

Name _____

Please read all the questions VERY carefully before answering. No outside paper is allowed.
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) What would the empirical formula be for the molecular compound $C_6H_9O_4$? 1) _____
A) CH_3O_2
B) $C_3H_6O_2$
C) $C_2H_3O_2$
D) $C_3H_9O_4$
E) none of the above
- 2) Determine the empirical formula of a compound containing 83% potassium and 17.0% oxygen. 2) _____
A) K_2O_3
B) KO
C) KO_2
D) K_2O
E) none of the above
- 3) What is the value of n when the empirical formula is C_3H_5 and the molecular mass is 205.4 g/mol. 3) _____
A) 5
B) 10
C) 0.02
D) 140
E) none of the above
- 4) What is the molecular formula of a compound given the molar mass of the compound is 186.5 gram and the empirical formula is C_2H_7 ? 4) _____
A) C_4H_{14}
B) C_2H_7
C) C_3H_{21}
D) C_2H_{14}
E) none of the above
- 5) Identify the double displacement reactions among the following: 5) _____
1. $KCl(aq) + AgNO_3(aq) \rightarrow AgCl(s) + KNO_3(aq)$
2. $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NaCl(aq)$
3. $H_2SO_4(aq) + 2NaOH(aq) \rightarrow Na_2SO_4(aq) + 2H_2O(l)$
A) 1 and 3 only
B) 1 and 2 only
C) 2 and 3 only
D) All of 1, 2, and 3
E) None of 1, 2, and 3

- 6) What type of reaction is the generic equation $AB \rightarrow A + B$? 6) _____
 A) displacement
 B) double-displacement
 C) synthesis/combination
 D) decomposition
 E) none of the above
- 7) What type of reaction is the generic equation $A + BC \rightarrow AC + B$? 7) _____
 A) synthesis/combination
 B) double-displacement
 C) displacement
 D) decomposition
 E) none of the above
- 8) What type of reaction is the generic equation $A + B \rightarrow AB$? 8) _____
 A) synthesis/combination
 B) double-displacement
 C) displacement
 D) decomposition
 E) none of the above
- 9) What is the complete ionic equation for the reaction of hydrochloric acid with potassium hydroxide? 9) _____
 A) $H^+ + OH^- \rightarrow H_2O$
 B) $H^+ + Cl^- + K^+ + OH^- \rightarrow H_2O + K^+ + Cl^-$
 C) $H^+ + Cl^- + K^+ + OH^- \rightarrow 2H^+ + O^{2-} + K^+ + Cl^-$
 D) $2H^+ + 2Cl^- + K^2+ + 2OH^- \rightarrow H_2O + K^2+ + 2 Cl^-$
 E) none of the above
- 10) When a solution of $MgCl_2$ and one of $AgNO_3$ are mixed, the net ionic equation is 10) _____
 A) $Mg^{2+}(aq) + 2Cl^-(aq) + 2Ag^+(aq) + 2NO_3^-(aq) \rightarrow Mg^{2+}(aq) + 2NO_3^-(aq) + 2AgCl(s)$
 B) $Mg^{2+}(aq) + 2NO_3^-(aq) \rightarrow Mg(NO_3)_2(aq)$
 C) $Mg^{2+}(aq) + 2Cl^-(aq) + 2Ag^+(aq) + 2NO_3^-(aq) \rightarrow Mg(NO_3)_2(aq) + 2 AgCl(s)$
 D) $Cl^-(aq) + Ag^+(aq) \rightarrow AgCl(s)$
 E) none of the above
- 11) Why does the rate of the reaction decrease over time? 11) _____
 A) As the reaction proceeds, the concentration of the products results in fewer collisions.
 B) Exothermic reactions lose heat which cools the reaction which decreases reaction rate.
 C) Not all molecules will react and some choose to stay in their present form.
 D) As the reaction proceeds, a decrease in the concentration of reactants results in fewer successful collisions.
 E) none of the above

- 12) For the reaction $\text{Ag}_2\text{S}(s) \rightleftharpoons 2\text{Ag}^+(aq) + \text{S}^{2-}(aq)$, what happens to the equilibrium position if ammonium sulfide is added? 12) _____
- A) doubles
 - B) does nothing
 - C) halves
 - D) shifts to the left
 - E) shifts to the right
- 13) Consider the reaction: $2\text{N}_2\text{O}(g) \rightleftharpoons \text{O}_2(g) + 2\text{N}_2(g)$. Which of the following will cause a shift in the equilibrium to the right? 13) _____
1. Add more N_2O
 2. Remove O_2
 3. Remove N_2
- A) 1 and 3 only
 - B) 2 and 3 only
 - C) 1 and 2 only
 - D) All of 1, 2, and 3
 - E) Neither 1, 2, or 3
- 14) What is the volume (in Liter) of 28.0 g of nitrogen gas at STP? 14) _____
- A) 22.4
 - B) 44.8
 - C) 11.2
 - D) 33.6
 - E) none of the above

Answer Key

Testname: FH_CHEM25_SP08_LABQUIZ2

- 1) E
- 2) D
- 3) A
- 4) E
- 5) C
- 6) D
- 7) C
- 8) A
- 9) B
- 10) D
- 11) D
- 12) D
- 13) D
- 14) A