

2015 Chemistry Final Exam PRACTICE TEST

Matching

Match each item with the correct statement below.

- | | |
|---------------------------------------|----------------------------------|
| A. activity series of metals | C. combustion reaction |
| B. single-replacement reaction | D. decomposition reaction |

- ___ 1. a reaction in which a single compound is broken down into simpler substances
- ___ 2. a reaction in which the atoms of one element replace the atoms of a second element in a compound
- ___ 3. a list of metals in order of decreasing reactivity
- ___ 4. a reaction in which oxygen reacts with another substance, often producing heat or light

Match each item with the correct statement below.

- | | |
|-------------------------------------|------------------------------|
| A. absolute zero | E. mass |
| B. Kelvin temperature scale | F. significant figure |
| C. Celsius temperature scale | G. precision |
| D. weight | H. accuracy |

- ___ 5. closeness to true value
- ___ 6. the non-SI scale for temperature
- ___ 7. the SI scale for temperature
- ___ 8. the lowest point on the Kelvin scale
- ___ 9. narrowness of range of measurements
- ___ 10. the quantity of matter an object contains
- ___ 11. known or estimated in a measurement

Match each item with the correct statement below.

- | | |
|-----------------------------------|---|
| A. representative particle | D. percent composition |
| B. mole | E. standard temperature and pressure |
| C. Avogadro's number | F. empirical formula |

- ___ 12. an atom, an ion, or a molecule, depending upon the way a substance commonly exists
- ___ 13. the percent by mass of each element in a compound

- ___ 14. the SI unit used to measure amount of substance
- ___ 15. the number of representative particles of a substance present in 1 mole of that substance
- ___ 16. 0°C and 1 atm
- ___ 17. the smallest whole number ratio of the atoms in a compound

Match each item with the correct statement below.

- A. molar volume
B. molar mass
C. atomic mass

- ___ 18. the number of grams of an element that is numerically equal to the atomic mass of the element in amu
- ___ 19. the mass of a mole of any element or compound
- ___ 20. the volume occupied by a mole of any gas at STP

Match each item with the correct statement below.

- A. product
B. reactant
C. chemical equation
D. balanced equation
E. skeleton equation

- ___ 21. a concise representation of a chemical reaction
- ___ 22. a chemical equation that does not indicate relative amounts of reactants and products
- ___ 23. a new substance formed in a chemical reaction
- ___ 24. an equation in which each side has the same number of atoms of each element
- ___ 25. a starting substance in a chemical reaction

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- ___ 26. Which of the following statements is true about single-replacement reactions?
- A. They involve a single product.
B. Any metal replaces any other metal.
C. They are restricted to metals.
D. Two reactants produce two products.

CONTENT REVIEW

- ___ 27. What are the elements in Group 7A of the periodic table called?
A. halogens
B. noble gases
C. alkali metals
D. alkaline earth metals
- ___ 28. The elements in Group 8A of the periodic table are called the
A. halogens.
B. alkaline earth metals.
C. alkali metals.
D. noble gases.
- ___ 29. The elements in Group 2A of the periodic table are called the
A. noble gases.
B. halogens.
C. alkaline earth metals.
D. alkali metals.
- ___ 30. The valence electrons in an atom are always
A. inside the nucleus.
B. the innermost electrons.
C. the outermost electrons.
D. in *s* orbitals.
- ___ 31. The equation $\text{Mg}(s) + 2\text{HCl}(aq) \rightarrow \text{MgCl}_2(aq) + \text{H}_2(g)$ is an example of which type of reaction?
A. decomposition reaction
B. single-replacement reaction
C. double-replacement reaction
D. combination reaction

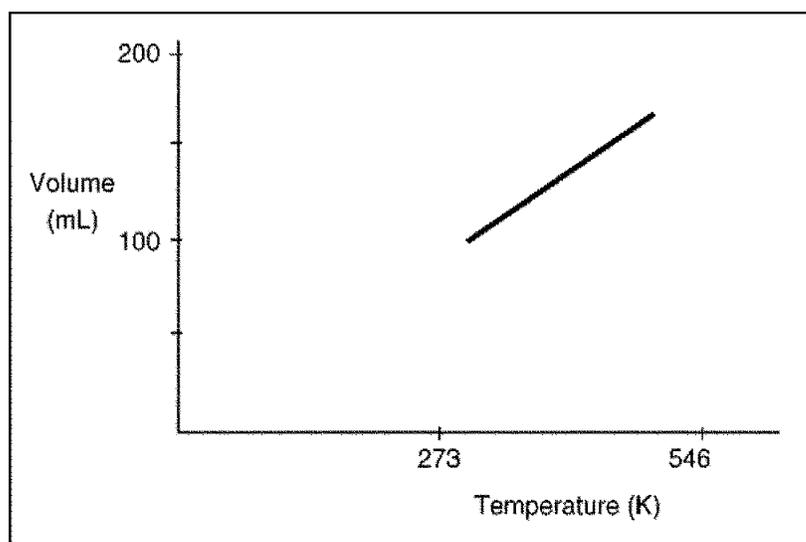


Figure 13-3

- ___ 32. Use Figure 13-3 to determine how the volume of a gas (at constant pressure) is related to the absolute temperature.
- They are directly proportional to each other.
 - They are negatively correlated.
 - They are inversely proportional to each other.
 - They are independent of each other.
- ___ 33. Using Figure 13-3, what would be the volume of a sample of gas at 500 K if its volume at 300 K was 100 liters?
- | | |
|---------------|---------------|
| A. 167 liters | C. 133 liters |
| B. 100 liters | D. 200 liters |
- ___ 34. In Figure 13-3, what is the volume of a gas when the temperature is extrapolated to zero?
- The temperature cannot be extrapolated to zero
 - Impossible to tell without knowing which gas it is.
 - The volume would be zero.
 - The volume would be minimal, about 1 milliliter.
- ___ 35. What is the result of multiplying 2.5×10^{10} by 3.5×10^{-7} ?
- | | |
|---------------------------|--------------------------|
| A. 8.75×10^{-17} | C. 8.75×10^{17} |
| B. 8.75×10^{-3} | D. 8.75×10^3 |

- ___ 36. Which of the following statements is NOT true about double-replacement reactions?
- A. The reactant may be a solid metal.
 - B. The product may precipitate from solution.
 - C. The product may be a gas.
 - D. The product may be a molecular compound.
- ___ 37. If 4 moles of gas are added to a container that already holds 1 mole of gas, how will the pressure change inside the container?
- A. The pressure will be five times higher.
 - B. The pressure will not change.
 - C. The pressure will be four times higher.
 - D. The pressure will double.
- ___ 38. Which of the following measurements (of different masses) is the most accurate?
- A. 3.122 22 g
 - B. 3.000 000 g
 - C. 3.1000 g
 - D. 3.100 00 g
- ___ 39. If a balloon is heated, what happens to the volume of the air in the balloon if the pressure is constant?
- A. It increases.
 - B. The change cannot be predicted.
 - C. It decreases.
 - D. It stays the same.
- ___ 40. Why does air escape from a tire when the tire valve is opened?
- A. The pressure outside the tire is greater than the pressure inside the tire.
 - B. There are more particles of air outside the tire than inside the tire.
 - C. The pressure outside the tire is lower than the pressure inside the tire.
 - D. The temperature is higher outside the tire than inside the tire.
- ___ 41. What is true about the molar mass of fluorine gas?
- A. The molar mass is 38.0 g.
 - B. The molar mass is 19.0 g.
 - C. The molar mass is equal to the mass of one mole of fluorine atoms.
 - D. none of the above
- ___ 42. What is a property of a base?
- A. bitter taste
 - B. watery feel
 - C. strong color
 - D. unreactive
- ___ 43. The formula of the hydrogen ion is often written as ____.
- A. OH^+
 - B. H_4N^+
 - C. H_2O^+
 - D. H^+

- ___ 52. Use the activity series of metals to complete a balanced chemical equation for the following single replacement reaction.
 $\text{Ag}(s) + \text{KNO}_3(aq) \rightarrow$
- A. AgKNO_3
 - B. $\text{AgNO}_3 + \text{K}$
 - C. $\text{AgK} + \text{NO}_3$
 - D. No reaction takes place because silver is less reactive than potassium.
- ___ 53. Which of the following volumes is the smallest?
- A. one deciliter
 - B. one liter
 - C. one milliliter
 - D. one microliter
- ___ 54. The equation below shows the decomposition of lead nitrate. How many grams of oxygen are produced when 11.5 g NO_2 is formed?
- $$2\text{Pb}(\text{NO}_3)_2(s) \rightarrow 2\text{PbO}(s) + 4\text{NO}_2(g) + \text{O}_2(g)$$
- A. 32.0 g
 - B. 2.00 g
 - C. 2.88 g
 - D. 1.00 g
- ___ 55. What is the molar mass of AuCl_3 ?
- A. 303.6 g
 - B. 130 g
 - C. 96 g
 - D. 232.5 g
- ___ 56. The combined gas law relates which of the following?
- A. volume and temperature only
 - B. pressure and volume only
 - C. temperature, pressure, and volume
 - D. temperature and pressure only
- ___ 57. If a balloon is squeezed, what happens to the pressure of the gas inside the balloon?
- A. The pressure depends on the type of gas in the balloon.
 - B. It stays the same.
 - C. It decreases.
 - D. It increases.
- ___ 58. Which of the following is NOT an empirical formula?
- A. BeCr_2O_7
 - B. $\text{C}_3\text{H}_8\text{O}$
 - C. Sb_2S_3
 - D. $\text{C}_2\text{N}_2\text{H}_8$

- ___ 59. Why does the pressure inside a container of gas increase if more gas is added to the container?
- A. There is a decrease in the volume of the gas.
 - B. There is an increase in the force of the collisions between the particles and the walls of the container.
 - C. There is an increase in the number of collisions between particles and the walls of the container.
 - D. There is an increase in the temperature of the gas.
- ___ 60. What is the boiling point of water in kelvins?
- A. 0 K
 - B. 273 K
 - C. 373 K
 - D. 100 K
- ___ 61. When the Kelvin temperature of an enclosed gas doubles, the particles of the gas ____.
- A. decrease in volume
 - B. strike the walls of the container with less force
 - C. move faster
 - D. decrease in average kinetic energy
- ___ 62. What is the temperature -34°C expressed in kelvins?
- A. 139 K
 - B. 239 K
 - C. 207 K
 - D. 339 K
- ___ 63. Express the product of 2.2 mm and 5.00 mm using the correct number of significant digits.
- A. 11 mm^2
 - B. 11.00 mm^2
 - C. 10 mm^2
 - D. 11.0 mm^2
- ___ 64. In a combustion reaction, one of the reactants is ____.
- A. oxygen
 - B. a metal
 - C. nitrogen
 - D. hydrogen
- ___ 65. Which of the following units is NOT an official SI unit?
- A. kilogram
 - B. ampere
 - C. mole
 - D. liter
- ___ 66. A smooth, slippery feel is associated with
- A. indicators.
 - B. bases.
 - C. acids.
 - D. salts.
- ___ 67. Which of the following measurements is expressed to three significant figures?
- A. 0.007 m
 - B. 7077 mg
 - C. 0.070 mm
 - D. $7.30 \times 10^{-7}\text{ km}$

- ___ 68. Which type of solution is one with a pH of 8?
A. acidic
B. basic
C. neutral
D. The type varies, depending on the solution.
- ___ 69. Which of the following compounds have the same empirical formula?
A. C_6H_{12} and C_6H_{14}
B. C_7H_{14} and $C_{10}H_{20}$
C. CO_2 and SO_2
D. C_4H_{10} and $C_{10}H_4$
- ___ 70. A gas occupies a volume of 2.4 L at 17.1 kPa. What volume will the gas occupy at 136.8 kPa?
A. 19 L
B. 975 L
C. 0.30 L
D. 3.3 L
- ___ 71. The mass of a mole of NaCl is the _____.
A. gram atomic mass
B. atomic mass
C. molecular mass
D. molar mass
- ___ 72. What happens to the pressure of a gas inside a container if the temperature of the gas decreases?
A. The pressure increases.
B. The pressure cannot be predicted.
C. The pressure decreases.
D. The pressure does not change.
- ___ 73. The expression of 5311 km in scientific notation is _____.
A. 5.311×10^3 km
B. 5.311×10^{-3} km
C. 5.311×10^4 km
D. 53.11×10^{-4} km
- ___ 74. Which of the following elements exists as a diatomic molecule?
A. neon
B. lithium
C. nitrogen
D. sulfur
- ___ 75. The volume of one mole of a substance is 22.4 L at STP for all _____.
A. liquids
B. compounds
C. solids
D. gases
- ___ 76. Given 1.00 mole of each of the following gases at STP, which gas would have the greatest volume?
A. He
B. SO_3
C. O_2
D. All would have the same volume.

- ___ 95. What is the SI unit of mass?
A. kilogram
B. liter
C. candela
D. joule
- ___ 96. What is the number of moles in 432 g $\text{Ba}(\text{NO}_3)_2$?
A. 1.65 mol
B. 3.66 mol
C. 0.605 mol
D. 0.237 mol
- ___ 97. The molar mass of a certain gas is 49 g. What is the density of the gas in g/L at STP?
A. 71 g/L
B. 0.46 g/L
C. 2.2 g/L
D. 3.6×10^{-24} g/L
- ___ 98. What is the balanced chemical equation for the reaction that takes place between bromine and sodium iodide?
A. $\text{Br}_2 + 2\text{NaI} \rightarrow 2\text{NaBr} + \text{I}_2$
B. $\text{Br} + \text{NaI}_2 \rightarrow \text{NaBr} + \text{I}_2$
C. $\text{Br} + \text{NaI}_2 \rightarrow \text{NaBrI}_2$
D. $\text{Br}_2 + \text{NaI} \rightarrow \text{NaBr}_2 + \text{I}$
- ___ 99. How many hydrogen atoms are in 5 molecules of isopropyl alcohol, $\text{C}_3\text{H}_7\text{O}$?
A. 5
B. 35
C. $5 \times (6.02 \times 10^{23})$
D. $35 \times (6.02 \times 10^{23})$
- ___ 100. What is the density at STP of the gas sulfur hexafluoride, SF_6 ?
A. 3270 g/L
B. 3.93×10^{24} g/L
C. 6.52 g/L
D. 0.153 g/L
- ___ 101. When the equation $\text{Fe} + \text{Cl}_2 \rightarrow \text{FeCl}_3$ is balanced, what is the coefficient for Cl_2 ?
A. 1
B. 3
C. 4
D. 2
- ___ 102. In a neutral solution, the $[\text{H}^+]$ is _____.
A. equal to $[\text{OH}^-]$
B. $10^{-14}M$
C. 1×10^7M
D. zero
- ___ 103. Which temperature scale has no negative temperatures?
A. Joule
B. Celsius
C. Fahrenheit
D. Kelvin

- ___ 104. The first step in most stoichiometry problems is to ____.
- A. add the coefficients of the reagents C. convert given quantities to volumes
B. convert given quantities to masses D. convert given quantities to moles
- ___ 105. Express the product of 4.0×10^{-2} m and 8.1×10^2 m using the correct number of significant digits.
- A. 3×10^1 C. 3.2×10^1
B. 3.24×10^1 D. 3.0×10^1
- ___ 106. What is the mass of oxygen in 250 g of sulfuric acid, H_2SO_4 ?
- A. 160 g C. 16 g
B. 0.65 g D. 3.9 g
- ___ 107. All of the following are equal to Avogadro's number EXCEPT ____.
- A. the number of atoms of bromine in 1 mol Br_2
B. the number of molecules of carbon monoxide in 1 mol CO
C. the number of molecules of nitrogen in 1 mol N_2
D. the number of atoms of gold in 1 mol Au
- ___ 108. A double-replacement reaction takes place when aqueous cobalt(III) chloride reacts with aqueous lithium hydroxide. One of the products of this reaction is ____.
- A. $\text{Co}(\text{OH})_3$ C. LiCo_3
B. LiCl_3 D. $\text{Co}(\text{OH})_2$
- ___ 109. How many significant figures are in the measurement 0.003 4 kg?
- A. five C. two
B. This cannot be determined. D. four
- ___ 110. The diameter of a carbon atom is 0.000 000 000 154 m. What is this number expressed in scientific notation?
- A. 1.54×10^{-12} m C. 1.54×10^{12} m
B. 1.54×10^{10} m D. 1.54×10^{-10} m
- ___ 111. What quantity is represented by the metric system prefix *deci*-?
- A. 1000 C. 100
B. 0.01 D. 0.1
- ___ 112. What is the number of moles in 500 L of He gas at STP?
- A. 22 mol C. 0.05 mol
B. 90 mol D. 0.2 mol

- ___ 113. What are the missing coefficients for the skeleton equation below?
 $\text{Cr}(s) + \text{Fe}(\text{NO}_3)_2(aq) \rightarrow \text{Fe}(s) + \text{Cr}(\text{NO}_3)_3(aq)$
- A. 2, 3, 2, 3
B. 1, 3, 3, 1
C. 4, 6, 6, 2
D. 2, 3, 3, 2
- ___ 114. What is the mass in grams of 5.90 mol C_8H_{18} ?
- A. 19.4 g
B. 673 g
C. 0.0512 g
D. 389 g
- ___ 115. What is the measurement 1042 L rounded off to two significant digits?
- A. 1050 L
B. 1.0×10^3 L
C. 1.1×10^3 L
D. 1040 L
- ___ 116. How many significant figures are in the measurement 811.40 grams?
- A. two
B. five
C. four
D. three
- ___ 117. Which of the following is a balanced equation representing the decomposition of lead(IV) oxide?
- A. $\text{Pb}_2\text{O} \rightarrow 2\text{Pb} + \text{O}$
B. $\text{PbO}_2 \rightarrow \text{Pb} + 2\text{O}$
C. $\text{PbO}_2 \rightarrow \text{Pb} + \text{O}_2$
D. $\text{PbO} \rightarrow \text{Pb} + \text{O}_2$
- ___ 118. How many atoms are in 0.075 mol of titanium?
- A. 2.2×10^{24}
B. 4.5×10^{22}
C. 1.2×10^{-25}
D. 6.4×10^2
- ___ 119. What is the number of moles of beryllium atoms in 36 g of Be?
- A. 0.25 mol
B. 45.0 mol
C. 4.0 mol
D. 320 mol
- ___ 120. When an acid reacts with a base, what compounds are formed?
- A. water only
B. a salt only
C. metal oxides only
D. a salt and water
- ___ 121. Chemical equations must be balanced to satisfy ____.
- A. Avogadro's principle
B. the law of definite proportions
C. the law of multiple proportions
D. the law of conservation of mass
- ___ 122. The molar mass of a substance can be calculated from its density alone, if that substance is a(n) ____.
- A. gas at STP
B. solid
C. element
D. liquid

- ___ 123. Chlorine boils at 239 K. What is the boiling point of chlorine expressed in degrees Celsius?
A. 93°C
B. -61°C
C. 34°C
D. -34°C
- ___ 124. The correct name of the acid HBr is
A. bromite acid.
B. bromate acid.
C. hydrobromic acid.
D. hydrobromous acid.
- ___ 125. If the density of a noble gas is 0.179 g/L at STP, that gas is _____.
A. Ar
B. Ne
C. He
D. Kr
- ___ 126. A double-replacement reaction takes place when aqueous Na_2CO_3 reacts with aqueous $\text{Sn}(\text{NO}_3)_2$. You would expect one of the products of this reaction to be _____.
A. NaSn
B. CNO_3
C. $\text{Sn}(\text{CO}_3)_2$
D. NaNO_3
- ___ 127. The product of a combination reaction is $\text{Ba}(\text{OH})_2$. If one of the reactants is H_2O , what is the other reactant?
A. BaO_2
B. BaO
C. BaH
D. Ba_2O
- ___ 128. Which of the following statements is NOT true about what happens in all chemical reactions?
A. The ways in which atoms are joined together are changed.
B. The starting substances are called reactants.
C. The bonds of the reactants are broken and new bonds of the products are formed.
D. New atoms are formed as products.
- ___ 129. If a balloon is heated, what happens to the pressure of the air inside the balloon if the volume remains constant?
A. The change cannot be predicted.
B. It decreases.
C. It stays the same.
D. It increases.
- ___ 130. The lowest whole-number ratio of the elements in a compound is called the _____.
A. representative formula
B. molecular formula
C. binary formula
D. empirical formula
- ___ 131. When potassium hydroxide and barium chloride react, potassium chloride and barium hydroxide are formed. The balanced equation for this reaction is _____.
A. $\text{KOH} + \text{BaCl} \rightarrow \text{KCl} + \text{BaOH}$
B. $2\text{KOH} + \text{BaCl}_2 \rightarrow 2\text{KCl} + \text{Ba}(\text{OH})_2$
C. $\text{KH} + \text{BaCl} \rightarrow \text{KCl} + \text{BaH}$
D. $\text{KOH} + \text{BaCl}_2 \rightarrow \text{KCl}_2 + \text{BaOH}$

- ___ 132. The equation $2C_3H_7OH + 9O_2 \rightarrow 6CO_2 + 8H_2O$ is an example of which type of reaction?
- A. single-replacement reaction C. combustion reaction
B. double-replacement reaction D. decomposition reaction
- ___ 133. How many moles of aluminum are needed to react completely with 1.2 mol of FeO?
 $2Al(s) + 3FeO(s) \rightarrow 3Fe(s) + Al_2O_3(s)$
- A. 2.4 mol C. 1.2 mol
B. 1.6 mol D. 0.8 mol
- ___ 134. In every balanced chemical equation, each side of the equation has the same number of ____.
- A. molecules C. atoms of each element
B. moles D. coefficients
- ___ 135. What are the coefficients that will balance the skeleton equation below?
 $N_2 + H_2 \rightarrow NH_3$
- A. 1, 3, 2 C. 1, 3, 3
B. 3, 1, 2 D. 1, 1, 2
- ___ 136. In the measurement 0.503 L, which digit is the estimated digit?
- A. the 0 to the left of the decimal point
B. 5
C. 3
D. the 0 immediately to the left of the 3
- ___ 137. In a chemical reaction, the mass of the products ____.
- A. has no relationship to the mass of the reactants
B. is less than the mass of the reactants
C. is greater than the mass of the reactants
D. is equal to the mass of the reactants
- ___ 138. Why is a gas easier to compress than a liquid or a solid?
- A. The volume of a gas's particles is small compared to the overall volume of the gas.
B. Its volume increases more under pressure than an equal volume of solid does.
C. The space between gas particles is much less than the space between liquid or solid particles.
D. Its volume increases more under pressure than an equal volume of liquid does.

- ___ 146. Chemical reactions ____.
- A. only occur outside living organisms
 - B. create and destroy atoms
 - C. produce new substances
 - D. occur only in living organisms
- ___ 147. Calculate the number of moles of Al_2O_3 that are produced when 0.60 mol of Fe is produced in the following reaction.
- $$2\text{Al}(s) + 3\text{FeO}(s) \rightarrow 3\text{Fe}(s) + \text{Al}_2\text{O}_3(s)$$
- A. 0.60 mol
 - B. 0.20 mol
 - C. 0.40 mol
 - D. 0.90 mol
- ___ 148. The complete combustion of which of the following substances produces carbon dioxide and water?
- A. NO
 - B. K_2CO_3
 - C. CaHCO_3
 - D. C_8H_{18}
- ___ 149. The equation $\text{H}_3\text{PO}_4 + 3\text{KOH} \rightarrow \text{K}_3\text{PO}_3 + 3\text{H}_2\text{O}$ is an example of which type of reaction?
- A. double-replacement reaction
 - B. decomposition reaction
 - C. combination reaction
 - D. single-replacement reaction
- ___ 150. Which of the following is a property of an acid?
- A. sour taste
 - B. nonelectrolyte
 - C. unreactive
 - D. strong color
- ___ 151. Which of these changes would NOT cause an increase in the pressure of a contained gas?
- A. More of the gas is added to the container.
 - B. The temperature is increased.
 - C. The volume of the container is increased.
 - D. The average kinetic energy of the gas in increased.
- ___ 152. Which of the following measurements contains two significant figures?
- A. 0.004 40 L
 - B. 0.004 00 L
 - C. 0.004 04 L
 - D. 0.000 44 L
- ___ 153. How many atoms are in 3.5 moles of arsenic atoms?
- A. 5.8×10^{-24} atoms
 - B. 1.7×10^{23} atoms
 - C. 7.5×10^1 atoms
 - D. 2.1×10^{24} atoms
- ___ 154. When the equation $\text{KClO}_3(s) \rightarrow \text{KCl}(s) + \text{O}_2(g)$ is balanced, the coefficient of KClO_3 is ____.
- A. 1
 - B. 3
 - C. 2
 - D. 4

- ___ 155. In the activity series of metals, which metal(s) will displace hydrogen from an acid?
A. only metals below hydrogen C. only metals from Li to Na
B. any metal D. only metals above hydrogen
- ___ 156. The type of reaction that takes place when one element reacts with a compound to form a new compound and a different element is a _____.
A. double-replacement reaction C. decomposition reaction
B. combination reaction D. single-replacement reaction
- ___ 157. In the reaction $2\text{CO}(g) + \text{O}_2(g) \rightarrow 2\text{CO}_2(g)$, what is the ratio of moles of oxygen used to moles of CO_2 produced?
A. 2:1 C. 2:2
B. 1:1 D. 1:2
- ___ 158. How many significant figures are in the measurement 40,500 mg?
A. three C. five
B. four D. two
- ___ 159. If the volume of a container of gas is reduced, what will happen to the pressure inside the container?
A. The pressure will not change.
B. The pressure depends on the type of gas.
C. The pressure will decrease.
D. The pressure will increase.
- ___ 160. If a liter of water is heated from 20°C to 50°C , what happens to its volume?
A. The volume decreases.
B. The volume increases.
C. The volume first increases, then decreases.
D. The volume first decreases, then increases.
- ___ 161. What happens to the temperature of a gas when it is compressed?
A. The temperature increases.
B. The temperature becomes unpredictable.
C. The temperature decreases.
D. The temperature does not change.
- ___ 162. If you rewrite the following word equation as a balanced chemical equation, what will the coefficient and symbol for fluorine be?
nitrogen trifluoride \rightarrow nitrogen + fluorine
A. 6F_2 C. F_3
B. 6F D. 3F_2

- ___ 163. Density is found by dividing ____.
- A. mass by area
B. area by mass
C. volume by mass
D. mass by volume
- ___ 164. What is the mass of silver in 3.4 g AgNO_3 ?
- A. 2.2 g
B. 0.025 g
C. 3.0 g
D. 0.64 g
- ___ 165. Hydrogen gas can be produced by reacting aluminum with sulfuric acid. How many moles of sulfuric acid are needed to completely react with 15.0 mol of aluminum?
- $$2\text{Al}(s) + 3\text{H}_2\text{SO}_4(aq) \rightarrow \text{Al}_2(\text{SO}_4)_3(aq) + 3\text{H}_2(g)$$
- A. 10.0 mol
B. 0.100 mol
C. 15.0 mol
D. 22.5 mol
- ___ 166. When the following equation is balanced, what is the coefficient for HCl?
- $$\text{Mg}(s) + \text{HCl}(aq) \rightarrow \text{MgCl}_2(aq) + \text{H}_2(g)$$
- A. 2
B. 1
C. 3
D. 6
- ___ 167. The molar volume of a gas at STP occupies ____.
- A. 1 kilopascal
B. 0°C
C. 22.4 L
D. 12 grams
- ___ 168. What is the temperature of absolute zero measured in $^\circ\text{C}$?
- A. -373°C
B. -73°C
C. -173°C
D. -273°C
- ___ 169. Which of the following is NOT a true about atomic mass?
- A. The atomic mass is 12 g for magnesium.
B. The atomic mass is the number of grams of an element that is numerically equal to the mass in amu.
C. The atomic mass is the mass of one mole of atoms.
D. The atomic mass is found by checking the periodic table.
- ___ 170. What is the result of adding 2.5×10^3 and 3.5×10^2 ?
- A. 6.0×10^3
B. 2.9×10^2
C. 6.0×10^5
D. 2.9×10^3

- ___ 171. What are the missing coefficients for the skeleton equation below?
 $\text{Al}_2(\text{SO}_4)_3(aq) + \text{KOH}(aq) \rightarrow \text{Al}(\text{OH})_3(aq) + \text{K}_2\text{SO}_4(aq)$
- A. 1, 6, 2, 3
B. 4, 6, 2, 3
C. 2, 12, 4, 6
D. 1, 3, 2, 3
- ___ 172. In the chemical equation $\text{H}_2\text{O}_2(aq) \rightarrow \text{H}_2\text{O}(l) + \text{O}_2(g)$, the O_2 is a ____.
- A. solid
B. product
C. catalyst
D. reactant
- ___ 173. What is the measurement 111.009 mm rounded off to four significant digits?
- A. 110 mm
B. 111.0 mm
C. 111 mm
D. 111.01 mm
- ___ 174. If the temperature changes by 100 K, by how much does it change in $^\circ\text{C}$?
- A. 37°C
B. 273°C
C. 0°C
D. 100°C
- ___ 175. When iron rusts in air, iron(III) oxide is produced. How many moles of oxygen react with 2.4 mol of iron in the rusting reaction?
 $4\text{Fe}(s) + 3\text{O}_2(g) \rightarrow 2\text{Fe}_2\text{O}_3(s)$
- A. 1.2 mol
B. 3.2 mol
C. 1.8 mol
D. 2.4 mol
- ___ 176. What is the molar mass of $(\text{NH}_4)_2\text{CO}_3$?
- A. 144 g
B. 78 g
C. 138 g
D. 96 g
- ___ 177. What are the coefficients that will balance the skeleton equation below?
 $\text{AlCl}_3 + \text{NaOH} \rightarrow \text{Al}(\text{OH})_3 + \text{NaCl}$
- A. 1, 3, 3, 1
B. 1, 3, 1, 3
C. 3, 1, 3, 1
D. 1, 1, 1, 3

**2015 Chemistry Final Exam PRACTICE TEST
Answer Section**

MATCHING

1. D
2. B
3. A
4. C

5. H
6. C
7. B
8. A
9. G
10. E
11. F

12. A
13. D
14. B
15. C
16. E
17. F

18. C
19. B
20. A

21. C
22. E
23. A
24. D
25. B

MULTIPLE CHOICE

26. D
27. A
28. D
29. C
30. C
31. B
32. A

- 33. A
- 34. C
- 35. D
- 36. A
- 37. A
- 38. B
- 39. A
- 40. C
- 41. A
- 42. A
- 43. D
- 44. D
- 45. C
- 46. C
- 47. D
- 48. D
- 49. A
- 50. B
- 51. B
- 52. D
- 53. D
- 54. B
- 55. A
- 56. C
- 57. D
- 58. D
- 59. C
- 60. C
- 61. C
- 62. B
- 63. A
- 64. A
- 65. D
- 66. B
- 67. D
- 68. B
- 69. B
- 70. C
- 71. D
- 72. C
- 73. A
- 74. C
- 75. D
- 76. D

- 77. A
- 78. C
- 79. D
- 80. B
- 81. B
- 82. A
- 83. C
- 84. A
- 85. C
- 86. C
- 87. A
- 88. D
- 89. A
- 90. C
- 91. B
- 92. A
- 93. D
- 94. D
- 95. A
- 96. A
- 97. C
- 98. A
- 99. B
- 100. C
- 101. B
- 102. A
- 103. D
- 104. D
- 105. C
- 106. A
- 107. A
- 108. A
- 109. C
- 110. D
- 111. D
- 112. A
- 113. D
- 114. B
- 115. B
- 116. B
- 117. C
- 118. B
- 119. C
- 120. D

- 121. D
- 122. A
- 123. D
- 124. C
- 125. C
- 126. D
- 127. B
- 128. D
- 129. D
- 130. D
- 131. B
- 132. C
- 133. D
- 134. C
- 135. A
- 136. C
- 137. D
- 138. A
- 139. B
- 140. C
- 141. A
- 142. A
- 143. C
- 144. A
- 145. D
- 146. C
- 147. B
- 148. D
- 149. A
- 150. A
- 151. C
- 152. D
- 153. D
- 154. C
- 155. D
- 156. D
- 157. D
- 158. A
- 159. D
- 160. B
- 161. A
- 162. D
- 163. D
- 164. A

- 165. D**
- 166. A**
- 167. C**
- 168. D**
- 169. A**
- 170. D**
- 171. A**
- 172. B**
- 173. B**
- 174. D**
- 175. C**
- 176. D**
- 177. B**

<u>C</u> 86.	<u>A</u> 95.	<u>D</u> 104.	<u>D</u> 113.	<u>D</u> 123.
<u>A</u> 87.	<u>A</u> 96.	<u>C</u> 105.	<u>B</u> 114.	<u>C</u> 124.
<u>D</u> 88.	<u>C</u> 97.	<u>A</u> 106.	<u>B</u> 115.	<u>C</u> 125.
<u>A</u> 89.	<u>A</u> 98.	<u>A</u> 107.	<u>B</u> 116.	<u>D</u> 126.
<u>C</u> 90.	<u>B</u> 99.	<u>A</u> 108.	<u>C</u> 117.	<u>B</u> 127.
<u>B</u> 91.	<u>C</u> 100.	<u>C</u> 109.	<u>B</u> 118.	<u>D</u> 128.
<u>A</u> 92.	<u>B</u> 101.	<u>D</u> 110.	<u>C</u> 119.	<u>D</u> 129.
<u>D</u> 93.	<u>A</u> 102.	<u>D</u> 111.	<u>D</u> 120.	<u>D</u> 130.
<u>D</u> 94.	<u>D</u> 103.	<u>A</u> 112.	<u>D</u> 121.	<u>B</u> 131.
			<u>A</u> 122.	

<u>C</u> 132.		<u>C</u> 146.	<u>D</u> 155.	<u>D</u> 163.
<u>D</u> 133.		<u>B</u> 147.	<u>D</u> 156.	<u>A</u> 164.
<u>C</u> 134.			<u>D</u> 157.	<u>D</u> 165.
	<u>B</u> 139.	<u>D</u> 148.		
<u>A</u> 135.		<u>A</u> 149.	<u>A</u> 158.	<u>A</u> 166.
	<u>C</u> 140.			
<u>C</u> 136.		<u>A</u> 150.	<u>D</u> 159.	<u>C</u> 167.
	<u>A</u> 141.			
<u>D</u> 137.	<u>A</u> 142.	<u>C</u> 151.	<u>B</u> 160.	<u>D</u> 168.
				<u>A</u> 169.
<u>A</u> 138.	<u>C</u> 143.	<u>D</u> 152.	<u>A</u> 161.	
	<u>A</u> 144.	<u>D</u> 153.		<u>D</u> 170.
			<u>D</u> 162.	
		<u>C</u> 154.		
	<u>D</u> 145.			

A 171.

B 172.

B 173.

D 174.

C 175.

D 176.

B 177.