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Chapter 02
Chemical Composition of the Body

Multiple Choice Questions

1. Water makes up _____ of the total body weight of an average adult.
A. 50-60%
B. 55-65%
C. 60-70%
D. 65-75%

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

2. Most of the water found in the body is in the
A. blood.
B. intracellular fluid compartment.
C. extracellular fluid compartment.
D. blood and extracellular fluid compartment.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

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True / False Questions

3. Neutrons are uncharged particles found in the nucleus of an atom.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

4. An element with 5 protons, 5 neutrons, and 5 electrons would have an atomic number of 15.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

Multiple Choice Questions

5. The atomic nucleus does not contain _____, which are negatively charged subatomic particles.
A. protons
B. electrons
C. neutrons

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

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6. An element with 11 neutrons, 11 protons, and 11 electrons would have a mass number of
A. 11
B. 33
C. 22
D. cannot be determined

Blooms Level: 2. Understand
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

7. The _____ is the physical space which an electron occupies in an atom.
A. nucleus
B. orbital
C. energy level
D. Both orbital and energy level are correct.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

8. The _____ electrons are the outermost electrons of an atom.
A. kernel
B. valence
C. atomic
D. anion

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

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9. Isotopes have the same _____ number, but a different _____ number.
A. mass, atomic
B. neutron, mass
C. atomic, mass
D. atomic, proton

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

10. Which of the following is NOT true of isotopes of a given atom?
A. have the same number of neutrons
B. have the same number of protons
C. have different atomic masses
D. All apply.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

True / False Questions

11. The term "chemical element" refers to the most common isotope of that element.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

12. Which of the following subatomic particles have negligible mass?
A. electrons
B. neutrons
C. protons
D. Both neutrons and protons.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

True / False Questions

13. Molecules with polar covalent bonds are hydrophobic.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

14. Negatively charged ions will migrate towards the anode in an electrical field.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

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15. Hydrogen bonds form between the partially charged atoms of two polar molecules, such as the slightly positively charged hydrogen atom of one water molecule and the slightly negatively charged oxygen atom of another.
TRUE

Blooms Level: 2. Understand
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

16. Atoms sharing a pair of electrons form covalent bonds.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

17. Carbon atoms form many organic molecules by forming polar covalent bonds with other carbon atoms.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

18. When an atom loses one or more electrons, it
A. becomes positively charged.
B. becomes negatively charged.
C. is called an anion.
D. has no change in its charge.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

19. When an atom gains one or more electrons, it
A. becomes positively charged.
B. has no change in its charge.
C. is called an anion.
D. is called a cation.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

20. An atom with 5 protons, 5 neutrons, and 6 electrons would have a net charge of
A. -1.
B. -2.
C. +1.
D. +2.

Blooms Level: 2. Understand
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

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21. _____ bonds are formed when atoms share electrons unequally.
A. Nonpolar covalent
B. Ionic
C. Polar covalent
D. van der Waals

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

22. Hydration spheres can be formed by compounds which contain _____ bonds.

A. nonpolar covalent
B. polar covalent
C. ionic
D. either polar covalent or ionic

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

True / False Questions

23. Ionic bonds are very strong and will not easily dissociate in water.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

24. Hydrophobic molecules would contain _____ bonds.
A. nonpolar covalent
B. polar covalent
C. hydrogen
D. ionic

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

True / False Questions

25. The formation of hydration spheres makes an ion or molecule soluble in water.
TRUE

Blooms Level: 2. Understand
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

26. Surface tension between water molecules occurs because adjacent water molecules form _____ bonds with each other.
A. nonpolar covalent
B. polar covalent
C. hydrogen
D. ionic

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

27. Bonds that are formed between oxygen and hydrogen atoms within water molecules are called
A. hydrogen bonds.
B. ionic bonds.
C. nonpolar covalent bonds.
D. polar covalent bonds.

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

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28. The type of bond found in sodium chloride is
A. an ionic bond.
B. a polar covalent bond.
C. a hydrogen bond.
D. a nonpolar covalent bond.

Blooms Level: 1. Remember
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

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29. What type of bond is formed between potassium and iodine?
A. polar covalent bond
B. ionic bond
C. nonpolar covalent bond
D. hydrogen bond

Blooms Level: 2. Understand
Learning Outcome: 02.01
Section: 02.01
Topic: Chemistry

30. Which of the following would be most easily broken?
A. a hydrogen bond
B. a nonpolar covalent bond
C. an ionic bond
D. a polar covalent bond

Blooms Level: 2. Understand
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

31. The ability of water to be pulled as a column through narrow channels is called
A. osmalality.
B. surface tension.
C. neutrality.
D. capillary action.

Blooms Level: 1. Remember
Learning Outcome: 02.02
Section: 02.01
Topic: Chemistry

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True / False Questions

32. The pH of a solution is directly proportional to the hydrogen ion concentration of the solution.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

33. Acids release hydrogen ions into solutions.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

34. As the pH of the blood decreases, the amount of hydrogen ions in the blood would decrease.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

35. Water molecules form _____ ions when they associate with a hydrogen ion.
A. hydroxide
B. bicarbonate
C. hydronium
D. water

Blooms Level: 1. Remember
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

36. A solution of a pH above 7 is called _____.
A. acidic
B. neutral
C. basic

Blooms Level: 1. Remember
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

37. Bases will _____ protons in a solution.
A. accept
B. donate
C. ignore
D. repel

Blooms Level: 1. Remember
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

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38. The primary buffer in the blood is the _____ buffer.
A. hydronium
B. ammonia
C. phosphate
D. bicarbonate

Blooms Level: 1. Remember
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

True / False Questions

39. A buffer has an acid component and a base component that can prevent drastic changes in pH.
TRUE

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

40. The pH of a solution increases as the _____ ion concentration decreases.
A. hydrogen
B. hydroxide
C. bicarbonate
D. sodium

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

41. In an acidic solution,
A. the OH^- ion concentration is greater than the H^+ ion concentration.
B. the OH^- ion concentration is less than the H^+ ion concentration.
C. the H^+ ion concentration is equal to the OH^- ion concentration.
D. the H^+ ion concentration is less than the OH^- ion concentration only if the solution is buffered.

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

42. A blood pH of 7.6 is
A. indicative of acidosis.
B. indicative of alkalosis.
C. in the normal physiological range.
D. indicates effective buffering by the bicarbonate/carbonic acid system.

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

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43. Regarding acids and bases,
A. acids will increase the pH of a solution.
B. bases will decrease the pH of a solution.
C. acids will accept hydrogen ions in a solution.
D. bases will accept hydrogen ions in a solution.

Blooms Level: 2. Understand
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

44. Ammonia usually
A. acts as a base.
B. acts as an acid.
C. acts as a buffer.
D. ionizes to form a hydroxyl ion.

Blooms Level: 1. Remember
Learning Outcome: 02.03
Section: 02.01
Topic: Chemistry

True / False Questions

45. Organic acids contain carbonyl groups.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.03
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

46. Molecules that contain carbon and hydrogen atoms are
A. ionic.
B. inorganic.
C. organic.
D. carbonic.

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

True / False Questions

47. An ionized organic acid is designated with the suffix - ate.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

48. The ionized form of the organic lactic acid is lactate.
TRUE

Blooms Level: 2. Understand
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

49. How many single bonds can a carbon atom form if it is double-bonded to an oxygen atom?
A. 1
B. 2
C. 3
D. 4

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

50. A six-sided organic molecule with alternating double bonds is termed a(n)
A. aromatic compound.
B. ketone.
C. alcohol.
D. organic acid.

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

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51. Ketones contain a(n) _____ group within the carbon chain.
A. hydroxyl
B. carbonyl
C. carboxyl
D. aromatic

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

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52. Organic acids will contain
A. a carboxyl group.
B. a carbonyl group.
C. an amino group.
D. a hydroxyl group.

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

53. An example of an aromatic substance is
A. hexane.
B. cyclohexane.
C. fructose.
D. benzene.

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

True / False Questions

54. Only L-stereoisomers are absorbed by the digestive tract and used to synthesize organic molecules.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

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Multiple Choice Questions

55. Molecules with the same atoms, in the same sequence, but arranged differently in space are called
A. structural isomers.
B. stereoisomers.
C. functional groups.
D. aromatic molecules.

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

56. Molecules that are mirror images of each other are
A. enantiomers.
B. geometric isomers.
C. cis/trans isomers.
D. structural isomers.

Blooms Level: 1. Remember
Learning Outcome: 02.04
Section: 02.01
Topic: Chemistry

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True / False Questions

57. Fats and carbohydrates are the primary energy stores in the body.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

58. Glucose, galactose, and fructose can be considered structural isomers of each other.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

59. Fructose is a ketone.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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Multiple Choice Questions

60. _____ are molecules with the same ratio of atoms but different arrangements of atoms.
A. Isotopes
B. Structural isomers
C. Stereoisomers
D. Radioactive isotopes

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

True / False Questions

61. Covalent bonds are formed between monosaccharides through dehydration synthesis.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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Multiple Choice Questions

62. The addition of water with the proper enzymes to a molecule is called
A. dehydration synthesis.
B. condensation.
C. hydrolysis.
D. combustion.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

63. Which reaction represents a dehydration synthesis reaction?

$$\text{glucose} + \text{glucose} \xrightleftharpoons[B]{A} \text{maltose} + \text{water}$$

A. Reaction A
B. Reaction B

Blooms Level: 2. Understand
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

True / False Questions

64. Carbohydrate molecules have a ratio of twice as many oxygen atoms to carbon atoms.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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Multiple Choice Questions

65. Sucrose is a disaccharide that is composed of _____ and _____.
A. glucose, glucose
B. glucose, galactose
C. glucose, fructose
D. fructose, galactose

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

66. Glycogen
A. is more highly branched than plant starch.
B. is a glycoprotein found in the liver.
C. is a glycolipid found in skeletal muscles.
D. is composed of alternating glucose and galactose molecules.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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67. An example of a monosaccharide is
A. maltose.
B. sucrose.
C. glucose.
D. glycogen.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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True / False Questions

68. Glucose is stored as a polysaccharide to prevent osmosis of water into the cells.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

Multiple Choice Questions

69. Which of the following is NOT a disaccharide?
A. fructose
B. sucrose
C. maltose
D. lactose

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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70. Which of the following polysaccharides cannot be digested by animals themselves?
A. glycogen
B. cellulose
C. starch
D. All apply.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

True / False Questions

71. Unsaturated fatty acids contain more hydrogen atoms than saturated fatty acids of the same length.
FALSE

Blooms Level: 2. Understand
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

72. Rapid, uncontrolled hydrolysis of body fats can result in ketoacidosis.
TRUE

Blooms Level: 2. Understand
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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73. Corticosteroids are a type of lipid commonly found in cell membranes.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

74. Steroids are derived from cholesterol.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

Multiple Choice Questions

75. In order to maintain proper health, total dietary fat intake should not exceed _____ of total dietary energy intake.
A. 10%
B. 20%
C. 30%
D. 40%

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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76. Which of the following is NOT a type of lipid?
A. prostaglandins
B. triglycerides
C. cholesterol
D. glycogen

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

77. Lipids containing glycerol would include _____ and _____.
A. triglycerides, steroids
B. prostaglandins, phospholipids
C. triglycerides, phospholipids
D. steroids, prostaglandins

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

78. _____ are liver synthesized derivatives of free fatty acids that can be used as an immediate source of energy by many organs.
A. Glycerols
B. Ketone bodies
C. Steroids
D. Cholesterols

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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79. _____ are fatty acids with a cyclic hydrocarbon group.
A. Triglycerides
B. Prostaglandins
C. Proteins
D. Carbohydrates

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

80. A molecule that is part polar and part nonpolar is called
A. an enantiomer.
B. a ketone body.
C. unsaturated.
D. amphipathic.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

81. This group of organic compounds acts as surfactants:
A. carbohydrates
B. phospholipids
C. nucleic acids
D. prostaglandins

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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82. In the formation of triglycerides,
A. hydroxyl and carbonyl groups interact.
B. amino and carbonyl groups interact.
C. carboxyl and amino groups interact.
D. carboxyl and hydroxyl groups interact.

Blooms Level: 1. Remember
Learning Outcome: 02.06
Section: 02.02
Topic: Chemistry

83. Which of the following is NOT true of unsaturated fatty acids?
A. They contain one or more double bonds.
B. They are usually liquid at room temperature.
C. They contain a maximal number of hydrogen atoms.
D. They contain less than the maximum number of hydrogen atoms.

Blooms Level: 2. Understand
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

84. Which of the following is NOT true of phospholipids?
A. They are glycolipids originally isolated from the prostate gland.
B. They are major components of the cell membrane.
C. They have a polar head and a nonpolar tail.
D. They are amphipathic molecules.

Blooms Level: 2. Understand
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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85. Ketosis
A. occurs when stored fats are rapidly degraded by the body.
B. stimulates an increased blood pH.
C. may lead to alkalosis.
D. occurs as the concentration of ketones in the urine decreases.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

86. Which of the following describes a trans-fat?
A. Has carbon-carbon single bonds.
B. Has carbon-carbon double bonds with hydrogens on opposite sides of the bonds.
C. Has carbon-carbon double bonds with hydrogens on the same side of the bonds.
D. The fatty acids form a bent chain.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

87. Which of the following is NOT true of steroids?
A. They have three 6-carbon rings joined to one 5-carbon ring.
B. They contain a variety of functional groups.
C. They are derived from palmitate.
D. They differ in the position of the double covalent bonds between the carbon atoms in the rings.

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

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88. Which of the following is NOT a derivative of cholesterol?
A. corticosteroids
B. vitamin D_3
C. aldosterone
D. lecithin

Blooms Level: 1. Remember
Learning Outcome: 02.05
Section: 02.02
Topic: Chemistry

89. Phospholipid molecules will form aggregates called _____ when placed in water.
A. surfactants
B. ketone bodies
C. prostaglandins
D. micelles

Blooms Level: 1. Remember
Learning Outcome: 02.07
Section: 02.02
Topic: Chemistry

90. What characteristic of phospholipids allows them to form the double layer seen in cell membranes?
A. They are amphipathic.
B. They are totally nonpolar.
C. They are soluble in water.
D. They are totally hydrophobic.

Blooms Level: 1. Remember
Learning Outcome: 02.07
Section: 02.02
Topic: Chemistry

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True / False Questions

91. All amino acids contain carboxyl and amino groups.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.05
Learning Outcome: 02.08
Section: 02.03
Topic: Chemistry

92. The specific sequence of amino acids in a polypeptide is known as the primary protein structure.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

93. The white part of a cooked egg is due to denatured albumin proteins.
TRUE

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

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Multiple Choice Questions

94. _____ is a structural protein found in tendons and ligaments.
A. Collagen
B. Keratin
C. Myosin
D. Fibrin

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

95. Peptide bonds are formed by the process of
A. ketosis.
B. hydrolysis.
C. dehydration synthesis.
D. aromatization.

Blooms Level: 1. Remember
Learning Outcome: 02.08
Section: 02.03
Topic: Chemistry

96. The secondary structure of proteins is/are
A. the linear arrangement of amino acids in the molecule.
B. alpha helix coils and beta-pleated sheet folds of a protein strand.
C. due to the interaction between protein subunits.
D. stabilized when a protein is denatured.

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

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97. The primary structure of proteins is/are
A. the linear arrangement of amino acids in the molecule.
B. alpha helix coils and beta-pleated sheet folds of a protein strand.
C. due to the interaction between protein subunits.
D. stabilized when a protein is denatured.

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

98. The subunit of protein is the
A. fatty acid.
B. nucleic acid.
C. amino acid.
D. carboxylic acid.

Blooms Level: 1. Remember
Learning Outcome: 02.08
Section: 02.03
Topic: Chemistry

99. How many different amino acids are known?
A. 10
B. 25
C. 30
D. 20

Blooms Level: 1. Remember
Learning Outcome: 02.08
Section: 02.03
Topic: Chemistry

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100. What holds a protein in its tertiary structure?
A. hydrogen bonds between nearby amino acids
B. weak chemical bonds between widely spaced amino acids
C. disulfide bonds between sulfur groups on cysteines
D. Both weak chemical bonds between widely spaced amino acids and disulfide bonds between sulfur groups on cysteines are correct.

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

101. How many amino acids are present for a polypeptide chain to be called a protein?
A. 3
B. 30
C. 50
D. 100

Blooms Level: 1. Remember
Learning Outcome: 02.08
Section: 02.03
Topic: Chemistry

True / False Questions

102. Proteins that combine with other molecules are said to be condensed.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

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103. The specific shape of a protein determines its function.
TRUE

Blooms Level: 2. Understand
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

Multiple Choice Questions

104. A protein that is combined with another type of molecule like a carbohydrate is
A. conjugated.
B. denatured.
C. hydrolyzed.
D. complemented.

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

105. Which of the following is NOT a function of proteins in the body?
A. carriers for membrane transport
B. enzymes
C. compose genes
D. receptors for regulator molecules

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

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106. Keratin and collagen are considered _____ proteins.
A. functional
B. structural
C. fibrous
D. Both structural and fibrous are correct.

Blooms Level: 1. Remember
Learning Outcome: 02.09
Section: 02.03
Topic: Chemistry

True / False Questions

107. In DNA, cytosine forms a complementary base pair with adenine.
FALSE

Blooms Level: 1. Remember
Learning Outcome: 02.11
Section: 02.04
Topic: Chemistry

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Multiple Choice Questions

108. The nitrogenous base adenine is a
A. purine.
B. pyrimidine.
C. steroid.
D. prostaglandin.

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

109. Which of the following is NOT a component of DNA?
A. phosphate
B. deoxyribose sugar
C. guanine
D. uracil

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

110. The human genome refers to
A. all living human beings.
B. the total variations in human cells.
C. all of the genes in the cell.
D. human mutations caused by gene defects.

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

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111. The "spiral staircase" structure of DNA is referred to as the
A. tertiary structure.
B. spiral structure.
C. the double helix.
D. the twist of life.

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

112. Which of the following is NOT one of the three types of RNA?
A. dRNA
B. tRNA
C. rRNA
D. mRNA

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

113. The base that is NOT found in RNA is
A. thymine.
B. guanine.
C. cytosine.
D. uracil.

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

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114. Which of the following is NOT a difference between DNA and RNA?
A. They have different sugars.
B. RNA is a single strand, while DNA is a double strand.
C. DNA has thymine, while RNA has uracil.
D. They both can leave the nucleus to perform their functions.

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

115. The backbone of a DNA molecule is a chain of
A. alternating deoxyribose sugar and phosphate.
B. alternating phosphate and nitrogen.
C. alternating nitrogenous bases.
D. alternating deoxyribose and ribose sugars.

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

116. Which of the following is NOT a function of a purine-containing nucleotide?
A. neurotransmitter
B. hormone
C. energy carrier
D. coenzymes

Blooms Level: 1. Remember
Learning Outcome: 02.10
Section: 02.04
Topic: Chemistry

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