Name: _____ **Class:** _____ **Date:** _____ **ID: A**

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. H_2O_2, hydrogen peroxide, naturally breaks down into H_2O over time. 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 MnO_2?

a. an inhibitor
b. a catalyst
c. a product
d. a reactant

____ 2. $C_3H_8 + O_2 \longrightarrow CO_2 + H_2O$

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. 5.16×10^{30}
b. 3.01×10^{23}
c. 1.20×10^{24}
d. 1.10×10^{28}

____ 4. How many moles of CH_4 are contained in 96.0 grams of CH_4?

a. 16.00 moles
b. 12.00 moles
c. 6.00 moles
d. 3.00 moles

____ 5. $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

In this reaction, how many grams of Fe_2O_3 are required to completely react with 84 grams of CO?

a. 64
b. 80
c. 160
d. 1400

____ 6. $Mg_3N_{2(s)} + 6H_2O_{(l)} \rightarrow 2NH_{3(aq)} + 3Mg(OH)_{2(s)}$

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. $3CuCl_2 + 2Al \longrightarrow 2AlCl_3 + 3Cu$

A mass of 5.4 grams of aluminum (Al) reacts with an excess of copper (II) chloride ($CuCl_2$) 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 NO_2 gas at <u>STP?</u>

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?

__ Fe_2O_3 → __ Fe + __ O_2

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

____ 10. What type of reaction is the reaction below?

__ Al + __ $CuSO_4$ → __ $Al_2(SO_4)_3$ + __Cu

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

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

__ $Pb(NO_3)_2$ + __ NH_4Cl → __ $PbCl_2$ + __ NH_4NO_3

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

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

__ NaF + __ $AgNO_3$ → ?

a. $NaNO_3$, AgF
b. FNO_3, NaAg
c. Na_3N, AgF, O_2
d. NaNO, AgF, O_2

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

__ Mg + __ H_2SO_4 → ?

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

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

$2KClO_3 \rightarrow 2KCl + 3\,O_2$

a. Two molecules of potassium chlorate produce two molecules 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.
c. Two formula units of potassium chlorite 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 **molecules of oxygen.**

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

$2\,NaN_{3(s)} \rightarrow 2Na_{(s)} + 3\,N_{2(g)}$

If an airbag has 100 grams of sodium azide (NaN_3), how many liters of nitrogen gas are produced? Assume STP

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

____ 16. $2CaCO_3 + 2SO_2 + O_2 \rightarrow 2CaSO_4 + 2CO_2$

If the above reaction has a 96.8% yield, how many actual grams of $CaSO_4$ are recovered when 5.24g of SO_2 are used in the presence of excess $CaCO_3$ and O_2?(Hint: Calculate the theoretical yield first)

a. 10.77g $CaSO_4$
b. 11.13 g $CaSO_4$
c. 10.00 g $CaSO_4$
d. 9.36 g $CaSO_4$

____ 17. $Mg + 2\ HCl \rightarrow MgCl_2 + H_2$

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
b. 22.4 L
c. 33.6 L
d. 44.8 L

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

$2S + 3\ O_2 \text{ --> } 2\ SO_3$

a. 2 moles of S + 3 moles of oxygen --> 2 moles of SO_3
b. 2 atoms of S + 6 molecules of oxygen --> 2 molecules of SO_3
c. 2 g of S + 3 g of O_2 --> 2 g of 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