

Organic Chemistry in the Natural World

Organic Chemistry · Answer Key · 15 Questions

1. Which organic compound is primarily responsible for the structural integrity of cell walls in terrestrial plants?

- A) Glycogen
- B) Cellulose**
- C) Chitin
- D) Starch

2. What is the primary organic acid found in the defensive spray of ants, known as formic acid?

- A) Methanoic acid**
- B) Ethanoic acid
- C) Propanoic acid
- D) Butanoic acid

3. Which organic pigment is essential for photosynthesis in plants by absorbing light energy?

- A) Hemoglobin
- B) Melanin
- C) Chlorophyll**
- D) Carotene

4. Chitin is an organic polymer that provides structural support in which of the following?

- A) Bacterial cell walls
- B) Plant leaves
- C) Insect exoskeletons**
- D) Human skin

5. What is the main chemical component of natural silk produced by silkworms?

- A) Keratin
- B) Collagen
- C) Fibroin**
- D) Elastin

6. Which organic molecule is used by many animals as the primary long-term energy storage?

- A) Glucose
- B) Triglycerides**
- C) Amino acids
- D) Nucleotides

7. The characteristic scent of many flowers is produced by organic compounds belonging to which chemical class?

- A) Esters**
- B) Alkanes
- C) Amines
- D) Halides

8. Which protein is the most abundant organic compound in the skin and connective tissues of mammals?

- A) Myosin
- B) Actin
- C) Collagen**
- D) Insulin

9. Beeswax is chemically classified primarily as which type of organic substance?

- A) Ether
- B) Ester**
- C) Ketone
- D) Aldehyde

10. Which organic compound is the primary component of natural gas produced by the decomposition of organic matter in wetlands?

- A) Propane
- B) Ethane
- C) Methane**
- D) Butane

11. What class of organic compounds provides the characteristic 'fishy' odor in decaying marine organisms?

- A) Amines**
- B) Alcohols
- C) Carboxylic acids
- D) Phenols

12. Which organic molecule acts as the genetic blueprint in all living organisms?

- A) ATP
- B) Deoxyribonucleic acid**
- C) Hemoglobin
- D) Glucose

13. What is the chemical name of the organic compound responsible for the heat sensation in chili peppers?

- A) Capsaicin**
- B) Limonene
- C) Menthol
- D) Caffeine

14. Which organic compound acts as a natural antifreeze in the blood of some Antarctic fish?

- A) Glucose
- B) Glycoprotein**
- C) Cholesterol
- D) Ethanol

15. Lignin is an organic polymer that provides rigidity to which specific part of a tree?

- A) Fruit
- B) Flower petals
- C) Xylem tissue**
- D) Root hairs