Prelims Exam Topics

EAC-PM WORKING PAPER ON DELIMITATION OF LOK SABHA CONSTITUENCIES

Context

Economic Advisory Council to the Prime Minister (EAC-PM) released a working paper recommending multi-factor criteria for "targeted" splitting of seats in India's next delimitation exercise.

Key Recommendations

- Advocates targeted splitting of constituencies (not uniform) based on joint demographic + linguistic profile, not size alone
- Recommends splitting 170 out of 543 existing seats- 59 for two-way split, 111 for three-way split
- Proposes expanding Lok Sabha to 824 seats (from current 543)
- Delimitation Commission, to be constituted after the 2027 Census, should use updated demographic and linguistic data for final calculations.
- ECI + Ministry of Statistics to time delimitation with a **fresh booth rationalisation cycle**
- **2027 Census tabulations** and gender-disaggregated electoral statistics to be released on schedule
- Women-only polling booths and **women-targeted voter roll update drives** to address residual urban women turnout gap.

FISH SURVIVAL BIOASSAY TEST FOR CAUSTIC SODA INDUSTRY

Context

Environment (Protection) Second Amendment Rules, 2025 mandate caustic soda plants using MCT to pass a fish-survival bioassay test for wastewater toxicity.

About the Rule

- Requires **laboratory-based bioassay testing** to measure the **combined toxicity** of industrial wastewater discharged by MCT-based caustic soda plants
- Bioassay test = measures cumulative/combined effect of all pollutants in wastewater on living organisms (fish)

About Membrane Cell Technology (MCT)

- Uses a **selective ion-exchange membrane** to separate the cathode and anode chambers during chlor-alkali electrolysis
- Considered **cleaner and less polluting** than older **mercury cell** and **diaphragm cell** processes

- MCT is the modern standard process for the Chlor-Alkali Industry (Produces chlorine, caustic soda, and hydrogen through electrolysis of brine)
- Produces high-purity caustic soda with lower energy consumption and zero mercury discharge

About Caustic Soda

- Sodium Hydroxide(NaOH)
- One of India's most widely used industrial chemicals
- **Applications:** Soap & detergents, paper & pulp, textiles, aluminium refining, petrochemicals, water purification

FLOATING SOLAR ENERGY POTENTIAL IN INDIA

Context

NISE (autonomous institute under MNRE) released India's first comprehensive national assessment "Solar PV Potential of India (Floating Solar)", estimating 102.18 GW of floating solar potential across India's reservoirs.

About Floating Solar Energy Potential

- **Top States with Floating Solar Energy Potential**: Maharashtra (16.28 GW), Madhya Pradesh, Karnataka, Odisha and Telangana
- **Advantages**
    - Land-neutral-no acquisition required
    - Reduces water evaporation from reservoirs
    - Existing grid infrastructure near reservoirs reduces transmission costs
    - Dual use of water bodies for fisheries/irrigation alongside power generation
- **Challenges**
    - Higher upfront cost: ~25% more expensive than ground-mounted systems (due to floats, anchoring, waterproofing)
    - Structural issues observed at Omkareshwar park: loosening float joints, misaligned platforms, uneven buoyancy, electric cable breakages
    - No national-level cost assessment exists for realising the 102 GW potential

1. Omkareshwar park

- Located on River Narmada, Khandwa district, Madhya Pradesh
- India's largest floating solar park, currently 278 MW, to be scaled up to 600 MW

BIRSA MUNDA

Context

Marking the 124th death anniversary of revolutionary tribal leader Birsa Munda, Jharkhand Chief Minister Champai Soren paid his tributes

About Birsa Munda

- Revered as "Dharti Aba" (Father of the Earth), he was tribal leader, freedom fighter, and spiritual healer
- Born 15 November 1875, Khunti district, Chotanagpur Plateau (present-day Jharkhand); belonged to the Munda tribe
- Combined religious reform with political rebellion-unique feature of his leadership
- Died in British custody in 1900, aged just 25

About Ulgulan-The Great Tumult (1899–1900)

- **Causes:**
  - British introduced the **zamindari system**, displacing the traditional **Khuntkatti system** (communal land ownership recognising Mundas as original cultivators)
  - Colonial **Forest Laws** restricted tribal access to traditional forest resources
  - Exploitation by local landlords (*dikus*) and missionaries further eroded tribal autonomy and cultural identity
- **Nature of Uprising:**
  - Armed tribal uprising against British colonial administration, zamindars, and missionaries
  - Birsa articulated the concept of **"Munda Raj"**- autonomous tribal self-rule
  - **Dombari Buru Massacre (1899)**: British forces opened fire on Birsa's followers gathered at Dombari Buru, resulting in a major tribal massacre.

1.Chotanagpur Tenancy (CNT) Act, 1908

- Enacted as a response to the Ulgulan Movement.
- Protects the Khuntkatti land tenure system.
- Prohibits transfer of tribal land to non-tribals, safeguarding Adivasi land rights.

2.Khuntkatti:

- Also known as Bhuinhari among Oraons, was the traditional Adivasi system of collective land ownership and governance prevalent among the Mundas of the Chotanagpur region.
- Under the system, the descendants of the original settlers who cleared forests and established a village, known as Khuntkattidars, held collective rights over the village territory.

3.Birsait Faith

- **Origin:** Emerged after Birsa distanced himself from Christian missionary institutions.
- **Core Philosophy**: Combined elements of Sarnaism, Hinduism, and monotheism.
- **Key Features**: Promoted worship of one supreme creator, rejected witchcraft, and encouraged a nature-centric lifestyle. Followers regarded Birsa as a messianic figure.

COAL EXCHANGE RULES, 2026

Context

Ministry of Coal published the Coal Exchange Rules, 2026

About Coal Exchange

- An organised **electronic marketplace** where multiple buyers and sellers trade coal through transparent mechanisms
- Shifts coal marketing from traditional **"one-to-many"** (one seller ⟶ many buyers) to exchange-based **"many-to-many"** (many sellers ⟷ many buyers) model
- Enables **market-driven price discovery**, improves efficiency, and widens buyer access for producers

Features

- **Authorising Body:** Coal Controller Organisation (CCO)
- **Registration Validity:** 25 years
- Authorised exchanges can:
    - Establish and operate trading platforms
    - Frame market rules and bye-laws
    - Facilitate coal transactions and ensure regulatory compliance
- **Legal basis:** The Mines and Minerals (Development and Regulation) Amendment Act, 2025 introduced the concept of a Mineral Exchange, empowering the Central Government to facilitate transparent trading of coal, its processed forms, and other notified minerals.

Coal Controller Organisation (CCO): Established in 1945; functions under Ministry of Coal; headquartered in Kolkata. Key functions: regulates coal quality, collects and disseminates coal statistics, ensures compliance with coal grading standards.

INDICATORS OF GLOBAL CLIMATE CHANGE 2025 REPORT

Context:

The Indicators of Global Climate Change (IGCC) 2025 report, led by University of Leeds, recorded the highest-ever human contribution to global warming.

Key Findings

- Human-induced warming reached **1.37°C** above pre-industrial levels (1850–1900) in 2025
- Rate of warming: **0.27°C per decade** (2016–2025)- matching all-time high
- GHG emissions at record high of **54.6 ± 5.5 GtCO$_2$e/year** (2015–2024); aerosol cooling effect also weakening
- **Methane and nitrous oxide** also reached all-time highs in 2025
- Evidence that **CO$_2$ emission growth is slowing**

Mains Exam Topics

INFLUENCE OF INDIAN IDEAS ON SOUTHEAST ASIA

Context

Ancient maritime trade (500–1500 AD) between India and Southeast Asia led to the exchange of cultural, religious, and political ideas, shaping civilisations from Cambodia to Java.

How Did Indian Ideas Spread to Southeast Asia?

- **Maritime Trade Routes:** Indian merchants sailing the Bay of Bengal established port polities across Southeast Asia, carrying Brahmanical and Buddhist ideas embedded in everyday cultural practice.
    - *E.g.,* Funan (Mekong Delta, 1st–6th century AD) emerged directly along Indian oceanic trade routes; Chinese records describe its rulers adopting Sanskrit titulature and Indian court customs.
- **Brahmin Priests and Buddhist Monks:** Religious intermediaries travelled voluntarily to Southeast Asian courts, transmitting Sanskrit learning, ritual practice, and iconographic traditions without any accompanying military force.
    - *E.g.,* Yupa pillar inscriptions (Kutai, Borneo, 4th century AD) — the earliest Sanskrit records in Southeast Asia — document a Brahmanical Ashvamedha sacrifice performed by a local king, confirming Brahmin court presence through invitation, not conquest.
- **Court Patronage:** Southeast Asian rulers actively invited Indian Brahmins and Buddhist scholars to legitimise their authority through Indian political theology — making cultural transmission a deliberate top-down choice.
    - *E.g.,* Jayavarman II (802 AD) invited a Brahmin ritualist to consecrate him as Devaraja, unifying the Khmer polity under a single divine sovereign through an explicitly Indian-derived ceremony.
- **Monastic and Dynastic Networks:** Buddhist pilgrimage corridors and inter-dynastic monastic ties deepened theological and artistic exchange over centuries.
    - *E.g.,* The Sailendra dynasty of Java maintained active ties with the Pala dynasty of Bengal, channelling Mahayana Buddhist theology and artistic styles into Java.

What Was the Impact of Indian Ideas in Southeast Asia?

- **Religion**

- **Shaivism:** Shiva worship and Linga veneration spread into Cham and Khmer territories through Brahmin networks, becoming state religion under royal patronage.
    - *E.g.,* My Son Sanctuary (Vietnam, 4th–13th century AD) was continuously built and maintained by Cham rulers as a royal Shaiva centre, featuring Linga worship and Sanskrit inscriptions spanning nearly a thousand years.
- **Vaishnavism:** Vishnu worship shaped the cosmological imagination of Khmer rulers, directly informing monumental temple architecture.
    - *E.g.,* Angkor Wat (Suryavarman II, 12th century AD) replicates Mount Meru as the cosmic centre, with concentric enclosures and cardinal orientation derived from Vastu Shastra tradition.
- **Buddhism:** Mahayana and Theravada Buddhism spread deeply across both mainland and island Southeast Asia through monastic networks and royal sponsorship.
    - *E.g.,* Borobudur (Java, 8th–9th century AD), the world's largest Buddhist monument, was built under direct Pala-influenced artistic and theological guidance; Bagan Plains (Myanmar) contain over 2,000 temples built through royal patronage between the 11th and 13th centuries.

- **Political Ideas-Devaraja (God-King):** Indian political theology provided Southeast Asian rulers a ready framework to centralise authority by presenting the king as an earthly manifestation of Vishnu or Shiva.
    - *E.g.,* The Khmer Devaraja cult institutionalised through Jayavarman II's consecration ceremony became the ideological cornerstone of Khmer kingship for centuries.
- **Language and Literature:** Sanskrit reshaped Southeast Asian scripts and literary traditions; Indian epics were indigenised rather than merely translated, reflecting active local creative engagement.
    - *E.g.,* Thai, Khmer, Malay, and Javanese scripts derive from Brahmi; the Ramayana was recast as the Ramakien (Thailand) and Kakawin Ramayana (Java).
- **Performing Arts:** Indian aesthetic theory and dance vocabulary were absorbed and localised into distinct Southeast Asian art forms.
    - *E.g.,* Cambodian Apsara dance and Thai classical dance trace their grammar to the Natya Shastra tradition.
- **Architecture:** Indian sacred spatial planning, concentric cosmological layouts, mountain-temple symbolism, cardinal orientation governed monumental construction across the region.

- *E.g.,* Angkor Wat, Borobudur, and My Son Sanctuary all reflect Indic cosmological design, each simultaneously expressing local dynastic identity.

PRELIMS FACT BOX

1. **Funan:** 1st–6th century AD; Mekong Delta; one of the earliest Indianised states
2. **Srivijaya:** 7th–13th century AD; Sumatra; major maritime Buddhist empire and Sanskrit learning centre.
3. **Sailendra Dynasty:** 8th–9th century AD; Java; built Borobudur; maintained Pala dynasty links.
4. **Yupa Inscriptions:** Kutai, Borneo (4th century AD); earliest Sanskrit inscriptions in Southeast Asia; record Ashvamedha sacrifice.

INDIA'S FDI LANDSCAPE

Context

India's net FDI fell from a peak of $44 billion in 2020-21 to under $1 billion in 2024-25, recovering to $7.6 billion in 2025-26 against gross inflows of $94.6 billion, exposing a growing and underexamined gap between gross inflows and net capital retention.

What is the Significance of FDI for India?

- **Technology and Productivity Gains** Real FDI brings proprietary technology, managerial expertise, and modern production processes, critical for industrial upgrading.
    - *E.g.,* Semiconductor and electronics FDI under PLI schemes is enabling integration into Global Value Chains (GVCs).
- **Employment and Export Competitiveness** Manufacturing-oriented FDI generates direct employment and builds export capacity
    - E.g., The UP Defence Industrial Corridor attracted investments worth $4.2 billion, expected to generate around 52,000 jobs and boost defence manufacturing capacity
- **Strategic Autonomy** FDI in defence, space, and deep-tech reduces import dependence in strategically sensitive sectors.
    - E.g., FDI-backed joint ventures like the Tata-Airbus C295 transport aircraft facility in Vadodara, India's first private sector military aircraft manufacturing plant

What Are the Key Challenges?

- **Overstated Gross Inflows** A large share of recorded FDI reflects intra-group restructuring, ECB-to-equity conversions, and share swaps, ownership changes on paper, no fresh money entering the economy.
    - Nearly $40 billion of $560 billion in equity inflows (2014-26) were of this nature.
- **Skewed Investor Composition** FDI flows from three investor types with fundamentally different economic impacts; only RFDI brings technology transfer and GVC integration; financial investors are structurally exit-oriented.
- **Declining Manufacturing FDI** Despite PLI schemes, RFDI into manufacturing was only 10.6% of effective inflows in the most recent four-year period, declining across three consecutive periods.
- **Services Dominance** Most FDI flows into financial services, digital platforms, and e-commerce , sectors with weak backward linkages and limited employment generation compared to manufacturing.

- **Disinvestment:** Weak net FDI is wrongly blamed on profit repatriation, while the actual driver is disinvestment and capital repatriation recorded in the financial account.
- **Outflows Exceeding Inflows** Between 2022-26, fresh equity inflows totalled $230.6 billion but disinvestment, dividends, and royalty outflows reached $344.4 billion; $1.50 leaving for every $1 entering.
- **Capital Routing via OFDI:** Of India's $65 billion OFDI (2023-26), 45% went into SPVs and holding companies in Singapore and UAE, pointing to capital routing rather than genuine corporate globalisation.
    - E.g., Tata Motors' subsidiary routed $405 million through a Singaporean entity to acquire Italy's IVECO Group.

What Is the Way Forward?

- **Effective FDI Measurement**: Policymakers must separately track RFDI, financial investments, SPV-routed capital, and exit-related outflows; gross inflow figures alone distort policy assessment.
- **Quality over Volume**: Since 1991, FDI policy has prioritised volume over value. Future policy must emphasise technology transfer, domestic value addition, and export competitiveness as core criteria.
- **Deepen Manufacturing Ecosystems**: FDI must be channelled into GVC-linked sectors-semiconductors, green manufacturing, and defence where RFDI creates durable industrial capacity.
- **Regulate Round-Tripping**: Greater disclosure on SPVs, tax haven routing, and beneficial ownership is needed to separate genuine foreign investment from recycled domestic capital re-entering as FDI.

PRELIMS FACt BOX

1. **Real FDI (RFDI)**: Investments by traditional multinationals that establish actual production units, R&D centres, or service operations in the host country.
    a. Bring technology, brands, and managerial expertise. Represent long-term commitments with limited exit intent.
    b. E.g., Samsung's semiconductor plant, Apple's iPhone assembly via Foxconn/Tata.
2. **Financial Investor**s: Include Private Equity (PE) funds, Venture Capital (VC) firms, Sovereign Wealth Funds, and asset managers.
    a. The primary goal is capital growth through appreciation in value-not production or technology transfer.
    b. Exits are planned from the outset through IPOs, secondary sales, or buybacks.
    c. E.g., Temasek's investment in and subsequent exit from Schneider Electric India.

3. **Diaspora Investments and SPVs**: Capital raised abroad by Indian-origin investors or routed through Special Purpose Vehicles (SPVs) in offshore financial centres like Singapore, Mauritius, or UAE.
    a. Sometimes involves round-tripping, Indian capital leaving the country, acquiring a foreign identity, and re-entering as FDI to avail tax or regulatory benefits.