

ANTIM ASSURED 100+

PART I · HEADLINES TO ECONOMY

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Polity & Governance

GS2

Fundamental Rights (Art. 19/21/22) • Separation of Powers • Judicial Review of Executive Action

11 October 2026 (hearing); background order 9 October 2026 · Source: Supreme Court of India (reportable proceedings)

Supreme Court's Rare Sunday Sitting Tests the Article 19(2) Limits on the Right to Protest

Why in News: On 11 October 2026, a Supreme Court Bench of Justices Joymalya Bagchi and V. Mohana held an exceptional Sunday hearing on a contempt petition alleging that 45 of Delhi's 303 Metro stations stayed shut despite the Court's 9 October order that transport "cannot be brought to a halt." A linked habeas corpus petition challenged the mass preventive detention of an estimated 6,000–7,000 persons — including four former Chief Ministers — ahead of a 10 October demonstration demanding the Chief Election Commissioner's resignation over the Special Intensive Revision of electoral rolls. The Court issued notice to the alleged contemnors, ordered a station-wise compliance map, and directed the State to justify each detention, with the matter returnable 13 October.

Background: Article 19(1)(a)/(b)/(d) guarantee speech, peaceful assembly and movement, but Article 19(2)–(3) permit "reasonable restrictions" in the interest of public order — the constitutional hinge on which this dispute turns. Section 163 of the Bharatiya Nagarik Suraksha Sanhita, 2023 (the successor to the old Section 144 CrPC) lets an Executive Magistrate pass urgent prohibitory orders against apprehended danger, but courts require such orders to be need-based, time-bound and proportionate — never a blanket shutdown. The writ of habeas corpus under Article 32/226 is the classical remedy against illegal detention; counsel invoked the Emergency-era caution against treating blanket restrictions as a de facto suspension of Part III rights outside a formal Proclamation of Emergency. A Sunday sitting is itself institutionally rare, signalling the Court's view that this is a matter of urgent, continuing rights violation.

KEY FACTS

- Bench: Justices Joymalya Bagchi and V. Mohana; hearing began around 5:30 am IST on 11 October 2026

- Contempt plea: Advocate Chand Qureshi vs the Union Home Secretary, the Delhi Police Commissioner and the DMRC Chairperson
- Alleged violation: 45 of Delhi's 303 Metro stations (~15%) had entry/exit restricted on 10 October despite the 9 October order
- Solicitor General's submission: 4,157 train trips ran that day; all stations reopened by 10 pm
- Detention claim (petitioners'): 6,000–7,000 persons across 45 “detention centres,” including four former Chief Ministers
- Section 163 BNSS was reportedly imposed in a 4-km radius around the Supreme Court without formal promulgation — the key legal flashpoint
- Court's order: notice to the alleged contemnors; a station-wise compliance report and detention justification due by 13 October
- Court's framing: Article 19 rights are “subject to public order,” but concern for life and liberty applies equally to citizens and police

MAINS DIMENSIONS / ANALYSIS

- Significance: reinforces judicial review as a check on executive use of prohibitory-order powers against peaceful assembly
- Criticism: petitioners argue blanket Metro/transport shutdowns and mass preventive detention amount to a de facto suspension of Article 19 without any Emergency proclamation
- Implementation challenge: balancing genuine public-order needs against the chilling effect of disproportionate restriction on ordinary commuters and civil society
- Federal angle: Delhi's Union Territory status puts Police and Metro under central (MHA/DMRC) control, sharpening a Centre-vs-protesters rather than Centre-vs-State federalism dimension
- Way forward: courts increasingly favour “proportionate regulation” over outright bans — codifying objective triggers and sunset clauses for Section 163 orders could cut future litigation

LET'S REMEMBER THIS THROUGH A TRICK

“144 becomes 163” — BNSS Section 163 is the direct successor of the old CrPC Section 144 prohibitory-order power. And remember the ratio at the centre of the contempt claim: “45 of 303” stations, roughly 15%.

PYQ LINKAGE

No direct PYQ match for this episode; thematically anchored to Mains 2014 GS2 (“Article 32 ... the heart and soul of the Constitution”) — the habeas corpus writ invoked here is a core Article 32/226 remedy.

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. The right to freedom of assembly under Article 19(1)(b) can be restricted only after a formal Proclamation of Emergency under Article 352.
2. Section 163 of the Bharatiya Nagarik Suraksha Sanhita, 2023 empowers an Executive

Magistrate to issue urgent orders in cases of apprehended danger or nuisance.

3. A writ of habeas corpus can be issued by both the Supreme Court and the High Courts.

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

Answer: (b). Statement 1 is the trap — Article 19(2)–(3) “reasonable restrictions” (e.g. public order) operate in ordinary times too; a formal Emergency proclamation is not a precondition.

GS2

Panchayati Raj & Local Self-Government (Art. 243D/243T) • Reservation Policy for Backward Classes

9 October 2026 • Source: Supreme Court of India (reportable order)

Supreme Court Reaffirms the “Triple Test” Ceiling on Backward Class Quotas in Local Body Elections

Why in News: On 9 October 2026, a Supreme Court Bench of Justices Dipankar Datta and Sheel Nagu dismissed Andhra Pradesh's Special Leave Petition in *State of Andhra Pradesh v. Thandava Yogesh* against a High Court order that had quashed two state government orders granting 34% reservation to Backward Classes in rural and urban local body elections. The High Court held the 34% quota pushed total reservation beyond the 50% ceiling without adequate empirical justification; the Supreme Court called that reasoning “very reasonable” and questioned the legal basis of the state's “family survey” data used to fix the figure.

Background: Articles 243D and 243T (inserted by the 73rd and 74th Amendments, 1992) provide for reservation in Panchayats and Municipalities respectively. *Indra Sawhney v. Union of India* (1992) capped total reservation at 50% except in extraordinary circumstances. For local-body OBC reservation specifically, *K. Krishnamurthy v. Union of India* (2010) laid down a “triple test”: a rigorous contemporaneous empirical inquiry into backwardness; specification of quantum based on that data; and an aggregate (SC+ST+OBC) quota that must not exceed 50%. States have repeatedly tried to breach this ceiling using hastily-conducted surveys, prompting recurring High Court interventions across states.

⚡ KEY FACTS

- Case: *State of Andhra Pradesh v. Thandava Yogesh*, SLP(C) No. 35539/2026; dismissed 9 October 2026
- Bench: Justices Dipankar Datta and Sheel Nagu
- Quashed government orders: GO No. 105 and GO No. 1065, granting 34% BC reservation in local body polls
- Legal ceiling invoked: the 50% aggregate reservation cap from *Indra Sawhney* (1992)
- Data rejected by the courts: an unverified “family survey” lacking statutory backing

- Senior Advocate Mukul Rohatgi argued for the state; the Court asked what legal basis the survey had
- The appeal was dismissed outright — no interim relief granted to the state
- Governing precedent: *K. Krishnamurthy v. Union of India* (2010) “triple test” for local-body OBC quotas

MAINS DIMENSIONS / ANALYSIS

- Significance: reinforces judicial insistence on rigorous, contemporaneous empirical data before expanding caste-based quotas, protecting the 50% ceiling
- Criticism: political competition among states to raise OBC quotas ahead of local body polls often outpaces the quality of backwardness data, inviting judicial strikedown
- Implementation challenge: a genuinely “rigorous and contemporaneous” backwardness survey is resource- and time-intensive, while elections cannot indefinitely wait
- Comparative angle: Andhra Pradesh, Telangana and (earlier) Maharashtra's Maratha-quota episode show an all-India pattern of executive overreach meeting judicial scrutiny in the quota space
- Way forward: a standing, statutorily empowered State Backward Classes Commission running continuous empirical surveys would better withstand judicial review than ad hoc pre-election exercises

LET'S REMEMBER THIS THROUGH A TRICK

“Triple test, 50% ceiling, K for Krishnamurthy” — three conditions (data, quantum, $\leq 50\%$) from *K. Krishnamurthy* (2010), built atop the *Indra Sawhney* (1992) ceiling.

PYQ LINKAGE

No direct PYQ match for this exact case; thematically linked to the recurring *Indra Sawhney/K. Krishnamurthy* jurisprudence tested across several Mains cycles under “Local self-government & reservation policy.”

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. The 50% ceiling on reservations laid down in *Indra Sawhney v. Union of India* (1992) applies without exception to all forms of reservation in India.
2. The “triple test” for Backward Class reservation in local bodies was laid down by the Supreme Court in *K. Krishnamurthy v. Union of India* (2010).
3. Article 243D of the Constitution provides for reservation of seats in Panchayats for Scheduled Castes and Scheduled Tribes.

Which of the statements given above is/are correct?

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

Answer: (a). Statement 1 is the trap — *Indra Sawhney* itself permits breaching 50% only in “extraordinary circumstances,” so the ceiling is not absolute.



International Relations

GS2

Important International Institutions — Structure & Mandate (UNCLOS Dispute-Settlement Architecture)

1 October 2026 (oath; elected 18 June 2026) · Source: ITLOS (Hamburg) official release

India Retains Its Seat on the UN's Law-of-the-Sea Tribunal as Dr Bimal Patel Takes Oath

Why in News: Dr Bimal N. Patel, former Vice-Chancellor of Rashtriya Raksha University and ex-member of the UN International Law Commission, was sworn in on 1 October 2026 as a judge of the International Tribunal for the Law of the Sea (ITLOS) at its Hamburg headquarters, beginning a nine-year term. He succeeds Judge Neeru Chadha, keeping India represented on the Tribunal's 21-member bench. He was elected on 18 June 2026 at the 36th Meeting of States Parties to UNCLOS in New York, securing 115 of 168 valid votes alongside six other newly or re-elected judges.

Background: ITLOS was established under Part XV and Annex VI of UNCLOS (1982, in force since 1994) as an *independent* judicial body — not a UN organ — to adjudicate disputes over the interpretation or application of UNCLOS: maritime boundaries, the EEZ, the continental shelf, freedom of navigation and deep-sea mining. It sits at Hamburg, distinct from the ICJ and the Permanent Court of Arbitration, both at The Hague — a classic Prelims confusion. One-third of its 21 judges are elected every three years for staggered nine-year terms. India has held a seat almost continuously since Justice P. Chandrasekhara Rao was among the Tribunal's original 1996 judges.

⚡ KEY FACTS

- ITLOS: 21 judges, 9-year staggered terms, seat at Hamburg, Germany
- Legal basis: UNCLOS 1982 (in force 1994), Part XV + Annex VI (ITLOS Statute)
- Dr Bimal Patel elected 18 June 2026 with 115/168 valid votes at UNCLOS's 36th Meeting of States Parties, New York
- Term: nine years from 1 October 2026; succeeds Judge Neeru Chadha, a former ITLOS Vice-President
- Co-sworn judges: representatives of Ghana, Brazil, Tunisia and Vietnam; Russia and the Netherlands were re-elected
- Patel holds doctorates in international law and has served on India's National Security Advisory Board

- India's prior ITLOS judges: P. Chandrasekhara Rao (1996–2011) and Neeru Chadha (2017–2026) — near-continuous presence since 1996
- Relevance: UNCLOS/ITLOS principles underpin India's own EEZ claims and its Indo-Pacific “rules-based order” diplomacy

MAINS DIMENSIONS / ANALYSIS

- Institutional: continuous representation on UN-linked judicial/technical bodies (ITLOS, ICJ, ILC) builds a rising power's normative influence
- Conceptual: the ITLOS (Hamburg, UNCLOS-specific) vs ICJ (The Hague, UN organ, general disputes) vs PCA (The Hague, ad hoc arbitration) distinction is a recurring Prelims trap
- Strategic: links to India's own maritime-boundary questions and its Indo-Pacific freedom-of-navigation positioning
- Debate: criticism that established powers dominate elected seats on international bodies, versus India's G4/Global-South push for wider representation
- Governance: multilateral legal canvassing (a 168-state vote) as a soft-power instrument distinct from hard-power tools

LET'S REMEMBER THIS THROUGH A TRICK

“H for Hamburg, not Hague” — ITLOS sits at Hamburg; the ICJ and the PCA both sit at The Hague. And remember Patel's numbers: 115/168 votes, a 9-year term, a 21-member bench.

PYQ LINKAGE

UPSC CSE Prelims 2022 carried a statement-based question on maritime zones under UNCLOS (territorial sea/continental shelf/EEZ) — the same conceptual base as this card.

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. It is a principal organ of the United Nations headquartered at The Hague.
2. Judges of ITLOS are elected by States Parties to UNCLOS for a term of nine years.
3. India has never had a judge on the ITLOS bench before 2026.

Which of the statements given above is/are correct?

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

Answer: (b). Statement 1 is wrong twice over — ITLOS is an independent UNCLOS body (not a UN organ) and sits at Hamburg, not The Hague. Statement 3 is wrong — India has held a seat since 1996.

GS2

Bilateral, Regional and Global Groupings and Agreements Involving India

STATIC

Static Topic — not tied to a current event · Source: MEA (mea.gov.in)

I2U2 — India's “West Asian Quad” and the Rise of Techno-Economic Minilateralism

Why in News: With India's connectivity diplomacy toward West Asia increasingly in focus (Gulf engagement, IMEC follow-through), the I2U2 grouping — India, Israel, UAE, United States — remains a live example of India's post-2022 pivot toward issue-based “minilaterals” that bypass traditional bloc politics. It is repeatedly tested in current-affairs-linked Prelims because of its unusual membership combination and thematic, non-military focus.

Background: I2U2 began with a 2021 virtual ministerial and was formally launched at the first I2U2 Leaders' Summit in July 2022 (PM Modi, President Biden, PM Lapid, President Mohamed bin Zayed, all virtually). Unlike the security-oriented Quad (India–US–Japan–Australia), I2U2 is explicitly non-military, built around joint investment and technology projects. It is sometimes loosely called the “Quad of West Asia,” a label that understates how purely techno-economic its agenda is.

⚡ KEY FACTS

- Members: India, Israel, United Arab Emirates (UAE), United States — hence “I2U2”
- Formally launched: July 2022 Leaders' Summit (virtual)
- Six cooperation pillars: water, energy, transportation, space, health and food security
- Flagship project: a UAE-funded (~\$2 billion) integrated food-parks initiative across India
- Energy pillar includes a hybrid wind-solar-plus-storage project in Gujarat backed by US and UAE private capital
- No standing secretariat — coordination runs through national nodal points, keeping it a light, flexible “minilateral”
- Distinct from but complementary to IMEC (India-Middle East-Europe Economic Corridor, announced at G20 2023)
- Seen by analysts as evidence of India's “multi-alignment” strategy across US-led and Gulf-centred architectures

🎯 MAINS DIMENSIONS / ANALYSIS

- Conceptual: minilateralism vs traditional multilateralism/alliance blocs — flexibility gains against limits on legitimacy and accountability
- Strategic: I2U2 as part of India's wider West Asia diversification, deepening Gulf-Israel-US linkages simultaneously
- Economic: techno-economic minilaterals addressing food security and clean energy without binding trade/tariff commitments
- Debate: criticism that the lack of a secretariat risks I2U2 becoming a “talk shop” without a results mechanism
- Comparative: contrast I2U2 (economic, 4 members) with the Quad (security-adjacent) and the SCO (Eurasian security-economic bloc)

LET'S REMEMBER THIS THROUGH A TRICK

"Two I's, two U's, six pillars, zero secretariat" — India + Israel, UAE + US, six cooperation areas, but no permanent institutional structure.

PYQ LINKAGE

No confirmed direct PYQ on I2U2; it fits the same "new grouping" question format UPSC has repeatedly used for QUAD/BRICS/SCO membership.

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. Its members are India, Israel, the United Kingdom, and the United Arab Emirates.
2. It focuses on six areas of cooperation including water, energy, transportation, space, health, and food security.
3. It has an established permanent secretariat based in Abu Dhabi.

Which of the statements given above is/are correct?

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

Answer: (b). Statement 1 wrongly swaps the "United Kingdom" for the "United States" — a classic membership-swap trap. Statement 3 is wrong: I2U2 deliberately has no standing secretariat.

THEIAS AKADEMIA Groupings like I2U2 and institutions like ITLOS are exactly the terrain **ANTIM 2027** drills on — our two-year-runway batch builds a living map of India's multilateral and minilateral commitments so no "new grouping" MCQ catches you off guard. theiasakademia.com



Defence & Security

GS3

Indigenisation of Technology & Developing New Technology — Defence Manufacturing and Self-Reliance

7–8 October 2026 · Source: Defence Ministry/HAL contract record, corroborated across defence-press reporting

The Engine Bottleneck — What Tejas Mk1A's Delayed GE F404 Deliveries Reveal About India's Indigenisation Gap

Why in News: GE Aerospace shipped four more F404-IN20 engines to Hindustan Aeronautics Limited (HAL) in September 2026, taking cumulative deliveries for the Tejas Mk1A programme

to just 14 of 99 contracted engines; the Defence Secretary has confirmed four more are scheduled between October and December 2026. The episode has reignited scrutiny of India's continued dependence on a single foreign supplier for the most critical sub-system of its indigenous fighter programme, after the Ministry invoked a penalty clause against GE in 2024 over delays exceeding 18 months.

Background: In 2021, HAL signed a ₹5,375-crore contract with GE Aerospace for 99 F404-IN20 engines to power 83 Tejas Mk1A jets, with deliveries contracted at 16 engines/year from April 2023. GE cited disruption at a South Korean sub-component supplier; India invoked a penalty clause in October 2024 and began exploring domestic sourcing of the affected cast metallurgical parts. In parallel, GE and HAL are negotiating a larger Transfer-of-Technology deal for the more powerful F414 engine (targeting ~80% indigenisation, against 58% for the F404) to power the Tejas Mk2 and the twin-engine AMCA — making today's F404 saga a bellwether for whether that costlier F414 ToT will deliver genuine technology transfer or merely licensed assembly.

⚡ KEY FACTS

- 2021 contract: ₹5,375 crore, HAL–GE Aerospace, 99 F404-IN20 engines for the Tejas Mk1A fleet
- Original schedule: 16 engines/year from April 2023; actual cumulative delivery by September 2026: only 14 engines
- Ministry of Defence invoked a penalty clause against GE in October 2024 after delays crossed 18 months
- GE cited a crisis at a South Korean sub-supplier; India is exploring domestic casting of the affected parts
- Four more engines confirmed for delivery between October–December 2026
- A separate F414 engine Transfer-of-Technology negotiation (for Tejas Mk2/AMCA) targets ~80% indigenisation, versus 58% for the F404
- Tejas Mk2 first flight is targeted for 2027; AMCA Mk1's prototype first flight is targeted for 2028, both contingent on the engine track record
- IAF squadron strength remains below the sanctioned 42, sharpening the urgency of stable engine supply

🎯 MAINS DIMENSIONS / ANALYSIS

- Analytical: the “indigenisation paradox” — an airframe that is largely indigenous, resting on a fully import-dependent engine
- Institutional: how much leverage a penalty clause really carries against a near-monopoly supplier in sovereign-to-sovereign defence contracts
- Strategic: engine delays directly constrain squadron strength at a time of already-thin fighter numbers
- Economic: the ToT percentage (58% vs a promised 80%) as a proxy metric for real versus nominal self-reliance

- Policy: the case for parallel domestic engine R&D (a revived, parallel Kaveri-engine investment) as a hedge against single-supplier dependency

🧠 LET'S REMEMBER THIS THROUGH A TRICK

"14 of 99, 58 to 80" — only 14 of 99 F404 engines delivered by October 2026; the F414's promised ToT would lift indigenisation from 58% to 80%. Those are the self-reliance numbers to remember.

📄 PYQ LINKAGE

Thematically consistent with past Mains years' questions on India's defence self-sufficiency and reducing import dependence in defence equipment; exact year not confirmable from available sources, cited as a thematic linkage only.

🎯 PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. The Tejas Mk1A is currently powered by the indigenously developed Kaveri engine.
2. The 2021 engine contract between HAL and GE Aerospace covers 99 F404-IN20 engines.
3. The Ministry of Defence has invoked a penalty clause against GE Aerospace over delivery delays.

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

Answer: (b). Statement 1 is false — the Tejas Mk1A flies on the imported GE F404-IN20; the indigenous Kaveri remains underpowered and uncertified for frontline service — a commonly tested indigenisation-myth trap.

GS3

Defence Innovation Ecosystem (iDEX/DISC/SPRINT) — Indigenisation of Technology

7 October 2026 · Source: Indian Navy / iDEX programme records, corroborated across defence-press reporting

From Kochi Startup to Navy Deck — EyeROV's TROUT and the iDEX–DISC–SPRINT Innovation Pipeline

Why in News: Kochi-based startup EyeROV delivered the first two of five indigenously built EyeROV TROUT underwater Remotely Operated Vehicles to the Indian Navy on 7 October 2026, under a ₹47-crore contract. Rated to 300 metres depth, TROUT is described as India's first indigenous military-grade ROV, developed under the iDEX DISC 7 SPRINT Challenge — illustrating how India's startup-oriented defence-innovation architecture is now producing deployable hardware, not just prototypes.

Background: Innovations for Defence Excellence (iDEX), launched in 2018, is implemented through the Defence Innovation Organisation (DIO) — a not-for-profit company — to fund and mentor startups, MSMEs and individual innovators on dual-use and defence technologies,

outside the traditional PSU/DRDO-only pathway. DISC (Defence India Startup Challenge) is iDEX's structured competition format; SPRINT is the Navy's own initiative to fast-track induction of indigenous technology aboard naval platforms. TROUT's journey — from a SPRINT/DISC-7 challenge to a signed Navy contract and first deliveries — is being cited as a template for how the ecosystem is meant to work.

KEY FACTS

- EyeROV TROUT: India's first indigenous military-grade underwater ROV, rated to 300 metres depth
- Delivery: first 2 of 5 contracted systems delivered 7 October 2026; contract value ₹47 crore
- Developed under the iDEX DISC 7 SPRINT Challenge (the Indian Navy's SPRINT initiative, nested in the iDEX ecosystem)
- iDEX is implemented by the Defence Innovation Organisation (DIO), a Section 8 not-for-profit under the Department of Defence Production
- Validated through the Directorate of Quality Assurance (Naval) against military environmental/stress standards
- Stated uses: underwater inspection, port/harbour security, search and recovery, subsea infrastructure surveillance
- EyeROV (iRov Technologies) is based in Kochi, Kerala — a coastal-state startup feeding directly into naval procurement
- Distinct from a DRDO-lab product: this is a privately developed system procured via the startup-innovation route

MAINS DIMENSIONS / ANALYSIS

- Institutional: how iDEX/DISC/SPRINT structurally differ from the traditional DRDO–HAL–OFB procurement/R&D model — faster iteration, smaller contracts, shared startup risk
- Conceptual: dual-use technology (an ROV serving both civilian subsea inspection and military roles) and its procurement implications
- Strategic: the growing importance of indigenous underwater/seabed-domain awareness given undersea-cable and port-security concerns
- Debate: can startup-origin systems scale to the volume and reliability needed for full operational deployment, or do they stay niche?
- Economic: iDEX as an Atmanirbhar Bharat instrument that also builds a domestic deep-tech startup base with civilian spillovers

LET'S REMEMBER THIS THROUGH A TRICK

“iDEX funds, DISC challenges, SPRINT delivers (to the Navy)” — the three-tier funnel: iDEX, the overarching scheme → DISC, the structured challenge → SPRINT, the service-specific fast-track induction.

No confirmed direct PYQ on iDEX/DISC/SPRINT; thematically linked to UPSC's recurring pattern of testing defence-reform schemes such as the Defence Acquisition Procedure and the Strategic Partnership Model.

 PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. iDEX (Innovations for Defence Excellence) is implemented through the Defence Innovation Organisation (DIO), a not-for-profit company.
2. SPRINT is an Indian Navy initiative under the iDEX umbrella to fast-track induction of indigenous technology.
3. The EyeROV TROUT underwater vehicle was developed by a DRDO laboratory.

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

Answer: (a). Statement 3 is false — TROUT was developed by a private Kochi startup, not a DRDO lab; the entire point of iDEX is to source innovation outside the traditional DRDO/PSU system.

THEIAS AKADEMIA The Tejas engine story is a genuine GS4 case study in institutional honesty about capability gaps — **EMP (Ethics & Moral Philosophy)** trains you to spot and argue exactly this kind of disclosure-vs-optics dilemma in the Ethics paper. theiasakademia.com



Science & Technology

GS3

Awareness in Space & IT — Achievements of Indians in Science and Technology (Astrophysics)

7 October 2026 · Source: Department of Science & Technology (ARIES, Nainital)

ARIES-Led Decade-Long Study Strengthens the Case for a Giant Binary Black Hole in Blazar OJ 287

Why in News: An international team coordinated by India's ARIES (Aryabhata Research Institute of Observational Sciences), Nainital, published the most extensive optical monitoring record — over ten years, against a roughly 150-year historical baseline — of blazar OJ 287, long suspected of harbouring two orbiting supermassive black holes. The study, involving 106 scientists from 48 institutions across 18 countries using about two dozen telescopes, mapped

the double-peaked brightness pattern produced by the binary's 12-year orbital cycle and estimates the central black hole's mass at a minimum of 3.89 billion solar masses.

Background: A blazar is an active galactic nucleus whose relativistic jet, powered by a supermassive black hole, points almost directly at Earth, producing extreme, rapid brightness variability. OJ 287, roughly 4 billion light-years away, has shown periodic optical outbursts recorded since the early 20th century, long used to argue for a secondary black hole perturbing an accretion disc on a ~12-year orbit. Confirming such binaries matters because merging supermassive black-hole pairs are predicted sources of low-frequency gravitational waves — the kind pulsar-timing arrays, not LIGO, would detect — making OJ 287 a bridge between electromagnetic and gravitational-wave astronomy. ARIES, an autonomous DST institute in the Himalayan foothills, is a recognised partner in such global multi-wavelength campaigns.

KEY FACTS

- Study coordinated by ARIES, Nainital, an autonomous DST institute
- 106 scientists, 48 institutions, 18 countries; about two dozen telescopes used
- Over 10 years of dedicated optical monitoring — the most extensive OJ 287 optical time-series in roughly 150 years
- OJ 287 lies about 4 billion light-years away; its binary orbital period is about 12 years
- Central black hole's mass estimated at a minimum of 3.89 billion solar masses
- A distinctive double-peaked brightness pattern was tracked across the 12-year cycle to constrain the two black holes' relative positions
- Significance: feeds multimessenger astronomy, linking optical/spectral data with future gravitational-wave signatures
- Defining blazar trait: a relativistic jet pointed almost directly at the observer, distinguishing it from a quasar or radio galaxy

MAINS DIMENSIONS / ANALYSIS

- India's growing role as a data-*contributing*, not merely data-consuming, node in global big-astronomy collaborations via DST-funded institutes
- Concept check: blazar vs quasar vs radio galaxy under the unified AGN model, classified by jet-observer viewing angle
- Binary supermassive black holes as progenitors of nanohertz gravitational waves — distinct from LIGO/Virgo's stellar-mass mergers
- Multimessenger astronomy as an emerging GS3 frontier, combining light, gravitational waves, neutrinos and cosmic rays
- Long-term ground-based monitoring infrastructure (ARIES's Devasthal telescopes) as low-cost, high-value basic-science capacity alongside big-ticket space missions

LET'S REMEMBER THIS THROUGH A TRICK

“12-10-18-4” — a black-hole pair waltzing on a 12-year orbit, watched for 10 years by scientists from 18 countries, 4 billion light-years away.

PYQ LINKAGE

Thematically anchors to UPSC Prelims questions on phenomena confirming Einstein's General Theory of Relativity (light bending, gravitational waves, perihelion precession) — verify the exact year before use.

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. It is classified as a blazar because its relativistic jet points almost directly towards Earth.
 2. The periodic brightness variation studied is attributed to a secondary supermassive black hole orbiting the primary one.
 3. The study primarily used gravitational-wave detectors to confirm the binary black hole system.
- 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

Answer: (a). Statement 3 is the distractor — the ARIES-led study used optical telescopes across the electromagnetic spectrum, not gravitational-wave detectors.

GS3

Indigenisation of Technology — Science and Technology Developments and Their Applications (Defence R&D)

6 October 2026 · Source: Ministry of Defence (DRDO)

DRDO Flight-Tests an Indigenous Stratospheric High-Altitude Platform, a Step Toward “Pseudo-Satellite” Surveillance

Why in News: DRDO's Aerial Delivery Research and Development Establishment (ADRDE), Agra, successfully flight-tested an indigenously developed lighter-than-air High-Altitude Platform (HAP), which climbed to 21 km above mean sea level and held station at 20 km for over 30 minutes before a commanded, successful descent and recovery. The Defence Minister called it a milestone toward a long-endurance stratospheric platform under Atmanirbhar Bharat. The same week, ADRDE also conducted the maiden live jump of its Advanced High-Altitude Parachute at Nyoma, Ladakh.

Background: High-Altitude Platforms operate in the stratosphere (roughly 18–25 km) — above commercial air traffic and weather, but far cheaper and more flexible to redeploy than satellites — making them “pseudo-satellites” for persistent surveillance, border monitoring and communications relay. India's HAPS effort sits alongside DRDO's broader high-altitude systems push, including the Advanced High-Altitude Parachute tested at a 13,700-ft drop zone in Ladakh, both aimed at closing capability gaps exposed by high-altitude border terrain. The trial

involved the Indian Air Force, CEMILAC (airworthiness certification) and civil aviation regulators, reflecting the dual-use, increasingly congested stratospheric airspace regime.

KEY FACTS

- Developed by ADRDE, Agra, a DRDO laboratory
- Platform type: lighter-than-air stratospheric airship/balloon fitted with IMU, GPS, cameras and an altitude-control mechanism
- Reached 21 km above mean sea level; held station at 20 km for 30-plus minutes
- Real-time video and telemetry were received throughout at the Ground Control Station
- The platform was successfully commanded to descend and was recovered intact
- Trial coordinated with the IAF, CEMILAC, DGCA and the Airports Authority of India
- Companion test the same week: the Advanced High-Altitude Parachute's maiden live jump at Nyoma, Ladakh — deployed at 15,500 ft, landed at 13,700 ft
- Framed by the Defence Minister as a step toward a “long-endurance stratospheric airship” under Atmanirbhar Bharat

MAINS DIMENSIONS / ANALYSIS

- HAPS vs LEO satellites vs balloons: cost, endurance and redeployability trade-offs for persistent surveillance and reconnaissance
- Relevance for high-altitude border surveillance where satellite revisit time and terrain limit conventional methods
- Indigenisation theme: the DRDO-lab-to-field pipeline (ADRDE → Ordnance Factory → IAF/CEMILAC certification) as a self-reliance model
- Dual-use and regulatory dimension: stratospheric airspace management now involves civil aviation regulators alongside military users
- Limitation: demonstrated HAPS endurance (hours) still falls short of the weeks-to-months needed for true “pseudo-satellite” persistence — a real capability gap against global leaders

LET'S REMEMBER THIS THROUGH A TRICK

“21 up, 20 for 30” — climbed to 21 km, held station at 20 km for 30-plus minutes.

PYQ LINKAGE

No exact prior PYQ on HAPS (a genuinely new capability); it sits under the GS3 Mains named sub-heading “Indigenisation of technology and developing new technology,” alongside past Tejas/Astra/Agni-V examples.

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. They typically operate in the stratosphere, above commercial air traffic.
2. They are considered a cost-effective alternative to Low Earth Orbit satellites for persistent surveillance and communication relay.

3. India's recently tested indigenous HAPS was developed by DRDO's ADRDE, Agra. 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

Answer: (d). All three are correct — the common trap is doubting statement 1 by confusing the stratosphere with the higher mesosphere/thermosphere where satellites actually orbit; HAPS deliberately sit below that, above weather and air traffic.

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Economy

GS2 / GS3

Indian Economy — Indirect Taxes/GST • Cooperative Federalism (Art. 279A)

8 October 2026 · Source: GST Council (57th meeting, Bharat Mandapam, New Delhi) official outcomes

GST Council Decriminalises Indirect-Tax Enforcement and Automates Refunds in a Sweeping 57th-Meeting Reform

Why in News: The 57th GST Council meeting, chaired by Union Finance Minister Nirmala Sitharaman on 8 October 2026, made no rate changes but approved a major procedural and legal overhaul: recommending omission of the power of arrest under Section 69 of the CGST Act, a five-fold rise in the prosecution threshold (₹1 crore to ₹5 crore), a lower general-penalty cap, automatic refund sanctioning, and alignment of the GST Appellate Tribunal with the new Tribunals Reforms Act, 2026. The Council cited buoyant underlying data — monthly taxable supply up 25.8%, even as the effective tax rate fell from 14.55% to 13.13% — to justify the shift from enforcement-heavy to trust-based compliance.

Background: The GST Council is a constitutional body under Article 279A (101st Amendment, 2016), chaired by the Union Finance Minister, with the Centre holding one-third weighted voting power and the states together two-thirds; a three-fourths weighted majority is required for any decision, making it India's foremost standing example of cooperative/fiscal federalism. Its recommendations are not strictly binding in law after the 2022 *Mohit Minerals* Supreme Court ruling (persuasive, not mandatory, preserving legislative competence), but in practice are almost always implemented uniformly. GSTAT, meant to reduce the High Courts' GST-dispute burden,

has faced long delays; its alignment with the new Tribunals Reforms Act and the National Tribunals Commission signals a push toward a unified, judicially-supervised tribunal-appointment system.

⚡ KEY FACTS

- 57th GST Council meeting held 8 October 2026, chaired by FM Nirmala Sitharaman, at Bharat Mandapam, New Delhi
- Section 69 (power of arrest) recommended for omission from the CGST Act; prosecution threshold raised ₹1 crore → ₹5 crore
- General penalty under Section 125 cut from ₹25,000 to ₹10,000; no show-cause notice below ₹10,000
- Refund acknowledgement window cut from 15 to 10 days; 90% automatic provisional sanction on zero-rated/inverted-duty claims within 3 working days
- Auto-registration within 3 working days for low-risk applicants (already ~61% of applications)
- E-way bill interception now needs specific intelligence plus Joint-Commissioner-rank authorisation; transit states barred from stopping goods vehicles on suspicion alone
- Context data cited by the Council: taxable-supply growth of 25.8%; effective tax rate down from 14.55% to 13.13%
- GSTAT to be aligned with the Tribunals Reforms Act, 2026 and the National Tribunals Commission Rules, 2026

🎯 MAINS DIMENSIONS / ANALYSIS

- Ease-of-doing-business vs revenue-protection trade-off: does removing arrest powers invite more evasion, or does risk-based data analytics substitute adequately?
- The GST Council as a federal bargaining institution — tested when structural, not just rate, reforms are at stake
- MSME formalisation incentives: auto-registration and auto-cancellation thresholds targeted at small taxpayers
- Part of a broader decriminalisation-of-business-laws arc (compare the Jan Vishwas Act, 2023)
- Federalism angle: the Centre-1/3rd, States-2/3rds weighted-voting design, and its non-binding-but-almost-always-followed status post *Mohit Minerals* (2022)

🧠 LET'S REMEMBER THIS THROUGH A TRICK

“1 → 5, 25 → 10, 15 → 10” — prosecution threshold up ₹1 crore to ₹5 crore; general penalty down ₹25,000 to ₹10,000; refund-acknowledgement window down 15 days to 10. And arrests: out. Council voting itself is “1-2-3”: Centre 1/3rd, States 2/3rd, 3/4ths majority needed.

📄 PYQ LINKAGE

Mains 2017 GS3 (“Discuss the rationale for introducing GST ... reasons for the delay in its roll-out”) is thematically linked; also ties to the recurring Article 279A/GST Council composition Prelims question type.

 PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. The Council recommended omitting the power of arrest from the GST law altogether.
2. The prosecution threshold under the CGST Act was raised from ₹1 crore to ₹5 crore.
3. The meeting also approved a reduction in GST rates on a wide range of consumer goods.

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

Answer: (a). Statement 3 is the classic distractor — this meeting made no broad rate changes at all; the reforms were procedural and legal, not rate-related.

GS3

Infrastructure — Roads, Ports, Railways, Airports, Logistics • Government Policies and Interventions

6 October 2026 • Source: Union Cabinet decision (PMO/PIB)

Cabinet Creates an Integrated Transport & Logistics Authority to End Multimodal Planning Fragmentation

Why in News: The Union Cabinet approved setting up the Integrated Transport and Logistics Authority (ITLA), a Special Purpose Vehicle mandated to prepare a National Transport Master Plan spanning roads, railways, ports/shipping, civil aviation, inland waterways, coastal shipping, urban mobility and logistics. ITLA will technically appraise and monitor infrastructure projects costing ₹500 crore or more, build a National Transport Data Repository drawing on GSTN e-way-bill, FASTag, Vahan and GPS data, and advise on updating the National Logistics Policy (2022).

Background: India's transport planning has historically been split across the Ministries of Road Transport, Railways, Ports/Shipping, Civil Aviation and the department that runs PM GatiShakti and the National Logistics Policy, 2022. Logistics costs in India have long been estimated at around 13–14% of GDP — well above the 8–10% typical of developed economies — partly attributed to poor multimodal integration and duplicated project appraisal. PM GatiShakti's National Master Plan (2021) already attempts digital integration of infrastructure data; ITLA is positioned as the dedicated technical-appraisal and long-term planning institution that deepens that vision with SPV backing, project-appraisal authority and a formal data repository.

KEY FACTS

- Approved by the Union Cabinet on 6 October 2026, chaired by the Prime Minister
- Structured as a Special Purpose Vehicle (SPV)
- Mandate: a 10-year-plus National Transport Master Plan across all transport modes
- Reviews ministries' shorter-term (~5-year) sectoral plans for consistency with the master plan
- Technical appraisal — not financial appraisal — of projects of ₹500 crore or more; financial appraisal stays with existing mechanisms

- Builds a National Transport Data Repository using GSTN e-way-bill, FASTag, Vahan and GPS-based freight-flow data
- Will advise on reviewing or updating the National Logistics Policy, 2022
- Objective explicitly tied to the Viksit Bharat@2047 vision of lower logistics costs and better multimodal integration

MAINS DIMENSIONS / ANALYSIS

- Institutional proliferation vs coordination: does ITLA duplicate PM GatiShakti's Network Planning Group, or genuinely fill an appraisal gap?
- Data-driven governance: using GSTN/FASTag/Vahan data for infrastructure planning as a template for evidence-based policymaking elsewhere
- Logistics-cost reduction as a competitiveness lever for "Make in India" amid global supply-chain realignment
- Centre-state and inter-ministerial coordination challenges in implementing a genuinely "integrated" transport body
- Governance design choice: separating technical appraisal (ITLA) from financial appraisal (existing mechanisms)

LET'S REMEMBER THIS THROUGH A TRICK

"₹500-crore gatekeeper for a 2047 blueprint" — ITLA appraises big-ticket (₹500-crore-plus) projects while drafting the long-horizon National Transport Master Plan for Viksit Bharat@2047.

PYQ LINKAGE

No direct prior PYQ (ITLA is newly created); syllabus-anchored to the GS3 Mains named sub-heading "Infrastructure: Energy, Ports, Roads, Airports, Railways etc."

PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following statements:

1. It has been set up as a Special Purpose Vehicle by the Union Cabinet.
 2. It is mandated to conduct both technical and financial appraisal of all infrastructure projects irrespective of cost.
 3. It will maintain a National Transport Data Repository using sources such as FASTag and Vahan.
- Which of the statements given above is/are correct?

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

Answer: (a). Statement 2 is the distractor on two counts — ITLA does technical appraisal only, and only for projects of ₹500 crore or more, not "all" projects.

India's Forex Reserves Log a Fourth Straight Weekly Decline, Led by Foreign Currency Assets

Why in News: RBI data released on 9 October 2026 showed India's foreign exchange reserves fell by \$12.95 billion in the week ended 2 October 2026, to \$734.61 billion — the fourth consecutive weekly decline. Foreign Currency Assets, the largest reserve component, fell \$10.664 billion to \$604.747 billion and drove most of the drop; gold reserves fell \$2.288 billion to \$106.413 billion. Despite the fall, reserves remain \$43.5 billion above end-March 2026 levels and \$34.6 billion higher year-on-year.

Background: India's forex reserves comprise four components tracked weekly in the RBI's Weekly Statistical Supplement: Foreign Currency Assets (FCA, the largest share, held in major reserve currencies and partly in foreign securities), Gold, Special Drawing Rights (an IMF-created reserve asset), and India's Reserve Tranche Position in the IMF. Reserves act as a buffer for external-sector stability — financing import cover, smoothing exchange-rate volatility through RBI intervention, and signalling creditworthiness. Multi-week declines typically reflect a mix of RBI's active intervention to stem rupee depreciation and valuation effects from a stronger dollar eroding non-dollar holdings.

⚡ KEY FACTS

- Week ended 2 October 2026: reserves down \$12.95 billion to \$734.61 billion
- Fourth consecutive week of decline
- Foreign Currency Assets (largest component) down \$10.664 billion to \$604.747 billion — the main driver
- Gold reserves down \$2.288 billion to \$106.413 billion
- Special Drawing Rights up marginally (\$15 million) to \$18.656 billion
- IMF Reserve Tranche Position down \$15 million to \$4.789 billion
- Reserves remain \$43.498 billion above end-March 2026 and \$34.645 billion higher year-on-year
- Four reserve components — FCA, Gold, SDR, Reserve Tranche Position — are the standard Prelims-tested composition

🎯 MAINS DIMENSIONS / ANALYSIS

- Reserve-adequacy debate: import-cover-months versus short-term-external-debt coverage as competing adequacy metrics
- RBI's dual-mandate tension — using reserves to manage rupee volatility while preserving the buffer for external shocks
- Valuation effects versus active intervention as competing explanations for reserve swings — the need to disaggregate FCA/Gold/SDR movement
- Reserves as one leg of the “twin deficit” external-vulnerability picture, alongside the current account deficit

- Policy trade-off: drawing down reserves to defend the rupee versus allowing greater market-determined depreciation

🧠 LET'S REMEMBER THIS THROUGH A TRICK

“FCA-Gold-SDR-RTP, four weeks down in a row” — remember the four reserve components through this fourth-straight-weekly-fall news hook.

📋 PYQ LINKAGE

The four-component composition of India's forex reserves (FCA + Gold + SDR + Reserve Tranche Position) is a classic, recurring statement-based Prelims question type — verify the exact year before use.

🎯 PROBABLE PRELIMS MCQ (STATEMENT-BASED)

Q. Consider the following:

1. Foreign Currency Assets
2. Gold held by the RBI
3. Special Drawing Rights
4. India's Reserve Tranche Position in the IMF

Select the correct answer using the code below:

(a) 1 and 2 only (b) 1, 2 and 3 only (c) 1, 3 and 4 only (d) 1, 2, 3 and 4

Answer: (d). Students often drop the “Reserve Tranche Position in the IMF” as an obscure fourth component — it is the smallest but still an officially reported component in every RBI Weekly Statistical Supplement.

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