

Elementary Climate Science Assessment

Climate Change · Practice Test · 18 Questions

1. Which gas, released primarily through the burning of fossil fuels, is the most significant driver of the current global warming trend?

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

2. What is the primary cause of sea-level rise resulting from increased global temperatures?

- A) Increased rainfall over oceans
- B) The melting of land-based ice sheets and glaciers
- C) Underwater volcanic activity
- D) Increased wind speed pushing water to coastlines

3. Which layer of the Earth's atmosphere traps heat radiated from the surface, creating the natural greenhouse effect?

- A) Troposphere
- B) Mesosphere
- C) Thermosphere
- D) Exosphere

4. What is the term for the process where oceans absorb carbon dioxide, leading to a decrease in the water's pH levels?

- A) Ocean acidification
- B) Ocean alkalization
- C) Marine desalination
- D) Coral bleaching

5. Which type of fossil fuel releases the highest amount of carbon dioxide per unit of energy produced?

- A) Natural gas
- B) Coal
- C) Petroleum
- D) Propane

6. What is the primary role of the ozone layer in the stratosphere?

- A) To regulate global wind patterns
- B) To absorb harmful ultraviolet radiation from the Sun
- C) To reflect sunlight back into space
- D) To trap heat within the Earth's surface

7. Which of the following is a major 'carbon sink' that absorbs large amounts of carbon dioxide from the atmosphere?

- A) Deserts
- B) Urban concrete surfaces
- C) Mature forests
- D) Rocky mountain ranges

8. What happens to the ability of water to hold dissolved gases as ocean temperatures rise?

- A) It increases
- B) It decreases
- C) It remains unchanged
- D) It cycles based on tides

9. Which greenhouse gas is produced during the decomposition of organic waste in landfills and through livestock digestion?

- A) Methane
- B) Sulfur dioxide
- C) Helium
- D) Neon

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

- A) The thickness of the atmosphere
- B) The ability of a surface to reflect sunlight
- C) The speed of ocean currents
- D) The rate of plant growth

11. Which of the following ecosystems is most vulnerable to temperature-induced bleaching?

- A) Temperate grasslands
- B) Coral reefs
- C) Boreal forests
- D) Desert scrublands

12. What is the primary source of the water vapor in the Earth's atmosphere?

- A) Volcanic eruptions
- B) Industrial cooling towers
- C) Evaporation from oceans and lakes
- D) Combustion of hydrocarbons

13. Which period of time refers to the recent history where human activities have significantly impacted the Earth's climate and ecosystems?

- A) The Holocene
- B) The Anthropocene
- C) The Pleistocene
- D) The Jurassic

14. What is the main reason that rising global temperatures cause ice caps to retreat?

- A) Increased snowfall
- B) Thermal energy intake causing phase change
- C) Increased mountain gravity
- D) Decreased atmospheric pressure

15. Which gas is considered a potent greenhouse gas that is released by the use of certain agricultural fertilizers?

- A) Nitrous oxide
- B) Carbon monoxide
- C) Hydrogen
- D) Krypton

16. What does the term 'climate variability' refer to?

- A) The permanent change in weather patterns
- B) Short-term fluctuations in weather within a climate system
- C) The total cessation of seasonal cycles
- D) The migration patterns of birds

17. Why are peatlands and wetlands considered important in the context of climate change?

- A) They prevent volcanic activity
- B) They act as significant carbon stores
- C) They increase local air temperature
- D) They generate oxygen through rapid burning

18. Which of these phenomena is driven by the difference in temperature between the land and the ocean?

- A) Sea breezes
- B) Geothermal activity
- C) Tectonic plate movement
- D) Lunar eclipses