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Daily news summary**ISRO Gaganyaan Crew Escape System Puller Design**

UPSC Civil Services · 24 August 2026 · Prelims and Mains

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WHY IN NEWS

- ISRO detailed the technological components of the Gaganyaan Crew Escape System (CES), highlighting its automated launch abort mechanisms.

WHAT IS THE CREW ESCAPE SYSTEM?

- Emergency safety mechanism designed to rapidly pull the crew module away from the launch vehicle during an emergency or launch trajectory failure.
- Utilizes high-thrust solid motor boosters capable of automatically activating within milliseconds upon fault detection.

KEY TECHNICAL HIGHLIGHTS

- Employs a 'puller' design architecture, where escape motors are mounted above the module to pull it clear rather than pushing from beneath.
- Designed to withstand extreme gravitational forces while ensuring safe splashdown recovery via automated parachute systems.

KEY TERMS

- **Crew Escape System:** An autonomous safety abort mechanism designed to rescue spaceflight personnel in event of launch vehicle failure.
- **Puller Design Architecture:** An escape design configuration where abort engines are placed ahead of the payload to pull it clear of the rocket.

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PRELIMS FACTS

- ISRO's Gaganyaan utilizes a puller-type **Crew Escape System** to isolate astronauts during launch aborts.

MAINS DISCUSSION

- Detail the indigenous safety technologies developed by ISRO for human spaceflight missions.

KEY DATA

- **Mission Name:** Gaganyaan - India's flagship human spaceflight mission targeting low Earth orbit.
- **Developer:** Indian Space Research Organisation (ISRO) - National space agency developing indigenous launch abort system technologies.

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