Defence & Security · GS - III

Assess the strategic importance of integrated air defence systems in protecting India's critical military and civilian infrastructure against emerging aerial threats.

EXAM YEAR	PAPER	SUBJECT
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MARKS	WORD LIMIT
15	~250 words

Answer Hint

Integrated air defence, S-400, ballistic missiles, drones, cruise missiles, airspace surveillance, deterrence, indigenous defence production

Model Answer

The growing use of drones, precision-guided weapons and long-range missiles has transformed the nature of aerial warfare. India's deployment of advanced systems such as the S-400 reflects the increasing importance of layered air defence in national security planning.

Strategic significance

1. **Protection of critical assets:** Integrated air defence can protect military installations, airbases, command centres, energy facilities and strategic infrastructure.
2. **Countering diverse threats:** Different interceptor capabilities help address aircraft, cruise missiles and selected ballistic missile threats.
3. **Strengthening deterrence:** The ability to detect and intercept incoming threats raises the operational costs of hostile aerial attacks.

4. **Improving operational flexibility:** Integration with radar networks, fighter aircraft and other defence systems enables coordinated responses across different operational environments.

Emerging vulnerabilities

1. **Drone saturation:** Large numbers of inexpensive drones can impose disproportionate costs on expensive interception systems.
2. **Electronic warfare:** Jamming, spoofing and disruption of communication networks can undermine detection and coordination.
3. **Cost asymmetry:** Using high-value interceptors against relatively inexpensive threats may create sustainability concerns.
4. **Technological dependence:** Reliance on foreign platforms can expose maintenance, supply-chain and upgrade requirements to external constraints.

India's capability requirements

India needs a network-centric air defence architecture combining long-, medium- and short-range systems, indigenous radar development, counter-drone technologies and secure command networks. Continued investment in domestic defence manufacturing and technological integration is equally important.

Ultimately, the effectiveness of air defence depends not merely on acquiring advanced missile systems but on their integration, operational readiness and ability to respond to evolving threats.

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