4. Small Satellite Launch Vehicle-D2

Prelims Syllabus: Science & Technology

Mains Syllabus: GS-III Science & Technology - Awareness in the fields of it, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

Why in News?

- The Indian Space Research Organisation (ISRO) is undertaking the second development flight of the Small Satellite Launch Vehicle (SSLV)-D2 from Satish Dhawan Space Centre in Sriharikota.

Highlights:

- SSLV-D2 is intended to place ISRO's EOS-07, Antaris's (U.S.-based firm) Janus-1 and the Chennai-based space start-up Space Kidz's AzaadiSAT-2 satellites into a 450-km circular orbit in its 15-minute flight.

- The objective of the development of the EOS-07 satellite is to design and develop payload instruments compatible with microsatellite launch vehicles and technologies that are required for future operational satellites.
- AzaadiSAT-2 has been developed by about 750 girl students across India guided by Space Kidz India start-up in Chennai.

Small Satellite Launch Vehicle (SSLV)-D2:

- The Small Satellite Launch Vehicles cater to the launch of satellites of up to 500 kgs to Low Earth Orbits on a "launch-on-demand" basis.
- SSLV is a cheaper alternative for placing small payloads in orbit and can carry multiple nano, micro and small satellites.
- SSLVs further boast of facilitating low-cost access to space, offering low turnaround time, flexibility in accommodating multiple satellites, and requiring only basic launch infrastructure.
- The Centre had sanctioned a total of ₹169 crores for the development project, which includes the cost of development, qualification of vehicle systems and flight demonstration through the three planned development flights named SSLV-D1, SSLV-D2 and SSLV-D3.
- SSLV had its maiden flight SSLV-D1 in August 2022.
- SSLV-D2 launch vehicle uses three solid stages which are then followed by a liquid-fuel-based Velocity Trimming Module (VTM) to place satellites in the intended orbits.