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ISRO Successfully Tests CE20 Cryogenic Engine at 22-Tonne Thrust

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The Indian Space Research Organisation successfully conducted a sea-level hot test of its CE20 cryogenic engine at 22-tonne thrust at the ISRO Propulsion Complex in Mahendragiri, Tamil Nadu. The test ran for about 165 seconds, validating the engine's performance at a higher thrust level.

Purpose of the Test

The CE20 cryogenic engine powers the upper stage of the LVM3 launch vehicle, India's heaviest rocket. The successful test will help increase the payload capacity of LVM3 and strengthen its capability for future space missions.

Significance for Future Missions

The upgraded engine is expected to support major upcoming missions, including India's human spaceflight programme, Gaganyaan, and other heavy satellite launches. Higher thrust levels will enable the rocket to carry heavier payloads into orbit and support more complex missions.

About the CE20 Cryogenic Engine

CE20 is India's most powerful indigenous cryogenic rocket engine.

Developed by the Liquid Propulsion Systems Centre (LPSC) of ISRO.

It uses liquid hydrogen (LH₂) as fuel and liquid oxygen (LOX) as oxidiser.

Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040
Phone: **044 4353 9988 / 98403 94477 / Whatsapp : 09710729833**

Designed to power the C25 cryogenic upper stage of the LVM3 rocket.

About Cryogenic Engines

Cryogenic engines operate using super-cooled propellants (typically liquid hydrogen and liquid oxygen).

They provide higher efficiency and thrust, making them suitable for heavy satellite launches and deep-space missions.

About LVM3 (Launch Vehicle Mark-3)

Formerly called GSLV Mk-III.

India's heaviest launch vehicle.

Capable of placing about 8,000 kg payload into Low Earth Orbit (LEO).

It will be used for the Gaganyaan human spaceflight mission.

ISRO Propulsion Complex (IPRC)

Located at Mahendragiri in Tamil Nadu.

Main facility for testing liquid and cryogenic rocket engines.