ENGLISH LANGUAGE & LOGICAL REASONING

PASSAGE - I

(Excerpts with formatting edits only, from **The Indian Express**, *Friday, June 27, 2025)**

By Mylswamy Annadurai

The sight of a beaming Shubhanshu Shukla at the International Space Station (ISS) has to be one of the most indelible images of our time. Shukla's journey opens a new chapter in India's space programme — the era of human space travel. It builds upon a series of extremely impressive achievements of the Indian Space Research Organisation (ISRO) in the past decade or so, each of which resulted in acquiring several critical technical capabilities. Human spaceflight capability is the next achievement in this line.

The fact that Shukla's journey has not come on India's own mission does not take anything away from the significance of this moment. The value of the feat is a little different — not just from other first-time astronauts on the Axiom-4 mission, but also from many other astronauts who have been to space on similar missions earlier. That's because it is not a one-off incident — it's the beginning of a process. Shukla himself put it aptly when he said it was not the beginning of his journey but the beginning of India's human spaceflight programme.

So far, citizens from about 50 countries have been to space, but only three nations actually have the capacity to send humans to space — the United States, Russia, and China. While India has sent humans to space before, they could very well be part of an Indian mission, governed by Indian flight and mission management, in the not-so-distant future.

At the same time, the Axiom-4 mission has accelerated India's own Gaganyaan mission. The fact that Shukla and three other astronauts selected for the Gaganyaan mission had to undergo training in Russia because India does not have those facilities shows that India is nearing readiness. Shukla and his colleague Prasahl Balakrishnan Nair, who was on standby for the Axiom mission, also went through advanced training at a NASA facility. Having gained this knowledge and experience, they can now be utilised to set up an advanced astronaut training facility in India itself — a significant step toward self-reliance in human spaceflight programmes.

The experience gained by Shukla can have more immediate benefits, and not just as inputs in the Gaganyaan programme. Shukla, and the three other astronauts selected for the Gaganyaan mission, had to undergo training in Russia because India does not have these facilities. Shukla and Prasahl Balakrishnan Nair, who was on standby for the Axiom mission, also went through advanced training at a NASA facility. Having gained this knowledge and experience, they can now be utilised to set up an advanced astronaut training facility in India itself — a significant step toward self-reliance in human spaceflight programmes.

This is not the only reason this mission is significant for India. The space sector has been going through a very exciting phase and is witnessing hectic activity. Private players, particularly in the U.S., are entering the field in a big way, and there has been a proliferation of space-based assets. The lower Earth orbits — 200 km to 2,000 km from the Earth — are the most active regions, primarily for commercial reasons. This is where most of the satellites and other assets are deployed. The ISS is also located in this band.

The longer-term goal seems to be to elevate this arena largely to private players to exploit for commercial activities and service the growing need for space-based data for applications on Earth. National space agencies can then focus their energies on more ambitious projects, like creating long-term settlements on the Moon, and possibly Mars. Human spaceflight capability is a crucial element of these plans. The U.S. and China are aggressively pursuing this goal. India's advantage is that it has not yet burdened its national space programme with a station of its own. India

may soon find itself in a position to participate in international collaborations involving the use of facilities that belong to other countries as well as private entities.

We will see much cooperation in the future. ISRO was not a passive participant in the Axiom-4 mission. It had sent a strong team to the U.S. in the weeks leading up to the launch, which was closely involved with the launch operations.

There will be more such cooperation in the future. The ISS is already an extension and is to be decommissioned by 2030. The ISI itself is a self-relevant model of international cooperation, with several countries contributing to its creation and operation. India is most likely to have a key part to play.

India has not built its own space station yet but has long been discussing the possibility of one. Human spaceflight capability is an important part of the future replacement for the ISS. It cannot be ruled out that, some years from now, India may host a platform similar to the ISS, built and operated in partnership with other countries.

The experience gained by Shukla and others in the Axiom mission will thus have both immediate and long-term consequences. It will help accelerate India's human spaceflight programme and contribute to the design and operation of a possible future Indian space station.

1. What is the author's primary contention in the passage?

A. The Axiom-4 mission marks India's official entry into global human space exploration through independent operation.

B. Shukla's journey is symbolically important but technically insignificant compared to India's previous achievements.

C. Shukla's participation in the Axiom-4 mission signals both India's readiness for indigenous human spaceflight and its growing integration into global space cooperation.

D. India should prioritize establishing its own permanent space station before participating in international ventures.

2. In the context of the passage, the phrase *"not a one-off incident"* most nearly conveys that:

A. The mission was unexpected and unlikely to be repeated.
B. The mission represents the starting point of a sustained national effort.
C. The mission was planned exclusively by foreign agencies.
D. The mission had only symbolic political value.

3. Which of the following best captures the author's tone throughout the passage?

A. Critical and skeptical of India's dependence on international collaboration.
B. Analytical yet optimistic about India's gradual path to human spaceflight independence.
C. Detached and technical, avoiding evaluation of India's performance.
D. Nationalistic and defensive toward global competitors.

4. What can be inferred from the author's statement that "India has not yet burdened its national space programme with a station of its own"?

A. India deliberately avoided creating a space station to maintain flexibility and focus on capability-building.
B. India's lack of a space station represents a strategic weakness in its space policy.
C. India's policy failures have delayed its entry into long-term space habitation.
D. India relies solely on U.S. and Russian space stations for all orbital research.

5. Which of the following best summarizes the author's outlook for India's space future?

A. India's role will remain peripheral because major powers dominate human spaceflight.
B. India will increasingly collaborate internationally while simultaneously advancing indigenous capabilities.
C. India should withdraw from global cooperation to preserve strategic autonomy.
D. Private players will overtake ISRO's leadership, limiting government-led progress.

6. Which of the following assumptions underlies the author's argument that Shukla's mission will benefit India's space programme?

A. Experience from collaborative missions can be effectively transferred to national projects.
B. Only missions undertaken domestically can yield technological benefits.
C. International training has limited relevance to indigenous contexts.
D. Astronaut experience is unrelated to mission design or engineering capabilities.

7.Which of the following, if true, would most strengthen the author's argument that India is approaching human spaceflight self-reliance?

A. ISRO announces that future astronaut training will occur entirely at its upcoming Bengaluru centre.
B. NASA declines further training partnerships with Indian astronauts.
C. India's expenditure on space research declines over the next five years.
D. Russia withdraws its collaboration with India's space missions.

8. Which of the following conclusions most logically follows from the passage?

A. The Axiom-4 mission represents the culmination of India's space ambitions.

B. India's future success in human spaceflight depends on balancing cooperation with self-reliance.
C. India's decision to collaborate internationally shows its inability to sustain independent missions.
D. The Gaganyaan programme's progress has been entirely dependent on Western funding.

9. Which of the following, if true, would most weaken the author's optimism about India's future human spaceflight capability?

A. Private Indian aerospace companies withdraw from ISRO collaborations due to funding shortages.
B. India secures permanent observer status at the ISS successor project.
C. A joint India–U.S. crewed mission is scheduled for 2028.
D. ISRO begins commercial satellite launches for private clients.

10. Which analogy best reflects the author's reasoning structure in the passage?

A. A student who trains abroad and uses that knowledge to establish a new research lab in their own country.
B. A company that imports all its technology and never invests in domestic production.
C. A country that rejects foreign partnerships to maintain its independence.
D. A team that wins because it imitates others without learning from experience.

LEGAL REASONING

Disclaimer

The following passage is an educational re-articulation of the *Forest Rights Act, 2006*, designed for academic and examination purposes. It does not represent the view of any judicial authority or government body. Candidates must answer all subsequent questions based solely on the legal principles stated herein.

The *Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006*—commonly called the *Forest Rights Act (FRA)*—embodies an effort to correct historical injustices suffered by forest-dwelling communities. It recognises their traditional rights over forest land and resources while balancing the imperatives of ecological conservation.

Historically, the colonial and postcolonial forest regimes in India regarded forests primarily as State assets. The *Indian Forest Acts* of 1865, 1894, and 1927 consolidated governmental control and restricted customary access, criminalising traditional livelihoods. After Independence, the situation largely persisted until the FRA's enactment in 2006—an outcome of decades of advocacy for justice to forest-dependent Scheduled Tribes and Other Traditional Forest Dwellers (OTFDs).

The FRA seeks to transform this historical relationship by recognising four types of rights: title rights, use rights, relief and rehabilitation rights, and forest management rights.

- *Title rights* confer ownership over cultivated forest land up to four hectares.
- *Use rights* extend to minor forest produce, grazing, and seasonal resource use.
- *Relief rights* secure protection from arbitrary eviction and displacement.
- *Management rights* empower communities to conserve, regenerate, and manage forest resources sustainably.

The Act applies to two principal beneficiary categories:

1. Forest-Dwelling Scheduled Tribes (FDSTs); and
2. Other Traditional Forest Dwellers (OTFDs)—those who have lived in forests for at least three generations (75 years) before 13 December 2005.

A notable procedural innovation is the Gram Sabha's authority to initiate recognition of both individual and community forest rights. The Gram Sabha identifies eligible claimants, whose cases pass through taluka and district-level committees. This bottom-up structure, with participatory verification and appeal provisions, reflects the democratic ethos of decentralised forest governance.

The Act's normative framework is reinforced by complementary statutes—such as the *Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA)*—which empower Gram Sabhas in tribal areas, and the *National Forest Policy, 1988*, which emphasises ecological balance and community participation. Together, they mark a shift from exclusionary conservation to participatory forest management.

However, practical implementation has faced multiple obstacles. Bureaucratic apathy, lack of technical capacity, and competing claims between conservation authorities and community rights have stalled progress. In many states, the rejection rate of claims exceeds 50%, often without due process or notice.

Forest departments frequently misconceive FRA as an encroachment regularisation measure rather than a rights recognition statute. This has led to tensions between forest officials and communities, especially in areas affected by insurgency or industrial interests.

Judicial developments have added further complexity. Recently, the Supreme Court directed states to evict persons whose claims under the FRA were rejected. Rights groups argue that such eviction orders violate natural justice, as many rejections were issued without due verification. The ruling reignited debate on whether wildlife conservation objectives can justify displacement of those who have lived symbiotically with forests for centuries.

The FRA operates at the intersection of three constitutional principles:

1. Social Justice and Inclusion (Articles 38 & 46) – uplifting marginalised Scheduled Tribes and traditional dwellers.
2. Environmental Protection (Articles 48A & 51A(g)) – safeguarding ecological balance.
3. Federalism and Decentralisation (73rd Amendment & PESA) – empowering local governance through Gram Sabhas.

Balancing these goals requires reconciling ecological conservation with distributive justice. Proponents contend that recognising community forest rights enhances conservation by aligning livelihood security with sustainable management. Critics argue that extensive recognition of individual rights could fragment forests and accelerate degradation.

The Supreme Court's recent interventions therefore raise a fundamental constitutional question:

Can the State's duty to protect the environment override the statutory recognition of tribal and community forest rights, or must both be harmonised through participatory governance and procedural fairness?

The resolution of this tension will determine not only the success of the FRA but also the future model of environmental justice in India—whether centralised control persists or forest governance truly becomes community-led.

11. In a remote district of Odisha, the Gram Sabha of Bhairavpur village passed a unanimous resolution granting Community Forest Resource (CFR) rights to all 200 families, including non-tribal artisan communities who have lived, worshipped and collectively protected the same forest ecosystem for well over a century. The District Level Committee (DLC) rejected the resolution, asserting CFRs under the FRA are exclusively for Scheduled Tribes. The State government also refused recognition citing ecological vulnerability and alleged encroachments, invoking the Wildlife Protection Act, 1972, which restricts human activity in certain notified areas. The community contends this refusal violates both Article 14 (equality) and PESA, 1996, which mandates Gram Sabha consultation and protections. The DLC and State argue that conservation imperatives and statutory wildlife restrictions must prevail to protect a fragile habitat. The villagers seek court intervention to enforce their CFR recognition.

A. CFRs are strictly limited to Scheduled Tribes; non-tribal communities cannot receive CFR rights.

B. CFR recognition turns on customary and long-standing collective use; non-tribal communities with demonstrated historic protection roles may be entitled to CFRs.

C. The Wildlife Protection Act automatically blocks any CFR recognition in ecologically sensitive zones.

D. Only the State government (not the Gram Sabha) can decide CFR recognition when wildlife concerns are asserted.

12. A tribal woman in Gadchiroli has cultivated two hectares of forest land for decades. When she applied for title rights under the FRA, her claim was rejected because she lacked formal documentary proof predating 2005. She produced oral testimony from elders and a Gram Sabha-certified village map. The forest department insists the FRA requires "verifiable evidence," interpreted by them as documentary records only, to prevent fraudulent encroachments. The woman argues the FRA was enacted specifically to recognise traditional and customary occupation and that oral and Gram Sabha evidence should suffice under the Act and the principle of substantive equality. The State contends strict proof is needed to protect forest integrity. The applicant appeals the denial.

A. Absence of formal documentary proof is fatal; pre-2005 paperwork is mandatory.

B. The FRA allows traditional/customary evidence (oral testimony, Gram Sabha certification, maps); documentary proof is not the sole criterion.

C. All claims lacking formal documents should be rejected but allowed a temporary usufruct pending verification.

D. Claimants must first obtain a court declaration of ownership before administrative recognition under the FRA.

13. Following a Supreme Court order directing states to evict persons whose FRA claims were rejected, a district in Madhya Pradesh issued eviction notices to 600 families. Later review showed many rejections were processed summarily without offering applicants the statutory opportunity to appeal to the District Level Committee (Section 6(4)). The administration argues it must comply with the high court's eviction direction. Rights activists say eviction without procedural compliance violates Article 21 and natural justice; they move the court for interim relief. The State counters that environmental protection under Article 48A permits summary action to protect critical eco-systems once claims are rejected. The controversy raises whether procedural safeguards in the FRA and natural justice principles must be exhausted before eviction.

A. Eviction orders issued in compliance with the Supreme Court are automatically lawful, regardless of procedural lapses.

B. Procedural compliance (opportunity to be heard and appeals process under Section 6) must be satisfied before evictions proceed; otherwise evictions are unlawful.

C. Environmental protection under Article 48A permits summary evictions where forest integrity is at risk, even if procedures were omitted.

D. Administrative urgency outweighs procedural safeguards; courts should defer to executive implementation.

14. A State government signs an MoU with a mining company to extract bauxite from a forested tract inhabited by tribal communities. The Gram Sabha unanimously rejects the project, invoking community forest management rights under the FRA and consultative safeguards under PESA. The State insists mineral extraction serves the public interest and that subsurface minerals belong to the State, so local veto cannot block extraction. The mining firm argues it has lawful State consent; the tribals file a writ alleging lack of Gram Sabha consent and statutory bypass. The High Court must decide whether Gram Sabha consent under FRA/PESA is legally capable of restraining executive action and project approvals for resource extraction.

A. Gram Sabha consent is a mere consultative formality and cannot legally restrain State or central resource allocation decisions.

B. The State's mineral ownership permits it to override Gram Sabha objections where project serves larger public interest.

C. Gram Sabha consent and PESA safeguards carry legal weight; resource projects affecting community rights require meaningful consultation and consent where applicable.

D. Courts should abstain from adjudicating resource allocation disputes and leave them to political negotiation.

15. After his forest rights claim was rejected, a small farmer continued cultivating the parcel while his appeal to the taluka committee was pending. The forest department demolished his standing crops and filed criminal proceedings for "illegal encroachment," arguing rejected claims confer no interim protection. The farmer contends prosecution and demolition during pendency of appeal violate administrative fairness and his right to livelihood. The State insists rejected claims allow immediate restoration of forest boundaries. The legal issue is whether enforcement and punitive measures can be initiated while bona fide appeals are pending under FRA procedures.

A. The State may evict or prosecute immediately once a claim is rejected; pending appeals do not suspend enforcement.

B. Administrative action (eviction/demolition/prosecution) should be stayed while a bona fide appeal remains pending to protect livelihoods and procedural fairness.

C. The applicant must post a bond to prevent eviction during appeal; otherwise the State may act.

D. Rejected claimants have no interim protections; the forest department may recover land instantly.

16.In a tiger reserve, tribal hamlets were relocated in 2012 under a conservation project, but promised rehabilitation under FRA was never delivered. The displaced families now demand compensation, resettlement and development benefits under the Act. The forest department replies that conservation imperatives and administrative delays justify the failure to rehabilitate. The families assert that the FRA's relief and development rights create enforceable obligations and that continued denial violates Article 21. The question for adjudication is whether the statute's relief and development obligations are justiciable and sufficiently robust to compel the State to deliver delayed rehabilitation.

A. Displaced families lose entitlement to FRA relief if rehabilitation schemes were delayed by administrative inertia.
B. The FRA's relief and development rights are binding; absence of promised resettlement violates Article 21 and requires State remediation.
C. Conservation imperatives negate the State's duty to provide delayed rehabilitation.
D. Relief claims become time-barred once relocation occurs, regardless of non-delivery.

17. A group of tribal women in Jharkhand formed a local forest protection committee under FRA to regulate grazing and collection of Minor Forest Produce (MFP). The forest ranger fined them, claiming they lacked authority to restrict access without departmental sanction. The women insist community forest management rights empower Gram Sabhas to self-regulate resources and levy fines for local compliance. The State counters that the FRA does not oust the forest department's statutory regulatory powers. The dispute raises whether Gram Sabha committees can legitimately exercise regulatory sanctions and enforcement within their CFRs.

A. Gram Sabhas have authority to regulate grazing and MFP collection under FRA; such committee-imposed fines are valid if following Gram Sabha procedures.

B. Only the forest department's rules prevail; community committees cannot impose fines or restrict access without departmental permission.

C. Community committees may recommend measures but lack enforceable sanctioning powers; fines are illegal.

D. Traditional committees can act only after prior judicial validation.

18. In a Scheduled Area of Chhattisgarh, the State proposed a hydroelectric project that would submerge tribal villages. Gram Sabhas objected, demanding mandatory consultation under PESA. The administration proceeded asserting urgency and public purpose. Affected villagers filed writ petitions alleging violation of participatory rights guaranteed by FRA and PESA. The State claims urgent development cannot be delayed by local veto; petitioners insist consultation is substantive, not perfunctory, and refusal invalidates the process. The court must decide how "urgency of development" balances against mandatory consultation and community consent.

A. The State may proceed with urgent development projects without Gram Sabha approval when invoking public purpose.

B. Mandatory consultation under PESA and meaningful Gram Sabha consent is essential; proceeding without it renders the project legally vulnerable.

C. Consultation is required but can be limited to information sharing; lack of consent does not invalidate the project.

D. Central approval automatically overrides State-level PESA protections for development projects.

19. During verification of FRA claims, the forest department used satellite mapping and digital boundary delineation without Gram Sabha participation, seeking speed and accuracy. Later, numerous claims were rejected because boundaries in the department's digital maps did not match the villagers' understanding. Gram Sabhas argue they were statutorily entitled to identify and verify boundaries, and that bypassing them violated procedural fairness. The department claims digital mapping is an efficient, objective tool and minor procedural deviations were justified. The dispute concerns whether administrative efficiency can trump the FRA's participatory verification role.

A. Administrative efficiency (digital mapping) justifies limited bypassing of Gram Sabha procedures to expedite verification.

B. Democratic verification mechanisms (Gram Sabha participation) are fundamental; digital tools cannot replace statutory participatory verification.

C. Digital mapping is conclusive proof; Gram Sabha objections are secondary.

D. Gram Sabha must validate digital maps post-facto, but rejections based on interim maps are acceptable.

20. A public interest petition challenges FRA's constitutional validity, arguing that granting individual and community land rights undermines ecological balance and violates the State's duty under **Article 48A**. The Union defends FRA as harmonising social justice with conservation through community-based forest governance. Petitioners insist individual ownership fragments forests, while defenders stress participatory conservation. The Court must adopt an interpretive approach resolving the apparent conflict between tribal livelihood security and environmental protection.

A. The FRA should be struck down wherever individual ownership demonstrably threatens ecological balance; forest protection is paramount.

B. Courts should interpret the FRA to harmonise rights and conservation — recognising community and limited individual rights subject to sustainable safeguards and management conditions.

C. Individual ownership under FRA should be unrestricted; environmental duties are secondary and to be handled administratively.

D. The constitutional duty of environmental protection nullifies any land rights under FRA in sensitive areas.

GENERAL KNOWLEDGE

Passage - I

The Navigation with Indian Constellation (NavIC) is India's home-grown regional satellite navigation system developed by ISRO (Indian Space Research Organisation). Initially known as the Indian Regional Navigation Satellite System (IRNSS), NavIC was conceived to provide independent, reliable positioning, navigation and timing (PNT) services for India and its neighbouring region, thereby reducing dependence on foreign Global Navigation Satellite Systems (GNSS) such as the U.S. GPS.

The system's current operational constellation consists of seven satellites — three in geostationary orbit (GEO) and four in inclined geosynchronous orbit (IGSO) — positioned such that the coverage spans India and extends approximately 1,500 km beyond its borders. NavIC provides two primary service levels: the Standard Positioning Service (SPS) for civilian users and the Restricted Service (RS) for authorised military/strategic users.

NavIC uses dual-frequency transmissions (L5 and S-band) enabling enhanced accuracy by reducing atmospheric errors via dual-band correction, allowing positioning accuracies of better than ~10 metres within India, and up to ~20 metres in the outer service region. The system is complemented by a robust ground-segment: ranging stations, a Master Control Facility, network timing centres and integrity monitoring.

Strategically, NavIC plays a pivotal role in India's space-based infrastructure, offering sovereign PNT capability for defence, critical infrastructure, disaster management, fleet and asset tracking, and emerging "Indian smart-city/IoT" applications. Analysts view NavIC as a key pillar of India's push toward "Atmanirbhar Bharat" in space, and a counterbalance to foreign GNSS dependency.

Despite its successes, NavIC faces significant challenges. The constellation has suffered atomic-clock failures on some satellites, leading to reliability concerns. Further, to become truly global rather than regional, NavIC requires additional satellites (possibly in Medium Earth Orbit) and full international interoperability standards. Implementation of NavIC across consumer smartphones, automotive systems and IoT devices is underway, aided by domestic chip-makers and partnerships, but full throughput and global uptake remain work in progress.

In summary, NavIC is a strategic national asset: a sovereign sat-nav system built for regional autonomy, supporting India's security, technology and economic aspirations. Its success and expansion will influence India's positioning in global satellite navigation, digital infrastructure and space diplomacy in the coming decade.

21. Which of the following statements about NavIC are correct?

1. NavIC is India's indigenous regional navigation system developed by ISRO.
2. It currently has a global coverage comparable to GPS.
3. It provides both a civilian Standard Positioning Service and a Restricted Service for authorised users.

A. 1 and 3 only B. 2 only C. 1 and 2 only D. 1, 2 and 3

22. Which of the following features are correctly associated with NavIC?

A. Constellation of seven satellites (3 GEO + 4 IGSO).
B. Uses L5 and S-band signals for dual-frequency correction.
C. Claims accuracy of better than ~10 metres within India.
D. All of the above

23. Which of the following challenges are mentioned (or hinted) in the passage regarding NavIC's future development?

4. Atomic-clock failures affecting reliability.
5. Requirement for additional satellites to attain global coverage.
6. Complete incompatibility with all existing smartphones making rollout impossible.

A. 1 and 2 only B. 2 and 3 only C. 1 and 3 only D. 1, 2 and 3

24. Which of these applications are explicitly noted for NavIC in the passage?

A. Defence and critical infrastructure PNT services.
B. Smart-city/IoT asset tracking.
C. Direct to consumer global smartphone navigation with worldwide service today.
D. Both A and B only

25. Which statement is **not** supported by the passage?

A. NavIC's service area extends roughly 1,500 km beyond India's landmass.
B. NavIC is completely unaffected by atmospheric delays due to dual-frequency use.
C. NavIC includes a ground-segment of ranging stations and network timing centres.
D. NavIC is part of India's push for sovereign space-based infrastructure.

26. Which of the following statements about NavIC's service levels is accurate?

A. Only civilian users can access NavIC; military use is forbidden.
B. NavIC offers a Restricted Service (RS) for authorised users and a Standard Service (SPS) for all.
C. NavIC's RS and SPS are identical in signal and access.
D. NavIC does not differentiate between civilian and military signals.

27. Which of the following inferences about NavIC's role and relevance is most justified based on the passage?

A. NavIC will immediately replace GPS globally within a year.
B. NavIC underpins India's technological sovereignty and space diplomacy.
C. NavIC is irrelevant to India's security architecture.
D. NavIC has no civilian applications and is purely military.

28. Which of these correctly reflects an aspect of NavIC's constellation architecture as described?

7. Three satellites in geostationary orbit (GEO).
8. Four satellites in inclined geosynchronous orbit (IGSO).
9. All satellites are in Medium Earth Orbit (MEO).

A. 1 and 2 only B. 2 and 3 only C. 1 and 3 only D. 1, 2 and 3

29. Which of the following best summarises the passage's depiction of NavIC's significance?

A. A regional sat-nav system that ensures India's independent positioning capability and supports security, economy and technology ambitions.
B. A global navigation system identical in coverage and scale to GPS.
C. A failed system with no strategic value.
D. A purely consumer gadget-targeted navigation chip for smartphones alone.

30. Which of the following aspects is least covered in the passage but would be a relevant policy issue for NavIC's scaling up (inferred)?

A. International interoperability and user-receiver mass-market adoption globally.
B. Manufacture of rubidium atomic clocks in India to reduce import dependence.
C. Use of NavIC signals for drone-based delivery and precision agriculture.
D. Merger of NavIC and commercial satellite-internet constellations.

Passage - II

India's energy transition agenda has entered a new phase with the launch of the Pradhan Mantri Surya Ghar Yojana (PMSGY) by the Ministry of New and Renewable Energy (MNRE), targeting residential rooftop solar adoption at scale. The scheme was formally notified in February 2024 and aims to benefit approximately 1 crore households across India, with a strong focus on middle-income and low-income domestic users.

Under PMSGY, eligible households are offered subsidies, interest-subsidised loans, and an enabling framework to install rooftop solar photovoltaic (PV) systems. The subsidies cover up to 40% of the system cost in many cases; some vendor/plant-size-based slabs offer even higher subsidy support. In addition, the scheme provides for 300 units of free electricity per month for many participating households — meaning the rooftop system is designed to offset an expected consumption of up to that level.

The PMSGY portal (pmsuryaghar.gov.in) facilitates online registration and approvals; loan-financing is made available through public-sector banks at concessional interest-rates for eligible installations. Implementation is expected to generate employment in the solar value chain, increase household energy self-reliance, reduce grid demand at peak times, and contribute to India's net-zero and rooftop solar capacity targets.

Key eligibility features include: Indian citizenship, legally owned residential rooftop space, existing valid electricity connection, and that the household has not already availed a subsidy under a similar rooftop solar scheme. The scheme emphasises robust implementation through vendor registration, quality standards, real-time monitoring of installations, and timely subsidy disbursement via direct bank transfer.

However, the scheme also faces several implementation and fiscal-policy challenges. Among these are ensuring revenue neutrality (or minimal burden) for DISCOMs during transition to net-metering or export compensation; standardising tariff and banking arrangements across states; managing grid impact of large-scale rooftop solar injection; ensuring vendor quality and after-sales maintenance; and aligning state-level subsidies/co-financing models without creating duplication or inequity. Analysts note that while the subsidy cuts household costs, the sustainability of the business models and timely maintenance will determine long-term success.

In sum, the Pradhan Mantri Surya Ghar Yojana marks a critical step in India's "solar for all" ambition — shifting residential users from passive consumers to active "prosumers", reducing monthly electricity bills, promoting renewable energy uptake, and strengthening distributed generation infrastructure. Effective rollout across states and households will be crucial for maximising value not just for the beneficiaries, but also for the grid and economy.

31. Which of the following statements about PMSGY are correct?

1. It targets approximately 1 crore households for rooftop solar adoption.
2. It guarantees free electricity beyond any consumption limit for participating households.
3. It provides subsidies up to around 40% of system cost for eligible installations.

A. 1 and 3 only B. 2 only C. 1 and 2 only D. 1, 2 and 3

32. Which of the following objectives of the scheme are explicitly mentioned in the passage?

A. Empower households as energy "prosumers".
B. Reduce grid peak demand and support India's net-zero targets.

C. Convert all existing conventional power plants into solar plants.
D. A and B only

33. Which of the following eligibility criteria for the rooftop solar scheme are indicated in the passage?

1. Applicant must have a legally owned residential rooftop space.
2. Household must not have previously availed a similar rooftop solar subsidy.
3. Applicant must have an annual income below Rs 1 lakh.

A. 1 and 2 only B. 2 and 3 only C. 1 and 3 only D. 1, 2 and 3

34. Which of the following challenges for implementation of PMSGY are mentioned in the passage?
A. Standardising state-level subsidies and avoiding duplication.
B. Ensuring vendor quality and after-sales maintenance.
C. Achieving immediate export of solar panel surplus abroad.
D. A and B only

35. Which of the following statements is **not** supported by the passage regarding scheme features?
A. The scheme provides an online portal for registration and real-time monitoring.
B. The scheme includes publicly listed companies' mandatory takeover of all rooftop installations.
C. The scheme offers interest-subsidised loans via public-sector banks.
D. The scheme supports households in reducing their monthly electricity bills.

36. Which of the following outcomes are inferred rather than explicitly mentioned?
A. Generation of employment in the solar value-chain.
B. Transition of households into active prosumers.
C. Immediate replacement of all conventional electricity generation with rooftop solar.
D. A and B only

37. Which of these statements about free electricity benefit are correct?
A. The scheme offers up to 300 units of free electricity per month for participating households.
B. The scheme offers unlimited free electricity after installation.
C. Participating households will not receive any free electricity under the scheme.
D. The scheme offers exactly 150 units of free electricity per month universally.

38. Which of the following would be considered an operational requirement for the scheme's success as inferred in the passage?
A. Timely disbursement of subsidy to beneficiary bank accounts.
B. Exporting all surplus household solar power to international markets.
C. Constant replacement of installed systems every year.
D. Mandating only state-owned vendors to install solar panels.

39. Which statement best summarises the significance of PMSGY according to the passage?
A. It is a major step in India's push for distributed generation, reducing reliance on grid supply and promoting renewable adoption.
B. It is a small pilot scheme for a few thousand households only.
C. It is a scheme aimed exclusively at industrial rooftop solar for large factories.
D. It is a scheme that mandates solar panels for every vehicle.

40. Which of the following aspects is least emphasised in the passage but would likely require future policy attention?
A. Grid-integration of large rooftop solar systems and compensation for surplus export.
B. Vendor certification and after-sales maintenance in remote regions.
C. Achieving export of Indian-manufactured solar modules to Europe.
D. Ensuring state-level co-financing without duplication of benefits.

QUANTITATIVE TECHNIQUE

Passage-I

The information given below is the investment of three Venture capitalists A, B and C in a partnership for the period of 2001 – 2005. The investments made by an individual are for the same period. The investment of B in 2001 is Rs. 40000 and is equal is to the investment of C in 2003. The total investment in 2004 is Rs. 24000 and the ratio of investments of A, B and C is 8 : 9 : 7 respectively. The investments of A in 2001, 2002 and 2003 are Rs. 32000, Rs. 48000 and Rs. 44000 respectively. The investment of C in 2001 and 2002 are same i.e. Rs. 22000. The investment of B in 2003 is Rs. 6000 more than the investment by him in 2002 i.e. Rs. 30000.

41. Find the share of profit earned by B in the year 2003, if the total profit in 2003 is Rs. 15000?
(A) Rs. 4250 (B) Rs. 4500 (C) Rs. 4750 (D) Rs. 5500

42. If the share of profit of C in 2001 and 2002 is Rs. 15400 and Rs. 17600 respectively, find the ratio of profit of A in 2001 to that in 2002?
(A) 1 : 2 (B) 1 : 4 (C) 12 : 7 (D) 7 : 12

43. The total investment of A in all the years together is Approximately what % to the total investment of B?
(A) 115% (B) 120% (C) 90% (D) 85%

44. Find out the ratio of total investment of all the partners together in the year 2001 to 2002?
(A) 11 : 2 (B) 47 : 50 (C) 22 : 17 (D) NOT

45. In the year 2002 , out of total profit B receive Rs. 45000, how much profit receive by A in that year?
(A) Rs. 42500 (B) Rs. 45000 (C) Rs. 72000 (D) Rs. 55000

Passage-II

Data related to salary structure of five individuals:

Name	Basic salary	Total allowance	Total deduction	Net Salary
P	21800	28600	-----	---
Q	----	-----	4350	25850
R	10400	12400	2800	20000
S	11200	13800	----	----
T	----	21600	5700	----

Note : 1. Total deduction = PF + Other deduction
2. PF = 10% of basic salary
3. Net salary = Basic salary + Total allowance – Total Deduction

46. If other deduction of P was Rs4720 , what was the net salary?
(a) 43500 (b) 44600 (c) 40000 (d) 34600

47. If Q's total allowance is Rs. 3000 more than his basic salary, what was his total allowance?
(a) 15600 (b)14600 (c)14000 (d) 16600

48. If the ratio of PF to other deduction of S was 7:13, what was S other deduction?
(a) 1500 (b) 2600 (c) 2080 (d) 1870

49. If other deduction of T was Rs. 4000, what was his net salary?
(a) 43500 (b) 24600 (c) 29900 (d) 32900

50. Basic salary of S is what %more than that of R? (approx.)
(a) 4% (b) 11% (c) 15% (d)