

Quiz: Climate Change

Topic: climate change

Questions: 5

Difficulty: Medium

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Question 1

Which of the following is the MOST significant contributor to the increase in greenhouse gases in the atmosphere?

- A) Deforestation
- B) Volcanic eruptions
- C) Burning of fossil fuels
- D) Changes in solar activity

Question 2

A positive feedback loop in the climate system is best described as:

- A) A process that reduces the initial change, stabilizing the climate.
- B) A process that amplifies the initial change, potentially leading to further warming.
- C) A process that has no effect on the climate system.
- D) A process that only affects local weather patterns.

Question 3

Which of the following is a likely consequence of ocean acidification, a direct result of increased atmospheric CO₂?

- A) Increased growth rates of coral reefs.
- B) Improved ability of shellfish to form shells.
- C) Disruption of marine food webs.
- D) Decreased sea levels.

Question 4

Which of the following mitigation strategies aims to remove carbon dioxide directly from the atmosphere?

- A) Switching from coal to natural gas for electricity generation.
- B) Improving energy efficiency in buildings.
- C) Implementing carbon capture and storage (CCS) technology on power plants.
- D) Afforestation and reforestation projects.

Question 5

Climate models are used to predict future climate scenarios. What is the primary reason why these models produce a range of possible outcomes rather than a single, definitive prediction?

- A) Climate models are inherently flawed and unreliable.
- B) The complexity of the climate system and uncertainties in future human behavior (e.g., emissions scenarios) make precise predictions impossible.
- C) Scientists intentionally introduce errors into the models to create controversy.
- D) Climate models only consider short-term weather patterns, not long-term climate trends.

Answer Key

1. Answer: C

Explanation: While deforestation contributes, the burning of fossil fuels (coal, oil, and natural gas) releases significantly larger quantities of greenhouse gases, primarily carbon dioxide, into the atmosphere.

2. Answer: B

Explanation: Positive feedback loops amplify the initial warming, such as melting ice reducing Earth's reflectivity and causing further warming.

3. Answer: C

Explanation: Ocean acidification makes it harder for marine organisms, like shellfish and corals, to build and maintain their shells and skeletons, disrupting marine ecosystems and food webs.

4. Answer: D

Explanation: Afforestation and reforestation involve planting trees, which absorb CO₂ from the atmosphere through photosynthesis, effectively removing it.

5. Answer: B

Explanation: Climate models are complex and rely on various assumptions about future emissions and other factors. The inherent complexity of the climate system and the uncertainties surrounding future human actions lead to a range of possible outcomes.