Geography · GS - I

Why is Indian Regional Navigational Satellite System (IRNSS) needed? How does it help in navigation?

EXAM YEAR	PAPER	SUBJECT
2018	GS - I	Geography

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Navigation autonomy; regional satellite coverage; strategic security; transport management; positioning services; timing accuracy; disaster response; technological self-reliance

Model Answer

Introduction

The Indian Regional Navigational Satellite System (IRNSS), operationally known as NavIC, is India's indigenous satellite navigation system designed to provide positioning, navigation and timing services.

Why Is IRNSS Needed?

1. **Strategic autonomy:** It reduces dependence on foreign navigation systems for critical applications.
2. **National security:** It supports navigation and situational awareness for defence and security agencies.
3. **Regional requirements:** It provides navigation services over India and the surrounding region.
4. **Economic applications:** It benefits transport, fisheries, logistics, surveying and infrastructure development.

How Does It Help in Navigation?

1. **Positioning:** Satellite signals help determine a receiver's location.
2. **Navigation:** Location information supports route planning and movement tracking.
3. **Timing:** Precise timing services assist telecommunications and other synchronised systems.

4. **Disaster management:** It supports the tracking of rescue teams, vehicles and vulnerable groups.
5. **Specialised services:** Fisheries and maritime users can benefit from navigation and location-based information.

Conclusion

IRNSS strengthens India’s technological self-reliance and provides strategic and civilian benefits. Its effectiveness depends on reliable receivers, wider adoption, continuous technological upgrades and integration into navigation services.

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