Science & Technology · GS - III

How is S-400 air defence system technically superior to any other system presently available in the world?

EXAM YEAR	PAPER	SUBJECT
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MARKS	WORD LIMIT
10	~150 words

Answer Hint

Russian-made air defence system, multiple interceptor missiles, long-range detection, engagement range, simultaneous target tracking, multi-layered defence, ballistic missiles, aircraft and drones, strategic deterrence, operational limitations

Model Answer

Introduction

The S-400 Triumf is a Russian long-range surface-to-air missile defence system designed to detect, track and intercept a wide range of aerial threats.

Major Technical Advantages

- **Multiple engagement ranges:** It can use different interceptor missiles, enabling engagement at varying distances and altitudes.
- **Multi-target capability:** Its radar network can track multiple targets and support engagements against several threats simultaneously.
- **Diverse threat coverage:** It is designed to counter aircraft, cruise missiles, certain ballistic missiles and other aerial threats.
- **Mobile deployment:** Its road-mobile launchers and command systems allow redeployment and flexible positioning.

- **Layered defence:** Different missile types provide defence against threats at different ranges, strengthening protection of strategic installations.
- **Integrated radar system:** Long-range surveillance and fire-control radars support early detection and engagement.

Qualification

The S-400 is considered one of the world's most capable long-range air defence systems, but it cannot be conclusively described as technically superior to every alternative. Actual performance depends on radar conditions, electronic warfare, terrain, interceptor availability, crew training and integration with other systems.

Conclusion

The S-400 can strengthen India's air defence and strategic deterrence, but its effectiveness depends on integration with indigenous radars, fighter aircraft and other air defence layers.

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