

PART I • HEADLINES TO ECONOMY

ANTIM ASSURED 100+

The Topper's Last Read. Every Morning.

Monday, 31 August 2026

MORNING EDITION • 08:00 IST

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§1 Top Headlines

1. PM Modi's Tashkent leg concludes with 11 agreements — including a uranium-supply framework and Central Asia's first UPI-QR interoperability — as he joins the 26th SCO Summit in Bishkek (31 Aug–1 Sept), marking the SCO's 25th anniversary. **GS2**
2. Parliament's Monsoon Session 2026 legislative scorecard: the Bankers' Books Evidence Act, 2026 gets Presidential assent; the FCRA Amendment Bill, 2026 is referred to a 31-member Joint Parliamentary Committee. **GS2**
3. Geographical Indications Registry adds Bodo Dokhona (Assam) and Garo Textile Weaving (Meghalaya) to India's GI register, alongside three Banaras crafts. **GS1**
4. Assam's PDNA flood-damage survey concludes: 401 homes fully destroyed, 24,897 hectares of cropland inundated, ₹146.26 crore in interim relief already disbursed. **GS3**
5. India's Commerce Secretary meets Chile's Vice-Minister in Santiago to advance CEPA talks, targeting a year-end conclusion with critical minerals in focus. **GS2**
6. Tata Advanced Systems signs an MoU with the Raytheon-Lockheed Martin Javelin Joint Venture to explore co-production of the Javelin anti-tank guided missile in India. **GS3**
7. Exercise MAITREE-XV, the 15th India-Thailand joint military exercise, concludes today at Surat Thani, Thailand. **GS3**
8. Eight CSIR laboratories report active non-animal drug-testing capabilities — organoids, organ-on-chip, in-silico modelling — under the 2023 Rules amendment. **GS3**
9. C-DoT unveils 14 indigenous quantum products, including Quantum Key Distribution hardware and Post-Quantum Cryptography protocols, for 6G-ready cybersecurity. **GS3**
10. India's gross FDI hits a 15-year quarterly high of \$30.7 billion in Q1 FY27, per RBI's accessible data series. **GS3**
11. Ministry of Coal earmarks ₹5,925 crore for coal and lignite exploration through FY2030-31. **GS3**
12. MoSPI is scheduled to release India's Q1 FY27 (Apr-Jun 2026) GDP growth estimate later today; analyst forecasts range 7-8%, with official figures awaited. **GS3**

THEIAS AKADEMIA A twelve-headline morning spanning five GS papers, from a Central Asian uranium deal to a lichen-feeding moth's taxonomy, is exactly the kind of density **Sahyog Mentorship's** weekly one-on-one session is built to convert into an organised, retrievable answer bank. Details: theiasakademia.com

§2 Polity & Governance

GS1

Indian Culture — Intellectual Property Rights & Craft Heritage

Late August 2026 · Source: Geographical Indications Registry, Chennai / PIB

New GI Tags Crown Northeast India's Textile Heritage: Bodo Dokhona and Garo Textile Weaving

What happened: The Geographical Indications Registry has added Bodo Dokhona (Assam) and Garo Textile Weaving (Meghalaya) to India's GI register in a fresh batch that also included Banaras Thandai, Banaras Tabla and Banaras Shehnai from Uttar Pradesh. Dokhona is the traditional wrap-around garment central to Bodo women's identity and festivals, while Garo textile weaving is interwoven with the community's socio-religious rituals in the Garo Hills.

Background: GI tags are granted under the Geographical Indications of Goods (Registration and Protection) Act, 1999, enacted to meet India's TRIPS obligations under the WTO. Protection prevents unauthorised use of a region-specific name and is administered by the GI Registry, Chennai, under the Controller General of Patents, Designs and Trademarks (CGPDTM), DPIIT.

⚡ KEY FACTS

- GI status granted under the GI Act, 1999, administered by the GI Registry, Chennai (CGPDTM, DPIIT).
- Bodo Dokhona: traditional wrap-around garment of Bodo women, woven in silk/cotton, central to festivals like Bwisagu.
- Garo Textile Weaving: linked to the socio-cultural and religious rituals of the Garo community, Meghalaya.
- India's official GI register (2 May 2026 list) carries 822 entries; Uttar Pradesh leads state-wise, followed by Tamil Nadu and West Bengal.
- Same registration batch added Banaras Thandai, Banaras Tabla and Banaras Shehnai from Uttar Pradesh.
- GI protection is a form of intellectual property recognised under the WTO's TRIPS Agreement, protecting a collective, place-linked right rather than an individual inventor's claim.

MAINS DIMENSIONS

- GI tags for Northeast textiles extend IPR protection to tribal/community-held craft knowledge, directly supporting livelihood security in a region with limited industrial alternatives.
- Raises the implementation question of translating GI status into real market access and export premium — many Indian GIs remain under-commercialised despite registration.
- Illustrates the "collective right versus individual right" distinction central to GI jurisprudence, differing from patent law's individual-inventor framework.
- Strengthens India's cultural-diplomacy toolkit, since GI-tagged Northeast crafts can be showcased internationally as authentic, legally protected Indian heritage.

💡 LET'S REMEMBER THIS THROUGH A TRICK

"One tag, many hands" — unlike a patent that rewards a single inventor, a GI tag protects an entire community's shared, place-bound craft knowledge.

📄 PYQ LINKAGE

GS3 2017: "What are the advantages of Geographical Indications registration to the agricultural products?" Extend the same advantages framework to textile and craft GIs from the Northeast.

Probable Mains Question (150 words): Discuss the significance of Geographical Indication (GI) tags in protecting traditional community craft knowledge, with reference to recent GI registrations from Northeast India.

GS1

GI Tag

Bodo Dokhona

#GaroTextile

#IPR

GS2

Parliament — Legislative Procedure & Committees

13 August 2026 (assent); JPC process ongoing · Source: PRS Legislative Research / Lok Sabha Secretariat / PIB

Parliament's Monsoon Session 2026 Legislative Scorecard: Bankers' Books Evidence Act Gets Assent, FCRA Amendment Sent to a 31-Member JPC

What happened: The 2026 Monsoon Session (20 July–13 August) closed with 12 Bills passed. Among them, the Bankers' Books Evidence Act, 2026 received Presidential assent on 13 August, replacing the 135-year-old Act of 1891 to recognise electronic, digital, cloud and disaster-recovery banking records as admissible evidence. Separately, after sustained Opposition protest and appeals from Christian organisations, the Foreign Contribution (Regulation) Amendment Bill, 2026 was referred to a 31-member Joint Parliamentary Committee (21 Lok Sabha + 10 Rajya Sabha members), which must report by the first week of the Winter Session.

Background: The Bankers' Books Evidence Act, 1891 predated digital banking entirely, prompting a full re-enactment rather than a patch amendment. The FCRA regime has been tightened repeatedly since 2010 to strengthen oversight of foreign-funded NGOs; critics argue each round narrows civil-society space, while government maintains the changes serve transparency and national-security objectives.

⚡ KEY FACTS

- Bankers' Books Evidence Act, 2026 (Act No. 15 of 2026): Presidential assent 13 August 2026, repeals the 1891 Act.
- New Act defines "bankers' books" to include electronic, digital, virtual, cloud, backup and disaster-recovery records, subject to system-integrity safeguards.
- FCRA Amendment Bill, 2026 creates a "Designated Authority" for vesting, supervision, management and disposal of foreign contributions/assets of entities that lose FCRA registration.
- JPC on the FCRA Bill: 31 members — 21 from Lok Sabha (nominated by the Speaker), 10 from Rajya Sabha (nominated by the Chairman).
- Monsoon Session 2026 ran 20 July–13 August across 19 sittings; only 2 of the 12 Bills saw substantive debate.
- Other Bills passed in the session included the Kerala (Alteration of Name) Bill, 2026, renaming the state "Keralam" in English usage.

MAINS DIMENSIONS

- The Bankers' Books Evidence Act's shift to a technology-neutral evidentiary standard mirrors the Bharatiya Sakshya Adhinyam's broader embrace of electronic evidence.
- Referring the FCRA Bill to a JPC rather than passing it directly exemplifies Parliament's committee system functioning as intended — contested legislation gets wider scrutiny before enactment.
- The FCRA amendment reopens the recurring civil-society debate on balancing national-security/transparency objectives against operational space for genuine non-profit and faith-based organisations.
- Only 2 of 12 Bills receiving substantive debate this session revives concern about declining legislative scrutiny time relative to the volume of Bills passed.

💡 LET'S REMEMBER THIS THROUGH A TRICK

"1891 meets 2026" — the Bankers' Books Evidence Act finally lets a cloud backup count as evidence, 135 years after it first defined a "banker's book" as ink on paper.

📄 PYQ LINKAGE

GS2 2021: "Discuss the role of the Public Accounts Committee in maintaining executive accountability to the legislature."
Format cue: extend the same committee-scrutiny lens to the FCRA Bill's JPC referral.

Probable Mains Question (150 words): Examine the significance of Joint Parliamentary Committees in India's legislative process, with reference to the FCRA Amendment Bill, 2026.

Survey concluded 30 August 2026 · Source: Assam State Disaster Management Authority (ASDMA)

Assam Floods 2026: Rapid PDNA Survey Concludes — 401 Homes Destroyed, ₹146.26 Crore in Interim Relief Disbursed

What happened: Assam's "Rapid Assessment Survey of Flood Damages for Post-Disaster Needs Assessment (PDNA)" concluded on 30 August 2026, more than three weeks after the state's 2026 flood death toll reached 100. ASDMA's assessment records 401 houses fully destroyed and 1,856 partially damaged, alongside 24,897.27 hectares of submerged cropland; ₹146.26 crore in interim relief has already been released to 96,842 affected families, with a final PDNA report due by 15 September.

Background: Assam's annual monsoon flooding, driven by the Brahmaputra and its tributaries, has repeatedly tested the state's disaster-response architecture. The government has moved this year toward publishing damage assessments on a public web portal for verification, a transparency step following past criticism of opaque, delayed relief disbursement.

⚡ KEY FACTS

- PDNA survey ("Assam Flood 2026 – Rapid Assessment Survey of Flood Damages for PDNA") concluded 30 August 2026.
- 401 houses fully damaged; 1,856 houses partially damaged, per ASDMA data.
- 24,897.27 hectares of cropland inundated across flood-hit districts.
- ₹146.26 crore in interim relief disbursed to 96,842 affected families so far (includes an earlier ₹47.93 crore tranche to 31,951 families).
- Ex-gratia compensation of ₹4 lakh announced for each flood-death family.
- Final PDNA report expected by 15 September 2026; damage list to be published on a dedicated public portal for citizen verification.

MAINS DIMENSIONS

- Distinguishes "interim relief" (immediate cash assistance) from a formal PDNA-based rehabilitation grant — a two-track disaster-finance architecture used across major Indian flood/cyclone responses.
- Publishing the damage list for public verification is a transparency-and-accountability innovation directly responsive to recurring criticism of India's disaster-relief administration.
- Assam's recurring flood burden strengthens the case for embankment modernisation and basin-wide, India-Bangladesh-coordinated flood forecasting.
- Tests the National Disaster Management Authority's guidelines on state-versus-centre financing responsibility (SDRF/NDRF norms) for a disaster of this scale.

🌸 LET'S REMEMBER THIS THROUGH A TRICK

"Assess first, rebuild right" — Assam's PDNA model ties every rupee of rehabilitation grant to a verified, publicly checkable damage record, not a blanket estimate.

📖 PYQ LINKAGE

GS3 2020: "Describe the various causes and significant impacts of landslides... What are the strategies for risk mitigation in vulnerable regions?" Format cue: substitute for flood-risk mitigation in the Brahmaputra basin.

Probable Mains Question (200 words): Discuss the institutional mechanism for post-disaster needs

assessment and relief disbursement in India, with reference to the 2026 Assam floods.

GS3

Assam Floods 2026

PDNA

#ASDMA

#DisasterManagement

THEIAS AKADEMIA Craft-IPR, legislative committees and disaster-finance architecture in one section — exactly the GS1-GS2-GS3 spread **ANTIM 2027** aspirants are trained to hold together under time pressure. theiasakademia.com

§3 International Relations

GS2

India & its Neighbourhood — Central Asia; Bilateral/Multilateral Groupings

30–31 August 2026 · Source: Ministry of External Affairs / PIB

PM Modi's Central Asia Tour Culminates: India-Uzbekistan Uranium Framework, UPI-QR Rollout, and the 26th SCO Summit's Bishkek Declaration

What happened: PM Modi's Tashkent leg concluded with 11 agreements, including a framework for long-term uranium supply to support India's civil nuclear programme and the first UPI-QR merchant-payment interoperability arrangement in Central Asia; both sides set a \$5 billion annual bilateral trade target by 2030. He has now joined the 26th SCO Summit in Bishkek (31 August–1 September), marking the SCO's 25th anniversary, where leaders are set to adopt a "Bishkek Declaration" alongside bilateral talks including with President Putin.

Background: This is the concrete-outcomes chapter of a tour already tracked through its announcement, departure and bilateral conclusion in previous days; today's substantive content — the signed uranium and UPI-QR agreements, and the SCO's actual Bishkek Declaration — had not been reported before, distinct from earlier pre-departure and pivot-framing coverage.

⚡ KEY FACTS

- 11 agreements signed during the Tashkent leg, spanning trade, uranium supply, digital payments, energy and connectivity.
- Uranium-supply framework supports India's civil nuclear-energy programme, linked to the Nuclear Energy Mission's 100 GW-by-2047 target.
- UPI-QR merchant-payment interoperability launched in Uzbekistan — the first such arrangement in Central Asia.
- Bilateral trade target: \$5 billion annually by 2030 (India-Uzbekistan).
- 26th SCO Summit, Bishkek, 31 Aug–1 Sept 2026, marks the SCO's 25th anniversary; a "Bishkek Declaration" and thematic statements are to be adopted.
- SCO founded 2001, Shanghai; India and Pakistan became full members in 2017 (Astana Summit); Bishkek Summit theme: "sustainable peace, development and prosperity."

MAINS DIMENSIONS

- Extending UPI beyond South Asia/the Gulf into Central Asia advances India's digital-public-infrastructure diplomacy, projecting a homegrown payment rail as a genuine export product.
- A uranium-supply agreement diversifies India's nuclear fuel sources beyond existing arrangements, directly supporting the Nuclear Energy Mission's capacity-scaling target.
- India's SCO participation requires continuous balancing — endorsing connectivity/counter-terror language in a forum that also includes Pakistan and China, without conceding ground on sovereignty-sensitive projects.
- The tour's sequencing — bilateral gains locked in at Tashkent, then multilateral positioning at Bishkek — is a repeatable template for India's Central Asia diplomacy.

🧠 LET'S REMEMBER THIS THROUGH A TRICK

"Sign first, summit next" — India banked the uranium and UPI-QR wins bilaterally before walking into the SCO's crowded, consensus-driven room.

📅 PYQ LINKAGE

GS2 2016: "What is the significance of Shanghai Cooperation Organisation for India?" Directly applicable, now updated with concrete 2026 outcomes.

Probable Mains Question (200 words): Discuss the strategic and economic significance of India's outreach to Central Asia, with reference to the 2026 Uzbekistan agreements and the SCO Summit.

GS2 SCO India-Uzbekistan #BishkekDeclaration #CentralAsia

GS2

Bilateral Trade Agreements & Groupings

26 August 2026 · Source: Ministry of Commerce & Industry / PIB

India-Chile CEPA Talks Advance in Santiago: Critical Minerals in Focus, Year-End Conclusion Targeted

What happened: Commerce Secretary Rajesh Agrawal met Chile's Vice-Minister of International Economic Relations, Paula Estévez Weinstein, in Santiago on 26 August to review progress on the India-Chile Comprehensive Economic Partnership Agreement (CEPA), with both sides reaffirming a commitment to conclude negotiations by the end of 2026.

Background: Chile ranked among India's significant Latin American trading partners in 2025; India's CEPA push with Chile is part of a wider strategy to secure long-term access to critical minerals (lithium, copper) essential for its clean-energy and electronics manufacturing ambitions, alongside opportunities in pharmaceuticals, agriculture, machinery and engineering.

⚡ KEY FACTS

- Meeting held in Santiago, 26 August 2026, between Commerce Secretary Rajesh Agrawal and Vice-Minister Paula Estévez Weinstein.
- Bilateral trade (2025): approximately \$5.4 billion — Chile is among India's key Latin American trading partners.
- Target: conclude CEPA negotiations by end of 2026.
- Focus sectors: critical minerals (lithium, copper), healthcare, pharmaceuticals, energy, agriculture, machinery and engineering.
- CEPA (Comprehensive Economic Partnership Agreement) is a deeper trade instrument than a standard FTA, typically covering goods, services and investment together.

- Chile holds among the world's largest lithium and copper reserves, central to India's critical-minerals security strategy alongside the National Critical Mineral Mission.

MAINS DIMENSIONS

- Reflects India's diversification of critical-mineral sourcing beyond traditional partners, reducing dependence on any single geography.
- A CEPA with Chile would be among India's first deep trade agreements with a Latin American economy, testing India's capacity to extend trade diplomacy beyond its traditional Asia-Europe-Gulf axis.
- Raises the standard CEPA trade-off: opening India's market to competitive imports versus securing reciprocal access and mineral security.
- Complements the National Critical Mineral Mission's goal of securing overseas mineral assets through diplomatic and commercial instruments together.

🧠 LET'S REMEMBER THIS THROUGH A TRICK

"Copper and lithium, not just a trade pact" — India's Chile CEPA push is really a critical-minerals security strategy wearing a trade-agreement label.

📄 PYQ LINKAGE

GS3 2023: "Explain the purpose of setting up the National Critical Mineral Mission." Direct linkage to today's Chile CEPA critical-minerals focus.

Probable Mains Question (150 words): Discuss the significance of critical minerals in India's clean-energy transition and examine India's strategy for securing their supply through trade agreements.

GS2

India-Chile CEPA

Critical Minerals

#TradeDiplomacy

#NationalCriticalMineralMission

THEIAS AKADEMIA

Reading a uranium deal and a copper-and-lithium trade pact as two faces of the same resource-security logic is precisely the connective analysis **EMP** (Ethics & Moral Philosophy) training rewards. theiasakademia.com

§4 Defence & Security

GS3

Defence Indigenisation & Make in India

30 August 2026 · Source: Ministry of Defence / Industry Release

Tata Advanced Systems Signs MoU with the Javelin Joint Venture for India Co-Production of the Javelin Anti-Tank Guided Missile

What happened: Tata Advanced Systems Limited (TASL) and the Javelin Joint Venture (JJV) — a partnership between Raytheon and Lockheed Martin — signed an MoU on 30 August 2026 to explore co-production of the Javelin All Up Round (AUR) anti-tank guided missile in India, including a final assembly and integration facility and component-production capability.

Background: The Javelin is a man-portable, fire-and-forget anti-tank guided missile long sought by the Indian Army to replace ageing second-generation ATGMs. India-US defence-industrial cooperation has deepened steadily under frameworks like INDUS-X and the bilateral defence-industrial roadmap, moving from imports toward co-production and technology transfer.

⚡ KEY FACTS

- MoU signed 30 August 2026 between Tata Advanced Systems Limited and the Javelin Joint Venture (Raytheon + Lockheed Martin).
- Scope: co-production of the Javelin All Up Round (AUR); exploration of a final assembly and integration (FAI) facility plus component production in India.
- Javelin: man-portable, shoulder-fired, fire-and-forget anti-tank guided missile with top-attack capability.
- Fits India's long-pending requirement to replace vintage second-generation ATGMs in infantry units.
- Builds on India-US defence-industrial cooperation frameworks, including INDUS-X (innovation) and the bilateral defence-industrial roadmap.
- Aligns with the Defence Production and Export Promotion Policy (DPEPP) 2020's indigenisation and export targets.

MAINS DIMENSIONS

- Marks a maturing India-US defence relationship — moving from a buyer-seller Foreign Military Sales relationship toward genuine co-production, previously reserved for partners like Russia and France.
- Tests India's "Make in India" defence framework against the technology-transfer depth US industry is willing to offer, a recurring friction point in India-US defence deals.
- Fills a genuine capability gap for infantry anti-armour firepower, relevant given India's continuing armoured-warfare modernisation on both western and northern fronts.
- Private defence-sector participation (Tata, not a DPSU) in a strategic missile co-production deal reflects the post-2020 opening of India's defence-industrial base to private players.

💡 LET'S REMEMBER THIS THROUGH A TRICK

"Fire, forget, and now, manufacture" — Javelin's signature "fire-and-forget" targeting philosophy is about to get a "Made in India" label too.

📄 PYQ LINKAGE

GS3 2020: "What is the significance of the Indo-US Nuclear Deal?" Format cue: substitute for a question on India-US defence-industrial co-production and its significance for Atmanirbhar Bharat.

Probable Mains Question (150 words): Examine the significance of co-development and co-production agreements in advancing India's defence-indigenisation goals, with reference to recent India-US defence-industrial initiatives.

GS3

Javelin ATGM

India-US Defence

#TataAdvancedSystems

#AtmanirbharBharat

GS3

Bilateral Military Exercises — Southeast Asia

18–31 August 2026 (concludes today) · Source: Indian Army / PIB

Exercise MAITREE–XV Concludes in Thailand: India–Thailand Army Ties Deepen Counter–Terror Cooperation

What happened: The 15th edition of the India–Thailand joint military exercise MAITREE, conducted from 18–31 August 2026 at the Vibhavadi Rangsit Camp, Surat Thani, Thailand, concludes today. The exercise involved 85 personnel each from the Indian Army (represented primarily by troops of 9 Gorkha Rifles) and the Royal Thai Army, focused on company-level joint training in jungle and semi-urban counter-terrorism operations.

Background: Exercise MAITREE has run for fifteen editions, alternating venues between India and Thailand, and forms one strand of India's Act East Policy's defence-cooperation dimension alongside exercises with Vietnam, Singapore, Indonesia and the wider ASEAN framework.

⚡ KEY FACTS

- MAITREE–XV: 15th edition, 18–31 August 2026, Vibhavadi Rangsit Camp, Surat Thani, Thailand.
- Participants: 85 personnel each from the Indian Army and Royal Thai Army.
- Indian contingent drawn primarily from 9 Gorkha Rifles; Thai contingent from the 3rd Battalion, 25th Infantry Brigade, 5th Division.
- Focus: company-level joint training in jungle and semi-urban terrain, counter-terrorism operations.
- Part of India's Act East Policy's defence-cooperation strand with ASEAN nations.
- Exercise alternates venues between India and Thailand in successive editions.

MAINS DIMENSIONS

- Jungle/semi-urban counter-terror interoperability training is directly relevant to both countries' internal-security concerns along their respective insurgency-affected border regions.
- Reinforces India's Act East Policy's military dimension, complementing economic and connectivity engagement with ASEAN.
- Bilateral exercises like MAITREE build interoperability and trust incrementally, distinct from larger multilateral exercises that serve broader coalition-building goals.
- Continuity of low-profile bilateral exercises like MAITREE, sustained across years regardless of headline-grabbing developments, reflects the

steady institutional core of India's defence diplomacy.

🔴 LET'S REMEMBER THIS THROUGH A TRICK

"Same jungle, different year" — MAITREE's 15 editions show defence diplomacy's real work often happens in quiet, recurring exercises, not just summit photographs.

📄 PYQ LINKAGE

GS3 2016: "Terrorism has become a significant threat to internal security... suggest measures to curb this menace." Extend to bilateral counter-terror training as a capacity-building tool.

Probable Mains Question (150 words): Discuss the significance of bilateral military exercises in advancing India's Act East Policy, with reference to Exercise MAITREE.

GS3

Exercise MAITREE-XV

India-Thailand

#ActEastPolicy

#CounterTerrorism

THEIAS AKADEMIA

A co-production MoU and a fifteenth-edition bilateral exercise, read together, show the two speeds of India's defence diplomacy — the kind of contrast **LAKSHYAM AIR1**'s integrated GS3 modules train students to hold in one answer. theiasakademia.com

§5 Science & Technology

GS3

Science & Technology — Biotechnology & Research Ethics

Ongoing rollout, reported ~16 August 2026 · Source: CSIR / ICMR / DBT

India's Push to Replace Animal Testing in Drug Development: Organ-on-Chip and Organoid Science Gain Regulatory Ground

What happened: Eight CSIR laboratories now report active capabilities in non-animal drug-testing methods — including three-dimensional organoids, organ-on-chip platforms, advanced in-vitro/cell-based systems and in-silico modelling — following a 2023 amendment to the New Drugs and Clinical Trials Rules that formally permits such non-animal, human-relevant approaches for safety and efficacy testing. The absence of detailed regulatory guidance on acceptance criteria and validation pathways, however, continues to limit their routine use in formal drug-approval submissions.

Background: India's amendment mirrors global regulatory shifts, including the US FDA Modernization Act 2.0, which similarly opened the

door to non-animal testing methods. The push responds both to animal-ethics concerns and to the scientific limitation that animal models often fail to predict human drug responses accurately, a recognised driver of costly late-stage clinical-trial failures.

KEY FACTS

- 8 CSIR laboratories report active non-animal testing capabilities: organoids, organ-on-chip, advanced in-vitro systems, in-silico modelling.
- Legal basis: 2023 amendment to the New Drugs and Clinical Trials Rules, 2019, permitting non-animal, human-relevant testing methods.
- Organ-on-chip: a microfluidic device lined with living human cells that mimics an organ's physiological function on a chip.
- Global parallel: the US FDA Modernization Act 2.0 similarly permits non-animal methods for drug approval.
- Implementation gap: absence of detailed regulatory guidance on acceptance criteria/validation pathways limits routine formal use.
- Coordinated across CSIR, ICMR and DBT, including a joint Indo-Swiss (SNSF) research programme on One Health approaches.

MAINS DIMENSIONS

- Represents a genuine ethics-meets-science convergence: reducing animal suffering in research while addressing animal models' poor predictive value for human drug toxicity/efficacy.
- The regulatory-guidance gap illustrates a common pattern in Indian science policy — permissive rule changes outpacing the technical standards needed for real-world adoption.
- Positions India within a global first-mover group on next-generation drug-safety science, relevant to India's pharmaceutical-export competitiveness.
- Raises validation and cross-jurisdictional-acceptance questions: a drug approved in India on organ-on-chip data alone may still need animal data for global regulatory acceptance.

LET'S REMEMBER THIS THROUGH A TRICK

"A liver on a chip, not in a cage" — organ-on-chip technology tries to answer the same safety question a lab animal would, using human cells instead.

PYQ LINKAGE

GS3 2019: "Discuss the research and developmental achievements in applications of biotechnology, and their consequences." Extend directly to organ-on-chip and non-animal drug-testing technology.

Probable Mains Question (150 words): Discuss the scientific and ethical significance of organ-on-chip and organoid technologies in replacing animal testing in drug development.

25 August 2026 · Source: C-DoT / Department of Telecommunications

C-DoT Unveils 14 Indigenous Quantum Products for 6G-Ready Cybersecurity

What happened: The Centre for Development of Telematics (C-DoT) unveiled 14 indigenous quantum technology products — including Quantum Key Distribution (QKD) hardware and Post-Quantum Cryptography (PQC) protocols — at its 43rd Foundation Day on 25 August 2026, aimed at helping financial institutions and telecom operators transition away from classical public-key infrastructure vulnerable to future quantum attacks.

Background: C-DoT, the telecom R&D arm of the Department of Telecommunications, has increasingly aligned its work with the National Quantum Mission and India's Bharat 6G Vision, which envisions India as a standards-setter rather than merely a standards-follower in next-generation telecom technology.

⚡ KEY FACTS

- 14 indigenous quantum products unveiled by C-DoT, 25 August 2026 (43rd Foundation Day).
- Product categories: Quantum Key Distribution (QKD) hardware, Post-Quantum Cryptography (PQC) protocols.
- Purpose: help financial institutions/telecom operators migrate from classical public-key infrastructure vulnerable to future quantum-computing attacks.
- Aligned with India's Bharat 6G Vision and the National Quantum Mission (2023, ₹6,003 crore outlay).
- C-DoT functions under the Department of Telecommunications, Ministry of Communications, as India's telecom R&D institution.
- India has contributed to ITU's IMT-2030 (6G) framework, pushing for "ubiquitous connectivity" as a recognised 6G usage scenario.

MAINS DIMENSIONS

- "Harvest now, decrypt later" attacks — adversaries storing encrypted data today to decrypt once quantum computers mature — make PQC migration a present, not future, cybersecurity priority.
- Indigenous QKD/PQC capability reduces India's dependence on imported cryptographic hardware for critical financial and telecom infrastructure.
- Positions India to influence 6G global standards early, rather than adopting standards set by other blocs,

addressing a criticism from India's 4G/5G rollout experience.

- Tests India's ability to move quantum research from laboratory demonstration to deployable, certified products at commercial scale — the harder half of any deep-tech mission.

🧠 LET'S REMEMBER THIS THROUGH A TRICK

"Lock today, quantum-proof tomorrow" — PQC protocols resist a quantum computer that doesn't fully exist yet, because today's encrypted data can be harvested and cracked later.

📖 PYQ LINKAGE

GS3 2022: "What is Quantum Entanglement? Discuss its significance for emerging technologies." Extend to India's quantum-communication/cryptography programme under the National Quantum Mission.

Probable Mains Question (150 words): Explain the significance of Post-Quantum Cryptography and Quantum Key Distribution in securing India's critical digital infrastructure.

GS3

C-DoT

Quantum Key Distribution

#PQC

#Bharat6G

§6 Economy

GS3

Indian Economy — Foreign Investment

26 August 2026 (Q1 FY27 data) · Source: RBI / DPIIT

India's FDI Inflows Hit a 15-Year High: \$30.7 Billion in Q1 FY27

What happened: India attracted \$30.7 billion in gross Foreign Direct Investment between April-June 2026 (Q1 FY27), the highest quarterly figure in the RBI's accessible data series, signalling sustained global investor confidence despite prevailing geopolitical uncertainty. Separately, under India's revised FDI framework, 29 proposals worth ₹4,895.65 crore had been processed as of 20 August 2026.

Background: India's cumulative FDI inflow stood at \$1.16 trillion between April 2000-March 2026; FY26's total inflow was ₹8,25,485 crore (~\$94.52 billion), with the government's continuing ease-of-doing-business

and FDI-liberalisation measures credited for sustaining momentum even as global FDI flows have generally softened amid trade and geopolitical frictions.

KEY FACTS

- Gross FDI, Q1 FY27 (Apr-Jun 2026): \$30.7 billion — the highest in the RBI's accessible quarterly data series.
- FY26 total FDI inflow: ₹8,25,485 crore (~\$94.52 billion); FDI equity inflow: ₹5,16,936 crore (~\$58.84 billion).
- Cumulative FDI (April 2000-March 2026): \$1.16 trillion, per DPIIT data.
- Revised FDI framework: 29 proposals worth ₹4,895.65 crore processed as of 20 August 2026.
- DPIIT (Department for Promotion of Industry and Internal Trade) is the nodal body for India's FDI policy.
- India's FDI regime operates on the Automatic and Government routes, with sector-specific caps under the Consolidated FDI Policy.

MAINS DIMENSIONS

- A 15-year-high quarterly FDI print amid global geopolitical uncertainty suggests India is increasingly viewed as a relative safe haven for capital, distinct from pure growth-chasing investment.
- Strong FDI inflows help finance India's current-account deficit without adding to external debt, unlike portfolio (FII) flows or external commercial borrowings.
- Sustained FDI momentum tests whether India can convert investment inflows into manufacturing capacity and jobs (the PLI-scheme logic), not merely portfolio-style capital parking.
- The revised FDI framework's dual objective — facilitation plus safeguards — reflects the ongoing tension between opening the capital account further and retaining strategic-sector oversight.

LET'S REMEMBER THIS THROUGH A TRICK

"Fifteen years, one number" — a 15-year-high FDI quarter is the kind of superlative examiners love to test with a "which statement is correct" trap on the base year.

PYQ LINKAGE

GS3 2015: "Craze for gold in Indians has led to a slack demand for other financial assets. Elaborate the reasons." Format cue: substitute for a question on FDI as a stable financing source for India's external sector.

Probable Mains Question (150 words): Discuss the significance of sustained FDI inflows for India's external-sector stability, and examine measures to convert investment into manufacturing capacity.

GS3

FDI

Q1 FY27

#DPIIT

#ExternalSector

GS3

Indian Economy — Energy Security & Mineral Resources

Late August 2026 · Source: Ministry of Coal / PIB

Government Earmarks ₹5,925 Crore for Coal and Lignite Exploration, FY2026-27 to FY2030-31

What happened: The Ministry of Coal has committed ₹5,925 crore over five years (FY27-FY31) for expanded coal and lignite exploration, aimed at augmenting India's proven reserve base and supporting continued domestic thermal-coal self-sufficiency even as the country pursues its parallel renewable-energy and net-zero-2070 commitments.

Background: Coal continues to supply roughly half of India's primary commercial energy and about 70% of electricity generation. Despite an accelerating renewables push, the government maintains that firm, dispatchable coal-based capacity remains essential for grid stability during the energy transition, making sustained exploration and reserve-augmentation a continuing priority.

⚡ KEY FACTS

- Outlay: ₹5,925 crore for coal and lignite exploration, FY2026-27 to FY2030-31 (five-year window).
- Coal India Limited's FY26 production: 768.19 million tonnes; coal off-take: 744.83 million tonnes.
- Coal supplies roughly 70% of India's electricity generation and about half its primary commercial energy.

- Exploration funding supports reserve-to-resource conversion, a prerequisite for future commercial mine auctions.
- Complements the Ministry of Coal's commercial coal-mining auction reforms initiated in 2020, opening the sector to private/foreign players.
- Sits alongside India's parallel National Green Hydrogen Mission and renewable-capacity targets under its net-zero-by-2070 pathway.

MAINS DIMENSIONS

- Illustrates India's explicit "twin-track" energy strategy — sustaining coal-based firm capacity while scaling renewables — rather than an abrupt coal phase-out.
- Exploration funding is upstream infrastructure most citizens never see, yet it underpins downstream energy-security and price-stability outcomes for decades.
- Raises the standard climate-versus-development tension: continued coal-sector investment sits uneasily against India's COP commitments, even as per-capita emissions remain far below developed-country levels.
- Tests coordination between the Ministry of Coal's exploration push and the Ministry of Power's grid-integration planning for a still-coal-heavy but increasingly renewables-mixed generation base.

🔴 LET'S REMEMBER THIS THROUGH A TRICK

"Explore now, mine later" — every rupee in exploration funding today becomes an auctionable coal block years down the line, the slow upstream half of India's energy-security pipeline.

📄 PYQ LINKAGE

GS3 2017: "Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals. Comment on the progress made in India." Directly applicable to coal's continuing role in India's energy mix.

Probable Mains Question (150 words):

Examine the rationale for continued investment in coal exploration even as India scales up its renewable energy capacity.

GS3

Coal Exploration

Energy Security

#MinistryOfCoal

#NetZero2070

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A record FDI quarter and a five-year coal-exploration commitment, read side by side, are the kind of "capital in, energy secured" pairing **NEEB 300+ Live PYQ Writing** drills for applied-economics answer speed.
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