

Pollution Science Mastery

Environmental Science · Answer Key · 18 Questions

1. Which process describes the accumulation of toxins in higher trophic levels of a food web?

- A) Eutrophication
- B) Bioaccumulation
- C) Biomagnification**
- D) Biodegradation

2. What is the primary chemical compound responsible for the depletion of the stratospheric ozone layer?

- A) Chlorofluorocarbons (CFCs)**
- B) Carbon Dioxide
- C) Methane
- D) Sulfur Dioxide

3. In aquatic ecosystems, what is the direct result of excessive nitrogen and phosphorus runoff?

- A) Thermal pollution
- B) Ocean acidification
- C) Eutrophication**
- D) Salinization

4. Which type of radiation is primarily trapped by greenhouse gases in the Earth's atmosphere?

- A) Ultraviolet
- B) Gamma
- C) Infrared**
- D) X-ray

5. What is the chemical formula for the acid primarily responsible for acid rain when sulfur dioxide reacts with water?

- A) H_2CO_3
- B) H_2SO_4**
- C) HCl
- D) HNO_3

6. Which heavy metal, historically used in paints and pipes, is known to cause severe neurotoxic effects in children?

- A) Mercury
- B) Cadmium
- C) Lead**
- D) Arsenic

7. What measurement is commonly used to quantify the amount of oxygen required by aerobic microorganisms to decompose organic matter?

- A) Biochemical Oxygen Demand (BOD)**
- B) Dissolved Oxygen Content (DOC)
- C) Total Suspended Solids (TSS)
- D) pH level

8. Which greenhouse gas is produced by the anaerobic decomposition of waste in landfills?

- A) Nitrous oxide
- B) Methane**
- C) Sulfur hexafluoride
- D) CFC-12

9. What is the primary source of anthropogenic mercury pollution in the global environment?

- A) Automobile exhaust
- B) Coal-fired power plants**
- C) Plastic manufacturing
- D) Agricultural fertilizers

10. Which particulate matter classification refers to particles with a diameter of 2.5 micrometers or smaller?

- A) PM10
- B) PM2.5**
- C) PM0.1
- D) PM5

11. What causes the phenomenon known as 'coral bleaching' in marine environments?

- A) Increased salinity
- B) Higher water temperatures**
- C) Oil spills
- D) Overfishing

12. Which gas, produced by the incomplete combustion of fossil fuels, binds to hemoglobin and prevents oxygen transport in the blood?

- A) Carbon dioxide
- B) Nitrogen dioxide
- C) Carbon monoxide**
- D) Sulfur dioxide

13. What is the term for the movement of pollutants through soil and into groundwater?

- A) Leaching**
- B) Transpiration
- C) Erosion
- D) Sedimentation

14. Which sector is the largest global emitter of methane?

- A) Transportation
- B) Agriculture**
- C) Manufacturing
- D) Construction

15. In the context of soil pollution, what does 'persistence' refer to?

- A) The rate of evaporation
- B) The chemical's resistance to degradation**
- C) The ability to bind to plants
- D) The toxicity to microorganisms

16. What byproduct of plastic degradation in the ocean acts as a sponge for hydrophobic pollutants?

- A) Microplastics**
- B) Methane
- C) Biomass
- D) Calcium carbonate

17. Which element is the primary component of most commercial fertilizers that contributes to water pollution?

- A) Potassium
- B) Nitrogen**
- C) Magnesium
- D) Calcium

18. What is the primary reason that deep-ocean water is highly susceptible to long-term pollution?

A) Low temperatures and slow circulation

B) High salinity

C) Extreme pressure

D) Absence of light