Macromolecules Quiz Answer Key PDF

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Which of the following are examples of lipids? (Select all that apply)

A. Triglycerides ✓

C. Phospholipids ✓

D. Hemoglobin

C. Cellulose

Which macromolecule can function as an enzyme?

A. Carbohydrates

C. Lipids

D. Nucleic acids

C. Proteins ✓

What is the process called when water is removed to join two monomers?

A. Hydrolysis

C. Dehydration synthesis ✓

D. Reduction

C. Oxidation

Which of the following are components of nucleotides? (Select all that apply)

A. Amino acids

C. Sugar ✓

D. Phosphate group ✓

C. Nitrogenous base ✓

Which macromolecules are involved in energy storage? (Select all that apply)

A. Carbohydrates ✓
C. Lipids ✓
D. Proteins
C. Nucleic acids

Which macromolecule is a major component of cell membranes?

A. Proteins
C. Carbohydrates
D. Nucleic acids
C. Lipids ✓

What is the primary function of carbohydrates in the body?

A. Catalyzing biochemical reactions
C. Providing energy ✓
D. Insulating the body
C. Storing genetic information

Which macromolecule primarily stores genetic information?

A. Carbohydrates
C. Lipids
D. Nucleic acids ✓
C. Proteins

What is the significance of nucleic acids in living organisms?

Nucleic acids are significant because they store genetic information and are involved in the processes of replication, transcription, and translation, which are vital for life.

Discuss the importance of lipids in biological membranes.

Lipids form the fundamental structure of biological membranes, primarily as phospholipid bilayers, which create a semi-permeable barrier that regulates the movement of substances in and out of cells.

Which of the following are types of bonds found in macromolecules? (Select all that apply)

A. Covalent bonds ✓

C. Hydrogen bonds ✓

D. Metallic bonds

C. Ionic bonds ✓

What type of bond holds amino acids together in proteins?

A. Hydrogen bond

C. Peptide bond ✓

D. Van der Waals forces

C. Ionic bond

Which test is used to identify the presence of proteins?

A. Benidict's test

C. Biuret test ✓

D. Sudan III test

C. Iodine test

Describe the primary structure of a protein and its significance.

The primary structure of a protein is the linear sequence of amino acids linked by peptide bonds, which ultimately dictates the protein's three-dimensional structure and function.

Which structures are part of a protein's secondary structure? (Select all that apply)

A. Alpha-helix ✓

C. Peptide bond

D. Quaternary structure

C. Beta-sheet ✓

How does the structure of carbohydrates relate to their function in energy storage?

Carbohydrates are structured as long chains of sugar molecules, which can be stored as polysaccharides like starch in plants and glycogen in animals, providing a readily accessible source

of energy.

How do enzymes, as proteins, facilitate biochemical reactions?

Enzymes facilitate biochemical reactions by lowering the activation energy and stabilizing the transition state, allowing reactions to occur more quickly.

Which of the following is a polymer of glucose?

A. DNA
C. Hemoglobin
D. Triglyceride
C. Starch ✓

Which of the following are functions of proteins? (Select all that apply)

A. Energy storage
C. Catalysis of reactions ✓
D. Genetic information storage
C. Structural support ✓

Explain the role of dehydration synthesis in forming macromolecules.

Dehydration synthesis plays a crucial role in forming macromolecules by linking monomers together through the removal of water, resulting in the creation of polymers such as proteins, carbohydrates, and nucleic acids.