

03_Biomolecules Answers

For all questions select all answers that apply (some questions may have more than one correct answer)

1) Which of the following is not a polymer?

- A) glucose
- B) starch
- C) RNA
- D) DNA

2) What is the major structural difference between starch and glycogen?

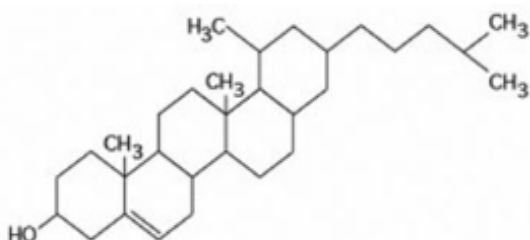
- A) the types of monosaccharide subunits in the molecules
- B) the type of glycosidic linkages in the molecule
- C) whether glucose is in the α or β form
- D) the amount of branching that occurs in the molecule

3) Saturated fats _____.

- A) are more common in plants than in animals
- B) have multiple double bonds in the carbon chains of their fatty acids
- C) are generally liquid at room temperature
- D) contain more hydrogen than unsaturated fats per number of carbons

4) Use the following figure to answer the question. The molecule shown is a _____.

- A) fatty acid
- B) steroid
- C) triacylglycerol
- D) phospholipid



5) What component of amino acid structure varies among different amino acids?

- A) the long carbon-hydrogen tails of the molecule
- B) the presence of a central C atom
- C) the components of the R group
- D) the glycerol molecule that forms the backbone of the amino acid

6) You disrupt all hydrogen bonds in a protein. What level of structure will be preserved?

- A) primary structure
- B) secondary structure
- C) tertiary structure
- D) quaternary structure

7) When observing a protein's structure, which of the following characteristics would best indicate its tertiary structure?

- A) The alpha helices and beta sheets within the protein.
- B) The specific sequence of amino acids in the polypeptide chain.
- C) The interactions between side chain R groups.
- D) The association of multiple protein subunits to form a functional complex.

Explanation: The interactions between side chain R groups contribute to the tertiary structure by stabilizing the folding pattern of the protein. Options A and B pertain to primary and secondary structures respectively, while option D refers to quaternary structure.

8) Which of the following is a major difference between RNA and DNA?

- A) type of sugar
- B) type of phosphate
- C) type of purines
- D) type of glycosidic bond

9) Which of the following statements about the 5' end of a polynucleotide strand of RNA is correct?

- A) The 5' end has a hydroxyl group attached to the number 5 carbon of ribose.
- B) The 5' end has a phosphate group attached to the number 5 carbon of ribose.
- C) The 5' end has phosphate attached to the number 5 carbon of the nitrogenous base.
- D) The 5' end has a carboxyl group attached to the number 5 carbon of ribose.

10) The central rule of molecular biology states that _____.

- A) DNA is transcribed into RNA, which is translated into protein
- B) DNA is translated into protein
- C) DNA is translated into RNA, which is transcribed into protein
- D) RNA is transcribed into protein