Science & Technology · GS - III

The Russia–Ukraine conflict has highlighted the strategic risks associated with dependence on foreign-controlled technology. Examine the need for technological self-reliance in India.

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10	~150 words

Answer Hint

Technological Self-Reliance, Atmanirbhar Bharat, Starlink, Satellite Communication, Artificial Intelligence, Indigenous R&D, Defence Technology, Cybersecurity, Digital Sovereignty, Strategic Autonomy, Technology Transfer, Public–Private Partnerships.

Model Answer

Introduction

The Russia–Ukraine conflict has demonstrated the strategic importance of satellite communication and digital infrastructure. Disruptions to Starlink services used by Ukrainian forces have highlighted the risks of excessive dependence on privately controlled foreign technology.

Main Body

India increasingly depends on global technology providers for cloud computing, software, digital platforms and advanced technological capabilities. Such dependence can create risks related to service continuity, data security, supply chains and national security.

Technological self-reliance is therefore important in telecommunications, artificial intelligence, semiconductors, cybersecurity and defence systems. India should strengthen domestic research and development, support startups, improve university–industry collaboration and encourage indigenous manufacturing. Strategic

partnerships and technology transfers can also help build domestic expertise.

However, self-reliance does not require complete technological isolation. India should continue international cooperation while diversifying suppliers, establishing backup systems and protecting critical digital infrastructure.

Conclusion

India must combine global technological cooperation with strong indigenous capabilities. A resilient technology ecosystem will enhance national security, strategic autonomy and India's ability to respond to future crises.