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

Midterm spring-practice test

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. What is conserved in the reaction shown below?
$H_2(g) + Cl_2(g) \rightarrow 2HCl(g)$

a. mass only
b. mass and moles only
c. mass, moles, and molecules only
d. mass, moles, molecules, and volume

____ 2. What is conserved in the reaction shown below?
$N_2(g) + 3F_2(g) \rightarrow 2NF_3(g)$

a. atoms only
b. mass only
c. mass and atoms only
d. moles only

____ 3. In the reaction $2CO(g) + O_2(g) \rightarrow 2CO_2(g)$, what is the ratio of moles of oxygen used to moles of CO_2 produced?

a. 1:1
b. 2:1
c. 1:2
d. 2:2

____ 4. Which of the following is true about the total number of reactants and the total number of products in the reaction shown below?
$C_5H_{12}(l) + 8O_2(g) \rightarrow 5CO_2(g) + 6H_2O(g)$

a. 9 moles of reactants chemically change into 11 moles of product.
b. 9 grams of reactants chemically change into 11 grams of product.
c. 9 liters of reactants chemically change into 11 liters of product.
d. 9 atoms of reactants chemically change into 11 atoms of product.

____ 5. Which of the following is an INCORRECT interpretation of the balanced equation shown below?
$2S(s) + 3O_2(g) \rightarrow 2SO_3(g)$

a. 2 atoms S + 3 molecules $O_2 \rightarrow$ 2 molecules SO_3
b. 2 g S + 3 g $O_2 \rightarrow$ 2 g SO_3
c. 2 mol S + 3 mol $O_2 \rightarrow$ 2 mol SO_3
d. none of the above

____ 6. 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. 1.2 mol
b. 0.8 mol
c. 1.6 mol
d. 2.4 mol

____ 7. 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?
$4Fe(s) + 3O_2(g) \rightarrow 2Fe2O_3(s)$

a. 1.2 mol
b. 1.8 mol
c. 2.4 mol
d. 3.2 mol

____ 8. At STP, how many liters of oxygen are required to react completely with 3.6 liters of hydrogen to form water?

$2H_2(g) + O_2(g) \rightarrow 2H_2O(g)$

a. 1.8 L
b. 3.6 L
c. 2.0 L
d. 2.4 L

____ 9. The equation below shows the decomposition of lead nitrate. How many grams of oxygen are produced when 11.5 g NO_2 is formed?

$2Pb(NO_3)_2(s) \rightarrow 2PbO(s) + 4NO_2(g) + O_2(g)$

a. 1.00 g
b. 2.00 g
c. 2.88 g
d. 3.20x10^1 g

____ 10. When glucose is consumed, it reacts with oxygen in the body to produce carbon dioxide, water, and energy. How many grams of carbon dioxide would be produced if 45 g of $C_6H_{12}O_6$ completely reacted with oxygen?

a. 1.5 g
b. 1.8 g
c. 1.1x10^1 g
d. 6.6x10^1 g

____ 11. Mercury can be obtained by reacting mercury(II) sulfide with calcium oxide. How many grams of calcium oxide are needed to produce 36.0 g of Hg?

$4HgS(s) + 4CaO(s) \rightarrow 4Hg(l) + 3CaS(s) + CaSO_4$

a. 1.80 g
b. 7.56 g
c. 1.01x10^1 g
d. 1.34 x 10 ^1g

____ 12. How many moles of H_3PO_4 are produced when 71.0 g P_4O_{10} reacts completely to form H_3PO_4?

$P_4O_{10}(s) + 6H_2O(l) \rightarrow 4H_3PO_4(aq)$

a. 6.35x10^-2 mol
b. 1.00 mol
c. 4.00 mol
d. 1.60x10^1 mol

____ 13. How many liters of hydrogen gas are needed to react with CS_2 to produce 2.50 L of CH_4 at STP?

$4H_2(g) + CS_2(l) \rightarrow CH_4(g) + 2H_2S(g)$

a. 2.50 L
b. 5.00 L
c. 7.50 L
d. 1.00 x10^1L

____ 14. Which conversion factor do you use first to calculate the number of grams of CO_2 produced by the reaction of 50.6 g of CH_4 with O_2? The equation for the complete combustion of methane is:

$CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(l)$

a. 1 mol CH_4/16.0 g CH_4
b. 2 mol O_2/1 mol CO_2
c. 16.0 g CH_4/1 mol CO_4
d. 44.0 g CO_2/2 mol CO_2

____ 15. How many liters of NH_3 are needed to react completely with 30.0 L of NO (at STP)?

$4NH_3(g) + 6NO(g) \rightarrow 5N_2(g) + 6H_2O(g)$

a. 5.0 L
b. 2.00 x10^1L
c. 7.5 L
d. 1.200x10^2 L

____ 16. Calcium oxide, or lime, is produced by the thermal decomposition of limestone in the reaction $CaCO_3(s) \xrightarrow{\Delta} CaO(s) + CO_2(g)$. What mass of lime can be produced from 1.5×10^3 kg of limestone?

a. 8.4×10^5 kg
b. 8.4×10^2 kg
c. 8.4 kg
d. none of the above

____ 17. Hydrogen gas is produced when zinc reacts with hydrochloric acid. If the actual yield of this reaction is 85%, how many grams of zinc are needed to produce 112 L of H_2 at STP?

$Zn(s) + 2HCl(aq) \rightarrow ZnCl_2(s) + H_2(g)$

a. 9.5x10^1 g
b. 1.8x10^2 g
c. 2.8x10^2 g
d. 3.8x10^2 g

____ 18. In a particular reaction between copper metal and silver nitrate, 12.7 g Cu produced 38.1 g Ag. What is the percent yield of silver in this reaction?
$Cu + 2AgNO_3 \rightarrow Cu(NO_3)_2 + 2Ag$

a. 56.7%
b. 77.3%
c. 88.2%
d. 176%

____ 19. Standard conditions when working with gases are defined as ____.
a. 0 K and 101.3 kPa
b. 0 K and 1 kPa
c. 0°C and 101.3 kPa
d. 0°C and 1 kPa

____ 20. What is the number of moles of solute in 250 mL of a 0.4*M* solution?
a. 0.1 mol
b. 0.16 mol
c. 0.62 mol
d. 1.6 mol

____ 21. What mass of Na_2SO_4 is needed to make 2.5 L of 2.0*M* solution? (Na = 23.0 g; S = 32.1 g; O = 16.0 g)

a. 178.5 g
b. 284.5 g
c. 356.5 g
d. 710.5 g

____ 22. How many mL of a 2.0*M* NaBr solution are needed to make 200.0 mL of 0.50*M* NaBr?
a. 25 mL
b. 50 mL
c. 100 mL
d. 150 mL

____ 23. To 225 mL of a 0.80*M* solution of KI, a student adds enough water to make 1.0 L of a more dilute KI solution. What is the molarity of the new solution?
a. 180*M*
b. 2.8*M*
c. 0.35*M*
d. 0.18*M*

____ 24. Which of the following is NOT a cation?

a. iron(III) ion
b. sulfate
c. Ca^{2+}
d. mercurous ion

____ 25. In which of the following are the symbol and name for the ion given correctly?

a. NH_4^+: ammonia; H^+: hydride
b. $C_2H_3O_2^-$: acetate; $C_2O_4^-$: oxalite
c. OH^-: hydroxide; O^{2-}: oxide
d. PO_3^{3-}: phosphate; PO_4^{3-}: phosphite

____ 26. An *-ate* or *-ite* at the end of a compound name usually indicates that the compound contains ____.
a. fewer electrons than protons
b. neutral molecules
c. only two elements
d. a polyatomic anion

____ 27. Which of the following shows correctly an ion pair and the ionic compound the two ions form?

a. Sn^{4+}, N^{3-}; Sn_4N_3
b. Cu^{2+}, O^{2-}; Cu_2O_2
c. Cr^{3+}, I^-; CrI
d. Fe^{3+}, O^{2-}; Fe_2O_3

____ 28. Which of the following correctly represents an ion pair and the ionic compound the ions form?

a. Ca^{2-}, F^-; CaF_2
b. Na^+, Cl^-; $NaCl_2$
c. Ba^{2+}, O^{2-}; Ba_2O_2
d. Pb^{4+}, O^{2-}; Pb_2O_4

____ 29. What is the correct formula for potassium sulfite?

a. $KHSO_3$
b. $KHSO_4$
c. K_2SO_3
d. K_2SO_4

____ 30. Which of the following correctly shows a prefix used in naming binary molecular compounds with its corresponding number?

a. *deca-*, 7
b. *nona-*, 9
c. *hexa-*, 8
d. *octa-*, 4

____ 31. Consider a mystery compound having the formula M_xT_y. If the compound is not an acid, if it contains only two elements, and if M is not a metal, which of the following is true about the compound?

a. It contains a polyatomic ion.
b. Its name ends in *-ite* or *-ate*.
c. Its name ends in *-ic*.
d. It is a binary molecular compound.

____ 32. What is the correct formula for calcium dihydrogen phosphate?

a. CaH_2PO_4
b. $Ca_2H_2PO_4$
c. $Ca(H_2PO_4)_2$
d. $Ca(H_2HPO_4)_2$

____ 33. How many moles of silver atoms are in 1.8×10^{20} atoms of silver?

a. 3.0×10^{-4}
b. 3.3×10^{-3}
c. 3.0×10^{2}
d. 1.1×10^{44}

____ 34. How many molecules are in 2.10 mol CO_2?

a. 2.53×10^{24} molecules
b. 3.79×10^{24} molecules
c. 3.49×10^{-24} molecules
d. 1.26×10^{24} molecules

____ 35. What is the molar mass of $(NH_4)_2CO_3$?

a. 144.0 g
b. 138.0 g
c. 96.0 g
d. 78.0 g

____ 36. A 22.4-L sample of which of the following substances, at STP, would contain 6.02×10^{23} representative particles?

a. oxygen
b. gold
c. cesium iodide
d. sulfur

____ 37. If the density of an unknown gas Z is 4.50 g/L at STP, what is the molar mass of gas Z?

a. 0.201 g/mol
b. 5.00 g/mol
c. 26.9 g/mol
d. 101 g/mol

____ 38. If 60.2 grams of Hg combines completely with 24.0 grams of Br to form a compound, what is the percent composition of Hg in the compound?

a. 28.5%
b. 39.9%
c. 71.5%
d. 60.1%

____ 39. What is the percent by mass of carbon in acetone, C_3H_6O?

a. 20.7%
b. 62.1%
c. 1.61%
d. 30.0%

____ 40. What is the empirical formula of a substance that is 53.5% C, 15.5% H, and 31.1% N by weight?

a. C_3HN_2
b. $C_4H_{14}N_2$
c. C_2H_8N
d. CH_4N_7

____ 41. P_4O_{10} + H_2O --> H_3PO_4
When correctly balanced, what will be the coefficient for phosphoric acid?

a. 1
b. 4
c. 6
d. 8

____ 42. What type of reaction is the following?
$Al_2(SO_4)_3(aq)$ + $KOH(aq)$ → $Al(OH)_3$ and K_2SO_4
a. synthesis
b. decomposition
c. single replacement
d. double replacement

____ 43. If you rewrite the following word equation as a balanced equation, what will the coeffiecient and symbol for iodine be?
Bromine + Potassium iodide → Potassium bromide + Iodine
a. $2I^-$
b. $2I_2$
c. 2I
d. I
e. I_2

____ 44. What type of reaction is shown below?
H_3PO_4 + KOH → K_3PO_4 + H_2O
a. combination
b. double replacement
c. acid-base neutralization
d. single replacement
e. combustion

____ 45. What particle is needed to complete the following nuclear equation?
$^{56}_{25}Mn \rightarrow$ ____ + $^{0}_{-1}e$
a. $^{58}_{24}Cr$
b. $^{56}_{27}Co$
c. $^{56}_{26}Fe$
d. $^{27}_{25}Mn$

____ 46. Which of the following sets of symbols represents isotopes of the same element?
a. $^{91}_{42}J$ $^{92}_{42}J$ $^{93}_{40}J$
b. $^{138}_{59}Q$ $^{133}_{55}Q$ $^{133}_{54}Q$
c. $^{84}_{38}M$ $^{86}_{38}M$ $^{87}_{38}M$
d. $^{50}_{19}L$ $^{50}_{20}L$ $^{50}_{21}L$

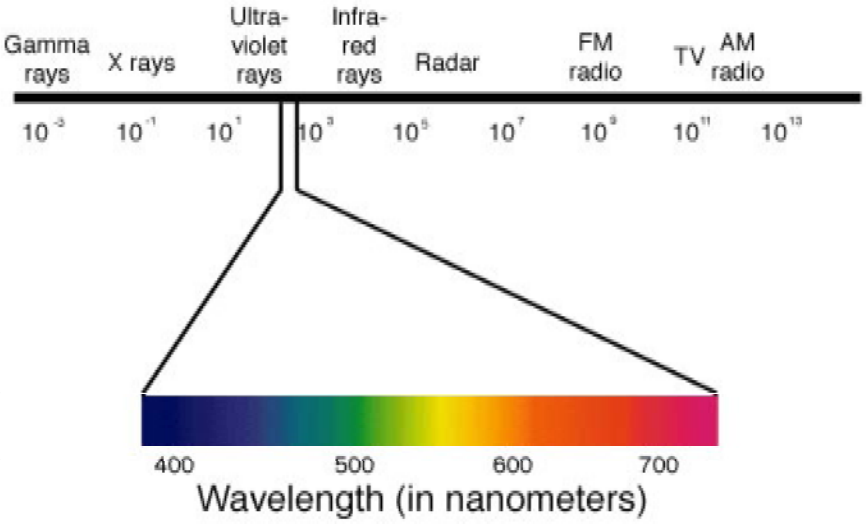
____ 47. Which of the following formulas represents a molecular compound?
a. ZnO
b. Xe
c. SO_2
d. BeF_2

____ 48. Which of the following compounds contains the lead(II) ion?
a. PbO
b. $PbCl_4$
c. Pb_2O
d. PbS_2

____ 49. The correct name for H_2SO_4 is:
a. dihyrodgen sulfur tetroxide
b. sulfuric acid
c. sulfurous acid
d. hydrogen sulfate

____ 50. What are the missing coefficients for the skeleton equation below?
$Cr(s) + Fe(NO_3)_2(aq) \rightarrow Fe(s) + Cr(NO_3)_3(aq)$
a. 4, 6, 6, 2
b. 2, 3, 2, 3
c. 2, 3, 3, 2
d. 1, 3, 3, 1

____ 51. Using the diagram below, which electromagneticradiation would have the longest wavelength?



a. radio waves
b. infrared
c. x-rays
d. gamma rays
e. radar

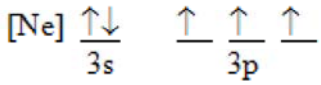
____ 52. What is the correct formula for Carbonic Acid?

a. HCO_3
b. H_2CO_3
c. HC_2O_4
d. $H_2C_2O_4$

____ 53. Choose the correct electron configuration for **phosphide ion.**

a. $1s^2\ 2s^2\ 2p^6\ 3s^2$
b. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$
c. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$
d. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2$

____ 54. Which ground-state atom has an electron configuration described by the following *orbital diagram*?



a. phosphorus
b. nitrogen
c. arsenic
d. vanadium

____ 55. Which of the following elements has the greatest ionization energy?

a. Sr
b. Ag
c. Sn
d. Te

____ 56. Which element has the greatest electronegatvity?

a. Al
b. Ga
c. In
d. B

____ 57. How many valence electrons are in an atom of phosphorus?

a. 2
b. 3
c. 4
d. 5

____ 58. Under what conditions can potassium bromide conduct electricity?
a. only when melted
b. only when dissolved
c. only when it is in crystal form
d. only when melted or dissolved in water

____ 59. What is the correct polarity for CF_4?
a. polar
b. nonpolar

____ 60. Which of the following covalent bonds is the most polar?
a. H—F
b. H—C
c. H—H
d. H—N

____ 61. Choose the correct noble gas electron configuration for Platinum
a. [Xe] $6s^2\ 5d^8$
b. [Rn] $6s^2\ 4f^{14}\ 5d^8$
c. [Rn] $7s^2\ 5f^{14}\ 6d^8$
d. [Xe] $6s^2\ 4f^{14}\ 5d^8$

____ 62. Chlorine-32 undergoes beta decay. What will be one of the products?
a. Sulfur-32
b. Argon-32
c. Phosphorus-28
d. Chlorine-33

____ 63. For the compound, PH_3, which intermolecular forces are present?
a. dispersion force , dipole-dipole
b. dispersion & hydrogen-bonding, dipole-dipole
c. dispersion force
d. dispersion & hydrogen-bonding

____ 64. In an ionic bond, the cation and anion are held together by what force?
a. intermolecular forces
b. electrostatic forces
c. intramolecular forces

____ 65. 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
b. 1.54×10^{-12} m
c. 1.54×10^{10} m
d. 1.54×10^{-10} m

____ 66. When a test instrument is calibrated, does its accuracy, precision, or reliability improve?
a. precision
b. accuracy
c. reliability
d. all of the above

____ 67. How many significant figures are in the measurement 0.003 4 kg?
a. two
b. four
c. five
d. This cannot be determined.

____ 68. How many significant figures are in the measurement 811.40 grams?
a. two
b. three
c. four
d. five

____ 69. Express the product of 2.2 mm and 5.00 mm using the correct number of significant digits.
a. 10 mm^2
b. 11 mm^2
c. 11.0 mm^2
d. 11.00 mm^2

____ 70. What is the measurement 1042 L rounded off to two significant digits?
a. 1.0×10^3 L
b. 1.04×10^3 L
c. 1.05×10^3 L
d. 1.1×10^3 L

____ 71. What quantity is represented by the metric system prefix *deci*-?
a. 1000 c. 10
b. 100 d. 1000000

____ 72. Which of the following units is NOT an official SI unit?
a. kilogram c. mole
b. ampere d. liter

____ 73. Which temperature scale has no negative temperatures?
a. Celsius c. Joule
b. Fahrenheit d. Kelvin

____ 74. What is the temperature –34°C expressed in kelvins?
a. 139 K c. 239 K
b. 207 K d. 339 K

____ 75. What is the quantity 0.0075 meters expressed in centimeters? Use the table above to help you.
a. 0.075 cm c. 7.5 cm
b. 0.75 cm d. 70.5 cm

____ 76. What is the volume of 80.0 g of ether if the density of ether is 0.70 g/mL?
a. 5.6×10^{1} c. 8.8×10^{-3}
b. 1.1×10^{2} d. 8.0×10^{1}

____ 77. What is the volume of 45.6 g of silver if the density of silver is 10.5 g/mL?
a. 0.23 mL c. 479 mL
b. 4.34 mL d. none of the above

Multiple Response
Identify one or more choices that best complete the statement or answer the question.

____ 78. What intermolecular forces are present in CH_3OH? (choose all that apply)
a. Dispersion c. Hydrogen Bonding
b. Dipole-Dipole d. Ionic Bonding

____ 79. Which of the following is NOT classified correctly as a representative particle? (choose all that apply)
a. CO = molecular c. $(NH_4)_2SiO_3$= molecule
b. Ag = formula unit d. Li = atom

Short Answer

80. The decomposition of potassium chlorate yields oxygen gas. If the yield is 95%, how many grams of $KClO_3$ are needed to produce 10.0 L of O_2?
$2KClO_3(s) \rightarrow 2KCl(s) + 3O_2(g)$

81. How many liters of a 1.5*M* solution are required to yield 5.0 grams of solute? (molar mass of solute = 30.0 g)

Midterm spring-practice test
Answer Section

MULTIPLE CHOICE

1.	ANS: D	PTS: 1	DIF: L1	REF: p. 356			
	OBJ: 12.1.2	STA: Ch.3.d					
2.	ANS: C	PTS: 1	DIF: L1	REF: p. 356			
	OBJ: 12.1.2	STA: Ch.3.d					
3.	ANS: C	PTS: 1	DIF: L1	REF: p. 356			
	OBJ: 12.1.2	STA: Ch.4.c					
4.	ANS: A	PTS: 1	DIF: L2	REF: p. 356			
	OBJ: 12.1.2	STA: Ch.3.d					
5.	ANS: B	PTS: 1	DIF: L2	REF: p. 356			
	OBJ: 12.1.2	STA: Ch.3.a					
6.	ANS: B	PTS: 1	DIF: L1	REF: p. 359 | p. 360			
	OBJ: 12.2.1	STA: Ch.3.d					
7.	ANS: B	PTS: 1	DIF: L2	REF: p. 359 | p. 360			
	OBJ: 12.2.1	STA: Ch.3.d					
8.	ANS: A	PTS: 1	DIF: L1	REF: p. 363 | p. 364 | p. 365 | p. 366			
	OBJ: 12.2.2	STA: Ch.3.d					
9.	ANS: B	PTS: 1	DIF: L2	REF: p. 360 | p. 361 | p. 362			
	OBJ: 12.2.2	STA: Ch.3.d					
10.	ANS: D	PTS: 1	DIF: L2	REF: p. 360 | p. 361 | p. 362			
	OBJ: 12.2.2	STA: Ch.3.d					
11.	ANS: C	PTS: 1	DIF: L2	REF: p. 360 | p. 361 | p. 362			
	OBJ: 12.2.2	STA: Ch.3.d					
12.	ANS: B	PTS: 1	DIF: L2	REF: p. 360 | p. 361 | p. 362			
	OBJ: 12.2.2	STA: Ch.3.d					
13.	ANS: D	PTS: 1	DIF: L2	REF: p. 363 | p. 364 | p. 365 | p. 366			
	OBJ: 12.2.2	STA: Ch.3.d					
14.	ANS: A	PTS: 1	DIF: L2	REF: p. 360 | p. 361 | p. 362			
	OBJ: 12.2.2	STA: Ch.3.d					
15.	ANS: B	PTS: 1	DIF: L2	REF: p. 363 | p. 364 | p. 365 | p. 366			
	OBJ: 12.2.2	STA: Ch.3.d					
16.	ANS: B	PTS: 1	DIF: L2	REF: p. 363 | p. 364 | p. 365 | p. 366			
	OBJ: 12.2.2	STA: Ch.3.d					
17.	ANS: D	PTS: 1	DIF: L2	REF: p. 374			
	OBJ: 12.3.2	STA: Ch.3.d					
18.	ANS: C	PTS: 1	DIF: L2	REF: p. 375			
	OBJ: 12.3.2	STA: Ch.3.f					
19.	ANS: C	PTS: 1	DIF: L1	REF: p. 387			
	OBJ: 13.1.2	STA: Ch.4.d					
20.	ANS: A	PTS: 1	DIF: L2	REF: p. 480 | p. 482			
	OBJ: 16.2.1	STA: Ch.6.d					
21.	ANS: D	PTS: 1	DIF: L3	REF: p. 481 | p. 482			
	OBJ: 16.2.1	STA: Ch.6.d					

22. ANS: B PTS: 1 DIF: L2 REF: p. 483 | p. 484
OBJ: 16.2.2 STA: Ch.6.d
23. ANS: D PTS: 1 DIF: L3 REF: p. 483 | p. 484
OBJ: 16.2.2 STA: Ch.6.d
24. ANS: B PTS: 1 DIF: L1 REF: p. 254 | p. 255 | p. 257
OBJ: 9.1.1 | 9.1.2 STA: Ch.2
25. ANS: C PTS: 1 DIF: L2 REF: p. 254 | p. 257
OBJ: 9.1.1 | 9.1.2 STA: Ch.2
26. ANS: D PTS: 1 DIF: L2 REF: p. 257
OBJ: 9.1.2 STA: Ch.2
27. ANS: D PTS: 1 DIF: L2 REF: p. 262
OBJ: 9.2.1 STA: Ch.2
28. ANS: A PTS: 1 DIF: L2 REF: p. 262
OBJ: 9.2.1 STA: Ch.2
29. ANS: C PTS: 1 DIF: L2 REF: p. 257 | p. 261 | p. 262
OBJ: 9.2.2 STA: Ch.2
30. ANS: B PTS: 1 DIF: L2 REF: p. 269
OBJ: 9.3.2 STA: Ch.2
31. ANS: D PTS: 1 DIF: L3 REF: p. 268 | p. 269
OBJ: 9.3.2 STA: Ch.2
32. ANS: C PTS: 1 DIF: L3 REF: p. 257 | p. 264
OBJ: 9.2.2 | 9.2.3 | 9.5.2 STA: Ch.5
33. ANS: A PTS: 1 DIF: L2 REF: p. 290 | p. 291
OBJ: 10.1.2 STA: Ch.3.d
34. ANS: D PTS: 1 DIF: L2 REF: p. 291 | p. 292
OBJ: 10.1.2 STA: Ch.3.d
35. ANS: C PTS: 1 DIF: L2 REF: p. 295 | p. 296
OBJ: 10.1.4 STA: Ch.3
36. ANS: A PTS: 1 DIF: L2 REF: p. 300
OBJ: 10.2.2 STA: Ch.4.h
37. ANS: D PTS: 1 DIF: L2 REF: p. 302
OBJ: 10.2.2 STA: Ch.4.h
38. ANS: C PTS: 1 DIF: L2 REF: p. 305 | p. 306
OBJ: 10.3.1 STA: Ch.3
39. ANS: B PTS: 1 DIF: L2 REF: p. 307
OBJ: 10.3.1 STA: Ch.3
40. ANS: C PTS: 1 DIF: L2 REF: p. 310
OBJ: 10.3.2 STA: Ch.3
41. ANS: B PTS: 1
42. ANS: C PTS: 1
43. ANS: E PTS: 1
44. ANS: C PTS: 1
45. ANS: C PTS: 1 DIF: L3 REF: p. 803 | p. 804
OBJ: 25.2.1 STA: Ch.11.d
46. ANS: C PTS: 1 DIF: L3 REF: p. 112 | p. 113
OBJ: 4.3.1 STA: Ch.11.c
47. ANS: C PTS: 1 DIF: L2 REF: p. 269
OBJ: 9.3.2 STA: Ch.2

48. ANS: A PTS: 1 DIF: L2 REF: p. 262 | p. 263
OBJ: 9.2.1 STA: Ch.2
49. ANS: B PTS: 1 DIF: 2 STA: 2a
TOP: Acid Identification
50. ANS: C PTS: 1 DIF: L2 REF: p. 324 | p. 325
OBJ: 11.1.3 STA: Ch.3.a | Ch.3.e
51. ANS: A PTS: 1
52. ANS: B PTS: 1
53. ANS: B PTS: 1
54. ANS: A PTS: 1 DIF: Medium REF: Section: 7.9
OBJ: EK.1.B.2
55. ANS: D PTS: 1 DIF: L2 REF: p. 174
OBJ: 6.3.1 | 6.3.3 STA: Ch.1.c
56. ANS: D PTS: 1 DIF: L2 REF: p. 177 | p. 178
OBJ: 6.3.3 STA: Ch.1.c
57. ANS: D PTS: 1 DIF: L1 REF: p. 187
OBJ: 7.1.1 STA: Ch.1.c | Ch.2.a | Ch.1.d
58. ANS: D PTS: 1 DIF: L1 REF: p. 198
OBJ: 7.2.2 STA: Ch.5.a
59. ANS: A PTS: 1 DIF: L2 REF: p. 233
OBJ: 8.3.2 STA: Ch.2.a
60. ANS: A PTS: 1 DIF: L3 REF: p. 238 | p. 239
OBJ: 8.4.1 STA: Ch.2.a
61. ANS: D PTS: 1
62. ANS: B PTS: 1
63. ANS: C PTS: 1 STA: 3d
KEY: Moles to Representative Particles within formula
64. ANS: B PTS: 1 DIF: L1 REF: p. 194
OBJ: 7.2.1 STA: Ch.2.a
65. ANS: D PTS: 1 DIF: L1 REF: p. 63
OBJ: 3.1.1
66. ANS: B PTS: 1 DIF: L2 REF: p. 64
OBJ: 3.1.2
67. ANS: A PTS: 1 DIF: L1 REF: p. 66
OBJ: 3.1.3
68. ANS: D PTS: 1 DIF: L1 REF: p. 66
OBJ: 3.1.3
69. ANS: B PTS: 1 DIF: L1 REF: p. 68 | p. 71
OBJ: 3.1.3
70. ANS: A PTS: 1 DIF: L2 REF: p. 66 | p. 68
OBJ: 3.1.3
71. ANS: C PTS: 1 DIF: L1 REF: p. 74
OBJ: 3.2.1
72. ANS: D PTS: 1 DIF: L1 REF: p. 73
OBJ: 3.2.1
73. ANS: D PTS: 1 DIF: L1 REF: p. 77
OBJ: 3.2.1 STA: Ch.4.f

74. ANS: C PTS: 1 DIF: L1 REF: p. 77 | p. 78
OBJ: 3.2.3 STA: Ch.4.e
75. ANS: B PTS: 1 DIF: L1 REF: p. 84
OBJ: 3.3.2
76. ANS: B PTS: 1 DIF: L2 REF: p. 91
OBJ: 3.4.1
77. ANS: B PTS: 1 DIF: L2 REF: p. 91
OBJ: 3.4.1

MULTIPLE RESPONSE

78. ANS: A, B, C PTS: 1
79. ANS: B, C PTS: 1

SHORT ANSWER

80. ANS:
10.0 L × 100%/95% = 10.5 L theoretical yield
10.5 L O_2 × 1 mol O_2/22.4 L O_2 × 2 mol $KClO_3$/3 mol O_2 × 122.6 g $KClO_3$/1mol $KClO_3$
= 38.4 g $KClO_3$

PTS: 1 DIF: L3 REF: p. 374 OBJ: 12.3.2
STA: Ch.3.d
81. ANS:
$$\frac{1\,\text{L}}{1.5\,\text{mol}} \times \frac{1\,\text{mol}}{30.0\,\text{g}} \times 5.0\,\text{g} = 0.11\,\text{L}$$

PTS: 1 DIF: L3 REF: p. 480 | p. 481
OBJ: 16.2.1 STA: Ch.6.d