

Organic Chemistry in Human Biology

Organic Chemistry · Answer Key · 10 Questions

1. Which functional group is primarily responsible for the polar nature of glucose, allowing it to dissolve in human blood plasma?

- A) Carboxyl group
- B) Hydroxyl group**
- C) Methyl group
- D) Amino group

2. What is the primary organic building block of human hemoglobin, responsible for binding oxygen?

- A) Lipid
- B) Carbohydrate
- C) Protein**
- D) Nucleic acid

3. Which essential fatty acid is classified as an omega-3 fatty acid crucial for human brain cell membrane fluidity?

- A) Stearic acid
- B) Alpha-linolenic acid**
- C) Oleic acid
- D) Palmitic acid

4. In the human body, what is the chemical nature of the molecules that act as the primary long-term energy storage?

- A) Triglycerides**
- B) Monosaccharides
- C) Amino acids
- D) Steroid hormones

5. Which nitrogenous base is found in RNA but is replaced by thymine in human DNA?

- A) Cytosine
- B) Adenine
- C) Uracil**
- D) Guanine

6. What type of chemical bond links individual amino acids together to form the primary structure of human proteins?

- A) Hydrogen bond
- B) Peptide bond**
- C) Ionic bond
- D) Glycosidic bond

7. Which steroid-derived molecule is a vital component of the human cell membrane and a precursor for vitamin D synthesis?

- A) Cholesterol**
- B) Testosterone
- C) Cortisol
- D) Progesterone

8. What is the specific organic classification of enzymes like amylase that catalyze reactions in the human digestive system?

- A) Carbohydrates
- B) Proteins**
- C) Lipids
- D) Nucleic acids

9. Which chemical structure is common to all standard amino acids found in human protein synthesis?

- A) A benzene ring
- B) An alpha-amino group and a carboxyl group**
- C) A long hydrocarbon chain
- D) A phosphate group

10. Vitamin C (ascorbic acid) is essential for human health; what is its primary chemical property that allows it to act as an antioxidant?

- A) It is a saturated hydrocarbon
- B) It acts as a reducing agent**
- C) It is a heavy metal catalyst
- D) It is an insoluble lipid