International Relations · GS - II

The US–China technology rivalry reflects the growing use of technological capabilities as instruments of geopolitical power. Examine its implications for global supply chains and discuss the strategic opportunities and challenges for India.

EXAM YEAR	PAPER	SUBJECT
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MARKS	WORD LIMIT
15	~250 words

Answer Hint

Techno-nationalism, semiconductor ecosystem, export controls, technological decoupling, supply-chain resilience, AI governance, strategic autonomy, domestic manufacturing, international partnerships, digital sovereignty.

Model Answer

Introduction

The US–China technology rivalry has expanded beyond trade into semiconductors, artificial intelligence, telecommunications and critical technologies. Export controls and domestic manufacturing initiatives reflect the increasing importance of technological self-reliance in national security.

Implications for Global Supply Chains

1. **Fragmentation:** Competing technology ecosystems may create separate standards, markets and supply networks.
2. **Economic uncertainty:** Export restrictions and geopolitical tensions can disrupt access to critical components and increase production costs.

3. **Technological competition:** Investment in domestic semiconductor manufacturing, AI and advanced research is accelerating.
4. **Global inequality:** Smaller economies may face difficulties accessing expensive technologies and infrastructure.

Opportunities for India

- **Semiconductor manufacturing:** Attract investment in chip fabrication, assembly, testing and packaging.
- **Strategic partnerships:** Cooperate with multiple technology partners while preserving strategic autonomy.
- **AI development:** Strengthen domestic research, computing infrastructure and responsible AI capabilities.
- **Supply-chain diversification:** Position India as an alternative manufacturing and technology-services hub.

Challenges and Way Forward

India must address infrastructure gaps, skilled workforce shortages, high capital requirements and dependence on imported semiconductor equipment. Stable policies, research funding, industry-academia collaboration and technology partnerships are essential.

Conclusion

The technology rivalry presents both risks and opportunities for India. A balanced strategy combining domestic capabilities, diversified partnerships and strategic autonomy can strengthen India's position in the emerging global technology order.

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