Chemistry – 2nd Semester Practice Test (June 2010)

Name:_____ Class:_____ Date:_____

States of Matter (Ch.10): Matching

1) melting point	A) the temperature at which a solid turns into a liquid	1) _____
2) boiling point	B) the term for a change in the physical state of a substance	2) _____
3) phase change		3) _____
4) evaporation	C) the conversion of a liquid to a gas below the boiling point	4) _____
5) vaporization	D) the vaporization of an uncontained liquid	5) _____
	E) the temperature at which the vapor pressure of a liquid is just equal to the external pressure	

States of Matter (Ch.10): Multiple Choice

6) What is the SI unit of pressure? 6) _____

A) candela B) mole C) joule D) pascal E) newton

7) What is the volume occupied by 2.20 mol of hydrogen at STP? 7) _____

A) 24.6 L B) 98.6 L C) 2.20 L D) 2.60 L E) 49.3 L

8) What is the volume occupied by 71 g of chlorine gas at STP? 8) _____

A) 56.0 L B) 22.4 L C) 78.4 L D) 44.8 L E) 67.2 L

9) What is the number of grams of neon present in 78.4 L of neon at STP? 9) _____

A) 105 g B) 20 g C) 140 g D) 35 g E) 70 g

10) Collisions between gas molecules are _____. 10) _____

A) never observed B) inelastic C) elastic

11) Standard conditions when working with gases are defined as _____. 11) _____

A) 0 K and 101 kPa B) 0°C and 101 kPa C) 0 K and 10 kPa D) 0°C and 10 kPa

12) Most solids _____. 12) _____

A) consist of particles in chaotic motion
B) are dense and incompressible
C) are amorphous in nature
D) have high melting points

13) Which of the following is NOT a phase change? 13) _____

A) sublimation B) melting C) vaporization D) diffusion

Thermochemistry (Ch.11): Matching I

14) calorimeter 14) _____

15) calorie 15) _____

16) joule 16) _____

17) heat capacity 17) _____

18) enthalpy 18) _____

19) specific heat 19) _____

A) quantity of heat needed to change the temperature of 1 g of a substance by 1°C

B) heat content of a system at standard pressure

C) quantity of heat needed to change the temperature of an object by 1°C

D) quantity of heat needed to raise the temperature of 1 g of water by 1°C

E) SI unit of energy

F) used to measure the heat involved in a chemical process

Thermochemistry (Ch.11): Matching II

20) heat of reaction 20) _____

21) heat of formation 21) _____

22) heat of fusion 22) _____

23) heat of solution 23) _____

A) the energy change involved in a chemical reaction

B) the energy involved in dissolving a solid

C) the energy required to melt a solid at its melting point

D) the energy involved in the creation of a compound from its elements

Chemistry – 2nd Semester Practice Test

Thermochemistry (Ch.11): Multiple Choice

24) What is the amount of heat required to raise the temperature of 200.0 g of aluminum by 10°C? 24) _____

(specific heat of aluminum = 0.21 $\frac{\text{cal}}{\text{g x °C}}$)

A) 4200 cal

B) 420 cal

C) 42 000 cal

D) 420 000 cal

E) none of the above

25) What is the specific heat of a substance if 1560 cal is required to raise the temperature of a 312–g sample by 15°C? 25) _____

A) 0.99 $\frac{\text{cal}}{\text{g x °C}}$ B) 1.33 $\frac{\text{cal}}{\text{g x °C}}$ C) 0.33 $\frac{\text{cal}}{\text{g x °C}}$ D) 0.033 $\frac{\text{cal}}{\text{g x °C}}$

26) How much heat does it take to warm 16.0 g of pure water from 90.0°C to 100.0°C? (specific heat of water = 4.18 J/g x °C) 26) _____

A) 16.0 joules B) 160 joules C) 66.9 joules D) 669 joules

27) As the temperature of a sample of matter is increased, what happens to the average kinetic energy of the particles in the sample? 27) _____

A) It decreases. B) It does not change. C) It increases.

28) The condensation of steam is a(n) _____. 28) _____

A) exothermic process B) endothermic process

C) catalytic process D) electrolytic process

29) When 45 g of an alloy is dropped into 100.0 g of water at 25°C, the final temperature is 37°C. What is the specific heat of the alloy? 29) _____

A) 1.77 B) 0.423 C) 48.8 D) 9.88

30) When cooking food with natural gas, the energy comes from _____. 30) _____

A) kinetic energy in the gas

B) the pressure of the gas

C) chemical potential energy of the gas molecules

D) the volume of the gas

31) The energy produced by burning gasoline in a car engine _____. 31) _____

A) is transformed into work to move the car B) is lost as heat in the exhaust

C) heats the parts of the engine D) all of the above

32) A piece of metal is heated, then submerged in cool water. Which statement below describes what happens? 32) _____

A) The temperature of the water will decrease.
B) The temperature of the water will increase and the temperature of the metal will decrease.
C) The temperature of the water will decrease and the temperature of the metal will increase.
D) The temperature of the metal will increase.
E) The temperature of the water will increase.

33) A process that absorbs heat is a(n) _____ process. 33) _____

A) ectothermic B) exothermic C) polythermic D) endothermic

34) When gasoline is burned in an automobile engine, _____. 34) _____

A) potential energy is transformed into kinetic energy
B) energy is created
C) heat energy is converted to chemical energy
D) energy is destroyed

35) What does the symbol "ΔH" stand for? 35) _____

A) the specific heat of a substance
B) one Calorie given off by a reaction
C) the heat capacity of a substance
D) the heat of reaction for a chemical reaction

36) The following equation shows the reaction that occurs when nitroglycerine explodes. 36) _____

$4C_3H_5O_9N_3 \rightarrow 12CO_2 + 6N_2 + O_2 + 10H_2O + 1725$ kcal

This reaction is _____.

A) a combination reaction
B) a combustion reaction
C) exothermic
D) endothermic

37) When 1.0g of solid NaOH ($\Delta H_{soln} = -445.1$ kJ/mol) dissolves in 10 L of water, how much heat is released? 37) _____

A) 11.1 kJ B) 445.1 kJ C) 11.1 J D) 405.1 kJ

38) During a phase change, the temperature of a substance _____. 38) _____

A) increases
B) remains constant
C) decreases
D) may increase or decrease

39) When heat is added to boiling water, its temperature _____. 39) _____

A) decreases
B) depends on the amount of water
C) stays the same
D) increases

40) When 10 g of diethyl ether is converted to vapor at its boiling point, about how much heat is absorbed? ($C_4H_{10}O$, ΔH_{vap} = 15.7 kJ/mol, boiling point: 34.6°C) 40) _____

A) 0.2 kJ
B) 2 kJ
C) 2 J
D) Not enough information given

Gas Laws (Ch.12): Matching

41) Boyle's law 41) _____
42) Charles' law 42) _____
43) Gay–Lussac's law 43) _____
44) ideal gas law 44) _____

A) The volume of a fixed mass of gas is directly proportional to its Kelvin temperature, if the pressure is kept constant.
B) The pressure of a gas is directly proportional to its Kelvin temperature if the volume is kept constant.
C) P x V = n x R x T
D) For a given mass of gas at constant temperature, the volume of the gas varies inversely with pressure.

Gas Laws (Ch.12): Multiple Choice

45) Which of the following is NOT one of the assumptions of kinetic theory? 45) _____
A) Particles in a gas are assumed to have an insignificant volume.
B) Gases consist of hard spherical particles.
C) Only small attractive and repulsive forces exists between gas particles.
D) All gas particles move in constant random motion.
E) none of the above

46) Why does the pressure inside a container of gas increase if more gas is added to the container? 46) _____
A) because there is a corresponding increase in the force of the collisions between the particles and the walls of the container
B) because there is a corresponding increase in the number of particles striking an area of the wall of the container per unit time
C) because there is a corresponding decrease in volume
D) because there is a corresponding increase in the temperature

47) Why does air leave a tire when the tire valve is opened? 47) _____

A) because the pressure outside the tire is lower than the pressure inside the tire

B) because the temperature is higher outside the tire than inside the tire

C) because the pressure outside the tire is greater than the pressure inside the tire

D) because there are more gas particles outside the tire than inside the tire

48) If 4 moles of gas are added to a container that already holds 1 mole of gas, how will the pressure change within the container? 48) _____

A) The pressure will be five times as great. B) The pressure will be four times as great.

C) The pressure will be twice as great. D) The pressure will not change.

49) What happens to the pressure of a gas inside a container if the temperature of the gas is lowered? 49) _____

A) The pressure does not change.

B) The pressure increases.

C) The pressure decreases.

50) The volume of a gas is reduced from 4 L to 0.5 L while the temperature is held constant. How does the gas pressure change? 50) _____

A) increases by a factor of eight B) decreases by a factor of eight

C) increases by a factor of two D) increases by a factor of four

51) A gas occupies a volume of 0.7 L at 10.1 kPa. What volume will the gas occupy at 101 kPa? 51) _____

A) 0.7 L B) 0.07 L C) 4 L D) 7 L

52) A sample of gas occupies 40.0 mL at –123°C. What volume does the sample occupy at 27°C? 52) _____

A) 80.0 mL B) 20.0 mL C) 182 mL D) 8.80 mL

53) Which of these changes would NOT cause an increase in the pressure of a gaseous system? 53) _____

A) Another gas is added to the container.

B) The temperature is increased.

C) The container is made larger.

D) Additional amounts of the same gas are added to the container.

54) An ideal gas CANNOT be _____. 54) _____

A) liquefied B) heated C) cooled D) pressurized

55) What does the ideal gas law allow a scientist to calculate that the other laws do not? 55) _____

A) energy
B) pressure
C) number of moles
D) temperature
E) volume

56) At a certain temperature and pressure, 0.20 mol of CO_2 has a volume of 3.1 L. A 3.1–L sample of hydrogen at the same temperature and pressure _____. 56) _____

A) contains the same number of atoms
B) contains the same number of molecules
C) has a higher density
D) has the same mass

Nuclear Chemistry (Ch.28): Matching

57) positron 57) _____

58) alpha particle 58) _____

59) beta particle 59) _____

60) transuranium element 60) _____

61) gamma radiation 61) _____

62) transmutation 62) _____

A) emitted helium nucleus
B) energetic electron from decomposed neutron
C) element with atomic number greater than 92
D) high–energy electromagnetic radiation
E) conversion of an atom of one element to an atom of another element
F) particle of charge +1 and mass equal to that of an electron

Nuclear Chemistry (Ch.28): Multiple Choice

63) How many neutrons are in the nucleus of iodine–131 (atomic number 53)? 63) _____

A) 127 B) 131 C) 53 D) 78

64) How many neutrons are there in an alpha particle? 64) _____

A) 2 B) 0 C) 1 D) 4 E) 3

65) What is the change in the atomic number when an atom emits an alpha particle? 65) _____

A) decreases by 1
B) remains the same
C) decreases by 2
D) increases by 2
E) increases by 1

66) What is the change in atomic number when an atom emits a beta particle? 66) _____

A) +1
B) decrease by 2
C) +2
D) decrease by 1
E) 0

67) What is the change in atomic number when an atom emits gamma radiation? 67) _____

A) decreases by 1
B) remains the same
C) decreases by 2
D) increases by 1
E) increases by 2

68) Which symbol is used for an alpha particle? 68) _____

A) $^{4}_{4}\mathrm{He}$ B) $^{2}_{4}\mathrm{He}$ C) $^{2}_{2}\mathrm{He}$ D) $^{4}_{2}\mathrm{He}$

69) What symbol is used for beta radiation? 69) _____

A) $^{0}_{-1}\mathrm{e}$ B) $^{-1}_{0}\mathrm{e}$ C) $^{0}_{0}\mathrm{e}$ D) $^{-1}_{-1}\mathrm{e}$

70) What does gamma radiation consist of? 70) _____

A) photons B) hydrogen nuclei C) helium nuclei D) electrons

71) What particle is needed to complete this nuclear reaction? 71) _____

$^{222}_{86}\mathrm{Rn} \rightarrow {}^{218}_{84}\mathrm{Po} + \_\_\_\_\_$

A) $^{1}_{1}\mathrm{H}$ B) $^{0}_{-1}\mathrm{e}$ C) $^{1}_{0}\mathrm{n}$ D) $^{4}_{2}\mathrm{He}$

72) What particle is needed to complete this equation? 72) _____

$^{14}_{7}N + \_\_\_\_\_ \rightarrow {}^{14}_{6}C + {}^{1}_{1}H$

A) $^{0}_{-1}e$ B) $^{1}_{0}n$ C) $^{0}_{+1}e$ D) $^{4}_{2}He$

73) To what does plutonium–239 (atomic number 94) decay when it loses an alpha particle? 73) _____

A) $^{237}_{90}Th$ B) $^{239}_{95}Am$ C) $^{235}_{92}Pu$ D) $^{235}_{92}U$

74) What particle does argon–39 (atomic number 18) lose when it decays to potassium–39 (atomic number 19)? 74) _____

A) proton B) alpha particle C) neutron D) electron

75) If an isotope undergoes beta emission _____. 75) _____

A) the mass number changes
B) the number of neutrons remains the same
C) the atomic number changes
D) protons are given off

76) Which of the following particles is needed to complete this nuclear equation? 76) _____

$^{55}_{25}Mn + {}^{2}_{1}H \rightarrow \_\_\_\_\_ + 2\ {}^{1}_{0}N$

A) $^{56}_{27}Co$ B) $^{55}_{26}Fe$ C) $^{27}_{25}Mn$ D) $^{58}_{24}Cr$

77) What thickness of what material is necessary to stop an alpha particle? 77) _____

A) sheet of paper
B) three feet of concrete
C) sheet of aluminum foil
D) three inches of lead

78) What thickness of what material is necessary to stop a beta particle? 78) _____

A) three inches of lead
B) three feet of concrete
C) sheet of paper
D) sheet of aluminum foil

79) What thickness of what material will stop gamma radiation? 79) _____

A) sheet of paper
B) sheet of aluminum foil
C) three inches of lead
D) one inch of water

80) Which type of ionizing radiation can be blocked by clothing? 80) _____

A) beta particle
B) gamma radiation
C) alpha particle
D) X–radiation

81) What drives the turbine in a nuclear power plant? 81) _____

A) the moderator
B) steam
C) the control rods
D) the primary coolant
E) UF_6 gas

82) What type of reaction is known as a thermonuclear reaction? 82) _____

A) fission
B) fusion
C) transmutation
D) beta emission
E) neutron emission

Water & Aqueous Systems (Ch.17): Matching

83) aqueous solution	A) dissolving medium	83) _____
84) solvent	B) compound that will conduct current in the liquid state or in aqueous solution	84) _____
85) electrolyte	C) dissolved particle	85) _____
86) solute	D) homogeneous mixture of water and dissolved substances	86) _____

Water & Aqueous Systems (Ch.17): Multiple Choice

87) How does the surface tension of water compare with the surface tensions of most other liquids? 87) _____

A) It is lower. B) It is higher. C) It is about the same.

88) Which of the following is primarily responsible for holding water molecules together in the liquid state? 88) _____

A) hydrogen bonds B) polar covalent bonds
C) dispersion forces D) ionic bonds

89) Which atom in a water molecule has the greatest electronegativity? 89) _____

A) one of the hydrogen atoms
B) the oxygen atom
C) both hydrogen atoms
D) There is no difference in the electronegativities of the atoms in a water molecule.

90) The bonds between the hydrogen and oxygen atoms in a water molecule are _____. 90) _____

A) hydrogen bonds B) polar covalent bonds

C) nonpolar covalent bonds D) ionic bonds

91) The bonds between adjacent water molecules are called _____. 91) _____

A) nonpolar covalent bonds B) hydrogen bonds

C) ionic bonds D) polar covalent bonds

92) How does the boiling point of water compare with the boiling points of other molecules of similar size? 92) _____

A) It is about the same. B) It is lower. C) It is higher.

93) A solution is a mixture _____. 93) _____

A) that has the same properties throughout

B) in which a solid solute is always dissolved in a liquid solvent

C) that is heterogeneous

D) from which the solute can be filtered

Solutions (Ch.18): Matching I

94) saturated solution 94) _____

95) supersaturated solution 95) _____

96) concentration 96) _____

97) dilute solution 97) _____

98) unsaturated solution 98) _____

99) concentrated solution 99) _____

A) solution containing more solute than can theoretically dissolve at a given temperature

B) measure of the amount of solute dissolved in a specified quantity of solvent

C) solution containing a small amount of solute

D) solution containing less than the maximum amount of dissolved solute

E) solution containing a large amount of solute

F) solution containing maximum amount of solute

Solutions (Ch.18): Matching II

100) boiling point elevation

101) colligative property

102) molarity

103) freezing point depression

A) depends on the number of particles a solute yields in solution

B) number of moles of solute dissolved in 1 L of solution

C) a colligative property related to the fact that ice will form at higher temperatures in the Great Lakes than in the ocean

D) a colligative property related to a decrease in the vapor pressure of a solution

100) _____

101) _____

102) _____

103) _____

Solutions (Ch.18): Multiple Choice

104) Which of the following operations usually makes a substance dissolve faster in a solvent? 104) _____

A) crushing the substance to a powder
B) raising the temperature
C) agitation
D) all of the above

105) Increasing the temperature of a solution will generally _____. 105) _____

A) increase the rate at which a solute dissolves
B) increase the amount of solute that dissolves
C) both A. and B.
D) neither A. nor B.

106) Holding the temperature constant while adding more solute to a solution that already has solute crystals at the bottom of the container _____. 106) _____

A) causes the solution to become supersaturated
B) makes the solution more concentrated
C) causes more solute crystals to appear at the bottom of the container
D) none of the above

107) What is the molarity of a solution containing 9.0 moles of solute in 500.0 mL of solution? 107) _____

A) 18M B) 0.18M C) 0.45M D) 1.8M E) 4.5M

108) What is the molarity of a solution containing 8 grams of solute in 500 mL of solution? (gram formula mass of solute = 24 g) 108) _____

A) 0.5M B) 1M C) 0.1M D) 0.05M E) 0.67M

109) What mass of Na_2SO_4 is needed to make 2.5 L of 2.0M solution? (Na = 23 amu; S = 32 amu; O = 16 amu) 109) _____

A) 356 g B) 284 g C) 178 g D) 710 g

110) How many mL of 3M HCl are needed to make 300 mL of 0.1M HCl? 110) _____

A) 90 mL B) 100 mL C) 10 mL D) 9 mL E) 30 mL

111) If 2.0 mL of 6.0M HCl is used to make a 500.0–mL aqueous solution, what is the molarity of the dilute solution? 111) _____

A) 0.24M B) 2.4M C) 0.83M D) 0.024M E) 0.30M

112) What mass of sucrose, $C_{12}H_{22}O_{11}$, is needed to make 500.0 mL of a 0.200M solution? 112) _____

A) 68.4 g B) 34.2 g C) 100 g D) 17.1 g

113) To 225 mL of a 0.80M 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? 113) _____

A) 0.35M B) 180M C) 2.8M D) 0.18M

114) If a stock solution of hydrochloric acid is 3.0M, how many milliliters are needed to make 200.0 mL of 0.10M HCl? 114) _____

A) 67 mL B) 15 mL C) 1.5 mL D) 6.7 mL E) 150 mL

115) If the percent by volume is 2.0% and the volume of solution is 250 mL, what is the volume of solute in solution? 115) _____

A) 5.0 mL B) 12.5 mL C) 0.5 mL D) 1.25 mL

116) If the percent (mass/volume) for the solute is 4% and the volume of the solution is 750 mL, what is the mass of solute in solution? 116) _____

A) 3.0 g B) 30 g C) 75 g D) 7.5 g

117) What is the volume of alcohol present in 200.0 mL of a 55% (v/v) solution of alcohol? 117) _____

A) 145 mL B) 110 mL C) 36 mL D) 28 mL

118) What does not change when a solution is diluted by the addition of solvent? 118) _____

A) mass of solvent
B) number of moles of solute
C) volume of solvent
D) mass of solution
E) molarity of solution

119) If more solvent is added to a solution _____. 119) _____

A) it becomes more dilute
B) its percent (v/v) decreases
C) its molarity decreases
D) all of the above

120) Why does a solute depress the freezing point? 120) _____

A) because the solute tends to sink to the bottom of the solution
B) because the solute is colder than the solvent
C) because the solute has bigger molecules than the solvent
D) because the solute disrupts crystal formation by the solvent

121) Which of the following is NOT a colligative property of a solution? 121) _____

A) boiling point elevation
B) freezing point depression
C) vapor pressure lowering
D) supersaturation

122) Why does a higher temperature cause a reaction to go faster? 122) _____

A) There are more collisions per second and the collisions are of greater energy.
B) There are more collisions per second only.
C) Collisions occur with greater energy only.

123) Why does a higher concentration make a reaction faster? 123) _____

A) There are more collisions per second only.
B) There are more collisions per second and the collisions are of greater energy.
C) Collisions occur with greater energy.

Acids & Bases (Ch.20): Matching

124) hydrogen–ion donor	A) Bronsted–Lowry acid	124) _____
125) hydrogen–ion acceptor	B) Bronsted–Lowry base	125) _____
126) amphoteric	C) able to act as both an acid and a base	126) _____
127) basic	D) base that has gained a proton	127) _____
128) conjugate acid	E) hydrogen ion concentration is less than 10^{-7}M	128) _____

129) neutral — A) hydrogen ion concentration is greater than 10^{-7}M — 129) _____

130) acid — B) hydrogen ion concentration is 10^{-7}M — 130) _____

131) conjugate base — C) acid that has lost a proton — 131) _____

Acids & Bases (Ch.20): Multiple Choice

132) When an acid reacts with a base what compounds are formed? 132) _____

A) metal oxides only
B) a salt only
C) water only
D) a salt and water

133) Which of the following is a property of an acid? 133) _____

A) slippery feel
B) unreactive
C) strong color
D) sour taste
E) nonelectrolyte

134) What is a property of a base? 134) _____

A) strong color
B) unreactive
C) watery feel
D) nonelectrolyte
E) bitter taste

135) If the hydrogen ion concentration is 10^{-10}M, is the solution acidic, basic, or neutral? 135) _____

A) acidic
B) none of the above
C) neutral
D) basic

136) If the hydroxide ion concentration is 10^{-10}M, what is the pH of the solution? 136) _____

A) 4 B) 1 C) 10 D) 7 E) 14

137) If the pH is 6, what is the concentration of hydrogen ion? 137) _____

A) 10^{-7}M B) 10^{-14}M C) 10^{-8}M D) 10^{-6}M E) 10^{-1}M

138) If $[H^+] = 1 \times 10^{-11}$M, what is the pH of the solution? 138) _____

A) –3.0 B) –1.0 C) 11.0 D) 3.0

139) What is the concentration of hydronium ions in a neutral solution? 139) _____

A) 10^{-10}M
B) 10M
C) 10^{-7}M
D) No determination can be made from the information given.

140) What is the pH of a solution with a $[H^+] = 4.5 \times 10^{-9}$? 140) _____

A) 8.6 B) 8.3 C) 8.0 D) 9.3

141) What type of acid is sulfuric acid? 141) _____

A) triprotic B) monoprotic C) diprotic

142) Which compound can act as both a Bronsted–Lowry acid and a Bronsted–Lowry base? 142) _____

A) sodium chloride
B) water
C) sodium hydroxide
D) ammonia
E) hydrochloric acid

Neutralization (Ch.21): Matching

143) neutralization 143) _____

144) titration 144) _____

A) procedure used to determine the concentration of an acid or base
B) reaction in which an acid and a base produce a salt and water

Neutralization (Ch.21): Multiple Choice

145) What products result from a neutralization reaction? 145) _____

A) polar covalent compounds
B) a salt and water
C) a salt only
D) water only
E) acids and bases

146) What is obtained when phosphoric acid and magnesium hydroxide are mixed? 146) _____

A) water only
B) magnesium hydride
C) hydrogen gas
D) magnesium phosphate plus water
E) hydrogen–magnesium alloy

147) What are the products of the reaction of one mole of $Mg(OH)_2$ and one mole of H_2SO_4? 147) _____

A) $MgSO_4 + 2H_2O$
B) $MgH_2 + H_3SO_4$
C) $MgSO_4 + H_3O^+ + H_2O$
D) $MgSO_4 + H_3O^+ + OH^-$

148) What type of reaction is an acid–base reaction? 148) _____

A) decomposition
B) combination
C) double replacement
D) single replacement

149) What measuring instrument is used in a titration? 149) _____

A) Erlenmeyer flask
B) buret
C) syringe
D) volumetric pipet
E) graduated cylinder

150) What is the purpose of a titration? 150) _____

A) to determine the color of an indicator
B) to determine the volume of base
C) to determine the concentration of acid or base
D) to determine the concentration of acid only

Organic Chemistry (Ch.25–26): Multiple Choice

151) Hydrocarbons containing only single bonds between the carbon atoms are called _____. 151) _____

A) alkenes B) alkynes C) aromatics D) alkanes E) ketones

152) The simplest alkyne is _____. 152) _____

A) ethylene B) ethane C) acetylene D) propyne E) benzene

153) Hydrocarbons containing carbon–carbon triple bonds are called _____. 153) _____

A) alkanes
B) aromatic hydrocarbons
C) alkynes
D) alkenes
E) olefins

154) Alkynes always contain a _____. 154) _____

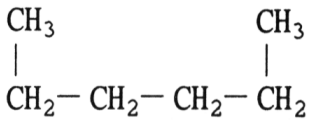
A) C═C bond B) C≡C bond C) C—C bond D) C═H bond E) C≡H bond

155) Alkenes always contain a _____. 155) _____

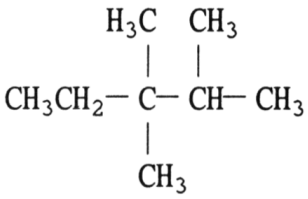
A) C═C bond B) C≡C bond C) C–C bond D) C═H bond E) C≡H bond

156) The structure of 2,3–dimethylheptane is _____. 156) _____

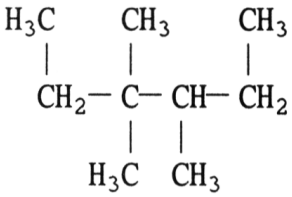
A)



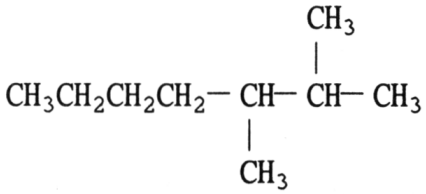
B)



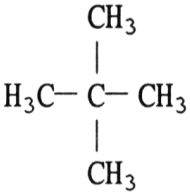
C)



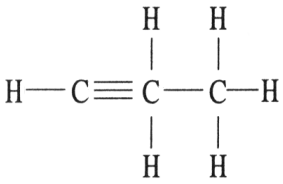
D)



E)

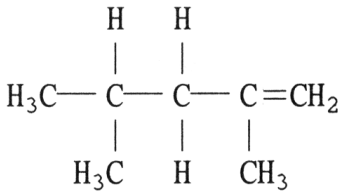


157) The compound below is an _____. 157) _____



A) alkyne
B) alkene
C) alkane
D) aromatic compound
E) olefin

158) What is the name of the compound below? 158) _____

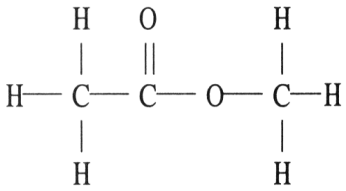


A) 2,4–methylbutene
B) 2,5–dimethylpentane
C) 2,4–ethylbutene
D) 2,4–dimethyl–1–pentene
E) 2,4–dimethyl–4–pentene

159) Alcohols are hydrocarbon derivatives in which one or more hydrogens have been replaced by a hydroxyl functional group. _____ is the general formula of an alcohol. 159) _____

A) R—O—R
B) R—CO—R
C) R—CO—OH
D) R—OH
E) R—CO—H

160) The compound below is a(n) _____. 160) _____

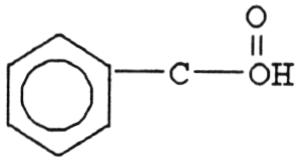


A) carboxylic acid
B) ketone
C) aldehyde
D) ester
E) amine

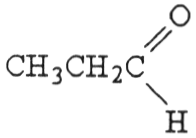
161) Which structure below represents a ketone? 161) _____

A)

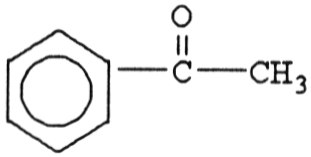
B)



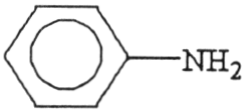
C)



D)



E)



162) Which of the following compounds does not contain a C=O bond? 162) _____

A) ketones B) aldehydes C) esters D) amides E) ethers

Chemistry – 2nd Semester Practice Exam - KEY

1) A
2) E
3) B
4) D
5) C
6) D
7) E
8) B
9) E
10) C
11) B
12) B
13) D
14) F
15) D
16) E
17) C
18) B
19) A
20) A
21) D
22) C
23) B
24) B
25) C
26) D
27) C
28) A
29) A
30) C
31) D
32) B
33) D
34) A
35) D
36) C
37) A
38) B
39) C
40) B
41) D
42) A
43) B
44) C
45) C
46) B
47) A
48) A
49) C
50) A
51) B
52) A
53) C
54) A
55) C
56) B
57) F
58) A
59) B
60) C
61) D
62) E
63) D
64) A
65) C
66) A
67) B
68) D
69) A
70) A
71) D
72) B
73) D
74) D
75) C
76) B
77) A
78) D
79) C
80) C
81) B
82) B
83) D
84) A
85) B
86) C
87) B
88) A
89) B
90) B
91) B
92) C
93) A
94) F
95) A
96) B
97) C
98) D
99) E
100) D
101) A
102) B
103) C
104) D
105) C
106) C
107) A
108) E
109) D
110) C
111) D
112) B
113) D
114) D
115) A
116) B
117) B
118) B
119) D
120) D
121) D
122) A
123) A
124) A
125) B
126) C
127) E
128) D
129) B
130) A
131) C
132) D
133) D
134) E
135) D
136) A
137) D
138) C
139) C
140) B
141) C
142) B
143) B
144) A
145) B
146) D
147) A
148) C
149) B
150) C
151) D
152) C
153) C
154) B
155) A
156) D
157) A
158) D
159) D
160) D
161) D
162) E