

Environmental Science Fundamentals

Environmental Science · Answer Key · 25 Questions

1. Which gas currently accounts for the highest percentage of Earth's atmosphere by volume?

- A) Oxygen
- B) Argon
- C) Nitrogen**
- D) Carbon dioxide

2. What is the primary process by which nitrogen is converted into a form that plants can use?

- A) Nitrogen fixation**
- B) Denitrification
- C) Photosynthesis
- D) Transpiration

3. Which layer of the atmosphere contains the ozone layer that absorbs ultraviolet radiation?

- A) Troposphere
- B) Stratosphere**
- C) Mesosphere
- D) Thermosphere

4. What is the term for the maximum population size of a species that an environment can sustain indefinitely?

- A) Biotic potential
- B) Carrying capacity**
- C) Environmental resistance
- D) Growth rate

5. Which biome is characterized by low precipitation, extreme temperatures, and vegetation adapted to conserve water?

- A) Tundra
- B) Taiga
- C) Desert**
- D) Savanna

6. What is the primary cause of ocean acidification?

- A) Increased solar radiation
- B) Absorption of atmospheric carbon dioxide**
- C) Plastic pollution
- D) Eutrophication

7. Which of the following is a non-renewable energy source?

- A) Geothermal
- B) Biomass
- C) Natural gas**
- D) Wind

8. In an energy pyramid, approximately how much energy is transferred to the next trophic level?

- A) 10%**
- B) 25%
- C) 50%
- D) 90%

9. Which phenomenon is responsible for the seasonal changes on Earth?

- A) Distance from the sun
- B) Earth's axial tilt**
- C) Ocean currents
- D) Volcanic activity

10. What is the main driver of the greenhouse effect?

- A) Absorption of infrared radiation by gases**
- B) Reflection of light by clouds
- C) Cooling of the Earth's crust
- D) Photosynthetic activity

11. Which process involves the breakdown of organic matter by decomposers in the absence of oxygen?

- A) Aerobic respiration
- B) Anaerobic decomposition**
- C) Nitrogen cycling
- D) Sedimentation

12. What is the primary source of phosphorus in the natural phosphorus cycle?

- A) Atmospheric gas
- B) Weathering of rocks**
- C) Biological nitrogen fixation
- D) Volcanic eruptions

13. Which type of resource can be replenished by natural processes at a rate comparable to its rate of consumption?

- A) Fossil fuel
- B) Renewable resource**
- C) Non-renewable resource
- D) Inexhaustible mineral

14. What does the term 'biodiversity' primarily refer to?

- A) The total mass of all organisms in an ecosystem
- B) The variety of life in a particular habitat or ecosystem**
- C) The number of predators in a food chain
- D) The rate of extinction of species

15. Which soil horizon is primarily composed of organic matter, such as decaying leaves and twigs?

- A) A horizon
- B) B horizon
- C) C horizon
- D) O horizon**

16. What is the main environmental impact of the over-application of synthetic fertilizers in agriculture?

- A) Increased soil acidity
- B) Eutrophication of waterways**
- C) Ozone depletion
- D) Desertification

17. Which gas is a significant byproduct of livestock agriculture and contributes to global warming?

- A) Methane**
- B) Sulfur dioxide
- C) Argon
- D) Helium

18. What is a watershed?

- A) A large artificial dam
- B) An area of land where all water drains into a common outlet**
- C) A type of desalination plant
- D) A deep underground aquifer

19. Which treaty was designed to phase out the production of substances that deplete the ozone layer?

- A) Kyoto Protocol
- B) Paris Agreement
- C) Montreal Protocol**
- D) Basel Convention

20. What is the primary purpose of an Environmental Impact Assessment (EIA)?

- A) To increase industrial output
- B) To predict and mitigate potential environmental damage from projects**
- C) To promote international tourism
- D) To manage municipal waste collection

21. Which of these describes an r-selected species?

- A) Produces few offspring with high parental care
- B) Produces many offspring with low parental care**
- C) Reaches sexual maturity at a late age
- D) Has a stable population near carrying capacity

22. What process converts solar energy into chemical energy in producers?

- A) Respiration
- B) Photosynthesis**
- C) Fermentation
- D) Transpiration

23. Which of the following is a primary greenhouse gas produced by volcanic eruptions?

- A) Oxygen
- B) Carbon dioxide**
- C) Helium
- D) Neon

24. What is the main cause of the loss of habitat for many species in the Amazon rainforest?

A) Natural forest fires

B) Deforestation for agriculture and logging

C) Sea level rise

D) Invasive species introduction

25. What instrument is used to measure the intensity of earthquakes?

A) Barometer

B) Seismograph

C) Anemometer

D) Hygrometer