Gaganyan:

Prime Minister Narendra Modi gave a name to India's first human space flight, Gaganyan, and claimed that it would be ready by 2022, the 75th year of India's independence.

About Gaganyan:

- It will be India's first manned space mission. Under it, India is planning to send three humans (Gaganyatris) into space i.e. in low earth orbit.
(LEO) by 2022 i.e. by 75th Independence Day for period of five to seven days.

- Under this mission, crew of three astronauts will conduct experiments on microgravity in space.
- The Indian Air Force and ISRO will work together on training the crew, some of the training would be at the Institute of Aerospace Medicine.
- India will be fourth nation in the world after USA, Russia and China to launch human spaceflight mission.
- The Indian Air Force and ISRO will work together on training the crew, some of the training would be at the Institute of Aerospace Medicine.
- ISRO has developed some critical technologies like re-entry mission capability, crew escape system, crew module configuration, thermal protection system, deceleration and floatation system, sub-systems of life support system etc. required for this programme.
- Some of these technologies have been demonstrated successfully through the Space Capsule Recovery Experiment (SRE-2007), Crew module Atmospheric Reentry Experiment (CARE-2014) and Pad Abort Test (2018).
- These technologies will enable ISRO in accomplishing the programme objectives in a short span of 4 years.
- GSLV Mk-III launch vehicle, which has the necessary payload capability for this mission, will be used to launch Gaganyaan.
- Two unmanned Gaganyaan missions will be undertaken prior to sending humans.
- The total programme is expected to be completed before 2022 with first unmanned flight within 30 months.
- The mission will aim to send a three-member crew to space for a period of five to seven days.
- The spacecraft will be placed in a low earth orbit of 300-400km.

**A Sivan:**

- Describing the mission as a complex one, ISRO Chairman said that it would truly be a national endeavour with the participation of ISRO,
academia, industry as well as other government and private agencies as stakeholders.

- To accelerate the programme, ISRO may consider collaborations with space agencies from friendly countries with advanced space programmes.
- The Indian Space programme has evolved from its humble beginnings into a mature national capability to utilize space technology for societal development.

**Objective:**

- Enhancement of science and technology levels in the country
- A national project involving several institutes, academia and industry
- Improvement of industrial growth
- Inspiring youth
- Development of technology for social benefits
- Improving international collaboration
2022: India’s space odyssey
What is the Human Space Flight Project all about?

- In 2022, 3 Indian astronauts, mostly flight test pilots from the IAF, will circle earth for seven days from a distance of 300-400 km.

- They will travel in a 7,000-kg crew capsule. A GSLV-MkIII launch vehicle will lift them to their orbit.

- The flight will take off from a refurbished launchpad at Sriharikota.

- The entire project could cost roughly between ₹7,000 to 9,000 crore.

**ALSO PROPOSED**

- Food, suits and other life systems for crew
- Astronaut selection & training
- Two unmanned trials, the first in two years
- A new command & tracking centre at ISTRAC, Bengaluru
- Improved launchpad at SDSC, Sriharikota

Source: PIB, IE,