Theories

- |      |       |
|------|-------|
| 1. c | 2. b  |
| 3. a | 4. b  |
| 5. b | 6. a  |
| 7. d | 8. c  |
| 9. b | 10. d |

### Section: Acid-Base Reactions

- |      |       |
|------|-------|
| 1. c | 2. c  |
| 3. c | 4. d  |
| 5. b | 6. c  |
| 7. d | 8. c  |
| 9. a | 10. a |

## 15 Acid-Base Titration and pH

### Section: Aqueous Solutions and the Concept of pH

- |      |       |
|------|-------|
| 1. d | 2. d  |
| 3. d | 4. b  |
| 5. c | 6. b  |
| 7. a | 8. b  |
| 9. d | 10. d |

### Section: Determining pH and Titrations

- |      |       |
|------|-------|
| 1. d | 2. b  |
| 3. c | 4. a  |
| 5. c | 6. b  |
| 7. b | 8. b  |
| 9. c | 10. a |

## 16 Reaction Energy

### Section: Thermochemistry

- |      |       |
|------|-------|
| 1. d | 2. a  |
| 3. b | 4. a  |
| 5. c | 6. c  |
| 7. c | 8. b  |
| 9. c | 10. b |

### Section: Driving Forces of Reactions

- |      |       |
|------|-------|
| 1. b | 2. a  |
| 3. d | 4. a  |
| 5. b | 6. a  |
| 7. a | 8. b  |
| 9. c | 10. d |