Defence & Security · GS - III

“The integration of Artificial Intelligence and indigenous technologies into naval operations is essential for strengthening India's maritime security and strategic autonomy.” Discuss.

EXAM YEAR	PAPER	SUBJECT
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MARKS	WORD LIMIT
10	~150 words

Answer Hint

Artificial Intelligence, Indian Navy modernisation, unmanned systems, maritime surveillance, Indian Ocean Region, Atmanirbhar Bharat, indigenous defence manufacturing, technological innovation, cybersecurity, strategic autonomy, defence preparedness.

Model Answer

Introduction

The changing nature of maritime threats requires advanced technologies and modern naval capabilities. The Indian Navy's focus on Artificial Intelligence (AI), unmanned systems and indigenous platforms reflects India's efforts to strengthen maritime security and achieve defence self-reliance.

Main Body

Significance of AI and indigenous technologies:

1. Enhanced surveillance: AI can analyse maritime data and help detect suspicious vessels and potential threats.

2. Operational efficiency: Unmanned aerial and underwater systems can support reconnaissance, surveillance and selected high-risk missions.
3. Faster decision-making: AI-assisted systems can improve situational awareness and coordination.
4. Strategic autonomy: Indigenous research and manufacturing reduce dependence on foreign suppliers and strengthen domestic defence industries.
5. Indian Ocean security: Advanced naval capabilities help protect sea lanes, ports and India's maritime interests.

Challenges and Way Forward

Cyberattacks, technical failures, high development costs and dependence on critical imported components remain concerns. India should invest in research, skilled personnel, indigenous production, rigorous testing and human oversight.

Conclusion

Integrating AI with indigenous naval technology can strengthen India's maritime preparedness and strategic autonomy. However, technological modernisation must be supported by reliable systems, cybersecurity and responsible human supervision.

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