





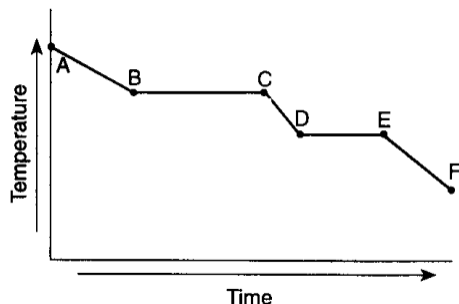
\_\_\_\_ 15.

**Results of Firing Alpha Particles at Gold Foil**

Observation:	Proportion:
Alpha particles went straight through gold foil.	> 98%
Alpha particles went through gold foil but were deflected at large angles.	≈ 2%
Alpha particles bounced off gold foil.	≈ 0.01%

**What information do the experimental results above reveal about the nucleus of the gold atom?**

- a. The nucleus is small and is the densest part of the atom.      c. The nucleus contains less than half the mass of the atom.
- b. The nucleus is large and occupies most of the atom's space.      d. The nucleus contains small positive and negative particles.
- \_\_\_\_ 16. How many oxygen atoms are there in 4.75 mol of Calcium Dichromate?
- a. 52.5 oxygen atoms      c.  $3.01 \times 10^{24}$  oxygen atoms
- b.  $2.00 \times 10^{25}$  oxygen atoms      d. 7 oxygen atoms
- \_\_\_\_ 17. In which of the following is the number of neutrons correctly represented?
- a.  $^{24}_{12}\text{Mg}$  has 24 neutrons      d.  $^{19}_9\text{F}$  has 0 neutrons
- b.  $^{75}_{33}\text{As}$  has 108 neutrons      e.  $^{238}_{92}\text{U}$  has 146 neutrons
- c.  $^{197}_{79}\text{Au}$  has 79 neutrons
- \_\_\_\_ 18. List the following atoms in order of increasing first ionization energy: B, Li, C, F, O.
- a. B, Li, C, O, F      c. F, O, C, B, Li
- b. Li, B, F, O, C      d. Li, B, C, O, F
- \_\_\_\_ 19. Which of the following is a monatomic gas at STP?
- a. Nitrogen      c. Fluorine
- b. Chlorine      d. Helium



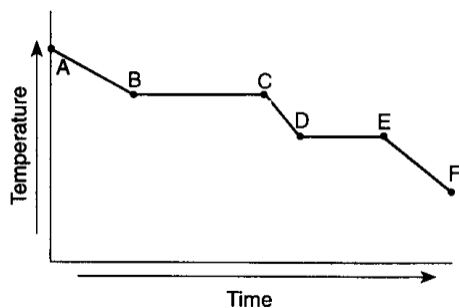
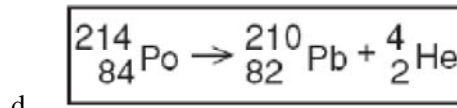
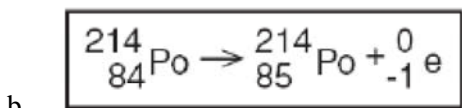
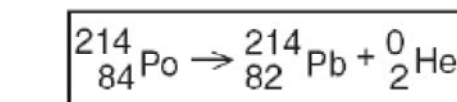
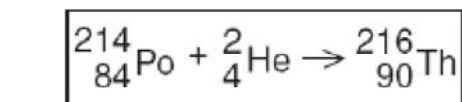
- \_\_\_\_\_ 20. According to the above figure, what is happening as a substance goes from point A to point B?
- A gas is condensing
  - A gas is getting colder
  - A solid is getting warmer
  - Ice is melting
- \_\_\_\_\_ 21. Alkanes are hydrocarbons that contain what type of bonds?
- ionic bonds
  - at least one double bond
  - single covalent bonds only
  - at least one triple bond
- \_\_\_\_\_ 22. The temperature of a substance is 23 degrees Celsius. Convert these degrees to Kelvin.
- 300K
  - 273K
  - 250K
  - 296K
- \_\_\_\_\_ 23. Standard temperature and pressure (STP) are defined as
- 0-K and 1-atm
  - 0-°C and 1-kPa
  - 0-K and 1-kPa
  - 0-°C and 101.3 kPa
- \_\_\_\_\_ 24. The specific heat of copper is about 0.4 joules/gram °C. How much heat is needed to change the temperature of a 60-gram sample of copper from 20.0 °C to 60.0 °C?
- 960 J
  - 1200 J
  - 720 J
  - 480 J
- \_\_\_\_\_ 25. How many valence electrons does a carbon atom have?
- 1
  - 2
  - 3
  - 4
- \_\_\_\_\_ 26. The splitting of a nucleus into smaller nuclei is known as...
- Fusion
  - Hydrolysis
  - Fission
- \_\_\_\_\_ 27. Select the correct statement about subatomic particles.
- Electrons, protons, and neutrons all have the same mass.
  - Neutrons have no charge and are the lightest subatomic particles.
  - Electrons are negatively charged, occupy most of the volume and are the lightest subatomic particles.
  - Protons are positively charged, found in the nucleus and the lightest subatomic particles.
- \_\_\_\_\_ 28. The energy released by the sun is a result from nuclear
- Combustion
  - Fission
  - Fusion
- \_\_\_\_\_ 29. What is the correct electron configuration for Gold?
- [Rn]6s<sup>2</sup>5d<sup>9</sup>
  - [Xe] 6s<sup>2</sup>4f<sup>14</sup>5d<sup>9</sup>
  - [Xe]6s<sup>2</sup>5d<sup>9</sup>
  - [Rn]6s<sup>2</sup>4f<sup>14</sup>5d<sup>9</sup>
- \_\_\_\_\_ 30. How many carbons are in a molecule of hexane?
- 5
  - 6
  - 3
  - 4

- \_\_\_ 31. What must happen for liquid water to freeze?
- The water must absorb kinetic energy from the surroundings.
  - The water molecules must begin to move in random patterns.
  - The water must release energy to the surroundings.
  - The water molecules must begin to move faster
- \_\_\_ 32. Under which of the following sets of conditions will a 0.50 mole sample of helium occupy a volume of 11.2 liters?
- 273 K and 1.0 atm
  - 298 K and 0.50 atm
  - 373 K and 0.50 atm
  - 273 K and 1.50 atm
- \_\_\_ 33. Which of the following elements will require the most energy to remove an electron from its outer energy level?
- Chlorine
  - Neon
  - Cesium
  - Lanthanum
- \_\_\_ 34. Which of the following structures are polar?
- CH<sub>4</sub>
  - HCP
  - PH<sub>3</sub>
  - C<sub>2</sub>H<sub>2</sub>
- \_\_\_ 35. \_\_\_ C<sub>8</sub>H<sub>18</sub> + \_\_\_ O<sub>2</sub> --> \_\_\_ CO<sub>2</sub> + \_\_\_ H<sub>2</sub>O  
 What volume of C<sub>8</sub>H<sub>18</sub> will completely react to produce exactly 36 liters of H<sub>2</sub>O? Balance the equation first!
- 2.0 L
  - 36 L
  - 27 L
  - 4 L
- \_\_\_ 36. What type of reaction is the reaction below?
- $$\underline{\hspace{1cm}} \text{Fe}_2\text{O}_3 \rightarrow \underline{\hspace{1cm}} \text{Fe} + \underline{\hspace{1cm}} \text{O}_2$$
- Synthesis/Combination
  - Decomposition
  - Single Replacement
  - Combustion
- \_\_\_ 37.  $\text{C}_3\text{H}_8 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$   
 This chemical equation represents the combustion of propane. When correctly balanced, the coefficient for water is
- 2
  - 8
  - 4
  - 16
- \_\_\_ 38. What is the density of 1 mole of NO<sub>2</sub> gas at STP?
- 0.513 g/L
  - 1.03 g/L
  - 1.34 g/L
  - 2.05 g/L
- \_\_\_ 39. \_\_\_ (NH<sub>4</sub>)<sub>3</sub>PO<sub>4</sub> + \_\_\_ FeSO<sub>4</sub> --> \_\_\_ Fe<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> + \_\_\_ (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>  
 How many grams of ammonium sulfate will be produced when 100. g of ammonium phosphate react completely with iron (II) sulfate?
- 100
  - 132.9
  - 186.9
  - 149.3
- \_\_\_ 40. Theoretically, when an ideal gas in a closed container cools, the pressure will drop steadily until the pressure inside is essentially that of a vacuum. At what temperature should this occur?
- 273 K
  - 460 °C
  - 0 K
  - 0°C

- \_\_\_\_\_ 41. Why is boiling a cooling process?
- The particles with less potential energy leave the liquid first, leaving the remaining particles with more potential energy.
  - The particles with less kinetic energy leave the liquid first, leaving the remaining particles with more kinetic energy.
  - The particles with more potential energy leave the liquid first, leaving the remaining particles with less potential energy.
  - The particles with more kinetic energy leave the liquid first, leaving the remaining particles with less kinetic energy.
- \_\_\_\_\_ 42. How do the isotopes carbon-12 and carbon-14 differ?
- Carbon-12 has no neutrons; Carbon-14 has two
  - Carbon-12 has two more electrons than Carbon-14.
  - Carbon-12 has no protons; Carbon-14 has six.
  - Carbon-12 has six neutrons; Carbon-14 has eight neutrons.
- \_\_\_\_\_ 43. Substance X a molecular compound that is a liquid at room temperature. Substance Z is a molecular compound that is a solid at room temperature. Which of the following statements is true?
- The molecules of substance Z move randomly compared to substance X.
  - The intermolecular forces are stronger in substance X.
  - The intermolecular forces are stronger in substance Z.
  - Substance X most likely has a higher molecular mass than substance Z.
- \_\_\_\_\_ 44. Which of the following is **not** an example of an emulsion?
- A cloudy layer formed when a mixture of biodiesel and water is shaken
  - Oil and water that is clearly separated
  - Mayonnaise
  - pancake batter
- \_\_\_\_\_ 45. Select the set of coefficients that properly balance the equation below.
- $$\underline{\quad} \text{Fe}_2\text{O}_3 \rightarrow \underline{\quad} \text{Fe} + \underline{\quad} \text{O}_2$$
- 1, 2, 3
  - 2, 4, 3
  - 2, 2, 3
  - 3, 4, 4
- \_\_\_\_\_ 46. What is the correct name for this compound:  $\text{HNO}_3$ ?
- Nitrous Acid
  - Hydronitrous Acid
  - Nitric Acid
  - Hydronitric Acid
- \_\_\_\_\_ 47. What is the volume of a 200-gram sample of nitrogen gas at STP?
- 125-L
  - 250-L
  - 320-L
  - 160-L
- \_\_\_\_\_ 48. How many moles of carbon-12 are contained in exactly 6 grams of carbon-12?
- 2.0 moles
  - 0.5 moles
  - $6.02 \times 10^{23}$  moles
  - $3.01 \times 10^{23}$  moles
- \_\_\_\_\_ 49. Which of the following ions should have the largest ionic radius?
- Iron II ion
  - Bromide ion
  - Potassium Ion
  - Selenide ion
- \_\_\_\_\_ 50. Which of these is an example of an exothermic chemical process?
- evaporation of water
  - photosynthesis of glucose
  - combustion of gasoline
  - melting ice



60. Which equation correctly represents the alpha decay of Polonium-214



61.

According to the above figure, what happens when a substance moves from point D to point E?

- a. A gas is condensing  
 b. A liquid is freezing  
 c. A liquid is cooling down  
 d. A solid is melting

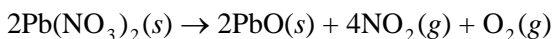
Table of Common Molecules				
Name	Hydrogen	Chlorine	Ammonia	Methane
Molecular Formula	H <sub>2</sub>	Cl <sub>2</sub>	NH <sub>3</sub>	CH <sub>4</sub>

62.

What type of bond to all of these compounds have in common?

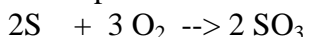
- a. hydrogen  
 b. metallic  
 c. Covalent  
 d. ionic

63. Lead nitrate can be decomposed by heating. What is the percent yield of the decomposition reaction if 9.9 g Pb(NO<sub>3</sub>)<sub>2</sub> are heated to give 5.5 g of PbO?



- a. 44%  
 b. 56%  
 c. 67%  
 d. 82%

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



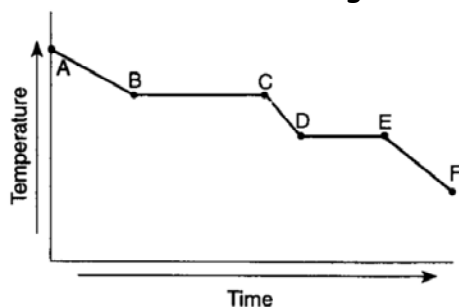
- a. 2 moles of S + 3 moles of oxygen --> 2 moles of SO<sub>3</sub>  
 b. 2 atoms of S + 6 molecules of oxygen --> 2 molecules of SO<sub>3</sub>  
 c. 2 g of S + 3 g of O<sub>2</sub> --> 2 g of SO<sub>3</sub>  
 d. None of the above



- \_\_\_ 65. Which expression proves the law of conservation of mass for the following equation.
- $$2K + 2 H_2O \rightarrow 2 KOH + H_2$$
- a. 164.2 g of reactants = 82.1 g of products  
 b. 57.1 g of reactants = 57.1 g of products  
 c. 114.2 g of reactants = 114.2 g of products  
 d. 57.1 g of reactants = 58.1 g of reactants
- \_\_\_ 66.  $H_2O_2$ , 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
- \_\_\_ 67. Which of the following compounds is an acid?
- a.  $H_2O$   
 b.  $NH_3$   
 c.  $H_2SO_4$   
 d.  $LiH$
- \_\_\_ 68. What is the correct name for the following  $N_2O_4$ ?
- a. nitrogen (IV) oxide  
 b. dinitrogen oxide  
 c. nitrogen tetraoxide  
 d. dinitrogen tetroxide
- \_\_\_ 69. How do the isotopes hydrogen-1 and hydrogen-2 differ?
- a. Hydrogen-1 has no protons; Hydrogen-2 has one.  
 b. Hydrogen-1 has one protons; Hydrogen-2 has two.  
 c. Hydrogen-1 has one protons; Hydrogen-2 has one protone and one neutron.  
 d. Hydrogen-1 has one neutron; Hydrogen-2 has two protons..
- \_\_\_ 70.  $P_4O_{10} + H_2O \rightarrow H_3PO_4$   
 Choose the correct type of reaction.
- a. decomposition  
 b. combination  
 c. combustion  
 d. single replacement
- \_\_\_ 71.  $LiOH + H_3PO_4 \rightarrow ? + ? + \dots$   
 The above reaction represents a special (exceptional) case of a reaction, which is the:
- a. Formation of an Acid  
 b. Formation of a Base  
 c. Acid-Base Neutralization  
 d. Formation of Hydrogen Gas  
 e. Not a special (exceptional) case.
- \_\_\_ 72. In a combustion reaction where hydrocarbons (e.g. propane) or carbohydrates (e.g. glucose) are burned in the air, which of the following is also the other reactant?
- a. Carbon dioxide  
 b. Water  
 c. Light  
 d. Oxygen  
 e. Heat
- \_\_\_ 73. A sample of a gas with a volume of 3.9 L at  $27^\circ C$  and 1.00 atm is cooled at a constant pressure until the temperature is  $11^\circ C$ . Calculate the new volume.
- a. 5.1 L  
 b. 3.7 L  
 c. 4.0 L  
 d. 1.4 L
- \_\_\_ 74. What is the element with the lowest electronegativity value?
- a. calcium  
 b. oxygen  
 c. cesium  
 d. fluorine

- \_\_\_\_\_ 75. Which of the following elements has the smallest ionic radius?
- Oxide ion
  - Lithium ion
  - Sulfide ion
  - Potassium ion
- \_\_\_\_\_ 76. Barium is a larger atom than Calcium. Which of the following is the *BEST* explanation why this occurs?
- Barium only has two valence electrons
  - Barium more electrons and protons and more attraction
  - Barium has more electrons than calcium
  - Barium has two more energy levels than calcium
- \_\_\_\_\_ 77. Which element has the configuration of  $[\text{Rn}] 7s^2 5f^3 6d^1$
- Th
  - Nd
  - Ac
  - U
- \_\_\_\_\_ 78. Choose the correct electron configuration for  $\text{P}^{3-}$ .
- $1s^2 2s^2 2p^6 3s^2$
  - $1s^2 2s^2 2p^6 3s^2 3p^6$
  - $1s^2 2s^2 2p^6 3s^2 3p^3$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$
- \_\_\_\_\_ 79. Who arranged the elements according to atomic mass and used the arrangement to predict the properties of missing elements?
- Dmitri Mendeleev
  - Antoine Lavoisier
  - John Dalton
  - Henry Moseley
- \_\_\_\_\_ 80. What is the number of moles of solute in 250 mL of a 0.4M solution?
- 0.16 mol
  - 1.6 mol
  - 0.1 mol
  - 0.62 mol
- \_\_\_\_\_ 81. The noble gas configuration for Uranium is:
- $[\text{Xe}] 7s^2 5f^3$
  - $[\text{Rn}] 7s^2 5f^3$
  - $[\text{Xe}] 7s^2 5f^2 5d^1$
  - $[\text{Rn}] 7s^2 5f^3 6d^1$
- \_\_\_\_\_ 82. What is the correct formula for barium chlorate?
- $\text{Ba}(\text{ClO})_2$
  - $\text{Ba}(\text{ClO}_2)_2$
  - $\text{Ba}(\text{ClO}_3)_2$
  - $\text{BaCl}_2$
- \_\_\_\_\_ 83. If a balloon is squeezed, what happens to the pressure of the gas inside the balloon?
- The pressure depends on the type of gas in the balloon.
  - It decreases.
  - It stays the same.
  - It increases.
- \_\_\_\_\_ 84. What is the volume of 63.8 g of Carbon Dioxide at a pressure of 75.0 kPa and a temperature of 345 K?
- 78.4 L
  - 8.23 L
  - 55.4 L
  - 22.4 L
- \_\_\_\_\_ 85. A 25.0 g sample of water at 100°C has an energy change of -1670 J. What is the new temperature of the water?
- 116°C
  - 84.0°C
  - 104.18°C
  - 58.5°C

- \_\_\_ 86. The graph below represents the uniform cooling (freezing) of a substance, starting with the substance as a gas above its boiling point.



Choose the answers that describe the change in enthalpy between C and D

- a.  $\Delta H$  and Endothermic  
 b.  $\Delta H$  and Exothermic  
 c.  $-\Delta H$  and Endothermic  
 d.  $-\Delta H$  and Exothermic  
 e.  $\Delta H_{\text{vap}}$  and Exothermic
- \_\_\_ 87. What is the molarity of 200 mL of solution in which 2.0 moles of sodium bromide is dissolved?  
 a. 2.0M  
 b. 4.0M  
 c. 0.40M  
 d. 10M
- \_\_\_ 88. What is the molality of a solution containing 8.0 grams of solute in 0.50 kg of solvent? (molar mass of solute = 24 g)  
 a. 0.17m  
 b. 0.67m  
 c. 4m  
 d. 1.67m
- \_\_\_ 89. How many valence electrons does an atom of any halogen group have?  
 a. 4  
 b. 5  
 c. 7  
 d. 8
- \_\_\_ 90. An analysis of the equilibrium mixture in a 1-L flask gives the following results:  $[\text{HCl}] = .30$  mol,  $[\text{O}_2] = .20$  mol,  $[\text{H}_2\text{O}] = 1.2$  mol, and  $[\text{Cl}_2] = .60$
- $$4\text{HCl}(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{H}_2\text{O}(\text{g}) + 2\text{Cl}_2(\text{g}) + 10\text{kJ}$$
- Based on your answer for  $K_{\text{eq}}$  are the reactants or products favored?
- a. products  
 b. heat  
 c. reactants  
 d. Both a and B
- \_\_\_ 91. Isotopes of the same element will have different... (Choose all that apply)  
 a. numbers of protons  
 b. chemical properties  
 c. numbers of neutrons  
 d. numbers of electrons  
 e. masses

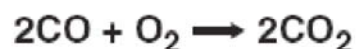


What kind of change will shift the reaction above to the right to form more products?

- \_\_\_ 92.  
 a. a decrease in total pressure  
 b. an increase in the pressure of  $\text{NH}_3$   
 c. a decrease in temperature  
 d. an increase in the concentration of  $\text{HCl}$

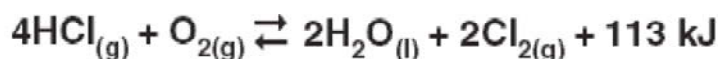
Of four different laboratory solutions, the solution with the *highest* acidity has a pH of

- \_\_\_ 93. a. 11 c. 3  
b. 7 d. 5
- \_\_\_ 94. Choose the correct molecular shape for ammonia, NH<sub>3</sub>.  
a. trigonal planar c. trigonal pyramidal  
b. linear d. bent
- \_\_\_ 95. When a reaction is at equilibrium and more reactant is added, which of the following changes is the immediate result?  
a. The forward reaction rate increases. c. The forward reaction rate remains the same.  
b. The reverse reaction rate decreases. d. The reverse reaction rate remains the same.



If the above reaction takes place inside a sealed reaction chamber, then which of these procedures will cause a decrease in the rate of reaction?

- \_\_\_ 96. a. removing the CO<sub>2</sub> as it is formed c. adding more CO to the reaction chamber  
b. raising the temperature of the reaction chamber d. increasing the volume inside the reaction chamber
- \_\_\_ 97. Determine the shape of SCl<sub>2</sub>:  
a. bent c. trigonal pyramidal  
b. tetrahedral d. linear



Which action will drive the reaction to the right?

- \_\_\_ 98. a. increasing the system's pressure c. decreasing the oxygen concentration  
b. heating the equilibrium mixture d. adding water to the system
- \_\_\_ 99. Which of the following covalent bonds is the most polar?  
a. C---C c. C---H  
b. C---Br d. C---Cl
- \_\_\_ 100. In which of the following reactions involving gases would the forward reaction be favored by an increase in pressure?  
a.  $\text{A} + \text{B} \rightleftharpoons \text{AB}$  c.  $\text{AC} \rightleftharpoons \text{A} + \text{C}$   
b.  $\text{A} + \text{B} \rightleftharpoons \text{C} + \text{D}$  d.  $2\text{A} + \text{B} \rightleftharpoons \text{C} + 2\text{D}$

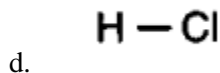
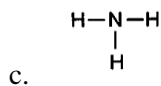
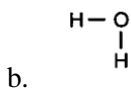
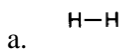
- \_\_\_ 101. Why do atoms share electrons in covalent bonds?
- to attain a noble-gas electron configuration
  - to increase their atomic numbers
  - to become ions and attract each other
  - to become more polar

**Equal volumes of 1 molar hydrochloric acid (HCl) and 1 molar sodium hydroxide base (NaOH) are mixed. After mixing, the solution will be**

- \_\_\_ 102.
- weakly basic
  - strongly acidic
  - nearly neutral
  - weakly acidic

**Which would be *most* appropriate for collecting data during a neutralization reaction?**

- \_\_\_ 103.
- a statistics program
  - a thermometer
  - a pH probe
  - a graphing program
- \_\_\_ 104. Which intermolecular force is present in the compound  $\text{CH}_3\text{NH}_2$  between the N and H? Choose only the strongest force present.
- dipole-dipole
  - electrostatic
  - dispersion
  - hydrogen bonding
- \_\_\_ 105. Which structural formula represents a nonpolar molecule?



## Spring Practice test Answer Section

### MULTIPLE CHOICE

1. ANS: D  
Stt. 4h  
  
PTS: 1                      STA: 4h
2. ANS: A  
ST 2A, 2B  
  
PTS: 1
3. ANS: A                      PTS: 1
4. ANS: B  
ST. 1.E  
  
PTS: 1
5. ANS: C  
St. 4c,g  
  
PTS: 1                      STA: 4c,g
6. ANS: B                      PTS: 1                      DIF: L1                      REF: p. 698  
OBJ: 22.1.2                      STA: Ch.10.d
7. ANS: A  
St. 4c  
  
PTS: 1
8. ANS: D  
ST. 1  
ST. 11.C  
  
PTS: 1
9. ANS: B                      PTS: 1                      STA: 3e
10. ANS: B  
St. 4c  
  
PTS: 1                      STA: 4c
11. ANS: A                      PTS: 1
12. ANS: B                      PTS: 1                      STA: 3d                      KEY: Mass to Representative Particles
13. ANS: B                      PTS: 1                      DIF: L1                      REF: p. 726  
OBJ: 23.1.1                      STA: Ch.10.e
14. ANS: B  
Standard 1c  
  
PTS: 1

15. ANS: A  
St. 1.E  
ST. 1.H
- PTS: 1
16. ANS: B PTS: 1 STA: 3d  
KEY: Moles to Representative Particles within formula
17. ANS: E PTS: 1
18. ANS: D  
St. 1c
- PTS: 1 STA: 1c
19. ANS: D  
ST 1B
- PTS: 1
20. ANS: B PTS: 1
21. ANS: C PTS: 1 DIF: L1 REF: p. 694  
OBJ: 22.1.2 STA: Ch.10.d
22. ANS: D  
ST 4E
- PTS: 1
23. ANS: D PTS: 1 STA: 4d
24. ANS: A  
St. 7d
- PTS: 1
25. ANS: D PTS: 1 DIF: L1 REF: p. 694  
OBJ: 22.1.1 STA: Ch.1.g | Ch.10.b
26. ANS: C PTS: 1
27. ANS: C  
ST. 1.A
- PTS: 1
28. ANS: C PTS: 1
29. ANS: B PTS: 1
30. ANS: B PTS: 1 DIF: L1 REF: p. 695  
OBJ: 22.1.2 STA: Ch.10.d
31. ANS: C  
St. 7c
- PTS: 1
32. ANS: A PTS: 1 STA: 3d KEY: Molar Volume of a gas at STP
33. ANS: B  
St. 1c
- PTS: 1

34. ANS: B                   PTS: 1                   DIF: L1                   REF: p. 737  
OBJ: 23.3.1               STA: Ch.10.e
35. ANS: D  
ST 3  
  
PTS: 1
36. ANS: B                   PTS: 1                   STA: 3a                   KEY: Types of Reactions; Decomposition
37. ANS: C                   PTS: 1
38. ANS: D                   PTS: 1                   STA: 3d  
KEY: density of a gas at STP; molar mass; molar volume
39. ANS: B  
ST 3  
  
PTS: 1
40. ANS: C  
St. 4d, 4e, 4f, 4c  
  
PTS: 1                   STA: 4c,d,e,f
41. ANS: D  
St. 7a  
  
PTS: 1                   STA: 7a
42. ANS: D  
ST.11.c  
  
PTS: 1
43. ANS: C  
St. 2d  
  
PTS: 1
44. ANS: B                   PTS: 1
45. ANS: B                   PTS: 1                   STA: 3a                   KEY: Balancing Equations
46. ANS: C  
ST 2A, 2B  
  
PTS: 1
47. ANS: D                   PTS: 1                   STA: 3d                   KEY: Molar Volume of a Gas
48. ANS: B                   PTS: 1                   STA: 3b                   KEY: Mass to Moles
49. ANS: D  
Standard 1c  
  
PTS: 1                   STA: 1c
50. ANS: C  
St. 7b  
  
PTS: 1
51. ANS: C                   PTS: 1                   DIF: L1                   REF: p. 740  
OBJ: 23.3.2               STA: Ch.10.e



52. ANS: C                   PTS: 1
53. ANS: C                   PTS: 1                   STA: 3e
54. ANS: A  
St. 4h
- PTS: 1                   STA: 4h
55. ANS: D  
St. 1.A
- PTS: 1
56. ANS: B                   PTS: 1                   STA: 3a                   KEY: Predicting Products
57. ANS: C                   PTS: 1
58. ANS: A  
ST. 1
- PTS: 1
59. ANS: C  
ST. 1A, ST 2.A
- PTS: 1
60. ANS: D                   PTS: 1
61. ANS: B                   PTS: 1
62. ANS: C  
ST 2B
- PTS: 1
63. ANS: D                   PTS: 1                   DIF: L2                   REF: p. 375  
OBJ: 12.3.2                   STA: Ch.3.f
64. ANS: A                   PTS: 1
65. ANS: C  
3
- PTS: 1
66. ANS: B                   PTS: 1                   STA: 8c
67. ANS: C                   PTS: 1                   DIF: 2                   STA: 2a  
TOP: Acid Identification
68. ANS: D                   PTS: 1                   DIF: 2                   STA: 2a  
TOP: Molecular Naming
69. ANS: C  
ST. 1  
ST. 11.C
- PTS: 1
70. ANS: B                   PTS: 1
71. ANS: C                   PTS: 1
72. ANS: D                   PTS: 1

73. ANS: B  
St. 4c
- PTS: 1 STA: 4c
74. ANS: C PTS: 1 DIF: L1 REF: p. 177  
OBJ: 6.3.3 STA: Ch.1.c
75. ANS: B PTS: 1 DIF: L2 REF: p. 175  
OBJ: 6.3.3 STA: Ch.1.c
76. ANS: D PTS: 1
77. ANS: D PTS: 1 DIF: L2 REF: p. 133  
OBJ: 5.2.1 STA: Ch.1.i
78. ANS: B PTS: 1
79. ANS: A PTS: 1 DIF: L1 REF: p. 156  
OBJ: 6.1.2 STA: Ch.1
80. ANS: C PTS: 1 DIF: L2 REF: p. 480 | p. 482  
OBJ: 16.2.1 STA: Ch.6.d
81. ANS: D PTS: 1 DIF: L2 REF: p. 164  
OBJ: 6.2.2 STA: Ch.1.g
82. ANS: C PTS: 1 DIF: L3 REF: p. 257 | p. 264  
OBJ: 9.2.2 | 9.5.2 STA: Ch.5
83. ANS: D PTS: 1 DIF: L1 REF: p. 416  
OBJ: 14.1.2 STA: Ch.4.c
84. ANS: C  
Stt. 4h
- PTS: 1 STA: 4h
85. ANS: B PTS: 1
86. ANS: D PTS: 1
87. ANS: D PTS: 1 DIF: L2 REF: p. 483 | p. 484  
OBJ: 16.2.2 STA: Ch.6.d
88. ANS: B PTS: 1 DIF: L2 REF: p. 491  
OBJ: 16.4.1 STA: Ch.6.d

**MULTIPLE RESPONSE**

89. ANS: C  
2a
- PTS: 1
90. ANS: A  
9b
- PTS: 1
91. ANS: C, E PTS: 1
92. ANS: A  
9a
- PTS: 1

93. ANS: C  
5d

PTS: 1

94. ANS: C  
2f

PTS: 1

95. ANS: A  
9a

PTS: 1

96. ANS: D  
8a

PTS: 1

97. ANS: A  
2f

PTS: 1

98. ANS: A  
9b

PTS: 1

99. ANS: D  
2f

PTS: 1

100. ANS: A  
9a

PTS: 1

101. ANS: A  
2a

PTS: 1

102. ANS: C  
5a

PTS: 1

103. ANS: C  
5a

PTS: 1

104. ANS: D  
2h

PTS: 1

105. ANS: A  
2f

PTS: 1