

Mains PYQs - GS-III (2025) (Q. 16 - 18)

16. India aims to become a semiconductor manufacturing hub. What are the challenges faced by the semiconductor industry in India? Mention the salient features of the India Semiconductor Mission. (250 words, 15 marks)

Directions: Intro-----Challenges + Features of ISM-----Conclusion.

Introduction:

Describe the semiconductor and its sector in India with data.

Main Body

Challenges faced by the semiconductor industry in India

- Heavy reliance on import
- High capital requirement
- Lack of skilled workforce
- Infrastructure deficiencies
- Supply chain constraints
- High global competition
- Limited Semiconductor Ecosystem (testing, fabrication, packing, etc)

Salient features of the India Semiconductor Mission (ISM)

- Dedicated Institutional Framework
- Design Linked Incentive (DLI) Scheme
- Promotes research and skill development
- Financial incentives
- Semiconductor Fab Support
- Complete ecosystem support - packaging, testing, assembly, marketing, etc.
- International partnership.

Conclusion:

Give a positive and progressive conclusion - The India Semiconductor Mission marks a transformative step toward making India a global semiconductor hub.

17. 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.
(250 words, 15 marks)**

Directions: Intro---- Mining considered an environmental hazard + Remedial measures---
---Conclusion.

Introduction:

Describe mining in India briefly.

Main Body

Why is mining considered an environmental hazard?

- Deforestation
- Land degradation
- Water pollution
- Air pollution
- Biodiversity loss
- Waste generation
- Health hazard
- Land subsidence

Remedial measures to reduce the environmental hazard due to mining

- Environment Impact Assessment
- Afforestation & reforestation
- Scientific mining practices
- Technological interventions - Precision mining
- Strict environmental regulations
- Land reclamation
- Scientific waste disposal
- Artificial construction of wetland
- Water management
- Pollution control measures

Conclusion:

Give a conclusion in a positive manner by emphasising sustainable mining.

18. 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 India's first Nationally Determined Contribution intended by India been updated in 2022? (250 words, 15 marks)

Directions: Intro---- Paris Agreement (2015) + COP26 + updated NDC in 2022----- Conclusion.

Introduction:

Describe briefly the Paris Agreement (2015) (or) Nationally Determined Contribution.

Main Body

India's Climate Commitments under the Paris Agreement (2015) (1st NDC, 2015)

- Reduce the emissions intensity of GDP by 33-35% from 2005 levels by 2030.
- Achieve 40% cumulative installed electric power capacity from non-fossil fuel-based resources by 2030.
- Create an additional 2.5-3 billion tonnes of CO₂ equivalent carbon sink through additional forest and tree cover by 2030.

Strengthening of Commitments at COP26 (Glasgow, 2021) - Panchamrit (Five Nectar Elements)

- 500 GW of non-fossil electricity capacity by 2030.
- Meet 50% of energy requirements from renewable energy by 2030.
- Reduce cumulative projected carbon emissions by 1 billion tonnes by 2030.
- Reduce emissions intensity of GDP by 45% from 2005 levels by 2030.
- Achieve Net Zero emissions by 2070.

Updated Nationally Determined Contribution (2022)

- 45% reduction in emissions intensity by 2030
- About 50% cumulative installed electric power capacity from non-fossil fuel-based energy resources by 2030.
- Carbon sink target of 2.5-3 billion tonnes of CO₂ equivalent
- Lifestyle for Environment (Mission LiFE)

Conclusion:

Give a neutral and progressive conclusion: India's climate commitments have evolved from ambitious yet equitable targets under the Paris Agreement to more robust commitments under COP26 and the updated 2022 NDC.