

# India's Ascent in Space: Gaganyaan, Chandrayaan-4, and NISAR's Earth View

Space Exploration · Practice Test · 15 Questions

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## 1. What is the primary objective of India's Chandrayaan-4 mission?

- A) To orbit the Moon and study its surface composition.
- B) To collect lunar samples and return them to Earth.
- C) To deploy a rover on the lunar south pole.
- D) To establish a lunar communication relay satellite.

## 2. Which joint mission between NASA and ISRO is designed to provide high-resolution measurements of Earth's surface changes using dual-frequency synthetic aperture radar?

- A) Aditya-L1
- B) Chandrayaan-4
- C) NISAR
- D) Gaganyaan

## 3. As of recent updates, what is the targeted timeframe for India's first crewed Gaganyaan mission?

- A) Late 2024
- B) Early 2025
- C) First quarter of 2027
- D) By the end of 2028

## 4. What is a significant technological advancement planned for the Chandrayaan-4 mission compared to its predecessors?

- A) It will utilize a single rocket launch for all modules.
- B) It involves a two-phase launch strategy with multiple modules for sample return.
- C) It will focus solely on orbital observation of the Moon.
- D) It is designed to be a robotic-only mission without a return capability.

## 5. What unique capability will the NISAR satellite possess for Earth observation?

- A) It will be the first satellite to use two different radar frequencies (L-band and S-band).
- B) It will exclusively use optical imaging for all its observations.
- C) It will focus only on polar regions for ice cap monitoring.
- D) It will be capable of deep space communication.

**6. The Gaganyaan mission's astronauts are undergoing training. Where did the initial phase of their comprehensive training take place?**

- A) At ISRO's Astronaut Training Facility in Bengaluru.
- B) At NASA's Johnson Space Center in Houston.
- C) At the Gagarin Cosmonaut Training Centre in Russia.
- D) At the European Space Agency's training facility in Germany.

**7. What is the projected launch year for India's Venus Orbiter Mission (VOM), also known as Shukrayaan?**

- A) 2025
- B) 2026
- C) 2027
- D) 2028

**8. Which Indian private space company successfully launched India's first privately built rocket, Vikram-S, on a suborbital mission?**

- A) Agnikul Cosmos
- B) Pixxel
- C) Skyroot Aerospace
- D) Dhruva Space

**9. What is the overarching goal of India's 'Debris Free Space Mission 2030' initiative?**

- A) To establish a space debris removal service.
- B) To ensure all Indian space missions are debris-free by 2030.
- C) To develop technologies for actively capturing space debris.
- D) To create a global registry of all space debris.

**10. The Aditya-L1 mission, India's first solar observatory, is positioned at which Lagrange point?**

- A) L2
- B) L3
- C) L4
- D) L1

**11. What significant scientific finding has the Aditya-L1 mission's Visible Emission Line Coronagraph (VELC) instrument enabled regarding solar activity?**

- A) Pinpointing the start time of a Coronal Mass Ejection (CME).
- B) Detecting the presence of water vapor on the Sun's surface.
- C) Measuring the magnetic field strength of distant stars.
- D) Observing the formation of new galaxies.

**12. Which upcoming Indian space mission is planned as a lunar sample return mission, involving multiple modules and launches?**

- A) Chandrayaan-3
- B) Chandrayaan-4
- C) Chandrayaan-5
- D) Missions to Moon's poles

**13. What is a key technological feature of the NISAR satellite that distinguishes it from previous Earth observation missions?**

- A) It uses a unique combination of X-band and K-band radar.
- B) It is the first satellite to employ dual microwave frequencies (L-band and S-band).
- C) It relies solely on optical sensors for data collection.
- D) It is designed for interplanetary travel.

**14. India aims to achieve debris-free space missions by 2030 through its 'Debris Free Space Mission' initiative. What does this initiative primarily focus on?**

- A) Cleaning up existing space debris.
- B) Preventing the creation of new space debris from Indian missions.
- C) Developing technologies for asteroid mining.
- D) Establishing a space traffic management system.

**15. What is the primary role of the 'Vyomitra' robot in the preliminary Gaganyaan missions?**

- A) To test landing systems on the Moon.
- B) To collect scientific data and act as a companion for astronauts.
- C) To perform spacewalks outside the spacecraft.
- D) To navigate the spacecraft through asteroid fields.