

Name: _____ Period: _____ Date: _____
Review: Ch 18/19 Acids, Bases and Salts

Quiz Format(60 pts.): 15 multiple choice (2 pts. Each)
6 fill in the blanks (2 pts. Each)
3 word problems (6 pts. Each)

Complete the following multiple choice.

- ___ 1. Bronsted's definition of acids and bases is based on:
a. acid acceptance of a proton. c. base donation of a proton.
b. acid donation of a proton. d. base donation of an electron.
- ___ 2. Water is amphoteric, therefore, it can act as:
a. an acid c. both a and b
b. a base d. neither
- ___ 3. In the equation $\text{NH}_3 + \text{HNO}_3 \rightarrow \text{NH}_4^+ + \text{NO}_3^-$, NH_3 is:
a. an Arrhenius acid c. an Arrhenius base
b. a Bronsted acid d. a Bronsted base
- ___ 4. A strong acid:
a. ionizes completely. c. is a concentrated solution.
b. conducts poorly. d. both a and c.
- ___ 5. Identify the conjugate acid-base pair from the following.
a. HCl and NaOH c. $\text{HC}_2\text{H}_3\text{O}_2$ and OH^-
b. NH_4^+ and NH_3 d. HF and H_3O^+
- ___ 6. Which of the following would you use to determine if something was acidic?
a. smell the substance c. add a base and watch the reaction
b. do a flame test d. use an indicator
- ___ 7. The term monoprotic means:
a. can only accept one proton c. has only one proton.
b. has more than one proton. d. can donate one proton.
- ___ 8. The complete neutralization of an acid by a base requires:
a. a strong acid and base c. a strong acid and a weak base
b. a weak acid and a strong base d. a weak acid and base
- ___ 9. Name the acid - base conjugate pair in this equation:
 $\text{Ca}(\text{OH})_2 (\text{aq}) + \text{HC}_2\text{H}_3\text{O}_2 (\text{aq}) \rightarrow \text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2 + 2\text{H}_2\text{O}$
a. $\text{Ca}(\text{OH})_2$ and $\text{HC}_2\text{H}_3\text{O}_2$ c. $\text{Ca}(\text{OH})_2$ and H_2O
b. $\text{HC}_2\text{H}_3\text{O}_2$ and H_2O d. H_2O and $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$
- ___ 10. Dill pickles with a H_3O^+ concentration of 1×10^{-3} are:
a. acidic c. neutral
b. basic d. undeterminable

Complete the following fill in the blank.

1. An ionic compound formed in an acid-base neutralization reaction is a(n) _____.
2. A(n) _____ is a solution that will conduct electricity.
3. The formula H_3O^+ represents a(n) _____.

4. A(n) _____ changes color in the presence of an acid or base.
5. Weak acids (do/do not) _____ completely ionize in water.
6. The strength of an salt (depends/does not depend) _____ the strength of the acid and base that form it.
7. When water breaks a compound into its free ions the process is called _____.
8. _____ is equal to 1×10^{-14} at 25°C .
9. The _____ scale represents the hydronium ion concentration of a solution.
10. The stronger the base the higher the _____ ion concentration.

Complete the following word problems.

11. The concentration of hydroxide ions in a solution is 3.4×10^{-3} M. What is the hydronium ion concentration? What is the pH? Is the solution acidic or basic?
12. Acid rain can have a pH of 3.5. What is the hydronium ion concentration? What is the hydroxide ion concentration?
13. What is the hydroxide concentration of 5.25g of NaOH is dissolved into 3.2L of solution? What is the hydronium ion concentration? What is the pH?
14. What is the pH of a solution that contains 10.4 g of HCl in 4.0L of solution? What is the hydroxide ion concentration?
15. A solution has a pH of 8.31 what is the hydroxide ion concentration?