

**Practice Test Chapter 12****Multiple Choice**

Your test will also have a blast from the past section with questions over past chapters. There will be no retakes available for the ch 12 test.

- \_\_\_\_\_ 1.  $\text{H}_2\text{O}_2$ , hydrogen peroxide, naturally breaks down into  $\text{H}_2\text{O}$  over time.  $\text{MnO}_2$ , manganese dioxide, can be used to lower the energy of activation needed for this reaction to take place and, thus, increase the rate of reaction. What type of substance is  $\text{MnO}_2$ ?
- a. an inhibitor  
b. a catalyst  
c. a product  
d. a reactant

- \_\_\_\_\_ 2. 
$$\text{C}_3\text{H}_8 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$$
This chemical equation represents the combustion of propane. When correctly balanced, the coefficient for water is
- a. 2  
b. 4  
c. 8  
d. 16

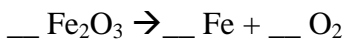
- \_\_\_\_\_ 3. How many atoms are contained in 97.6 g of platinum (Pt)?
- a.  $5.16 \times 10^{30}$   
b.  $3.01 \times 10^{23}$   
c.  $1.20 \times 10^{24}$   
d.  $1.10 \times 10^{28}$
- \_\_\_\_\_ 4. How many moles of  $\text{CH}_4$  are contained in 96.0 grams of  $\text{CH}_4$ ?
- a. 16.00 moles  
b. 12.00 moles  
c. 6.00 moles  
d. 3.00 moles

- \_\_\_\_\_ 5. 
$$\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$$
In this reaction, how many grams of  $\text{Fe}_2\text{O}_3$  are required to completely react with 84 grams of  $\text{CO}$ ?
- a. 64  
b. 80  
c. 160  
d. 1400

- \_\_\_\_\_ 6. 
$$\text{Mg}_3\text{N}_2(\text{s}) + 6\text{H}_2\text{O}(\text{l}) \longrightarrow$$
  
$$2\text{NH}_3(\text{aq}) + 3\text{Mg}(\text{OH})_2(\text{s})$$
If 54.0 grams of water are mixed with excess magnesium nitride, then how many grams of ammonia are produced?
- a. 1.00 grams  
b. 17.0 grams  
c. 51.0 grams  
d. 153 grams

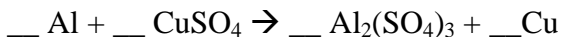
- \_\_\_\_\_ 7. 
$$3\text{CuCl}_2 + 2\text{Al} \longrightarrow 2\text{AlCl}_3 + 3\text{Cu}$$
A mass of 5.4 grams of aluminum (Al) reacts with an excess of copper (II) chloride ( $\text{CuCl}_2$ ) in solution, as shown above. What mass of solid copper (Cu) is produced?
- a. 28 grams  
b. 8.5 grams  
c. 38 grams  
d. 19 grams
- \_\_\_\_\_ 8. What is the density of 1 mole of  $\text{NO}_2$  gas at STP?
- a. 2.05 g/L  
b. 1.34 g/L  
c. 1.03 g/L  
d. 0.513 g/L

\_\_\_ 9. What type of reaction is the reaction below?



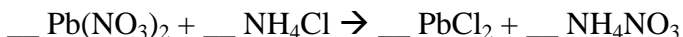
- |                          |                       |
|--------------------------|-----------------------|
| a. Synthesis/Combination | c. Combustion         |
| b. Decomposition         | d. Single Replacement |

\_\_\_ 10. What type of reaction is the reaction below?



- |                          |                       |
|--------------------------|-----------------------|
| a. Synthesis/Combination | c. Double Replacement |
| b. Decomposition         | d. Single Replacement |

\_\_\_ 11. Select the set of coefficients that properly balance the equation below.



- |               |               |
|---------------|---------------|
| a. 1, 2, 1, 2 | c. 2, 1, 2, 1 |
| b. 1, 2, 2, 1 | d. 1, 2, 2, 2 |

\_\_\_ 12. The products created from the reactants below would be:



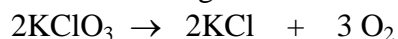
- |                                |  |
|--------------------------------|--|
| a. $\text{NaNO}_3, \text{AgF}$ | c. $\text{Na}_3\text{N}, \text{AgF}, \text{O}_2$ |
| b. $\text{FNO}_3, \text{NaAg}$ | d. $\text{NaNO}, \text{AgF}, \text{O}_2$         |

\_\_\_ 13. The products created from the reactants below would be:



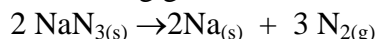
- |   |   |
|---|---|
| a. Manganese Sulfate and Hydrogen Gas         | c. Magnesium Sulfate and Hydrogen Gas         |
| b. Manganese Hydride and Sulfur Tetroxide Gas | d. Magnesium Hydride and Sulfur Tetroxide Gas |

\_\_\_ 14. Which of the following is a correct interpretation of this balanced equation?



- |   |   |
|---|---|
| a. Two molecules of potassium chlorate produce two molecules of potassium chloride and three molecules of oxygen.         | c. Two formula units of potassium chlorite produce two formula units of potassium chloride and three molecules of oxygen.       |
| b. Two formula units of potassium chlorate produce two formula units of potassium chloride and three molecules of oxygen. | d. Two formula units of potassium chlorate produce two formula units of potassium chloride and two <b>molecules of oxygen</b> . |

\_\_\_ 15. This is the Reaction that occurs when an airbag goes off.

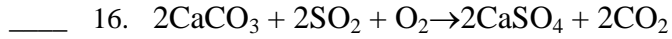


If an airbag has 100 grams of sodium azide ( $\text{NaN}_3$ ), how many liters of nitrogen gas are produced? Assume STP

- |          |          |
|----------|----------|
| a. 67.2L | c. 51.7L |
| b. 22.4L | d. 5.8L  |

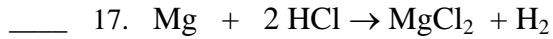
Name: \_\_\_\_\_

ID: A



If the above reaction has a 96.8% yield, how many actual grams of  $\text{CaSO}_4$  are recovered when 5.24g of  $\text{SO}_2$  are used in the presence of excess  $\text{CaCO}_3$  and  $\text{O}_2$ ? (Hint: Calculate the theoretical yield first)

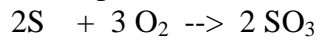
- |                            |                            |
|----------------------------|----------------------------|
| a. 10.77g $\text{CaSO}_4$  | c. 10.00 g $\text{CaSO}_4$ |
| b. 11.13 g $\text{CaSO}_4$ | d. 9.36 g $\text{CaSO}_4$  |



At STP, what is the total number of liters of hydrogen gas produced when 3.00 moles of hydrochloric acid solution is completely consumed?

- |           |           |
|-----------|-----------|
| a. 11.2L  | c. 33.6 L |
| b. 22.4 L | d. 44.8 L |

\_\_\_ 18. Which of these expressions is a correct interpretation of the balanced equation?



- |   |  |
|---|--|
| a. 2 moles of S + 3 moles of oxygen<br>--> 2 moles of $\text{SO}_3$         | c. 2 g of S + 3 g of $\text{O}_2$ --> 2 g of $\text{SO}_3$ |
| b. 2 atoms of S + 6 molecules of oxygen<br>--> 2 molecules of $\text{SO}_3$ | d. None of the above                                       |

## Practice Test Chapter 12

### Answer Section

#### MULTIPLE CHOICE

- |            |  |         |  |
|------------|--|---------|--|
| 1. ANS: B  | PTS: 1   | STA: 8c |  |
| 2. ANS: B  | PTS: 1   |         |  |
| 3. ANS: B  | PTS: 1   | STA: 3d | KEY: Mass to Representative Particles  |
| 4. ANS: C  | PTS: 1   | STA: 3d | KEY: Mass to Moles                     |
| 5. ANS: C  | PTS: 1   | STA: 3e |  |
| 6. ANS: B  | PTS: 1   | STA: 3e |  |
| 7. ANS: D  | PTS: 1   | STA: 3e |  |
| 8. ANS: A  | PTS: 1   | STA: 3d |  |
|            | KEY: density of a gas at STP; molar mass; molar volume |         |  |
| 9. ANS: B  | PTS: 1   | STA: 3a | KEY: Types of Reactions; Decomposition |
| 10. ANS: D | PTS: 1   | STA: 3a |  |
|            | KEY: Types of Reactions; Single Replacement            |         |  |
| 11. ANS: A | PTS: 1   | STA: 3a | KEY: Balancing Equations               |
| 12. ANS: A | PTS: 1   | STA: 3a | KEY: Predicting Products               |
| 13. ANS: C | PTS: 1   | STA: 3a | TOP: Predicting Products by Name       |
|            | KEY: Single Replacement;                               |         |  |
| 14. ANS: C |  |         |  |
|            | ST 3   |         |  |
|            | PTS: 1   |         |  |
| 15. ANS: C |  |         |  |
|            | ST 3   |         |  |
|            | PTS: 1   |         |  |
| 16. ANS: A |  |         |  |
|            | ST. 3  |         |  |
|            | PTS: 1   |         |  |
| 17. ANS: C |  |         |  |
|            | ST 3   |         |  |
|            | PTS: 1   |         |  |
| 18. ANS: A | PTS: 1   |         |  |