15 April 2019: UPSC Exam PIB Summary & Analysis

Successful Trial of 'Nirbhay' Sub-Sonic Cruise Missile

Context:

- Defence Research & Development Organisation (DRDO) successfully test fired indigenously designed & developed Long Range Sub-Sonic Cruise Missile **"Nirbhay"** from the Integrated Test Range (ITR), **Chandipur Odisha.**

Details:

- It is the sixth development flight trial with the objective to prove the repeatability of boost phase, cruise phase using waypoint navigation at very low altitudes.
- The missile took off vertically turning horizontally into the desired direction, booster separated, the wing deployed, the engine started, cruised all the intended waypoints. The missile demonstrated its sea-skimming capability to cruise at very low altitudes.
- The entire flight was fully tracked by a chain of **Electro-Optical Tracking Systems,** Radars and Ground Telemetry Systems deployed all along the sea coast.
- All the mission objectives were met.

MoU between India and the Republic of Korea

Context:

- The Union Cabinet, chaired by the Prime Minister, was apprised about an MoU signed in February 2019 between India and the Republic of Korea.

Details:

- Department of Posts, Ministry of Communications, Government of India and The Ministry of Science and ICT (Korea Post), Government of the Republic of Korea have mutually agreed to jointly issue Postage Stamps on the theme **"Queen Hur Hwang-ok of Korea".**
- The joint stamps will be released on a mutually agreed date by the end of 2019.

MoU between India and Brazil

Context:

- The Union Cabinet, chaired by the Prime Minister, was apprised about an MoU signed in May 2018 between India and Brazil.

Details:

- The MoU has been signed to strengthen the ties between India and Brazil to work out the future agenda for the collaboration for innovation in Science & Technology diplomacy to evolve a concrete

strategic plan in the area of biotechnology education, training and research.

The broad areas of collaboration are:

- Biomedicine and health, especially biotech-based products
- Agriculture breeding practices
- Biofuel and bio-energy
- Nanotechnology and Bioinstrumentation
- Biodiversity and Taxonomy

Phase 4 of Geosynchronous Satellite Launch Vehicle (GSLV)

Context:

- The Union Cabinet, chaired by the Prime Minister, has approved ongoing GSLV continuation programme Phase-4 consisting of five GSLV flights during the **period 2021-2024.**
- The GSLV Programme - Phase 4 will enable the launch of 2 tonne class of satellites for Geo-imaging, Navigation, Data Relay Communication and Space Sciences.

Financial implications:

- The total fund requirement is Rs. 2729.13 Crores and includes the cost of five GSLV vehicles, essential facility augmentation, Programme Management, and Launch Campaign along with the additional funds required for meeting the scope of the ongoing GSLV Continuation Programme.

Benefits :

- The GSLV Continuation Programme - Phase 4 will meet the launch requirement of satellites for providing critical Satellite Navigation Services, Data Relay Communication for supporting the Indian Human spaceflight programme and the next interplanetary mission to Mars. This will also ensure the continuity of production in the Indian industry.

Implementation Strategy and targets:

- The GSLV Continuation Programme - Phase 4 will meet the demand for the launch of satellites at a frequency up to two launches per year, with maximal participation by the Indian industry. All the operational flights would be completed during the period 2021-24.

Major impact:

- The operationalization of GSLV has made the country self-reliant in the launching capability of 2 tonne class of satellites for communication & meteorological satellites. The GSLV Continuation Programme will sustain & strengthen the capability and self-reliance in the launching of similar satellites for national requirements including next-generation navigation satellites, data relay communication satellites and interplanetary missions.

Background:

- GSLV has enabled independent access to space for 2 tonne class of satellites to Geosynchronous Transfer Orbit (GTO). One of the very significant outcomes of the GSLV Continuation Programme

is the mastering of the highly complex cryogenic propulsion technology, which is an essential technological capability to launch communication satellites to GTO. This has also paved the way for the development of a high thrust Cryogenic engine & stage for the next generation launch vehicle i.e. GSLV Mk-lll.

- With the recent successful launch of **GSLV-F11 on 19th December 2018,** GSLV has successfully orbited 10 national satellites. GSLV with the indigenous Cryogenic Upper Stage has established itself as a reliable launch vehicle for communication, navigation and meteorological satellites and also to undertake future interplanetary missions.
- GSLV Continuation Programme was initially sanctioned in 2003, and two phases have been completed and the third phase is in progress and expected to be completed by Q4 of 2020-21.