Essentials of Anatomy and Physiology 7th edition LaPres Test Bank

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Essentials of Anatomy & Physiology, 7e **(LaPres)**
Chapter 2 Chemicals of Life

1) Anything that has weight and occupies space can be described as _____.
A) an atom
B) matter
C) a compound
D) a molecule

Answer: B
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.1b. With respect to the structure of an atom:Relate the number of electrons in an electron shell to an atoms chemical stability and its ability to form chemical bonds.,C1.1c. With respect to the structure of an atom: Explain how ions and isotopes are produced by changing the relative number of specific subatomic particles.,C1.1d. With respect to the structure of an atom: Distinguish among the terms atomic number, mass number and atomic weight.,C4.6. Demonstrate factors that affect enzyme activity, including denaturation, and interpret graphs showing the effects of various factors on the rate of enzyme catalyzed reactions.,C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C04 Organic compounds.

2) There are _____ naturally occurring elements of which _____ are involved in maintaining life.
A) 96; 22
B) 104; 28
C) 92; 24
D) 58; 34

Answer: C
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C01 Atoms and molecules.

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3) Which of the following is NOT an example of a lipid?
A) Fats
B) Amino acids
C) Steroids
D) Phospholipids

Answer: B
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples./Module C04 Organic compounds.

4) Proteins are made up of _____.
A) fats
B) amino acids
C) nucleotides
D) sugars

Answer: B
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples./Module C04 Organic compounds.

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5) Nucleic acids are made up of _____.
A) fats
B) amino acids
C) nucleotides
D) sugars

Answer: C
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples./Module C04 Organic compounds.

6) About 96% of the body consists of what four elements?
A) Oxygen, hydrogen, glucose, and carbon
B) Oxygen, hydrogen, carbon, and copper
C) Oxygen, hydrogen, carbon, and sodium
D) Oxygen, hydrogen, carbon, and nitrogen

Answer: D
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1b. With respect to the structure of an atom:Relate the number of electrons in an electron shell to an atoms chemical stability and its ability to form chemical bonds./Module C01 Atoms and molecules.

7) A chemical formula expresses _____.
A) the chemical composition of a molecule
B) the number of atoms for each element in the molecule
C) the atoms involved in chemical bonding
D) All of the choices are correct.

Answer: D
Topic: Chemical bonding
Learning Objective: 02.03 Explain the meaning of a chemical formula.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons./Module C01 Atoms and molecules.

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8) Covalent bonds form when _____.
A) two or more atoms share electrons equally
B) a positive ion and a negative ion attract
C) two or more molecules share electrons unequally
D) two or more atoms share electrons equally and two or more molecules share electrons unequally

Answer: D
Topic: Chemical bonding
Learning Objective: 02.05 Compare and contrast ionic, nonpolar covalent, polar covalent, and hydrogen bonds.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C2.1b With respect to non-polar covalent, polar covalent, ionic, and hydrogen bonds: Explain the mechanism of each type of bond./Module C01 Atoms and molecules.

9) To be considered an organic molecule a substance must contain _____.
A) carbon and nitrogen
B) carbon and hydrogen
C) carbon and oxygen
D) oxygen and hydrogen

Answer: B
Topic: Organic compounds
Learning Objective: 02.07 Distinguish between inorganic and organic substances.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.1. Define the term organic molecule./Module C04 Organic compounds.

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10) The process used to convert liquid vegetable oils to solids by changing its bonds is called _____.
A) carbonization
B) hydrogenation
C) solidification
D) oxygenation

Answer: B
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C2.1c Provide biologically significant examples of each type of non-polar covalent, polar covalent, ionic, and hydrogen bonds./Module C02 Chemical bonding.,Module C04 Organic compounds.

11) If an atom has 8 protons and 8 neutrons in its nucleus, and 8 orbiting electrons, its atomic number would be _____.
A) 24
B) 16
C) 8
D) 12

Answer: C
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.1d. With respect to the structure of an atom: Distinguish among the terms atomic number, mass number and atomic weight./Module C01 Atoms and molecules.

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12) To form an ion, an atom must either donate or receive a(n) _____.
A) electron
B) proton
C) neutron
D) electrons and neutron

Answer: A
Topic: Chemical bonding
Learning Objective: 02.05 Compare and contrast ionic, nonpolar covalent, polar covalent, and hydrogen bonds.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.2 Compare and contrast the terms ions, electrolytes, free radicals, isotopes and radioisotopes./Module C01 Atoms and molecules.

13) Hydrogen bonds occur between _____.
A) multiple ions
B) nonpolar molecules
C) polar molecules
D) ions and nonpolar molecules

Answer: C
Topic: Chemical bonding
Learning Objective: 02.05 Compare and contrast ionic, nonpolar covalent, polar covalent, and hydrogen bonds.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C2.1b With respect to non-polar covalent, polar covalent, ionic, and hydrogen bonds: Explain the mechanism of each type of bond./Module C02 Chemical bonding.

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14) The valence electrons are those _____.
A) active in chemical bonds
B) close to the nucleus of the atom
C) located in the outermost shell
D) located in the innermost shell

Answer: C
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.1b. With respect to the structure of an atom:Relate the number of electrons in an electron shell to an atoms chemical stability and its ability to form chemical bonds./Module C01 Atoms and molecules.

15) A saturated fat will have _____.
A) significant numbers of carbon-carbon double bonds
B) very few hydrogen atoms
C) no carbon to carbon double bonds
D) excessive nutrients

Answer: C
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C2.1c Provide biologically significant examples of each type of non-polar covalent, polar covalent, ionic, and hydrogen bonds./Module C02 Chemical bonding.,Module C04 Organic compounds.

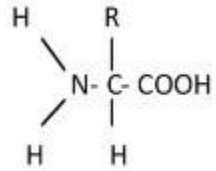
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16) Lactose, the sugar contained in milk, is an example of a _____.
A) simple sugar
B) monosaccharide
C) disaccharide
D) None of the choices are correct.

Answer: C
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C4.4d.With respect to carbohydrates, proteins, lipids and nucleic acids: Identify dietary sources./Module C04 Organic compounds.

17) This chemical structure would be the general representation of _____.



A) an amino acid
B) a fatty acid
C) a nucleic acid
D) glycerol

Answer: A
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers./Module C04 Organic compounds.

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18) Enzymes directly act to _____.
A) maintain cell structure
B) slow down chemical reactions
C) speed up chemical reactions
D) supply energy

Answer: C
Topic: Organic compounds
Learning Objective: 02.13 Explain the role of enzymes.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body.,C4.6. Demonstrate factors that affect enzyme activity, including denaturation, and interpret graphs showing the effects of various factors on the rate of enzyme catalyzed reactions./Module C04 Organic compounds.

19) The difference between DNA and RNA is that _____.
A) each contains different sugars
B) each has different bases
C) each has a difference in the number of strands
D) there are differences in sugars, bases, and the number of strands

Answer: D
Topic: Nucleic acids: DNA and RNA
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure./Module C04 Organic compounds.

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20) Steroids are a type of _____.
A) protein
B) lipid
C) sugar
D) nucleic acid

Answer: B
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples./Module C04 Organic compounds.

21) A substance that cannot be broken down into a simpler substance by chemical means is a/an _____.
A) element
B) compound
C) molecule
D) nucleic acid

Answer: A
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C01 Atoms and molecules.

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22) The positively charged subatomic particles located in the nucleus of an atom are the _____.
A) electrons
B) protons
C) neutrons
D) nucleons

Answer: B
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons./Module C01 Atoms and molecules.

23) The number of protons plus the number of neutrons determines the _____ of an atom.
A) isotope
B) valence electrons
C) atomic number
D) atomic mass

Answer: D
Topic: Atoms and molecules
Learning Objective: 02.01 Describe the basic structure of an atom.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1d. With respect to the structure of an atom: Distinguish among the terms atomic number, mass number and atomic weight./Module C01 Atoms and molecules.

24) Two or more atoms of the SAME element combine to form a(n) _____.
A) isotope
B) compound
C) molecule
D) ion

Answer: C
Topic: Atoms and molecules
Learning Objective: 02.03 Explain the meaning of a chemical formula.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C01 Atoms and molecules.

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25) When one atom donates an electron to another atom, the donating atom becomes a _____ charged ion, and the receiving atom becomes a _____ charged ion. These ions are joined together by a/an _____ chemical bond.
A) positively; negatively; ionic
B) negatively; positively; ionic
C) negatively; positively; covalent
D) positively; negatively; hydrogen

Answer: A
Topic: Chemical bonding
Learning Objective: 02.05 Compare and contrast ionic, nonpolar covalent, polar covalent, and hydrogen bonds.
Bloom's: 1. Remember; 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C2.1b With respect to non-polar covalent, polar covalent, ionic, and hydrogen bonds: Explain the mechanism of each type of bond.,C1.2 Compare and contrast the terms ions, electrolytes, free radicals, isotopes and radioisotopes./Module C01 Atoms and molecules.

26) The element that forms the backbone of organic molecules is _____.
A) hydrogen
B) oxygen
C) carbon
D) nitrogen

Answer: C
Topic: Organic compounds
Learning Objective: 02.07 Distinguish between inorganic and organic substances.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.1. Define the term organic molecule./Module C04 Organic compounds.

27) Which of the following is an organic substance?
A) $NaHCO_3$
B) NaOH
C) $C_6H_{12}O_6$
D) CO_2

Answer: C
Topic: Organic compounds
Learning Objective: 02.07 Distinguish between inorganic and organic substances.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.1. Define the term organic molecule./Module C04 Organic compounds.

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28) The ionization of a/an _____ releases hydrogen ions and increases the concentration of hydrogen ions in a solution.
A) acid
B) base
C) salt
D) solvent

Answer: A
Topic: Inorganic compounds and solutions
Learning Objective: 02.09 Compare and contrast electrolytes and nonelectrolytes, and acids and bases.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.4 Define the terms pH, acid, base, and buffer and give examples of physiological significance./Module C03 Inorganic compounds and solutions.

29) On the typical pH scale, a pH of _____ indicates the lowest concentration of hydrogen ions, whereas a pH of _____ indicates the highest concentration of H^+.
A) 0; 14
B) 7; 14
C) 14; 0
D) 0; 7

Answer: C
Topic: Inorganic compounds and solutions
Learning Objective: 02.10 Explain the use of the pH scale.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.5. State acidic, neutral, and alkaline pH values./Module C03 Inorganic compounds and solutions.

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30) A carbohydrate molecule consisting of glucose combined with fructose is a _____.
A) monosaccharide
B) disaccharide
C) polysaccharide
D) starch

Answer: B
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples./Module C04 Organic compounds.

31) The monosaccharide that is the major carbohydrate fuel for body cells is _____.
A) sucrose
B) fructose
C) galactose
D) glucose

Answer: D
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C4.4d.With respect to carbohydrates, proteins, lipids and nucleic acids: Identify dietary sources.,C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body./Module C04 Organic compounds.

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32) When the body has excess energy and builds molecules to store it, which molecule do we build MOST?
A) Glycogen
B) Glucose
C) Triglycerides
D) Cholesterol

Answer: C
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 4. Analyze
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C4.4d.With respect to carbohydrates, proteins, lipids and nucleic acids: Identify dietary sources.,C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body./Module C04 Organic compounds.

33) Proteins are composed of subunits called _____ and functional proteins include _____, which speed up chemical reactions in the body.
A) amino acids; enzymes
B) fatty acids; enzymes
C) fatty acids; triglycerides
D) amino acids; antibodies

Answer: A
Topic: Organic compounds
Learning Objective: 02.13 Explain the role of enzymes.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body.,C4.6. Demonstrate factors that affect enzyme activity, including denaturation, and interpret graphs showing the effects of various factors on the rate of enzyme catalyzed reactions./Module C04 Organic compounds.

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34) Select the correct statement.
A) DNA and RNA are double-stranded molecules composed of nucleotides.
B) DNA and RNA are single-stranded molecules with dissimilar nucleotides.
C) DNA contains the genetic code, and RNA carries the coded information to the sites of protein synthesis.
D) DNA is double-stranded but RNA is single-stranded, although their nucleotides are identical.

Answer: C
Topic: Nucleic acids: DNA and RNA
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body./Module C04 Organic compounds.

35) The molecule that provides immediate energy for cellular processes is _____.
A) glucose
B) glycogen
C) starch
D) adenosine triphosphate

Answer: D
Topic: Energy transfer using ATP
Learning Objective: 02.15 Describe the structure and function of adenosine triphosphate (ATP).
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C5.1. Describe the generalized reversible reaction for release of energy from ATP and explain the role of ATP in the cell./Module C05 Energy transfer using ATP.

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36) Adding additional neutrons to an atom would form _____.
A) an isotope
B) an ion
C) covalent bonds
D) ionic bonds

Answer: A
Topic: Atoms and molecules
Learning Objective: 02.02 Distinguish between atoms, isotopes, and radioisotopes.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1c. With respect to the structure of an atom: Explain how ions and isotopes are produced by changing the relative number of specific subatomic particles.,C1.2 Compare and contrast the terms ions, electrolytes, free radicals, isotopes and radioisotopes./Module C01 Atoms and molecules.

37) An atom that has 6 electrons in its valence shell will be most likely to _____.
A) donate 2 electrons
B) donate 6 electrons
C) receive 2 electrons
D) receive 6 electrons

Answer: C
Topic: Chemical bonding
Learning Objective: 02.01 Describe the basic structure of an atom.; 02.05 Compare and contrast ionic, nonpolar covalent, polar covalent, and hydrogen bonds.
Bloom's: 4. Analyze
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C1.1b. With respect to the structure of an atom:Relate the number of electrons in an electron shell to an atoms chemical stability and its ability to form chemical bonds.,C2.1b With respect to non-polar covalent, polar covalent, ionic, and hydrogen bonds: Explain the mechanism of each type of bond./Module C01 Atoms and molecules.

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38) An ionic bond forms between _____.
A) a cation and another cation
B) a cation and an anion
C) an anion and another anion
D) All of the choices are correct.

Answer: B
Topic: Chemical bonding
Learning Objective: 02.01 Describe the basic structure of an atom.; 02.05 Compare and contrast ionic, nonpolar covalent, polar covalent, and hydrogen bonds.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.1a. With respect to the structure of an atom: Describe the charge, mass, and relative location of electrons, protons and neutrons.,C2.1b With respect to non-polar covalent, polar covalent, ionic, and hydrogen bonds: Explain the mechanism of each type of bond./Module C01 Atoms and molecules.

39) When placed in water, ionic substances ionize into _____.
A) water molecules
B) salts
C) hydrogen ions
D) electrolytes

Answer: D
Topic: Inorganic compounds and solutions
Learning Objective: 02.08 Explain the importance of water and its locations in the body.; 02.09 Compare and contrast electrolytes and nonelectrolytes, and acids and bases.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.1. Discuss the physiologically important properties of water.,C3.3. Define the term salt and give examples of physiological significance./Module C03 Inorganic compounds and solutions.

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40) At a pH of 7, which of the following would be true?
A) H^+ and OH^- concentrations would be equal.
B) H^+ concentration would be greater than OH^- concentration.
C) OH^- concentration would be greater than H^+ concentration.
D) None of the choices are correct.

Answer: A
Topic: Inorganic compounds and solutions
Learning Objective: 02.10 Explain the use of the pH scale.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.5. State acidic, neutral, and alkaline pH values.,C3.4 Define the terms pH, acid, base, and buffer and give examples of physiological significance./Module C03 Inorganic compounds and solutions.

41) The form of carbohydrate our bodies use to store reserve energy is _____.
A) disaccharides
B) starches
C) glycogen
D) glucose

Answer: C
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4a. With respect to carbohydrates, proteins, lipids and nucleic acids: Identify the monomers and polymers.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples.,C4.4d.With respect to carbohydrates, proteins, lipids and nucleic acids: Identify dietary sources.,C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body./Module C04 Organic compounds.

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42) A monounsaturated fat would have _____.
A) one carbon-carbon double bond in a fatty acid tail
B) two fatty acid tails and a phosphate group
C) two carbon-carbon double bonds in its fatty acid tails
D) four carbon rings

Answer: A
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 2. Understand
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4b. With respect to carbohydrates, proteins, lipids and nucleic acids: Compare and contrast general molecular structure.,C4.4c. With respect to carbohydrates, proteins, lipids and nucleic acids: Provide specific examples./Module C04 Organic compounds.

43) A covalent bond between two amino acids is called a(n) _____.
A) protein bond
B) ionic bond
C) enzyme bond
D) peptide bond

Answer: D
Topic: Organic compounds
Learning Objective: 02.12 Distinguish between carbohydrates, lipids, proteins, and nucleic acids and their roles in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.5. Describe the four levels of protein structure and discuss the importance of protein shape for protein function./Module C04 Organic compounds.

44) If there are two forms of atoms for an element that differ only in the number of neutron, the various forms of the element are referred to as _____ of that element.
A) isotopes
B) ions
C) molecules
D) electrolytes

Answer: A
Topic: Atoms and molecules
Learning Objective: 02.02 Distinguish between atoms, isotopes, and radioisotopes.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.2 Compare and contrast the terms ions, electrolytes, free radicals, isotopes and radioisotopes./Module C01 Atoms and molecules.

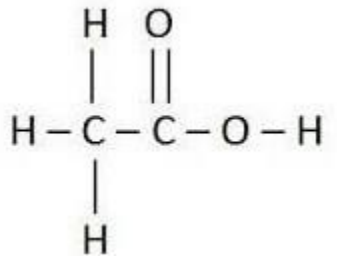
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45) What is the notation that tells the reader the chemical composition of a molecule or compound?
A) Chemical formula
B) Compound formula
C) Elemental notation
D) Atomic structure

Answer: A
Topic: Atoms and molecules
Learning Objective: 02.03 Explain the meaning of a chemical formula.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C01 Atoms and molecules.

46) What type of formula is shown?



A) Structural formula
B) Molecular formula
C) Atomic formula
D) Elemental formula

Answer: A
Topic: Atoms and molecules
Learning Objective: 02.04 Compare and contrast molecular formula and structural formula.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C01 Atoms and molecules.

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47) What type of chemical formula is shown here?

CH_4
A) Structural formula
B) Molecular formula
C) Atomic formula
D) Elemental formula

Answer: B
Topic: Atoms and molecules
Learning Objective: 02.04 Compare and contrast molecular formula and structural formula.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C1.3 Compare and contrast the terms atoms, molecules, elements, and compounds./Module C01 Atoms and molecules.

48) What type of reaction is shown?

$A + B \rightarrow AB$
A) Synthesis
B) Exchange
C) Reversible
D) Decomposition

Answer: A
Topic: Chemical bonding
Learning Objective: 02.06 Compare synthesis, decomposition, exchange, and reversible reactions.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.3. Define and give examples of dehydration synthesis and hydrolysis reactions./Module C04 Organic compounds.

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49) What type of reaction is shown?

$AB + CD \rightarrow AD + BC$
A) Synthesis
B) Exchange
C) Reversible
D) Decomposition

Answer: B
Topic: Chemical bonding
Learning Objective: 02.06 Compare synthesis, decomposition, exchange, and reversible reactions.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.3. Define and give examples of dehydration synthesis and hydrolysis reactions./Module C04 Organic compounds.

50) What type of reaction is shown?

$A + B + C \leftrightarrow ABC \leftrightarrow AB + C$
A) Synthesis
B) Exchange
C) Reversible
D) Decomposition

Answer: C
Topic: Chemical bonding
Learning Objective: 02.06 Compare synthesis, decomposition, exchange, and reversible reactions.
Bloom's: 3. Apply
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.3. Define and give examples of dehydration synthesis and hydrolysis reactions./Module C04 Organic compounds.

51) What is the most abundant substance in the human body?
A) Water
B) Glucose
C) Carbon
D) Hydrogen

Answer: A
Topic: Inorganic compounds and solutions
Learning Objective: 02.08 Explain the importance of water and its locations in the body.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.1. Discuss the physiologically important properties of water./Module C03 Inorganic compounds and solutions.

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52) Water molecules are special. But what makes them so special?
A) Polar bonds
B) The bend in their structure
C) Because they are liquid
D) Their abundance

Answer: A
Topic: Inorganic compounds and solutions
Learning Objective: 02.08 Explain the importance of water and its locations in the body.
Bloom's: 4. Analyze
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.1. Discuss the physiologically important properties of water./Module C03 Inorganic compounds and solutions.

53) What is the term for a substance that causes a resistance to a change in pH?
A) Buffer
B) Salt
C) Base
D) Electrolyte

Answer: A
Topic: Inorganic compounds and solutions
Learning Objective: 02.11 Explain the importance of buffers.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.4 Define the terms pH, acid, base, and buffer and give examples of physiological significance./Module C03 Inorganic compounds and solutions.

54) How does a buffer help a solution maintain pH?
A) A buffer can act like a base if pH is acidic, and it can act like an acid if pH is basic.
B) A buffer releases acid to maintain proper pH.
C) A buffer release base to neutralize acid.
D) A buffer forms both cations and anions to counteract acids.

Answer: A
Topic: Inorganic compounds and solutions
Learning Objective: 02.11 Explain the importance of buffers.
Bloom's: 3. Apply
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C3.4 Define the terms pH, acid, base, and buffer and give examples of physiological significance./Module C03 Inorganic compounds and solutions.

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55) Which of the following is TRUE regarding enzymes?
A) They are proteins.
B) They speed up chemical reactions.
C) They are reusable.
D) All of the choices are correct.

Answer: D
Topic: Organic compounds
Learning Objective: 02.14 Describe the mechanism of enzymatic action.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body./Module C04 Organic compounds.

56) Where on an enzyme does the substrate bind?
A) The enzymatic site
B) The inhibition site
C) The allosteric site
D) The active site

Answer: D
Topic: Organic compounds
Learning Objective: 02.14 Describe the mechanism of enzymatic action.
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C4.4e.With respect to carbohydrates, proteins, lipids and nucleic acids: Discuss physiological and structural roles in the human body./Module C04 Organic compounds.

57) What is released when an ATP splits to produce an ADP?
A) Energy
B) Heat
C) Inorganic phosphate (P_i)
D) All of the choices are correct.

Answer: D
Topic: Energy transfer using ATP
Learning Objective: 02.15 Describe the structure and function of adenosine triphosphate (ATP).
Bloom's: 1. Remember
Accessibility: Keyboard Navigation
HAPS Outcome/HAPS Topic: C5.1. Describe the generalized reversible reaction for release of energy from ATP and explain the role of ATP in the cell./Module C05 Energy transfer using ATP.

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