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03 September 2026

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Daily Current Affairs Quiz 03 September 2026

Q1. On which date is EOS-05 scheduled to be launched?

- (a) 15 August 2026
- (b) 4 September 2026
- (c) 2 October 2026
- (d) 14 November 2026

Ans.(b)

Sol. The correct answer is (B) 4 September 2026

Explanation:

- The Earth Observation Satellite EOS-05 is officially scheduled to be launched on 4 September 2026 by the Indian Space Research Organisation (ISRO).
- The satellite forms a crucial part of India's continuous efforts to upgrade its space-based surveillance, weather monitoring, and agricultural assessment capabilities.
- EOS-05 (also known in its developmental phase as GISAT-1A) is placed in a geostationary orbit to provide continuous, real-time monitoring of the Indian subcontinent.
- The launch aligns with ISRO's strategic calendar for deploying advanced geostationary earth observation satellites to bolster disaster management and natural resource mapping.
- This mission reflects the technological advancements in indigenous spacecraft manufacturing under the Department of Space.

Information Booster:

- The Earth Observation Satellite (EOS) naming convention was adopted by ISRO to standardize and simplify the nomenclature of its remote sensing satellites, which were previously named based on their payloads or specific purposes (e.g., Cartosat, Oceansat, RISAT).
- According to the standard NCERT Geography curriculum (Class 11, Practical Work in Geography), remote sensing satellites are broadly classified into two categories: Sun-Synchronous (Polar) and Geostationary.
- Earth Observation Satellites are pivotal in providing critical data for the National Natural Resources Management System (NNRMS).
- They assist the government in policy-making regarding agriculture (crop yield forecasting), forestry, water resources, and urban planning.
- ISRO, established in 1969, operates under the Department of Space, which is directly overseen by the Prime Minister of India.

Additional Knowledge:

- 15 August 2026 (Option A): While August 15 marks India's Independence Day and the historical foundation day of ISRO (established August 15, 1969), it is not the scheduled launch date for the EOS-05 mission.
- 2 October 2026 (Option C): October 2 is observed as Gandhi Jayanti and the International Day of Non-Violence, but no major satellite launch corresponding to EOS-05 is slated for this date.
- 14 November 2026 (Option D): This date is widely celebrated as Children's Day in India (birth anniversary of Jawaharlal Nehru) and occasionally coincides with specific planetary mission milestones, but it does not correspond to the EOS-05 geostationary satellite launch.

Q2. Consider the following statements regarding EOS-05 and geostationary satellites:

1. EOS-05 is planned to provide near-real-time images primarily of the Indian subcontinent.
2. A geostationary satellite has an orbital period equal to the Earth's rotation period.
3. A geostationary orbit is located approximately 35,786 km above the equator.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans.(d)

Sol. The correct answer is (D) 1, 2 and 3

Explanation:

- Statement 1 is correct: EOS-05 is an agile Earth observation satellite placed in a geostationary orbit specifically to maintain a constant gaze over the Indian subcontinent, facilitating near-real-time imaging for disaster management, agriculture, and forestry.
- Statement 2 is correct: A geostationary satellite revolves around the Earth in the exact same direction (west to east) and with the same rotational period (approximately 23 hours, 56 minutes, and 4 seconds) as the Earth's rotation on its axis.
- Statement 3 is correct: As detailed in standard physics textbooks (such as NCERT Class 11 Physics, Gravitation chapter), a geostationary orbit is a circular orbit situated strictly in the Earth's equatorial plane at an altitude of approximately 35,786 kilometers above the mean sea level.
- Because all three statements accurately describe the functional and physical characteristics of the EOS-05 satellite and its geostationary orbit, the correct choice includes all statements.

Information Booster:

- The concept of a geostationary orbit was popularized by science fiction author Arthur C. Clarke, which is why it is often referred to as the Clarke Orbit.
- Geostationary satellites appear stationary from the ground, making them ideal for telecommunications, direct-to-home (DTH) television broadcasting, and continuous weather monitoring (e.g., INSAT series).
- To stay in this specific orbit, the satellite must travel at a precise orbital velocity of approximately 3.07 kilometers per second.
- Unlike polar-orbiting satellites that scan the Earth in strips as it rotates beneath them (typically at altitudes of 600-900 km), geostationary satellites provide continuous coverage of a specific large region footprint (roughly one-third of the Earth's surface).
- The laws governing these orbits are rooted in Kepler's Laws of Planetary Motion and Newton's Law of Universal Gravitation.

Additional Knowledge:

- 1 and 2 only (Option A): This option is incorrect because it fails to acknowledge the factual accuracy of the satellite altitude (35,786 km) required to maintain a geostationary orbit.

- 2 and 3 only (Option B): This option is incorrect because it omits the primary functional objective of the EOS-05 satellite, which is strictly designed to provide near-real-time imaging capabilities over the Indian region.
- 1 and 3 only (Option C): This option is incorrect as it leaves out the fundamental physics definition of a geostationary satellite, which mandates an orbital period perfectly synchronized with Earth's sidereal day.

Q3. From which launch centre is EOS-05 scheduled to be launched?

- (a) Vikram Sarabhai Space Centre
- (b) Satish Dhawan Space Centre
- (c) U R Rao Space Centre
- (d) Thumba Equatorial Rocket Launching Station

Ans.(b)

Sol. The correct answer is (B) Satish Dhawan Space Centre

Explanation:

- The Satish Dhawan Space Centre (SDSC) SHAR, located in Sriharikota, Andhra Pradesh, is the primary spaceport of the Indian Space Research Organisation (ISRO).
- EOS-05, being a heavy Earth observation satellite utilizing a robust launch vehicle (GSLV), is scheduled to be launched from the Launch Pad at SDSC.
- Sriharikota is an ideal launch site due to its proximity to the equator, which provides a natural velocity boost to the rockets due to the Earth's rotation (west to east).
- Furthermore, its location on the eastern coastline ensures that if a launch failure occurs or during normal stage separations, the rocket debris falls safely into the Bay of Bengal, minimizing danger to human populations.
- SDSC features state-of-the-art facilities for solid propellant processing, static testing of solid motors, and integration of launch vehicles.

Information Booster:

- The facility was originally named Sriharikota Range (SHAR) and was renamed in 2002 to honor Prof. Satish Dhawan, a pioneering former Chairman of ISRO.
- Standard geography and science standard texts highlight that equatorial launch sites are highly preferred for geostationary satellites because they save a massive amount of rocket fuel.
- India is also developing a second spaceport located in Kulasekharapatnam in the Thoothukudi district of Tamil Nadu, which will primarily cater to the Small Satellite Launch Vehicle (SSLV).
- A launch from the east coast takes maximum advantage of the Earth's rotational speed, which is roughly 460 meters per second at the equator.
- SDSC currently operates two functional launch pads—the First Launch Pad (FLP) and the Second Launch Pad (SLP).

Additional Knowledge:

- Vikram Sarabhai Space Centre (Option A): Located in Thiruvananthapuram, Kerala, VSSC is the lead center for launch vehicle design and development (rocket technology), but it is not a launch port for satellite missions.

- U R Rao Space Centre (Option C): Situated in Bengaluru, Karnataka, URSC (formerly ISRO Satellite Centre) is the premier center for the design, development, and assembly of Indian satellites, not a launch pad.
- Thumba Equatorial Rocket Launching Station (Option D): Located in Kerala, TERLS is historic as India's first rocket launch site, but it is currently used exclusively for launching small sounding rockets for atmospheric research, not large orbital launch vehicles like the GSLV.

Q4. Consider the following statements regarding EOS-05:

1. EOS-05 is also known as GISAT-1A.
2. EOS-05 is primarily designed for Earth observation and imaging.
3. EOS-05 is scheduled to be launched using the GSLV-F17 launch vehicle.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans.(d)

Sol. The correct answer is (D) 1, 2 and 3

Explanation:

- Statement 1 is correct: In ISRO's developmental nomenclature, EOS-05 was originally designated as GISAT-1A (Geo Imaging Satellite), before being renamed under the new standardized Earth Observation Satellite (EOS) numbering series.
- Statement 2 is correct: The satellite is inherently designed for high-resolution Earth observation. From its geostationary vantage point, it conducts multi-spectral and hyperspectral imaging to track dynamic natural phenomena like floods, cyclones, and forest fires.
- Statement 3 is correct: Due to the satellite's heavy mass (over 2,000 kg) and the requirement to inject it into a Geostationary Transfer Orbit (GTO), the Geosynchronous Satellite Launch Vehicle (GSLV), specifically the GSLV-F17 mission, is assigned for its launch.
- As all three statements present factually accurate technical configurations and designations of the satellite mission, option D is the correct choice.

Information Booster:

- Earth observation payloads typically include high-resolution cameras, synthetic aperture radars (SAR), and infrared sensors to capture data across various electromagnetic spectrum bands.
- The GSLV is a three-stage launch vehicle featuring a heavy solid rocket motor, a liquid propellant second stage, and an advanced Cryogenic Upper Stage (CUS) critical for heavy lifting.
- NCERT Physics principles outline that placing a satellite directly into a geostationary orbit requires immense energy; hence satellites are first put into a highly elliptical transfer orbit (GTO) before using their onboard propulsion to circularize their orbit.
- GISAT series satellites represent a massive leap for India's spatial surveillance, shifting from low-earth orbit (LEO) passes to continuous "staring" observation capabilities.
- The data obtained is seamlessly integrated into the Bhuvan Geoportal managed by the National Remote Sensing Centre (NRSC).

Additional Knowledge:

- 1 and 2 only (Option A): While these statements are true, omitting statement 3 fails to acknowledge the critical delivery mechanism (GSLV) designated for the mission's success.
- 2 and 3 only (Option B): This option ignores the important alternative designation (GISAT-1A), which is essential for tracking ISRO's historical mission development documentation.
- 1 and 3 only (Option C): Earth observation is the primary utility of this multi-million dollar satellite. Ignoring statement 2 eliminates the core objective of the entire space mission.

Q5. What is the full form of GSLV?

- (a) Geostationary Satellite Launch Vehicle
- (b) Geosynchronous Satellite Launch Vehicle
- (c) Geographical Satellite Launch Vehicle
- (d) Geospatial Satellite Launch Vehicle

Ans.(b)

Sol. The correct answer is (B) Geosynchronous Satellite Launch Vehicle

Explanation:

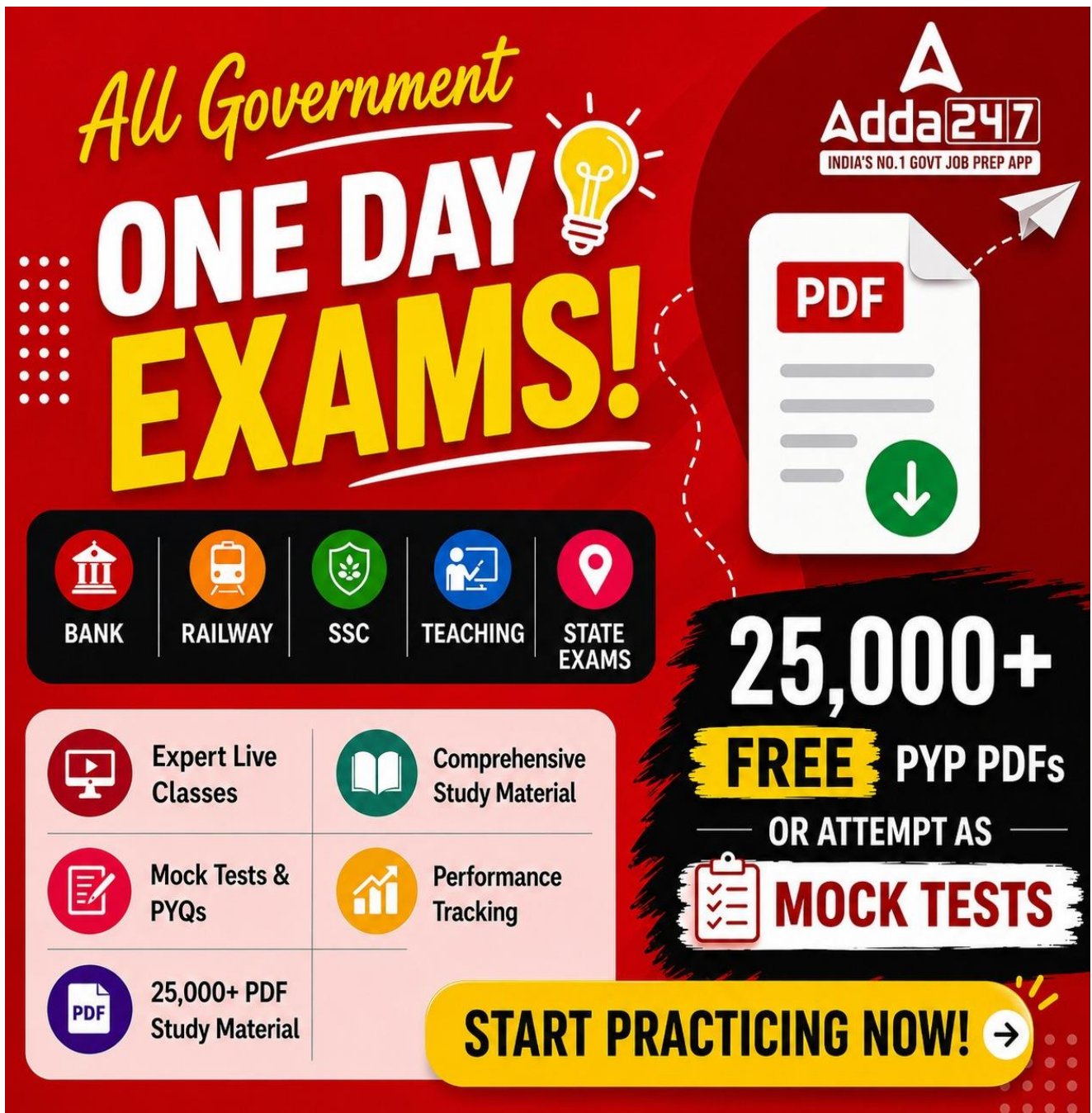
- The full form of GSLV is Geosynchronous Satellite Launch Vehicle.
- It is an expendable space launch vehicle designed, developed, and operated by the Indian Space Research Organisation (ISRO) specifically to launch heavy satellites into Geosynchronous Transfer Orbits (GTO).
- The vehicle was developed to enable India to launch its INSAT and GSAT series of communication and earth observation satellites independently, drastically reducing reliance on foreign launch providers like Arianespace.
- A standard GSLV Mk-II is a three-stage vehicle. The first stage uses solid fuel, the second utilizes liquid earth-storable propellants (Vikas engine), and the highly complex third stage uses a Cryogenic engine fueled by liquid hydrogen and liquid oxygen.
- Developing the cryogenic upper stage was one of the greatest technological challenges ISRO faced and overcame, cementing India's position as a global space power.

Information Booster:

- **GSLV vs PSLV:** While the Polar Satellite Launch Vehicle (PSLV) is ISRO's highly reliable "workhorse" designed primarily for lighter payloads into low-earth polar orbits, the GSLV is the heavy-lifter designed for high-altitude geosynchronous missions.
- **GSLV Mk-III** (now known as LVM3 - Launch Vehicle Mark 3) is a much heavier, modernized variant capable of placing 4,000 kg satellites into GTO and 8,000 kg into Low Earth Orbit.
- The physics of rockets (momentum conservation and thrust) is a fundamental topic in NCERT Class 11 Physics.
- A geosynchronous orbit is a broad term for an orbit that matches the Earth's rotational period; a geostationary orbit is a specific type of geosynchronous orbit situated directly above the equator.
- Important GSLV missions include the launching of the Chandrayaan-2 and Chandrayaan-3 missions.

Additional Knowledge:

- Geostationary Satellite Launch Vehicle (Option A): Although the vehicle launches satellites into geostationary orbits, the official, technically accurate acronym expanded by ISRO is "Geosynchronous." Geostationary is a subset of geosynchronous orbits.
- Geographical Satellite Launch Vehicle (Option C): Geography refers to the study of lands and terrestrial phenomena. The word is not used in rocket nomenclature. The payload may map geography, but the rocket is named after its target orbit.
- Geospatial Satellite Launch Vehicle (Option D): Geospatial refers to data associated with a particular location on Earth's surface. While satellites launched by GSLV provide geospatial data, this does not represent the acronym of the launch vehicle.



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