Defence & Security · GS - III

Assess the significance of indigenous, decentralised communication technologies in strengthening India's military preparedness along remote and strategically sensitive borders.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 17/11/2026	GS - III	Defence & Security

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Tactical communication, mesh networking, operational autonomy, communication resilience, indigenous defence technology, electronic warfare, cybersecurity, strategic autonomy.

Model Answer

Introduction

Reliable communication is essential for military coordination, situational awareness and rapid decision-making. Indigenous mesh-based tactical radios can address connectivity gaps in remote border regions where conventional infrastructure is unavailable or vulnerable.

Strategic Significance

1. **Operational resilience:** Decentralised networks enable communication through interconnected nodes without dependence on a central tower or satellite link.

2. **Border security:** They can improve connectivity in mountainous terrain, deep valleys and isolated forward posts.

3. **Strategic autonomy:** Indigenous development reduces dependence on foreign communication equipment and external supply chains.

4. **Cost-effectiveness:** Low-cost systems can facilitate wider deployment and support modernisation of frontline units.

5. **Technological innovation:** Such technologies strengthen India's domestic defence ecosystem and encourage participation by startups and academic institutions.

Limitations and Priorities

Mesh networks are not inherently immune to electronic warfare. Signal interference, cybersecurity threats, interoperability, battery limitations and ruggedisation remain important concerns. The military must prioritise encryption, anti-jamming capabilities, field testing and integration with existing communication systems.

Conclusion

Indigenous tactical communication technologies can strengthen battlefield connectivity and operational autonomy. Their effectiveness, however, depends on secure design, rigorous testing and integration into a comprehensive military communication architecture.

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