

Chemistry in the Natural World

Chemistry · Answer Key · 12 Questions

1. Which metallic element is the central atom in the chlorophyll molecule that allows plants to perform photosynthesis?

- A) Iron
- B) Magnesium**
- C) Calcium
- D) Zinc

2. What is the primary chemical compound that makes up the hard exoskeleton of crustaceans like crabs and lobsters?

- A) Chitin**
- B) Cellulose
- C) Keratin
- D) Collagen

3. Which toxic heavy metal is known to biomagnify in aquatic food chains, often reaching high levels in large predatory fish?

- A) Sodium
- B) Mercury**
- C) Potassium
- D) Calcium

4. The distinctive blue colour of the blood of a horseshoe crab is caused by the presence of which metal-based respiratory pigment?

- A) Iron
- B) Copper**
- C) Cobalt
- D) Nickel

5. Which gas, essential for respiration in most animals, is the most abundant component of the Earth's atmosphere?

- A) Oxygen
- B) Carbon Dioxide
- C) Nitrogen**
- D) Hydrogen

6. Which chemical element, found in the amino acids cysteine and methionine, gives the scent of skunk spray its potency?

A) Sulfur

B) Phosphorus

C) Silicon

D) Chlorine

7. What is the primary chemical compound that provides the structure for the cell walls of plants?

A) Glucose

B) Starch

C) Cellulose

D) Lipid

8. Which acid is produced by Formicinae ants and is used as a chemical defence mechanism?

A) Acetic acid

B) Formic acid

C) Citric acid

D) Sulfuric acid

9. What chemical element makes up the majority of a diamond, which is the hardest natural substance found in the Earth?

A) Silicon

B) Carbon

C) Oxygen

D) Gold

10. Which chemical process do plants use to convert water and carbon dioxide into glucose using sunlight?

A) Respiration

B) Fermentation

C) Photosynthesis

D) Combustion

11. Which gas do plants primarily absorb from the atmosphere to build their structural biomass?

A) Nitrogen

B) Carbon dioxide

C) Oxygen

D) Argon

12. What substance, rich in nitrogen, is secreted by many desert animals to conserve water due to its low solubility?

A) Urea

B) Uric acid

C) Ammonia

D) Glucose