# International Relations · GS - II

**India-Japan cooperation in semiconductors and critical minerals reflects the growing importance of economic security in contemporary international relations. Discuss how this partnership can strengthen India's strategic autonomy and integration into global value chains.**

| EXAM YEAR | PAPER | SUBJECT |
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| MARKS | WORD LIMIT |
|---|---|
| 15 | ~250 words |

## Answer Hint

**Economic security, semiconductor ecosystem, critical minerals, Supply Chain Resilience Initiative, technology transfer, investment, strategic autonomy, Indo-Pacific, global value chains.**

## Model Answer

### Introduction

Economic security has emerged as an important dimension of international relations amid geopolitical tensions and disruptions in global supply chains. India-Japan cooperation provides an opportunity to strengthen technological and industrial resilience.

### Areas of Strategic Cooperation

1. **Semiconductor ecosystem:** Japanese expertise in semiconductor materials, manufacturing equipment and technology can support India's domestic semiconductor ambitions.
2. **Critical minerals:** Cooperation in exploration, processing and recycling can reduce dependence on concentrated global sources.

3. **Supply-chain diversification:** Joint initiatives can create resilient alternatives for essential industrial inputs.
4. **Investment and manufacturing:** Japanese investment can strengthen India's electronics, automotive and advanced manufacturing sectors.
5. **Human resource development:** Research partnerships, skill development and academic exchanges can promote technological capabilities.

**Significance for India**

Such cooperation can reduce strategic vulnerabilities, generate skilled employment and improve India's position in global value chains. It also complements India's broader Indo-Pacific engagement and economic partnerships.

**Challenges and Way Forward**

High capital requirements, technological dependence, environmental concerns in mineral extraction and global competition remain obstacles. India should improve research infrastructure, provide stable policy support, promote domestic innovation and strengthen recycling and sustainable mining.

**Conclusion**

India-Japan cooperation can transform economic security into a foundation for technological self-reliance and strategic autonomy. Its success will depend on long-term investment, innovation and mutually beneficial supply-chain integration.

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