Environmental Science Fundamentals

Environmental Science · Answer Key · 25 Questions

1. Which layer of the atmosphere contains the ozone layer that absorbs the majority of ultraviolet radiation from the Sun?

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

2. What is the primary process by which nitrogen gas is converted into ammonia by soil bacteria?

A) Nitrogen fixation
B) Denitrification
C) Nitrification
D) Assimilation

3. Which greenhouse gas is produced by the anaerobic decomposition of organic matter in landfills and wetlands?

A) Carbon dioxide
B) Nitrous oxide
C) Methane
D) CFCs

4. The 'pH scale' measures the acidity of a solution. At what pH level is rain considered 'acid rain'?

A) Below 5.6
B) Exactly 7.0
C) Above 8.2
D) Between 9.0 and 10.0

5. Which biome is characterized by permafrost, low precipitation, and very short growing seasons?

A) Taiga
B) Temperate deciduous forest
C) Tundra
D) Chaparral

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6. Which phenomenon describes the increase in concentration of a substance, such as a toxic chemical, in the tissues of organisms at successively higher levels in a food chain?

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

7. What is the largest carbon reservoir on Earth?

A) The atmosphere
B) The terrestrial biosphere
C) The deep ocean
D) Sedimentary rocks

8. Which chemical element is the primary limiting factor for plant growth in most freshwater ecosystems?

A) Carbon
B) Phosphorus
C) Potassium
D) Sulfur

9. What is the term for the variety of all living things and their interactions within a specific ecosystem?

A) Ecological succession
B) Biodiversity
C) Carrying capacity
D) Biomass

10. Which gas, when released into the atmosphere, is most directly responsible for the depletion of the stratospheric ozone layer?

A) Carbon monoxide
B) Chlorofluorocarbons (CFCs)
C) Sulfur dioxide
D) Methane

11. What is the 'albedo effect' in the context of climate science?

A) The absorption of heat by oceans
B) The reflection of solar radiation by surfaces
C) The trapping of infrared radiation
D) The process of cloud formation

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12. Which type of rock is formed through the cooling and solidification of molten magma or lava?

A) Sedimentary
B) Metamorphic
C) Igneous
D) Conglomerate

13. In population dynamics, what term describes 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

14. Which biome has the highest primary productivity and biodiversity on Earth?

A) Tropical rainforest
B) Savanna
C) Coral reef
D) Temperate grassland

15. What is the primary cause of ocean acidification?

A) Increased solar radiation
B) Absorption of excess atmospheric CO2
C) Runoff of industrial fertilizers
D) Oil spills

16. Which nutrient cycle does not have a significant gaseous phase?

A) Carbon cycle
B) Nitrogen cycle
C) Phosphorus cycle
D) Oxygen cycle

17. What term refers to the process by which a body of water becomes overly enriched with minerals and nutrients, inducing excessive growth of algae?

A) Bioaccumulation
B) Eutrophication
C) Calcification
D) Desalination

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18. Which of the following is a primary air pollutant produced by the incomplete combustion of fossil fuels?

A) Carbon monoxide
B) Nitrogen gas
C) Water vapor
D) Oxygen

19. What is the approximate percentage of nitrogen in Earth's atmosphere?

A) 21%
B) 78%
C) 0.04%
D) 1%

20. Which zone of a lake or ocean is the topmost layer where sunlight penetrates and photosynthesis can occur?

A) Benthic zone
B) Aphotic zone
C) Photic zone
D) Abyssal zone

21. What process involves the movement of water from the soil into plant roots and its subsequent evaporation from leaves?

A) Infiltration
B) Transpiration
C) Percolation
D) Condensation

22. Which type of organism is considered a 'decomposer' in an ecosystem?

A) Herbivore
B) Autotroph
C) Fungi
D) Carnivore

23. What is the definition of a 'keystone species'?

A) The species with the highest biomass
B) A species that has a disproportionately large effect on its environment
C) The most abundant species in a community
D) A species that is at the top of the food chain

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

A) Geothermal
B) Nuclear fission
C) Wind
D) Biomass

25. What term describes the shift in climate patterns resulting from long-term changes in average temperatures and weather conditions?

A) Weathering
B) Climate change
C) Meteorological drift
D) Tectonic shift

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