

CHAPTER 8 PRACTICE QUESTIONS

Directions: Review what you just learned in this chapter and test your comprehension with these practice questions. Answers can be found directly after the questions.

Acids and bases

1. State whether each of the following substances are either an acid, base, or salt. Then write an equation that show its dissociation in water.
 - a. CaCl_2
 - b. LiOH
 - c. HClO_4
2. All of the following are strong acids EXCEPT:
 - A) HCl
 - B) HNO_3
 - C) H_2SO_4
 - D) H_3PO_4
3. What is the conjugate base of HCO_3^- ?

pH scale

4. Which of the following substances has the highest pH?
 - A) Soda
 - B) Blood
 - C) Detergent
 - D) Lemon juice

pH calculations

5. A 500. mL solution contains 0.05 mol of sodium hydroxide.
 - a. What is the pH of the solution?
 - b. If one drop of phenolphthalein indicator is added to the solution, what color will the solution be?
6.
 - a. What is the hydrogen ion concentration of an aqueous HCl solution that has a pH of 4.5?
 - b. What is the hydroxide concentration of the same solution?

Titrations

7. 25.00 mL of 0.50 M hydrobromic acid solution is titrated with 0.455 M potassium hydroxide solution.
 - a. Write both the full and net ionic equations for the reaction described above.
 - b. What is the initial pH of the hydrobromic acid?
 - c. What volume of base solution is needed for complete neutralization?
 - d. What is the pH of the solution upon neutralization?

8. Which of the following solutions would result in a neutral solution after mixing with 200. mL of 0.40 M HCl?
- A) 40. mL of 0.50 M NaOH
 - B) 80. mL of 0.50 M NaOH
 - C) 120. mL of 0.50 M NaOH
 - D) 160. mL of 0.50 M NaOH