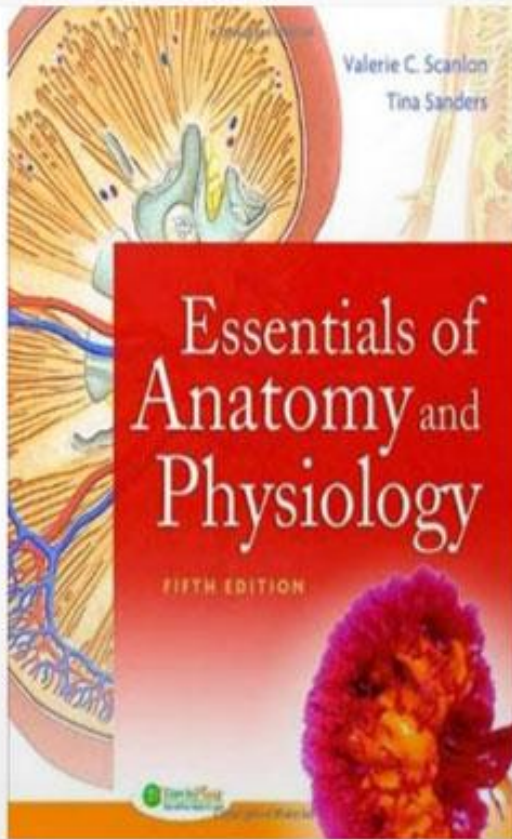


TEST BANK



1. Which element is NOT paired with its correct symbol?
A) carbon – C
B) potassium – P
C) nitrogen – N
D) cobalt – Co
2. Which element is NOT paired with its correct symbol?
A) sodium – S
B) oxygen – O
C) magnesium – Mg
D) chlorine – Cl
3. Which element is NOT paired with its correct symbol?
A) hydrogen – H
B) sulfur – S
C) calcium – Ca
D) iron – I
4. For sodium, sulfur, zinc, and chlorine, the correct chemical symbols, in order, are:
A) S, Su, Z, Cl
B) Na, S, Zn, Cl
C) No, Su, Z, C
D) Na, S, Z, Cl
5. For iron, iodine, potassium, and phosphorus, the correct chemical symbols, in order, are:
A) I, Io, P, Ph
B) Fe, I, P, Ph
C) I, Io, K, P
D) Fe, I, K, P
6. For cobalt, copper, calcium, and carbon, the correct chemical symbols, in order, are:
A) Cb, Co, Ca, C
B) Co, Cp, Ca, Cr
C) Cb, Cu, Cm, C
D) Co, Cu, Ca, C
7. An ionic bond is formed when:
A) an atom of sodium loses an electron to another atom of sodium
B) an atom of sodium shares two electrons with two atoms of chlorine
C) an atom of sodium gains an electron from an atom of chlorine
D) an atom of sodium loses an electron to an atom of chlorine

8. Which statement is NOT true of ions?
- A) An ion has either a positive or negative charge.
 - B) Atoms become ions by gaining or losing protons.
 - C) Ions with unlike charges are attracted to one another and form ionic bonds.
 - D) An atom that loses an electron will have a charge of +1.
9. An atom that has gained an electron is now called:
- A) an ion that is neutral
 - B) an ion with a charge of +1
 - C) an ion with a charge of -1
 - D) an atom with a charge of +1
10. A cation has a:
- A) positive charge
 - B) negative charge
 - C) neutral charge
 - D) none of these, because the charge may vary
11. An anion has a:
- A) positive charge
 - B) negative charge
 - C) neutral charge
 - D) none of these, because the charge may vary
12. A cation has a:
- A) positive charge, and an example is a chloride ion
 - B) negative charge, and an example is a potassium ion
 - C) positive charge, and an example is a calcium ion
 - D) negative charge, and an example is an iron ion
13. An anion has a:
- A) positive charge, and an example is a hydrogen ion
 - B) negative charge, and an example is a bicarbonate ion
 - C) positive charge, and an example is a chloride ion
 - D) negative charge, and an example is a sodium ion
14. Which statement is NOT true of ionic bonds?
- A) They form salts.
 - B) In the solid state they are very strong.
 - C) In water, many ionic bonds weaken.
 - D) They involve the sharing of electrons.

15. The term *dissociation* refers to:
A) ionic bonds
B) the breaking of bonds in a water solution
C) both A and B
D) both A and B, and covalent bonds
16. A synonym for dissociation is:
A) decomposition
B) ionization
C) synthesis
D) reformulation
17. Dissociation of salts is important to:
A) free ions to take part in other reactions
B) produce energy
C) keep salt molecules stable in water
D) keep salt molecules stable as solids
18. Ionization of salts such as sodium chloride takes place:
A) when the temperature rises
B) when the temperature falls
C) in the solid state
D) in water
19. A covalent bond is formed when:
A) two or more atoms share electrons
B) two atoms form ions and are attracted to each other
C) one atom loses two electrons that are gained by another atom
D) a carbon atom loses all of its electrons to other atoms
20. A bond in which electrons are shared between atoms is:
A) ionic
B) reciprocal
C) covalent
D) di-electron
21. An atom of carbon has ____ electrons to share to form ____ bonds.
A) 2/ionic
B) 4/covalent
C) 2/covalent
D) 4/ionic

22. Which statement is NOT true of covalent bonds?
- A) These bonds are not weakened when in water.
 - B) A molecule of water is formed by covalent bonds.
 - C) These bonds involve the sharing of electrons.
 - D) The atoms of most inorganic molecules are bonded by covalent bonds.
23. The bonds that help maintain the three-dimensional shape of proteins and nucleic acids are:
- A) covalent bonds
 - B) hydrogen bonds
 - C) ionic bonds
 - D) water bonds
24. The bonds that make water cohesive are:
- A) disulfide bonds
 - B) hydrogen bonds
 - C) ionic bonds
 - D) water bonds
25. The bonds that hold the two chains of an insulin molecule together are:
- A) disulfide bonds
 - B) peptide bonds
 - C) ionic bonds
 - D) protein bonds
26. Disulfide bonds may be part of:
- A) some starches
 - B) some proteins
 - C) DNA and RNA
 - D) true fats
27. Large molecules of glycogen are made of the smaller subunits called:
- A) glucose
 - B) fatty acids and glycerol
 - C) amino acids
 - D) nucleotides
28. Glucose molecules are the subunits of:
- A) starch
 - B) glycogen
 - C) both A and B
 - D) both A and B, and cellulose

29. Glycogen and starch are ____ that are made of ____.
- A) disaccharides/sucrose
 - B) polysaccharides/glucose
 - C) disaccharides/glucose
 - D) polysaccharides/sucrose
30. Glucose is a molecule that is a:
- A) hexose sugar
 - B) monosaccharide
 - C) both A and B
 - D) both A and B, and inorganic
31. Glucose is a molecule that is a:
- A) double sugar
 - B) hexose sugar
 - C) pentose sugar
 - D) triple sugar
32. The chemical formula for glucose is:
- A) $C_{12}H_6O_{12}$
 - B) $C_{12}H_6O_6$
 - C) $C_6H_6O_6$
 - D) $C_6H_{12}O_6$
33. Glucose, fructose, and galactose are:
- A) hexose sugars
 - B) monosaccharides
 - C) both A and B
 - D) both A and B, and all have the same chemical formula
34. Large molecules of true fats are made of the smaller subunits called:
- A) fatty acids and glucose
 - B) fatty acids and glycerol
 - C) amino acids
 - D) nucleotides
35. Fatty acids and glycerol are the subunits of:
- A) phospholipids
 - B) true fats
 - C) both A and B
 - D) both A and B, and cholesterol

36. Large molecules of protein are made of the smaller subunits called:
A) glucose
B) fatty acids and glycerol
C) amino acids
D) nucleotides
37. Which statement is NOT true of amino acids?
A) They all contain the elements C, H, O, and N.
B) They are the subunits of proteins.
C) A chain of amino acids is linked by ionic bonds.
D) There are about 20 different amino acids in human proteins.
38. Large molecules of DNA and RNA are made of the smaller subunits called:
A) glucose
B) fatty acids and glycerol
C) amino acids
D) nucleotides
39. Which statement is NOT true of the subunits of organic molecules?
A) Glycogen is made of glucose.
B) Glycerol is found in true fats and in diglycerides.
C) DNA subunits are called deoxyprecursors.
D) The subunits of enzymes are amino acids.
40. Which statement is NOT true of saturated fats?
A) Most are plant oils.
B) They have the maximum number of hydrogens.
C) They have single bonds between carbons.
D) They have been implicated in heart disease.
41. Which statement is NOT true of unsaturated fats?
A) They have one or more double bonds between carbons.
B) They have the maximum number of hydrogens.
C) Most are plant oils.
D) They are made of fatty acids and glycerol.
42. The fluid found within lymph vessels is called:
A) lymph
B) plasma
C) intracellular fluid
D) tissue fluid

43. Lymph is a fluid that is found:
A) in lymph vessels
B) in tissue spaces
C) both A and B
D) both A and B, and between cells
44. The fluid found within veins is called:
A) lymph
B) plasma
C) intracellular fluid
D) tissue fluid
45. Plasma is a fluid that is found:
A) in veins
B) in arteries
C) both A and B
D) both A and B, and in capillaries
46. The fluid found within cells is called:
A) intercellular fluid
B) plasma
C) intracellular fluid
D) extracellular fluid
47. Intracellular fluid is found:
A) within cells
B) between cells
C) both A and B
D) both A and B, and in tissue spaces
48. The fluid found in spaces between cells is called:
A) lymph
B) plasma
C) intracellular fluid
D) tissue fluid
49. The fluid found in spaces between cells is called:
A) tissue fluid
B) intercellular fluid
C) both A and B
D) both A and B, and lymph

50. Intercellular fluid is found:
A) within cells
B) between cells
C) both A and B
D) both A and B, and around cells
51. The fact that water changes temperature slowly is important for:
A) digestion of food
B) pumping of the heart
C) keeping a fairly constant body temperature
D) nerve impulse transmission
52. Water can absorb a great deal of heat, and this is important for:
A) sweating to lose excess body heat
B) digestion of very large meals
C) nerve impulse transmission
D) production of RBCs
53. The process of sweating depends upon water as a:
A) solvent
B) lubricant
C) transporter
D) heat absorber
54. The sense of taste depends upon water as a:
A) solvent
B) lubricant
C) transporter
D) heat absorber
55. The excretion of waste products in urine depends upon water as a:
A) solvent
B) lubricant
C) cushion
D) heat absorber
56. Which of these is NOT an example of the importance of water as a solvent?
A) the senses of smell and taste
B) synovial fluid in joints
C) transport of nutrients in the blood
D) excretion of waste products in urine

57. Swallowing depends upon water as a:
- A) solvent
 - B) lubricant
 - C) cushion
 - D) heat absorber
58. Which of these is an example of the lubricant function of water?
- A) the senses of smell and taste
 - B) synovial fluid in joints
 - C) transport of nutrients in the blood
 - D) excretion of waste products in urine
59. The storage form for glucose in the liver is:
- A) glycogen
 - B) true fats
 - C) pentose sugars
 - D) oligosaccharides
60. The storage form for energy in adipose tissue is:
- A) glycogen
 - B) true fats
 - C) pentose sugars
 - D) oligosaccharides
61. The carbohydrates that are part of DNA and RNA are:
- A) glucose
 - B) starch
 - C) pentose sugars
 - D) oligosaccharides
62. The pentose sugars are part of:
- A) starches
 - B) DNA and RNA
 - C) specialized enzymes
 - D) cell membranes
63. The self antigens on cell membranes are:
- A) starch
 - B) pentose sugars
 - C) glucose
 - D) oligosaccharides

64. The oligosaccharides are attached to:
A) DNA and RNA as part of the genetic code
B) certain enzymes as part of the active site
C) structural proteins to provide stability
D) cell membranes as self antigens
65. The disaccharides are sugars that:
A) will be digested and used for energy, such as sucrose
B) will become part of DNA and RNA
C) will be digested for energy, such as fructose
D) are part of specialized enzymes
66. Which of these is NOT a disaccharide?
A) sucrose
B) galactose
C) maltose
D) lactose
67. Disaccharides in the diet are digested and used for:
A) energy
B) amino acids
C) proteins
D) cell membranes
68. Sucrose and lactose are:
A) monosaccharides
B) disaccharides
C) oligosaccharides
D) polysaccharides
69. The precursor molecule for steroid hormones is:
A) cholesterol
B) cellulose
C) phospholipids
D) enzymes
70. Cholesterol is important for the:
A) synthesis of steroid hormones
B) production of vitamin D
C) both A and B
D) both A and B, and as part of cell membranes

71. Vitamin D may be synthesized in the body from:
A) amino acids
B) phospholipids
C) cholesterol
D) disaccharides
72. The undigested part of food that promotes peristalsis is:
A) cholesterol
B) cellulose
C) true fats
D) proteins
73. For people, the function of cellulose is to promote:
A) energy production between meals
B) peristalsis
C) loss of heat in hot weather
D) retention of heat in cold weather
74. The genetic material (genetic code) within cells is:
A) enzymes
B) RNA
C) DNA
D) phospholipids
75. The function of DNA is to:
A) be the genetic code within cells
B) serve as the site of protein synthesis
C) both A and B
D) both A and B, and form chromosomes
76. The function of RNA is:
A) protein synthesis
B) cell respiration
C) to help synthesize DNA
D) to help synthesize ATP
77. RNA is different from DNA in that:
A) RNA is a single strand of amino acids
B) RNA has the base uracil where DNA has thymine
C) both A and B
D) neither A nor B

78. The catalysts of cellular reactions are:
A) phospholipids
B) nucleic acids
C) hexose sugars
D) enzymes
79. Within the body, proteins may be:
A) enzymes
B) hormones
C) structural components of tissues
D) all of these
80. Which organic molecule is NOT part of cell membranes?
A) glucose
B) protein
C) phospholipid
D) cholesterol
81. Which of the following are energy-storage molecules?
A) glucose and proteins
B) glycogen and true fats
C) proteins and glycogen
D) true fats and amino acids
82. Which statement is NOT true of organic molecules?
A) DNA is the genetic code in chromosomes.
B) Hormones may be steroids or proteins.
C) Phospholipids are part of cell membranes.
D) Oligosaccharides are energy-storage molecules.
83. Which statement is NOT true of organic molecules?
A) RNA is important for protein synthesis.
B) Cholesterol is part of cell membranes.
C) Glucose is the most important pentose sugar.
D) All enzymes are proteins.
84. The raw materials, or reactants, of cell respiration are:
A) glucose and oxygen
B) water and glucose
C) oxygen and carbon dioxide
D) carbon dioxide and glucose

85. Which of these is NOT a product of cell respiration?
A) water
B) carbon dioxide
C) ATP
D) oxygen
86. The purpose of cell respiration is to produce:
A) ATP from water
B) ATP from glucose
C) carbon dioxide from ATP
D) water from ATP
87. The waste product of cell respiration is:
A) carbon dioxide
B) water
C) ATP
D) heat
88. Biologically useful energy is released in cell respiration in the form of:
A) light
B) heat
C) ATP
D) movement
89. Cell respiration enables our cells to release the potential energy found in molecules of:
A) water
B) glucose
C) oxygen
D) minerals
90. In cell respiration, the breakdown of glucose to form ATP must take place in the presence of:
A) carbon dioxide
B) water
C) hydrogen
D) oxygen
91. If too much carbon dioxide accumulates in cells and tissues:
A) the pH will decrease
B) cell membranes will rupture
C) the pH will increase
D) cell membranes will shrivel

92. Which statement is NOT true of cell respiration?
- A) It is the link between eating and breathing.
 - B) The water produced must be excreted or the cell will burst.
 - C) One of the energy products is heat.
 - D) ATP is biologically useful energy.
93. The element that carries oxygen in red blood cells is:
- A) iron
 - B) calcium
 - C) iodine
 - D) cobalt
94. The element that provides strength in bones and teeth is:
- A) iron
 - B) calcium
 - C) zinc
 - D) iodine
95. Two elements that provide strength in bones and teeth are:
- A) iron and calcium
 - B) calcium and potassium
 - C) sodium and phosphorus
 - D) calcium and phosphorus
96. The element that is part of the hormone thyroxine is:
- A) calcium
 - B) cobalt
 - C) iodine
 - D) sodium
97. The element iodine is an essential part of the hormone:
- A) insulin
 - B) thyroxine
 - C) estrogen
 - D) growth hormone
98. The element that is part of vitamin B₁₂ is:
- A) sodium
 - B) copper
 - C) calcium
 - D) cobalt

99. The element cobalt is an essential part of vitamin:
A) C
B) D
C) B₆
D) B₁₂
100. Two elements that are necessary for nerve-impulse transmission are:
A) sodium and potassium
B) iron and copper
C) calcium and phosphorus
D) sulfur and cobalt
101. The element that is necessary for blood clotting is:
A) sulfur
B) calcium
C) copper
D) potassium
102. The element that is part of some amino acids and forms bonds in proteins is:
A) sulfur
B) calcium
C) copper
D) potassium
103. Two elements that are necessary for cell respiration are:
A) sodium and potassium
B) calcium and phosphorus
C) iodine and sulfur
D) iron and copper
104. All organic molecules contain the elements:
A) C, H, and N
B) C, H, and O
C) C, O, and N
D) H, O, and N
105. A large organic molecule made of the elements C, H, O, N, and P would most likely be a:
A) nucleic acid
B) polysaccharide
C) protein
D) true fat

106. A large organic molecule made of the elements C, H, O, N, and S would most likely be a:
- A) nucleic acid
 - B) polysaccharide
 - C) protein
 - D) true fat
107. Which statement is NOT true of the elements in the human body?
- A) Iron is part of hemoglobin.
 - B) The hormone thyroxine contains copper.
 - C) Sodium is needed for nerve-impulse transmission.
 - D) Phosphorus is part of bones and teeth.
108. Which statement is NOT true of the elements in the human body?
- A) Calcium is necessary for blood clotting.
 - B) Potassium is needed for nerve-impulse transmission.
 - C) Sulfur is part of some carbohydrates.
 - D) Vitamin B₁₂ contains cobalt.
109. A solution that has more hydrogen ions than hydroxyl ions is:
- A) a base
 - B) an acid
 - C) neutral
 - D) none of these
110. An acid solution has:
- A) more hydroxyl ions than hydrogen ions
 - B) more hydroxyl ions than water ions
 - C) more hydrogen ions than water ions
 - D) more hydrogen ions than hydroxyl ions
111. A solution that has more hydroxyl ions than hydrogen ions is:
- A) neutral
 - B) a base
 - C) an acid
 - D) none of these
112. An alkaline (basic) solution has:
- A) more hydroxyl ions than hydrogen ions
 - B) more hydroxyl ions than water ions
 - C) more hydrogen ions than water ions
 - D) more hydrogen ions than hydroxyl ions

113. A solution that has equal numbers of hydrogen and hydroxyl ions is:
A) neutral
B) a base
C) an acid
D) none of these
114. On the pH scale, acids are indicated by numbers:
A) above 10
B) below 10
C) above 7
D) below 7
115. On the pH scale, bases are indicated by numbers:
A) below 4
B) below 7
C) above 4
D) above 7
116. A solution with a pH of 7.5 would be:
A) slightly acidic
B) strongly acidic
C) slightly alkaline
D) strongly alkaline
117. A solution with a pH of 2.5 would be:
A) slightly acidic
B) strongly acidic
C) slightly alkaline
D) strongly alkaline
118. Which statement is NOT true of the pH scale?
A) It ranges from 0 through 14.
B) It is a measure of the hydrogen and hydroxyl ions in a solution.
C) The more hydrogen ions present, the higher the pH.
D) A pH of 7 is considered neutral.
119. Which statement is NOT true of pH and human body fluids?
A) Blood has a very narrow normal pH range.
B) Gastric juice may have a pH of 2.
C) The pH of urine may be acidic or alkaline and still be in the normal range.
D) The normal pH range of intestinal secretions is acidic.

120. The normal pH range of blood is _____, which is _____.
- A) 6.75–6.95/slightly acidic
 - B) 7.35–7.45/slightly alkaline
 - C) 7.10–7.20/slightly alkaline
 - D) 6.90–7.15/neutral
121. Which pH would NOT be in the normal range for human blood?
- A) 7.30
 - B) 7.39
 - C) 7.40
 - D) All of these are within the normal range.
122. A blood pH of 7.36 is:
- A) slightly alkaline and in the normal range
 - B) slightly acidic and in the normal range
 - C) slightly alkaline and too high for the normal range
 - D) slightly acidic and too low for the normal range
123. A blood pH of 7.44 is:
- A) slightly alkaline and in the normal range
 - B) slightly acidic and in the normal range
 - C) slightly alkaline and too high for the normal range
 - D) slightly acidic and too low for the normal range
124. The purpose of a buffer system is to:
- A) maintain a normal growth rate
 - B) ensure proper digestion
 - C) prevent drastic changes in pH
 - D) speed up nerve impulses
125. When the bicarbonate buffer system buffers the strong acid HCl:
- A) carbonic acid is formed, which only slightly lowers pH
 - B) sodium chloride is formed, which raises pH
 - C) water is formed, which lowers pH
 - D) sodium chloride is formed, which lowers pH
126. Salts are molecules that when in solution will:
- A) have no effect on pH
 - B) only slightly lower pH
 - C) only slightly raise pH
 - D) all of these, depending on the particular salt

127. When a buffer system forms a weak acid from a strong acid:
- A) the pH is lowered only slightly, instead of greatly
 - B) the pH is raised only slightly, instead of greatly
 - C) the pH is raised only slightly, because more hydrogen ions are produced
 - D) all of these are possible, depending on the particular reaction
128. If body fluids are becoming too acidic, this means that there are excess ___ ions in the fluid.
- A) sodium
 - B) potassium
 - C) hydroxyl
 - D) hydrogen
129. If the body fluids are becoming too alkaline, this means that there are not enough _____ ions in the fluid.
- A) sodium
 - B) potassium
 - C) hydroxyl
 - D) hydrogen
130. The product of cell respiration that will cause acidosis if present in excess is:
- A) water
 - B) carbon dioxide
 - C) oxygen
 - D) ATP
131. All enzymes are:
- A) carbohydrates
 - B) lipids
 - C) proteins
 - D) steroids
132. The active site of an enzyme:
- A) is the part where the substrate molecules fit
 - B) has a particular and specific shape
 - C) both A and B
 - D) both A and B, and it changes when other reactions are needed
133. Which statement is NOT true of the active site theory of enzyme functioning?
- A) An enzyme may catalyze many different kinds of reactions.
 - B) It depends on the shapes of the enzyme and the substrate molecules.
 - C) An enzyme remains unchanged when the reaction is complete.
 - D) An enzyme catalyzes only one type of reaction.

134. The purpose of enzyme catalysts is to:
- A) slow down reactions
 - B) transmit electrical nerve impulses
 - C) speed up reactions by adding heat
 - D) speed up reactions without the addition of heat
135. Heat may disrupt the functioning of an enzyme because:
- A) human enzymes function only at 98.6°F
 - B) heat can break peptide bonds
 - C) water molecules are attracted to the enzyme, and denature it
 - D) heat can break hydrogen bonds and denature the enzyme
136. A heavy-metal ion may disrupt the functioning of an enzyme because:
- A) substrates bond to the metal ion
 - B) a metal ion may change the shape of the active site
 - C) metal ions raise the pH of cellular fluid
 - D) metal ions displace enzymes in intracellular fluid
137. A change in pH may disrupt the functioning of an enzyme because:
- A) the enzyme must help out the bicarbonate buffer system
 - B) the active site becomes clogged with excess water
 - C) the substrate fits into the active site but cannot get out
 - D) excess hydrogen ions may block the active site
138. A synthesis reaction involves:
- A) the formation of bonds
 - B) the breaking of bonds
 - C) the release of energy
 - D) the creation of smaller molecules
139. A decomposition reaction involves:
- A) the creation of large molecules
 - B) the formation of bonds
 - C) the need for energy to create bonds
 - D) the breaking of bonds
140. A reaction in which the bonds of a large molecule are broken is called a:
- A) synthesis reaction
 - B) catalytic reaction
 - C) decomposition reaction
 - D) debonding reaction

141. A reaction in which smaller molecules are bonded to form larger ones is called a:
A) composition reaction
B) synthesis reaction
C) thesis reaction
D) decomposition reaction
142. The type of reaction more likely to release energy is a:
A) decomposition reaction
B) composition reaction
C) synthesis reaction
D) thesis reaction
143. With respect to the glucose molecule involved, cell respiration is a(n):
A) synthesis reaction
B) decomposition reaction
C) thesis reaction
D) antithesis reaction
144. For the elements chlorine and calcium, the chemical symbols are _____ and _____.
145. For the elements iron and iodine, the chemical symbols are _____ and _____.
146. For the elements potassium and phosphorus, the chemical symbols are _____ and _____.
147. For the elements cobalt and copper, the chemical symbols are _____ and _____.
148. For the elements sodium and sulfur, the chemical symbols are _____ and _____.
149. An ionic bond is formed when atoms gain or lose _____.
150. When atoms gain or lose electrons, a(n) _____ bond is formed.
151. An atom that has lost or gained electrons is called a(n) _____.

152. The number of positive or negative charges an ion has is called its _____.
153. An anion is an ion with a _____ charge.
154. A cation is an ion with a _____ charge.
155. A synonym for ionization (such as NaCl in water) is _____.
156. Dissociation means that a molecule breaks into its _____.
157. The bond between sodium and chloride in a molecule of NaCl is a(n) _____ bond.
158. A bond in which electrons are shared between two atoms is a(n) _____ bond.
159. An atom of carbon has _____ electrons to share with other atoms.
160. An atom of oxygen has _____ electrons to share with other atoms.
161. The bonds in a molecule of oxygen are _____ bonds.
162. The bonds between hydrogen and oxygen in a water molecule are _____ bonds.
163. The weak bonds that help maintain the 3-D shape of proteins and nucleic acids are _____ bonds.
164. Disulfide bonds help maintain the 3-D shape of _____.
165. The subunits of DNA and RNA are called _____.

166. A nucleotide consists of a phosphate group, a _____, and a _____.
167. The subunits of a molecule of glycogen are molecules of _____.
168. Two polysaccharides made of glucose are _____ and _____.
169. Starches are plant polysaccharides made of _____.
170. Glucose is a monosaccharide called a _____ sugar.
171. The subunits of the true fats are _____ and _____.
172. Fatty acids and glycerol are the subunits of the energy storage molecules called _____.
173. The subunits of proteins are molecules called _____.
174. Amino acids are the subunits of _____.
175. The bonds between the amino acids in a protein are _____ bonds.
176. Peptide bonds are found between the _____ in a molecule of _____.
177. The name for the water within blood vessels is _____.
178. Plasma is the name for the water within _____.
179. The name for the water in lymph vessels is _____.

180. The name for the water within cells is _____.
181. The name for the water around cells is _____.
182. The body as a whole changes temperature slowly because the body is mostly _____.
183. While sweating, the body loses heat by the process of _____.
184. The evaporation of sweat is a mechanism for the loss of _____.
185. A disadvantage of sweating is that it may lead to _____.
186. The excretion of waste products in urine depends on the _____ function of water.
187. The sense of taste depends on the _____ function of water.
188. The transport of minerals in the blood depends on the _____ function of water.
189. The synovial fluid of joints is an example of the _____ function of water.
190. The mucus of the large intestine is an example of the _____ function of water.
191. The genetic material of the chromosomes of a cell is _____.

192. DNA is the genetic material in the _____ of a cell.
193. The carbohydrates that form self antigens on cell membranes are the _____.
194. Excess glucose is stored as _____ in the _____.
195. The energy storage molecule in the liver is _____.
196. Glycogen is the storage form for excess _____.
197. Starches from plants are digested by people to _____.
198. A disaccharide such as sucrose is used by the body for _____.
199. The polysaccharide that humans cannot digest is _____.
200. The polysaccharide that stimulates peristalsis of the colon is _____.
201. The energy-storage molecule in adipose tissue is _____.
202. The lipids that form the largest part of cell membranes are the _____.
203. Phospholipids are present in all human cells as part of _____.
204. The precursor molecule for the steroid hormones is _____.

205. Cholesterol is the precursor molecule from which the _____ hormones are made.
206. Cells in the ovaries use cholesterol to synthesize _____.
207. Cells in the testes use cholesterol to synthesize _____.
208. The steroid molecule that is part of cell membranes is _____.
209. The monosaccharides that are part of DNA and RNA are the _____.
210. Pentose sugars are part of the larger molecules _____ and _____.
211. The raw materials of cell respiration are _____ and _____.
212. The inorganic molecular products of cell respiration are _____ and _____.
213. The energy products of cell respiration are _____ and _____.
214. The purpose of cell respiration is to produce _____ from _____.
215. Biologically useful energy is released in cell respiration in the form of _____.
216. The waste product of cell respiration is _____.
217. The product of cell respiration that in excess will cause cellular pH to decrease is _____.

218. The accumulation of carbon dioxide will cause the _____ of body fluids to decrease.
219. The mineral that carries oxygen in red blood cells is _____.
220. Two minerals that provide strength in bones are _____ and _____.
221. The mineral necessary for blood clotting is _____.
222. Two minerals that are needed for nerve impulse transmission are _____ and _____.
223. A large molecule made of the elements C, H, O, N, and P would most likely be a _____.
224. A large molecule made of the elements C, H, O, N, and S would most likely be a _____.
225. The trace element _____ is part of some thyroid hormones.
226. The trace element _____ is part of vitamin B₁₂.
227. On the pH scale, acids are indicated by numbers _____.
228. On the pH scale, bases are indicated by numbers _____.
229. A solution with a pH of 2 is _____, and has many _____ ions.
230. A solution with a pH of 10 is _____, and has many _____ ions.

231. An acid has more _____ ions than does a neutral solution.
232. A base has more _____ ions than does a neutral solution.
233. The normal pH range of blood is _____.
234. The purpose of a buffer system is to prevent large changes in _____.
235. Large changes in the pH of the blood are prevented by chemicals called _____.
236. The bicarbonate buffer system consists of carbonic acid and _____.
237. Carbonic acid is a _____ acid that will only slightly _____ pH.
238. Sodium bicarbonate is a _____ base that will only slightly _____ pH.
239. Sodium chloride is a _____ that has _____ effect on pH.
240. All enzymes are made of the organic molecule _____.
241. A protein that speeds up a reaction yet remains unchanged is called a(n) _____.
242. The function of enzymes is to be _____, which speed up reactions.
243. The particular function of an enzyme depends on the _____ of its _____.

244. The active site of an enzyme is the place where the _____ molecule(s) fit.
245. The shape of an enzyme creates an _____, where the substrate molecule(s) fit.
246. At the end of an enzymatic reaction, the enzyme itself is _____.
247. A heavy metal ion may exert toxic effects by blocking the _____ of enzymes.
248. A change in pH may disrupt enzyme functioning because H^+ ions change the shape of the _____.
249. A high fever may change the shape of enzymes; that is, enzymes become _____.
250. A reaction that involves the formation of bonds is a _____ reaction.
251. A reaction that involves the breaking of bonds is a _____ reaction.
252. A reaction in which small molecules are bonded to form a larger one is a _____ reaction.
253. A reaction in which a large molecule is broken down into smaller ones is a _____ reaction.

Answer Key

1. B
2. A
3. D
4. B
5. D
6. D
7. D
8. B
9. C
10. A
11. B
12. C
13. B
14. D
15. C
16. B
17. A
18. D
19. A
20. C
21. B
22. D
23. B
24. B
25. A
26. B
27. A
28. D
29. B
30. C
31. B
32. D
33. D
34. B
35. C
36. C
37. C
38. D
39. C
40. A
41. B
42. A
43. A
44. B

Chapter 2: Some Basic Chemistry

- 45. D
- 46. C
- 47. A
- 48. D
- 49. C
- 50. B
- 51. C
- 52. A
- 53. D
- 54. A
- 55. A
- 56. B
- 57. B
- 58. B
- 59. A
- 60. B
- 61. C
- 62. B
- 63. D
- 64. D
- 65. A
- 66. B
- 67. A
- 68. B
- 69. A
- 70. D
- 71. C
- 72. B
- 73. B
- 74. C
- 75. A
- 76. A
- 77. B
- 78. D
- 79. D
- 80. A
- 81. B
- 82. D
- 83. C
- 84. A
- 85. D
- 86. B
- 87. A
- 88. C
- 89. B
- 90. D

Chapter 2: Some Basic Chemistry

- 91. A
- 92. B
- 93. A
- 94. B
- 95. D
- 96. C
- 97. B
- 98. D
- 99. D
- 100. A
- 101. B
- 102. A
- 103. D
- 104. B
- 105. A
- 106. C
- 107. B
- 108. C
- 109. B
- 110. D
- 111. B
- 112. A
- 113. A
- 114. D
- 115. D
- 116. C
- 117. B
- 118. C
- 119. D
- 120. B
- 121. A
- 122. A
- 123. A
- 124. C
- 125. A
- 126. A
- 127. A
- 128. D
- 129. D
- 130. B
- 131. C
- 132. C
- 133. A
- 134. D
- 135. D
- 136. B

- 137. D
- 138. A
- 139. D
- 140. C
- 141. B
- 142. A
- 143. B
- 144A. Cl
- 144B. Ca
- 145A. Fe
- 145B. I
- 146A. K
- 146B. P
- 147A. Co
- 147B. Cu
- 148A. Na
- 148B. S
- 149. electrons
- 150. ionic
- 151. ion
- 152. valence
- 153. negative
- 154. positive
- 155. dissociation
- 156. ions
- 157. ionic
- 158. covalent
- 159. four
- 160. two
- 161. covalent
- 162. covalent
- 163. hydrogen
- 164. proteins
- 165. nucleotides
- 166A. pentose sugar
- 166B. nitrogenous base
- 167. glucose
- 168A. glycogen
- 168B. starch; cellulose
- 169. glucose
- 170. hexose
- 171A. fatty acids
- 171B. glycerol
- 172. true fats; triglycerides
- 173. amino acids
- 174. proteins

- 175. peptide
- 176A. amino acids
- 176B. protein
- 177. plasma
- 178. blood vessels
- 179. lymph
- 180. intracellular fluid
- 181. tissue fluid; intercellular fluid; interstitial fluid
- 182. water
- 183. evaporation
- 184. excess heat
- 185. dehydration
- 186. solvent
- 187. solvent
- 188. solvent
- 189. lubricant
- 190. lubricant
- 191. DNA
- 192. chromosomes
- 193. oligosaccharides
- 194A. glycogen
- 194B. liver; muscles
- 195. glycogen
- 196. glucose
- 197. glucose; monosaccharides
- 198. energy production
- 199. cellulose
- 200. cellulose
- 201. true fat
- 202. phospholipids
- 203. cell membranes
- 204. cholesterol
- 205. steroid
- 206. estrogen
- 207. testosterone
- 208. cholesterol
- 209. pentose sugars
- 210A. DNA
- 210B. RNA
- 211A. glucose
- 211B. oxygen
- 212A. carbon dioxide
- 212B. water
- 213A. ATP
- 213B. heat
- 214A. ATP

- 214B. glucose; food
- 215. ATP
- 216. carbon dioxide
- 217. carbon dioxide
- 218. pH
- 219. iron
- 220A. calcium
- 220B. phosphorus
- 221. calcium
- 222A. sodium
- 222B. potassium
- 223. nucleic acid
- 224. protein
- 225. iodine
- 226. cobalt
- 227. below 7
- 228. above 7
- 229A. acidic
- 229B. hydrogen
- 230A. basic; alkaline
- 230B. hydroxyl
- 231. hydrogen
- 232. hydroxyl
- 233. 7.35 to 7.45
- 234. pH
- 235. buffer systems
- 236. sodium bicarbonate
- 237A. weak
- 237B. lower
- 238A. weak
- 238B. raise
- 239A. salt
- 239B. no
- 240. protein
- 241. enzyme
- 242. catalysts
- 243A. shape
- 243B. active site
- 244. substrate
- 245. active site
- 246. unchanged
- 247. active sites
- 248. active site
- 249. denatured
- 250. synthesis
- 251. decomposition

- 252. synthesis
- 253. decomposition