Science & Technology · GS - III

The growing competition over Artificial Intelligence has transformed advanced computing technologies into instruments of geopolitical influence. Analyse how technology restrictions and investment barriers are reshaping global AI development. What should be India's approach to this emerging technological divide?

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MARKS	WORD LIMIT
15	~250 words

Answer Hint

AI geopolitics, US-China technological competition, semiconductor supply chains, export controls, technological sovereignty, investment restrictions, strategic autonomy, IndiaAI Mission, international cooperation.

Model Answer

Introduction

Artificial Intelligence is increasingly a strategic economic and security asset. Restrictions reportedly imposed on Chinese investors ahead of Anthropic's public listing reflect the growing intersection of technology markets, national security and geopolitical competition.

Impact of Technology Restrictions

1. **Fragmentation of technology markets:** Investment restrictions and export controls can divide the global AI ecosystem into competing technological blocs.

2. **Semiconductor competition:** Restrictions on advanced chips and manufacturing equipment can affect access to high-performance computing.
3. **Innovation disruption:** Limited cross-border investment and research collaboration may slow knowledge exchange and increase development costs.
4. **Strategic dependencies:** Countries dependent on foreign AI infrastructure and semiconductor supply chains become vulnerable to geopolitical pressures.
5. **Security concerns:** Governments increasingly treat advanced AI as a dual-use technology with applications in civilian and military domains.

India's Strategic Approach

- **Domestic capabilities:** Strengthen indigenous semiconductor manufacturing, AI computing infrastructure and foundational research.
- **Strategic autonomy:** Maintain constructive technological partnerships with multiple countries without excessive dependence on any single supplier.
- **Human capital:** Invest in AI education, advanced research and specialised technical skills.
- **Responsible governance:** Develop transparent, risk-based AI safeguards while encouraging innovation.
- **Global cooperation:** Participate in international discussions on AI safety, standards and equitable technology access.
- **Startup ecosystem:** Support domestic AI enterprises through research funding, infrastructure and access to computing resources.

Conclusion

Technological competition should not result in permanent fragmentation of the global innovation ecosystem. India must combine technological self-reliance with international cooperation to emerge as a competitive and responsible AI power.

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