Defence & Security · GS - III

Assess the strategic significance of space-based capabilities for India's national security. What measures are required to strengthen India's military-space preparedness?

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MARKS	WORD LIMIT
15	~250 words

Answer Hint

Space-based surveillance, satellite communication, navigation systems, counter-space threats, China-Pakistan cooperation, military-space integration, private sector, space security

Model Answer

Space has emerged as a critical domain of national security. Satellites support military surveillance, navigation, communication, missile warning and intelligence gathering. Growing space capabilities in India's neighbourhood, including reported cooperation between Pakistan and China, underline the need for continuous technological preparedness.

Strategic significance for India:

1. **Enhanced surveillance:** Satellites provide real-time and persistent observation of borders, military movements and strategic infrastructure.

2. **Operational coordination:** Satellite communication and navigation improve coordination among geographically dispersed defence forces.

3. **Early warning:** Space-based sensors can contribute to detecting missile launches and assessing emerging threats.

4. **Strategic deterrence:** Resilient space assets strengthen military preparedness and reduce dependence on vulnerable terrestrial infrastructure.

Measures to strengthen preparedness:

- Expand indigenous satellite constellations and surveillance capabilities.
- Improve protection against jamming, spoofing and cyberattacks.
- Strengthen military-space integration and inter-service coordination.
- Promote private-sector participation in satellite manufacturing and launch services.
- Develop space situational awareness and resilient backup systems.
- Enhance international cooperation on responsible behaviour and space security.

Conclusion

India must treat space as an increasingly contested strategic domain. A combination of indigenous technology, military preparedness, private-sector innovation and international cooperation is essential to protect national security interests.

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