

ENVIRONMENT AND ECOLOGY

2025

1. What is Carbon Capture, Utilization and Storage (CCUS)? What is the potential role of CCUS in tackling climate change? (150 words)
2. Seawater intrusion in the coastal aquifers is a major concern in India. What are the causes of seawater intrusion and the remedial measures to combat this hazard? (150 words)
3. Examine the factors responsible for depleting groundwater in India. What are the steps taken by the government to mitigate such depletion of groundwater? (Answer in 250 words)
4. Mineral resources are fundamental to the country's economy and these are exploited by mining. Why is mining considered an environmental hazard? Explain the remedial measures required to reduce the environmental hazard due to mining. (Answer in 250 words)
5. Write a review on India's climate commitments under the Paris Agreement (2015) and mention how these have been further strengthened in COP26 (2021). In this direction, how has the first Nationally Determined Contribution intended by India been updated in 2022? (Answer in 250 words)

2024

1. Industrial pollution of river water is a significant environmental issue in India. Discuss the various mitigation measures to deal with this problem and also the government's initiatives in this regard.
2. What role do environmental NGOs and activists play in influencing Environmental Impact Assessment (EIA) outcomes for major projects in India? Cite four examples with all important details.
3. The world is facing an acute shortage of clean and safe freshwater. What are the alternative technologies which can solve this crisis? Briefly discuss any three such technologies citing their key merits and demerits.

2023

1. What is oil pollution? What are its impacts on the marine ecosystem? In what way is oil pollution particularly harmful for a country like India?
2. The adoption of electric vehicles is rapidly growing worldwide. How do electric vehicles contribute to reducing carbon emissions and what are the key benefits they offer compared to traditional combustion engine vehicles?
3. Comment on the National Wetland Conservation Programme initiated by the Government of India and name a few India's wetlands of international importance included in the Ramsar Sites.
4. The Intergovernmental Panel on Climate Change (IPCC) has predicted a global sea level rise of about one metre by AD 2100. What would be its impact in India and the other countries in the Indian Ocean region?

2022

1. Each year a large amount of plant material, cellulose, is deposited on the surface of Planet Earth. What are the natural processes this cellulose undergoes before yielding carbon dioxide, water and other end products?
2. Discuss in detail the photochemical smog emphasizing its formation, effects and mitigation. Explain the 1999 Gothenburg protocol.
3. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997.
4. Explain the causes and effects of coastal erosion in India. What are the available coastal management techniques for combating the hazard?

2021

1. Explain the purpose of the Green Grid Initiative launched at World Leaders Summit of the COP26 UN Climate Change Conference in Glasgow in November, 2021. When was this idea first floated in the International Solar Alliance (ISA)?
2. Describe the key points of the revised Global Air Quality Guidelines (AQGs) recently released by the World Health Organisation (WHO). How are these different from its last update in 2005? What changes in India's National Clean Air Programme are required to achieve revised standards?

3. Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference?

2020

1. How does the draft Environment Impact Assessment (EIA) Notification, 2020 differ from the existing EIA Notification, 2006?
2. What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security?
3. What are the key features of the National Clean Air Programme (NCAP) initiated by the government of India?

2019

1. Coastal sand mining, whether legal or illegal, poses one of the biggest threats to our environment. Analyze the impact of sand mining along the Indian coasts, citing specific examples.
2. How is the Government of India protecting traditional knowledge of medicine from patenting by pharmaceutical companies?
3. How can biotechnology help to improve the living standards of farmers?
4. Define the concept of carrying capacity of an ecosystem as relevant to an environment. Explain how understanding this concept is vital while planning for sustainable development of a region

2018

1. What are the impediments disposing the huge quantities of discarded solid waste which are continuously being generated? How do we remove safely the toxic wastes that have been accumulated in our habitable environment?
2. What is wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation. Cite two examples of Ramsar sites from India.
3. Sikkim is the first 'Organic State' in India. What are the ecological and economical benefits of Organic State?
4. How does biodiversity vary in India? How is the Biological Diversity Act, 2002 helpful in conservation of flora and fauna?

2017

1. Not many years ago, river linking was a concept but it is becoming reality in the country. Discuss the advantages of river linking and its possible impact on the environment.
2. 'Climate change' is a global problem. How India will be affected by climate change? How Himalayan and coastal states of India will be affected by climate change?

2016

1. Rehabilitation of human settlements is one of the important environmental impacts which always attracts controversy while planning major projects. Discuss the measures suggested for mitigation of this impact while proposing major developmental projects.

2015

1. Discuss the Namami Gange and National Mission for Clean Ganga (NMCG) programmes and causes of mixed results from the previous schemes. What quantum leaps can help preserve the river Ganga better than incremental inputs?

2014

1. Environmental Impact Assessment studies are increasingly undertaken before a project is cleared by the Government. Discuss the environmental impacts of coal-fired thermal plants located at coal pitheads.

2013

1. What are the consequences of Illegal mining? Discuss the Ministry of Environment and Forests' concept of GO AND NO GO zones for coal mining sector.
2. Enumerate the National Water Policy of India. Taking river Ganges as an example, discuss the strategies which may be adopted for river water pollution control and management. What are the legal provisions of management and handling of hazardous wastes in India?