

Essay and Discussion Questions

Climate Change Higher Education Questions

Help students understand how climate change poses an extraordinary threat to the planet and its inhabitants through these essay and discussion questions.

Question 1

How has industrialization contributed to climate change? What is the evidence that human activity is contributing to climate change since the industrial revolution, and how have scientists measured these impacts?

Question 2

To what extent is climate change a major concern for the international community? How might the international community best address climate change (consider mitigation, adaptation, geoengineering, or other solutions)? What are the challenges to delivering effective international solutions? What are the challenges that occur when international solutions are not pursued? What are the advantages and disadvantages of top-down versus a bottom-up approaches to mitigation?

Question 3

When analyzing greenhouse gas emissions, what are the differences among annual emissions, cumulative emissions, per capita emissions, emissions by economic sector, and emissions by company? What information does each approach provide? What are the benefits of each approach?

Question 4

Choose a country that emits the most greenhouse gases (such as China, the United States, India, or Russia) and write a policy memo to this country's leader outlining ways in which its government should or should not reduce its emissions. How should this government address the effects of climate change on global inequality?

- Should developed countries like the United States be expected to take a more active role in cutting their carbon emissions given their historical contributions of greenhouse gas emissions?
- Should developing countries like China and India continue industrializing, even though their carbon emissions are increasing as a result?
- How does climate change threaten global food security?
- How does climate change disproportionately impact certain communities and contribute to global inequality?
- In what ways does the Inflation Reduction Act seek to mitigate greenhouse gas emissions? How might this impact the efforts of the global community as a whole in addressing climate change?

Question 5

What renewable and alternative energy sources offer the most potential for addressing climate change?? Why? Looking at the five main renewable and alternative energy sources (wind, solar, hydro, nuclear, and biofuels), pick two to compare them. What are the benefits and drawbacks of each?

- What are fossil fuels? How are they different from alternative energy sources?
- Which form of energy would you recommend for wide-scale adoption in the United States? Why? Consider

how geography might factor into your recommendation.

- Which form of energy would you recommend for wide-scale adoption internationally? Why? Consider how geography might factor into your recommendation.

Question 6

What is the Paris Agreement and how is it different from previous climate accords like the Kyoto Protocol? What does the Paris Agreement require of countries? What does it leave up to individual countries to decide? What are the limitations of the Paris Agreement?

- Why did the United States withdraw from the Paris Agreement in 2017? What percentage of global emissions cuts did the United States account for at that time? When the United States reentered in 2021, what goal was set for 2050?
- To what extent did the Paris Agreement lead to actionable climate solutions? What are the challenges and opportunities for implementing the ideas set out in the Paris Agreement?

Question 7

Analyze the advantages and limitations of the use of artificial intelligence in fighting global climate change. Where can AI best outperform existing technologies? How can this technology fight climate change without inadvertently accelerating carbon emissions in the process?