Syllabus subtopic: Science and Technology - developments and their applications and effects in everyday life; Achievements of Indians in science & technology; indigenization of technology and developing new technology.

Prelims and Mains focus: about the satellite and its applications; about geostationary orbit

News: The nation's latest communication satellite, GSAT-30, was sent to space from the Guiana Space Centre in Kourou at 2:35 a.m. IST on Friday.

About the launch

• In a flight lasting over 38 minutes, European Ariane-5 space vehicle VA-251 released GSAT-30 in an initial elliptical geosynchronous orbit. The ISRO Master Control Facility picked up its signals immediately and found its systems healthy.

• Over the coming weeks MCF engineers will gradually adjust it into a final circular orbit 36,000 km from earth and apparently fixed at 83° East longitude over the country.

• ISRO hired a foreign launcher as GSAT-30 is much heavier than the 2,000-kg lifting capacity of its geostationary launch vehicle GSLV-MkII.

• As for the newer and more powerful GSLV-MkIII that can lift up to 4,000 kg, the space agency plans to save the two or three upcoming MkIIIs mainly for its first human space flight Gaganyaan of 2022 and two preceding crew-less trials. The first Indian crew-less test flight is planned later this year.

• A European communication satellite called EUTELSAT KONNECT was the co-passenger of GSAT-30.

About GSAT-30 satellite
• The 3,357-kg satellite will replace INSAT-4A which was launched in 2005 and marks the first mission of the year for Indian Space Research Organisation (ISRO).

• The high-power satellite is equipped with 12 normal C band and 12 Ku band transponders.

Applications

• GSAT-30 will provide DTH (direct to home) television services, connectivity to VSATs (that support working of banks') ATMs, stock exchange, television uplinking and teleport services, digital satellite news gathering and e-governance applications.

• The satellite will also be used for bulk data transfer for a host of emerging telecommunication applications.

• Its unique configuration provides flexible frequency segments and flexible coverage. The satellite will provide communication services to Indian mainland and islands through the Ku band and wide coverage over Gulf countries, a large number of Asian countries and Australia through the C band.

About Indian Space Research Organisation (ISRO)

• The Indian Space Research Organisation is the space agency of the Government of India and has its headquarters in the city of Bengaluru.

• Its vision is to "harness space technology for national development while pursuing space science research & planetary exploration".

• The Indian National Committee for Space Research (INCOSPAR) was established in the tenure of Jawaharlal Nehru under the Department of Atomic Energy (DAE) in 1962, with the urging of scientist Vikram Sarabhai recognizing the need in space research.
INCOSPAR grew and became ISRO in 1969, also under the DAE.

In 1972, Government of India had setup a Space Commission and the Department of Space (DOS), bringing ISRO under the DOS. The establishment of ISRO thus institutionalized space research activities in India.

It is managed by the DOS, which reports to the Prime Minister of India.