Flight Acceptance Test of Cryogenic Engine (CE20)

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Why in News?

The Indian Space Research Organisation (ISRO) recently conducted a successful Flight Acceptance Test of a cryogenic engine for the next LVM3 mission.

- The ***indigenous CE20 cryogenic engine*** will power the upper stage of the next LVM3 launch, designated LVM3-M7.

  LVM-3 is India's heaviest operational launch vehicle.

- **NPS -** It also marked the first time the space agency used a newly developed Nozzle Protection System (NPS) during a flight acceptance test.
- NPS is designed to enable testing of the CE20 engine fitted with its full area-ratio 100 nozzle under sea-level conditions.
- The results confirmed the satisfactory performance of both the engine systems and the NPS.
- **Thrust Range -** The engine is qualified to operate across a thrust range of ***19 to 22 tonnes*** and has successfully flown on eight consecutive LVM-3 missions.
- **Launches**
  - These include Chandrayaan-2, Chandrayaan-3 and 3 commercial launches.
  - The engine has also completed the human-rating qualification required for use in the Gaganyaan program, India's first human spaceflight mission.
- The new system simplifies these procedures, reduces the resources needed for engine testing and enables longer-duration tests.

Reference
Times of India | CE20 cryogenic engine