

VISION IAS

ENVIRONMENT PREVIOUS YEAR QUESTIONS 2013-2024 (SYLLABUS-WISE)

GS I: Indian Heritage and Culture, History and Geography of the World and Society

Salient features of world's physical geography

Climatology

- What are aurora australis and aurora borealis? How are these triggered? (GS I 2024, 15 marks)
- Troposphere is a very significant atmospheric layer that determines weather processes. How? (GS-I 2022, 15 Marks)
- What characteristics can be assigned to monsoon climate that succeeds in feeding more than 50 percent of the world population residing in Monsoon Asia? (GS-I 2017, 15 Marks)
- Discuss the concept of air mass and explain its role in macro-climatic changes. (GS-I 2016, 12.5 Marks)
- How far do you agree that the behaviour of the Indian monsoon has been changing due to humanizing landscape? Discuss. (GS-I 2015, 12.5 Marks)
- Mumbai, Delhi and Kolkata are the three Mega cities of the country but the air pollution is much more serious problem in Delhi as compared to the other two. Why is this so? (GS-I 2015, 12.5 Marks)
- Most of the unusual climatic happenings are explained as an outcome of the El-Nino effect. Do you agree? (GS-I 2014, 10 Marks)
- What do you understand by the phenomenon of 'temperature inversion' in meteorology? How does it affect weather and the habitants of the place? (GS-I 2013, 5 Marks)
- Bring out the causes for the formation of heat islands in the urban habitat of the world. (GS-I 2013, 5 Marks)

Geomorphology

- How are the fjords formed? Why do they constitute some of the most picturesque area of the world? (GS-I 2023, 10 marks)
- Define mantle plume and explain its role in plate tectonics. (GS-I 2018, 10 Marks)
- What do you understand by the theory of continental drift? Discuss the prominent evidences in its support. (GS-I 2013, 5 Marks)

Hydrology

- The groundwater potential of the Gangetic valley is on a serious decline. How may it affect the food security of India? (GS I 2024, 15 marks)
- Why is the world today confronted with a crisis of availability of and access to freshwater resources? (GS-I 2023, 10 marks)
- What are the forces that influence ocean currents? Describe their role in fishing industry of the world. (GS-I 2022, 15 Marks)
- What are the environmental implications of the reclamation of the water bodies into urban land use? Explain with examples. (GS-I 2021, 10 Marks)
- The interlinking of rivers can provide viable solutions to the multi-dimensional inter-related problems of droughts, floods and interrupted navigation. Critically examine. (GS-I 2020, 15 Marks)
- Discuss the geophysical characteristics of Circum-Pacific Zone. (GS-I 2020, 10 Marks)
- How do ocean currents and water masses differ in their impacts on marine life and coastal environment? (GS-I 2019, 15 Marks)



- What is water stress? How and why does it differ regionally in India? (GS-I 2019, 15 Marks)
- What are the consequences of spreading of 'Dead Zones' on marine ecosystem? (GS-I 2018, 10 Marks)
- "The ideal solution of depleting ground water resources in India is water harvesting system." How can it be made effective in urban areas? (GS-I 2018, 15 Marks)
- Defining blue revolution, explain the problems and strategies for pisciculture development in India. (GS-I 2018, 15 Marks)
- Account for variations in oceanic salinity and discuss its multi-dimensional effects. (GS-I 2017, 15 Marks)
- In what way micro-watershed development projects help in water conservation in drought-prone and semi-arid regions of India? (GS-I 2016, 12.5 Marks)
- Explain the factors responsible for the origin of ocean currents. How do they influence regional climates, fishing and navigation? (GS-I 2015, 12.5 Marks)
- India is well endowed with fresh water resources. Critically examine why it still suffers from water scarcity. (GS-I 2015, 12.5 Marks)

Distribution of key natural resources across the world (including South Asia and the Indian sub-continent)

- Comment on the resource potentials of the long coastline of India and highlight the status of natural hazard preparedness in these areas. (GS-I 2023, 15 marks)
- Describing the distribution of rubber producing countries, indicate the major environmental issues faced by them. (GS-I 2022, 15 Marks)
- Examine the potential of wind energy in India and explain the reasons for their limited spatial spread. (GS-I 2022, 10 Marks)
- India has immense potential of solar energy though there are regional variations in its development. Elaborate. (GS-I 2020, 15 Marks)
- Why is India taking keen interest in resources of Arctic region? (GS-I 2018, 10 Marks)
- The effective management of land and water resources will drastically reduce the human miseries. Explain. (GS-I 2016, 12.5 Marks)
- What are the economic significances of discovery of oil in Arctic Sea and its possible environmental consequences? (GS-I 2015, 12.5 Marks)
- Whereas the British planters had developed tea gardens all along the Shivaliks and Lesser Himalayas from Assam to Himachal Pradesh, in effect they did not succeed beyond the Darjeeling area. Explain. (GS-I 2014, 10 Marks)
- How does India see its place in the economic space of rising natural resources rich Africa? (GS-I 2014, 10 Marks)
- Critically evaluate the various resources of the oceans which can be harnessed to meet the resource crisis in the world. (GS-I 2014, 10 Marks)
- It is said that India has substantial reserves of shale oil and gas, which can feed the needs of the country for quarter century. However, tapping of the resource does not appear to be high on the agenda. Discuss critically the availability and issues involved. (GS-I 2013, 10 Marks)
- With growing scarcity of fossil fuels, the atomic energy is gaining more and more significance in India. Discuss the availability of raw material required for the generation of atomic energy in India and in the world. (GS-I 2013, 10 Marks)

Factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India)

- Identify and discuss the factors responsible for diversity of natural vegetation in India. Assess the significance of wildlife sanctuaries in rain forest regions of India. (GS-I 2023, 15 marks)
- Account for the present location of iron and steel industries away from the source of raw material, by giving examples. (GS-I 2020 10, Marks)
- Discuss the factors for localisation of agro-based food processing industries of North-West India. (GS-I 2019, 10 Marks)



- Petroleum refineries are not necessarily located nearer to crude oil producing areas, particularly in many of the developing countries. Explain its implications. (GS-I 2017, 15 Marks)
- "In spite of adverse environmental impact, coal mining is still inevitable for development." Discuss (GS-I 2017, 10 Marks)
- Why did the Green Revolution in India virtually by-pass the eastern region despite fertile soil and good availability of water? (GS-I 2014, 10 Marks)
- Account for the change in the spatial pattern of the Iron and Steel industry in the world. (GS-I 2014, 10 Marks)
- Do you agree that there is a growing trend of opening new sugar mills in southern states of India? Discuss with justification. (GS-I 2013, 5 Marks)
- Analyze the factors for the highly decentralized cotton textile industry in India. (GS-I 2013, 5 Marks)

Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc.

- **Cyclones/Tornados/Tsunamis and other Atmospheric Phenomena**
 - What is the phenomenon of 'cloudbursts'? Explain. (GS I 2024, 10 marks)
 - What is a twister? Why are the majority of twisters observed in areas around the Gulf of Mexico? (GS I 2024, 15 marks)
 - Discuss the meaning of colour-coded weather warnings for cyclone prone areas given by India Meteorological department. (GS-I 2022, 10 Marks)
 - Tropical cyclones are largely confined to South China Sea, Bay of Bengal and Gulf of Mexico. Why? (GS-I 2014, 10 Marks)
 - The recent cyclone on the east coast of India was called 'Phailin'. How are the tropical cyclones named across the world? Elaborate. (GS-I 2013, 5 Marks)
- **Landslides**
 - Differentiate the causes of landslides in the Himalayan region and Western Ghats. (GS-I 2021, 10 Marks)
 - "The Himalayas are highly prone to landslides." Discuss the causes and suggest suitable measures of mitigation. (GS-I 2016, 12.5 Marks)
 - Bring out the causes for more frequent occurrence of landslides in the Himalayas than in the Western Ghats. (GS-I 2013, 5 Marks)
- **Volcanic Activity**
 - Mention the global occurrence of volcanic eruptions in 2021 and their impact on regional environment. (GS-I 2021, 10 Marks)
- **Flooding**
 - Account for the huge flooding of million cities in India including the smart ones like Hyderabad and Pune. Suggest lasting remedial measures. (GS-I 2020, 15 Marks)
 - In what way can floods be converted into a sustainable source of irrigation and all-weather inland navigation in India? (GS-I 2017, 15 Marks)
 - Major cities of India are becoming vulnerable to flood conditions. Discuss. (GS-I 2016, 12.5 Marks)

Geographical features and their location

- Briefly mention the alignment of major mountain ranges of the world and explain their impact on local weather conditions, with examples. (GS-I 2021, 15 Marks)
- The process of desertification does not have climatic boundaries. Justify with examples. (GS-I 2020, 10 Marks)
- Why are the world's fold mountain systems located along the margins of continents? Bring out the association between the global distribution of fold mountains and the earthquakes and volcanoes. (GS-I 2014, 10 Marks)
- Explain the formation of thousands of islands in Indonesian and Philippines archipelagos. (GS-I 2014, 10 Marks)
- Major hot deserts in northern hemisphere are located between 20-30 deg N latitudes and on the western sides of the continents. Why? (GS-I 2013, 10 Marks)



- There is no formation of deltas by rivers on the Western Ghats. Why? (GS-I 2013, 5 Marks)

Changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes

- What is sea surface temperature rise? How does it affect the formation of tropical cyclones? (GS I 2024, 10 marks)
- Discuss the consequences of climate change on the food security in tropical countries. (GS-I 2023, 10 marks)
- How do the melting of the Arctic ice and glaciers of the Antarctic differently affect the weather patterns and human activities on the Earth? Explain. (GS-I 2021, 10 Marks)
- How will the melting of Himalayan glaciers have a far-reaching impact on the water resources of India? (GS-I 2020, 10 Marks)
- Examine the status of forest resources of India and its resultant impact on climate change. (GS-I 2020, 15 Marks)
- Assess the impact of global warming on the coral life system with examples. (GS-I 2019, 10 Marks)
- How can the mountain ecosystem be restored from the negative impact of development initiatives and tourism? (GS-I 2019, 15 Marks)
- Discuss the causes of depletion of mangroves and explain their importance in maintaining coastal ecology. (GS-I 2019, 10 Marks)
- Mention the advantages of the cultivation of pulses because of which the year 2016 was declared as the International Year of Pulses by the United Nations. (GS-I 2017, 10 Marks)
- How does the cryosphere affect global climate? (GS-I 2017, 10 Marks)
- The states of Jammu and Kashmir, Himachal Pradesh and Uttarakhand are reaching the limits of ecological carrying capacity due to tourism. Critically evaluate. (GS-I 2015, 12.5 Marks)
- Bring out the relationship between the shrinking Himalayan glaciers and the symptoms of climate change in the Indian sub-continent. (GS-I 2014, 10 Marks)

GS III: Technology, Economic Development, Bio diversity, Environment, Security and Disaster Management

Conservation

Biodiversity

- 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. (GS-III 2023, 15 marks)
- How is the government of India protecting traditional knowledge of medicine from patenting by pharmaceutical companies? (GS-III 2019, 15 Marks)
- 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. (GS-III 2019, 15 Marks)
- What is wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation. Cite two examples of Ramsar sites from India. (GS-III 2018, 10 Marks)
- How does biodiversity vary in India? How is the Biological Diversity Act, 2002 helpful in conservation of flora and fauna? (GS-III 2018, 15 Marks)

Renewable and Alternate Energy

- Discuss several ways in which microorganisms can help in meeting the current fuel shortage. (GS-III 2023, 10 marks)
- 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? (GS-III 2023, 15 marks)



- Do you think India will meet 50 percent of its energy needs from renewable energy by 2030? Justify your answer. How will the shift of subsidies from fossil fuels to renewables help achieve the above objective? Explain. (GS-III 2022, 15 Marks)
- Describe the benefits of deriving electric energy from sunlight in contrast to the conventional energy generation. What are the initiatives offered by our Government for this purpose? (GS-III 2020, 15 Marks)
- One of the intended objectives of Union Budget 2017-18 is to 'transform, energize and clean India'. Analyse the measures proposed in the Budget 2017-18 to achieve the objective. (GS-III 2017, 15 Marks)
- Give an account of the current status and the targets to be achieved pertaining to renewable energy sources in the country. Discuss in brief the importance of National Programme on Light Emitting Diodes (LEDs). (GS-III 2016, 12.5 Marks)

Sustainable Agriculture

- What is Integrated Farming System? How is it helpful to small and marginal farmers in India? (GS-III 2022, 15 Marks)
- How and to what extent would micro-irrigation help in solving India's water crisis? (GS-III 2021, 10 Marks)
- How far is Integrated Farming System (IFS) helpful in sustaining agricultural production? (GS-III 2019, 10 Marks)
- Sikkim is the first 'Organic State' in India. What are the ecological and economic benefits of Organic State? (GS-III 2018, 10 Marks)

Environment Pollution and Degradation

Climate Change

- 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? (GS-III 2023, 15 marks)
- 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. (GS-III 2022, 15 Marks)
- 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? (GS-III 2021, 15 Marks)
- 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)? (GS-III 2021, 10 Marks)
- '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? (GS-III 2017, 15 Marks)
- Should the pursuit of carbon credits and clean development mechanisms set up under UNFCCC be maintained even though there has been a massive slide in the value of a carbon credit? Discuss with respect to India's energy needs for economic growth. (GS-III 2014 12.5, Marks)

Air Pollution

- Discuss in detail the photochemical smog emphasizing its formation, effects and mitigation. Explain the 1999 Gothenburg Protocol. (GS-III 2022, 10 Marks)
- 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 these revised standards? (GS-III 2021, 10 Marks)
- What are the key features of the National Clean Air Programme (NCAP) initiated by the Government of India? (GS-III 2020, 15 Marks)



Water/River Pollution

- 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. (GS III 2024, 10 marks)
- What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? (GS-III 2020, 10 Marks)
- Suggest measures to improve water storage and irrigation system to make its judicious use under depleting scenario. (GS-III 2020, 15 Marks)
- Elaborate the impact of National Watershed Project in increasing agricultural production from water-stressed areas. (GS-III 2019, 10 Marks)
- 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? (GS-III 2015, 12.5 Marks)
- 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? (GS-III 2013, 10 Marks)

Other types of Environmental Pollution and degradation

- 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? (GS-III 2023, 10 marks)
- Explain the causes and effects of coastal erosion in India. What are the available coastal management techniques for combating the hazard? (GS-III 2022, 15 Marks)
- Coastal sand mining, whether legal or illegal, poses one of the biggest threats to our environment. Analyse the impact of sand mining along the Indian coasts, citing specific examples. (GS-III 2019, 10 Marks)
- What are the impediments in disposing the huge quantities of discarded solid wastes which are continuously being generated? How do we remove safely the toxic wastes that have been accumulating in our habitable environment? (GS-III 2018, 10 Marks)

Environmental Impact Assessment

- 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. (GS III 2024, 10 marks)
- How does the draft Environmental Impact Assessment (EIA) Notification, 2020 differ from the existing EIA Notification, 2006? (GS-III 2020, 10 Marks)
- 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. (GS-III 2017, 10 Marks)
- 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. (GS-III 2016, 12.5 Marks)
- 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. (GS-III 2014, 12.5 Marks)
- What are the consequences of Illegal mining? Discuss the Ministry of Environment and Forest's concept of GO AND NO GO zones for coal mining sector. (GS-III 2013, 10 Marks)

Disaster and disaster management

- What is disaster resilience? How is it determined? Describe various elements of a resilience framework. Also mention the global targets of Sendai Framework for Disaster Risk Reduction (2015-2030). (GS III 2024, 15 marks)



- Flooding in urban areas is an emerging climate-induced disaster. Discuss the causes of this disaster. Mention the features of two such major floods in the last two decades in India. Describe the policies and frameworks in India that aim at tackling such floods. (GS III 2024, 15 marks)
- Dam failures are always catastrophic, especially on the downstream side, resulting in a colossal loss of life and property. Analyze the various causes of dam failures. Give two examples of large dam failures. (GS-III 2023, 10 marks)
- Explain the mechanism and occurrence of cloudburst in the context of the Indian subcontinent. Discuss two recent examples. (GS-III 2022, 10 Marks)
- Discuss about the vulnerability of India to earthquake related hazards. Give examples including the salient features of major disasters caused by earthquakes in different parts of India during the last three decades. (GS-III 2021, 10 Marks)
- Describe the various causes and the effects of landslides. Mention the important components of the National Landslide Risk Management Strategy. (GS-III 2021, 15 Marks)
- Discuss the recent measures initiated in disaster management by the Government of India departing from the earlier reactive approach. (GS-III 2020, 15 Marks)
- Vulnerability is an essential element for defining disaster impacts and its threat to people. How and in what ways can vulnerability to disasters be characterized? Discuss different types of vulnerability with reference to disasters. (GS-III 2019, 10 Marks)
- Disaster preparedness is the first step in any disaster management process. Explain how hazard zonation mapping will help in disaster mitigation in the case of landslides. (GS-III 2019, 15 Marks)
- Describe various measures taken in India for Disaster Risk Reduction (DRR) before and after signing 'Sendai Framework for DRR (2015-2030)'. How is this framework different from 'Hyogo Framework for Action, 2005'? (GS-III 2018, 15 Marks)
- On December 2004, tsunami brought havoc on 14 countries including India. Discuss the factors responsible for occurrence of Tsunami and its effects on life and economy. In the light of guidelines of NDMA (2010) describe the mechanisms for preparedness to reduce the risk during such events. (GS-III 2017, 15 Marks)
- The frequency of urban floods due to high intensity rainfall is increasing over the years. Discussing the reasons for urban floods, highlight the mechanisms for preparedness to reduce the risk during such events. (GS-III 2016, 12.5 Marks)
- With reference to National Disaster Management Authority (NDMA) guidelines, discuss the measures to be adopted to mitigate the impact of recent incidents of cloudbursts in many places of Uttarakhand. (GS-III 2016, 12.5 Marks)
- The frequency of earthquakes appears to have increased in the Indian subcontinent. However, India's preparedness for mitigating their impact has significant gaps. Discuss various aspects. (GS-III 2015, 12.5 Marks)
- Drought has been recognized as a disaster in view of its spatial expanse, temporal duration, slow onset and lasting effects on vulnerable sections. With a focus on the September 2010 guidelines from the National Disaster Management Authority (NDMA), discuss the mechanisms for preparedness to deal with likely El Nino and La Nina fallouts in India. (GS-III 2014, 12.5 Marks)
- How important are vulnerability and risk assessment for pre-disaster management? As an administrator, what are key areas that you would focus on in a Disaster Management System? (GS-III 2013, 10 Marks)

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