Science & Technology · GS - III

Examine the role of indigenous satellite navigation systems such as NavIC in strengthening India's technological self-reliance and strategic autonomy.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 31/10/2026	GS - III	Science & Technology

MARKS	WORD LIMIT
10	~150 words

Answer Hint

NavIC; indigenous space technology; strategic autonomy; positioning and timing services; disaster management; civil aviation; defence applications; technological self-reliance

Model Answer

Introduction

Navigation with Indian Constellation (NavIC), developed by ISRO, is India's independent regional satellite navigation system. It strengthens the country's capabilities in positioning, navigation and timing services.

Significance of NavIC

1. **Strategic autonomy:** Reduces dependence on foreign navigation systems and strengthens India's control over critical positioning infrastructure.
2. **Civilian applications:** Supports transportation, fisheries, surveying, logistics and location-based services.
3. **Disaster management:** Provides positioning information useful for emergency response, search and rescue operations.
4. **Strategic applications:** Supports defence-related navigation and operational coordination.
5. **Technological development:** Promotes indigenous satellite manufacturing, precision timing and advanced space research.

Challenges and Way Forward

India must ensure satellite continuity, improve signal accuracy, expand compatible receiver devices and encourage private-sector participation in navigation-based applications.

Conclusion

Modernisation of NavIC through next-generation satellites can strengthen India's technological self-reliance and establish a resilient foundation for civilian and strategic navigation services.

BECOME IAS
AI POWERED UPSC PREP