

## Chapter 19 Review "Acids, Bases, and Salts"



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### Chapter 19 Review

- An indicator is what type of compound?
- In a titration, when the number of moles of hydrogen ions equals the number of moles of hydroxide ions, what is said to have happened?
- Which base is strong, but never concentrated: a) sodium hydroxide, or b) magnesium hydroxide?

### Chapter 19 Review

- When an acid reacts with a base, what compounds are formed?
- Which type of solution is one with a pH of 8?
- With solutions of strong acids and strong bases, the word *strong* refers to \_\_\_\_.
- What is the charge on the hydronium ion?

### Chapter 19 Review

- Which of the following represents a Bronsted-Lowry conjugate acid-base pair: a)  $\text{SO}_3^{2-}$  and  $\text{SO}_2$ , or b)  $\text{NH}_4^{1+}$  and  $\text{NH}_3$ ?
- Which compound can act as both a Bronsted-Lowry acid and a Bronsted-Lowry base: a) water, or b) hydrochloric acid?

### Chapter 19 Review

- What type of acid is sulfuric acid?
- Know the properties of a base.
- Know the properties of an acid.
- What is an acid according to Arrhenius?
- In the reaction of aluminum bromide with ionized sodium bromide, which compound is the Lewis acid?

### Chapter 19 Review

- Which of these is an Arrhenius base: a)  $\text{LiOH}$ , or b)  $\text{CH}_3\text{COOH}$ ?
- What is pH?
- In a neutral solution, the  $[\text{H}^{1+}]$  is \_\_\_\_.
- The acid dissociation constant for an acid dissolved in water is equal to the \_\_\_\_.
- A 0.12 M solution of an acid that ionizes only slightly in solution would be termed \_\_\_\_.

### Chapter 19 Review

- In the reaction:  
 $\text{CO}_3^{2-} + \text{H}_2\text{O} \leftrightarrow \text{HCO}_3^{1-} + \text{OH}^{1-}$ , the carbonate ion is acting as a(n) \_\_\_\_\_.
- What is transferred between a conjugate acid-base pair?
- What are the acids in the following:  
 $\text{CN}^{1-} + \text{H}_2\text{O} \leftrightarrow \text{HCN} + \text{OH}^{1-}$ ?

### Chapter 19 Review

- A Lewis acid is a substance that can \_\_\_\_\_.
- If the hydrogen ion concentration of a solution is  $1 \times 10^{-10}$  M, is the solution acidic, alkaline, or neutral?
- The process of adding a known amount of solution of known concentration to determine the concentration of another solution is called \_\_\_\_\_.

### Chapter 19 Review

- If the hydroxide-ion concentration is  $1 \times 10^{-12}$  M, what is the pH of the solution?
- What is the hydrogen-ion concentration if the pH is 3.7?
- If the hydrogen-ion concentration is  $1 \times 10^{-13}$  M, what is the pOH of the solution?

### Chapter 19 Review

- A 0.500 M solution of a weak acid, HX, is only partially ionized. The  $[\text{H}^{1+}]$  was found to be  $4.02 \times 10^{-3}$  M. Find the dissociation constant ( $K_a$ ) for this acid.
- What is the pH if the hydrogen-ion concentration is  $6.8 \times 10^{-7}$  M?
- What is the pH of a solution with a concentration of 0.01 M HCl?

### Chapter 19 Review

- If the hydroxide-ion concentration is  $1 \times 10^{-10}$  M, what is the pH of the solution?
- If  $[\text{OH}^{1-}] = 1 \times 10^{-4}$  M, what is the pH of the solution?
- If the hydrogen ion concentration is  $1 \times 10^{-7}$  M, what is the pH of the solution?

### Chapter 19 Review

- What is the pH when the hydrogen ion concentration is  $7.0 \times 10^{-3}$  M?

*End of Chapter 19 Review*