Comprehension Questions - Module 3: Organic Molecules

Carbohydrates

1. Compare and contrast monosaccharides, disaccharides, and polysaccharides in terms of structure and function.
2. Explain how the structure of starch, glycogen, and cellulose relates to their different functions in organisms.
3. How do organisms use carbohydrates for energy storage and structural support?

Lipids

1. Compare and contrast the different types of lipids (fats, phospholipids, steroids) in terms of structure and function.
2. Explain how the structure of phospholipids makes them ideal for forming cell membranes.
3. How do saturated and unsaturated fats differ, and what are the biological implications of these differences?

Proteins

1. Explain how the four levels of protein structure (primary, secondary, tertiary, quaternary) contribute to protein function.
2. Describe how amino acid sequence determines protein structure and function.
3. What factors can cause protein denaturation, and why is this important in biological systems?

4. Give examples of different protein functions and explain how structure enables each function.

Nucleic Acids

1. Compare and contrast the structure and function of DNA and RNA.
2. Explain how the structure of nucleotides allows for information storage and transfer.
3. How does the complementary base pairing in DNA contribute to its role in heredity?

Biological Molecules Integration

1. Explain how the different classes of organic molecules work together in living organisms.
2. How do organisms obtain and use organic molecules for energy and building materials?