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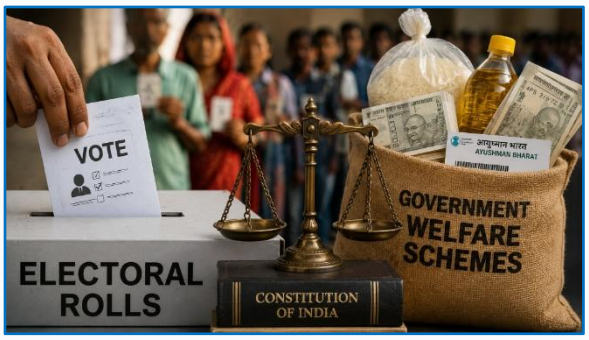
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GENERAL STUDIES 2

1.1. POLITY & GOVERNANCE

1.1.1. ELECTORAL ROLLS CANNOT DETERMINE WELFARE BENEFICIARIES

Context



Union Minister Singh proposed using Voter ID (EPIC) with biometric authentication instead of Aadhaar for identifying welfare beneficiaries.

Introduction

Electoral rolls determine the right to vote, while welfare databases identify beneficiaries based on scheme-specific eligibility. Using electoral identity as a basis for welfare delivery risks conflating two distinct constitutional and administrative purposes.

Understanding the Core Issue

Electoral Roll vs Welfare Beneficiary Identification

Electoral Roll	Welfare Beneficiary Database
Determines eligibility to vote.	Determines eligibility for social protection.
Governed by electoral laws.	Governed by scheme-specific laws and guidelines.
Based on electoral registration criteria, including ordinary residence and age.	Based on socio-economic conditions and eligibility criteria of individual schemes.
Exclusion affects electoral participation.	Exclusion can deprive individuals of essential services and entitlements.

Constitutional and Legal Framework

A. Supreme Court's observations on SIR (May 27 judgment)

The Supreme Court clarified important limitations on the ECI's powers:

- The ECI can undertake only a limited enquiry into citizenship for determining eligibility for inclusion in electoral rolls.
- Any action arising from such an exercise must remain confined to electoral consequences.
- Deletion from electoral rolls affects an individual's place on the roll and the corresponding right to vote, not their independent welfare entitlements.
- EPIC is a derivative document, issued on the basis of inclusion in the electoral roll. Using it to verify the correctness of that very roll would create a logical contradiction.

B. Relevant Constitutional Provisions

Constitutional provision	Relevance
Article 14	Equality before law; arbitrary exclusion from welfare benefits violates the principle of non-arbitrariness.
Article 21	Right to life with dignity; access to essential welfare services is closely linked to dignified existence.
Article 38	Directs the State to promote social, economic and political justice.
Article 39(b)	Ensures distribution of material resources to serve the common good.
Article 41	Provides for the State's obligation to secure public assistance within its economic capacity.
Article 47	Makes improvement of nutrition and public health among the State's primary duties.
Article 326	Provides for adult suffrage; electoral eligibility is distinct from welfare eligibility.

C. Relevant Legal Framework

- Representation of the People Act, 1950: Governs preparation and revision of electoral rolls.
- Aadhaar Act, 2016: Provides the statutory framework for Aadhaar-based identity authentication, subject to applicable legal safeguards.
- National Food Security Act, 2013: Establishes statutory food security entitlements for eligible households.

Major Challenges and Concerns

1. Arbitrary exclusion from welfare entitlements

- Linking welfare delivery to electoral rolls can deprive individuals of essential services due to wrongful deletion or errors in electoral registration.
- It creates a situation where electoral disenfranchisement can translate into socio-economic exclusion.

2. Flaws in the Special Intensive Revision (SIR)

- Stringent residency requirements and documentation-related difficulties can disproportionately affect migrant workers, itinerant populations and vulnerable communities.
- In West Bengal, nearly 93% of appeals against deletion resulted in restoration of names by September 2026, indicating substantial wrongful exclusions.

3. Violation of the principle of universal social protection

- Welfare eligibility should be determined by socio-economic vulnerability and scheme-specific criteria rather than electoral registration.

- Linking benefits to voter identity risks excluding children, non-voters and other vulnerable individuals who may otherwise qualify for assistance.

4. **Constitutional and institutional overreach**
   - The ECI's mandate is to conduct free and fair elections, not determine access to welfare schemes.
   - Using electoral rolls for welfare verification risks expanding the consequences of electoral decisions beyond their constitutional purpose.
5. **Weakening of the welfare state**
   - Welfare programmes are instruments of distributive justice and social protection.
   - Making benefits conditional upon electoral inclusion can transform welfare from a rights-based entitlement into an instrument of administrative discretion.
6. **Exclusion through technological dependence**
   - Biometric authentication, incorrect records, authentication failures and database mismatches can create additional barriers to accessing welfare.
   - Digital verification without adequate alternatives may disproportionately affect elderly persons, persons with disabilities and marginalised populations.
7. **Fiscal considerations overriding social justice**
   - Linking welfare beneficiaries to a narrower electoral database may indirectly facilitate the exclusion of beneficiaries.
   - Such an approach risks prioritising expenditure reduction over the constitutional commitment to social and economic justice.

Why the Proposed Approach is Fundamentally Flawed

- **Institutional contradiction:** An electoral institution's database is being used for determining entitlements that fall under the domain of welfare administration.
- **Legal contradiction:** A document derived from electoral registration is being used to determine eligibility for benefits unrelated to electoral participation.
- **Constitutional contradiction:** The exclusion of an individual from the electoral process cannot automatically become a ground for excluding them from the social protection framework.

Way Forward

1. **Separate electoral registration from welfare identification**
   - Electoral rolls must remain confined to determining electoral eligibility.
   - Welfare beneficiaries should be identified through independent, scheme-specific eligibility databases.
2. **Strengthen rights-based welfare delivery**
   - Ensure that eligibility is determined by the provisions of the relevant welfare legislation and socio-economic criteria.
   - Prevent electoral exclusion from becoming a ground for denial of essential public services.

3. **Establish robust grievance redressal mechanisms**
    - Introduce time-bound appeals, independent verification and correction mechanisms for wrongful exclusion.
    - Ensure that eligible individuals continue receiving essential benefits during the resolution of genuine identity disputes, subject to applicable scheme provisions.
4. **Adopt an inclusive digital governance framework**
    - Use multiple identity verification mechanisms rather than relying exclusively on one database.
    - Provide offline alternatives, assisted authentication and human intervention in cases of technological failure.
5. **Strengthen institutional accountability**
    - Ensure transparency and accountability in SIR exercises.
    - Require proper notice, an opportunity to be heard and reasoned decisions before deletion from electoral rolls.
6. **Judicial clarification**

    The Supreme Court should clarify the permissible limits of electoral roll verification and reaffirm that electoral exclusion cannot automatically curtail independent welfare entitlements.

Conclusion

A welfare state must separate electoral rights from welfare entitlements. Benefits should be determined by legal eligibility and socio-economic vulnerability, ensuring that digital governance promotes inclusion rather than exclusion.

Q. *The use of electoral rolls for identifying welfare beneficiaries risks converting electoral exclusion into socio-economic exclusion. Examine the constitutional, institutional and governance-related concerns associated with this approach. Suggest measures to ensure inclusive welfare delivery. 15* ***Marks***

1.1.2. DEATH PENALTY IN INDIA: JUSTICE, DETERRENCE AND JUDICIAL FALLIBILITY

Context



India voted against the UN resolution on a global moratorium on the death penalty, citing sovereignty and judicial safeguards, including the **'rarest of rare' doctrine** and mandatory High Court confirmation of death sentences.

Introduction

The death penalty is the most irreversible form of punishment imposed by the state. While it is justified on grounds of deterrence, retribution and justice for victims, its legitimacy depends on the reliability and fairness of the criminal justice system.

Historical Background of Death Penalty in India

- **Colonial legacy (1860):** The Indian Penal Code (IPC), 1860, introduced and codified capital punishment for specified offences.
- **Pre-Independence abolition debate (1931):** Gaya Prasad Singh attempted to introduce a Bill for abolition; the demand also gained prominence following the execution of Bhagat Singh, Sukhdev and Rajguru.
- **Constitutional debates (1947–49):** The Constituent Assembly debated abolition, highlighting arbitrariness, discrimination and the possibility of wrongful convictions; however, the Constitution retained capital punishment.
- **Reform of 1955:** Amendment to the CrPC removed the requirement for courts to give reasons for not imposing death, shifting away from death as the presumptive punishment.
- **Law Commission Report (1967):** The 35th Report recommended retention of capital punishment, considering India's socio-economic conditions and law-and-order requirements.
- **CrPC, 1973:** Made life imprisonment the normal punishment and death an exception; courts were required to record *special reasons* for imposing the death penalty.
- **Jagmohan Singh v. State of U.P. (1973):** Supreme Court upheld the constitutional validity of the death penalty.

India's Position on the Death Penalty

- **Retained punishment:** India continues to retain capital punishment for certain offences under criminal law.
- **Constitutional safeguards:** Death penalty is constitutionally permissible, subject to judicial scrutiny and procedural safeguards.
- **Rarest of rare doctrine:** As laid down in *Bachan Singh v. State of Punjab (1980)*, the death penalty should be imposed only in the rarest of rare cases when the alternative option is unquestionably foreclosed.
- **Judicial review:** Death sentences awarded by Sessions Courts require confirmation by the High Court.
- **Sovereign position:** India considers the choice to retain or abolish capital punishment a matter of national legal policy.

Arguments Against the Death Penalty

A. Irreversibility of punishment

- Execution is irreversible, whereas errors in investigation, evidence appreciation or judicial decisions may result in wrongful conviction.
- The release of innocent persons after years on death row demonstrates the limitations of judicial safeguards.

B. Limited deterrence

- Research has not established conclusively that the death penalty provides greater deterrence than life imprisonment.

- Excessively harsh punishments may not prevent crime when the probability of detection and conviction remains low.

C. Structural inequality in justice delivery

- Accused persons from economically disadvantaged backgrounds may lack access to competent legal representation.
- Poor investigation, coerced confessions, unreliable witness testimony and flawed evidence increase the risk of wrongful convictions.

D. Penal populism

- Expanding capital offences in response to public outrage, particularly following sexual violence, may prioritise symbolic severity over effective criminal justice reform.
- Harsh punishment alone cannot compensate for poor policing, low conviction rates and delayed trials.

E. Disproportionate punishment and unintended consequences

- Imposing death for offences not involving intentional killing raises concerns of proportionality.
- Excessive penalties for non-fatal crimes may create incentives for offenders to escalate violence to eliminate witnesses or avoid detection.

Constitutional and Legal Dimensions

- **Article 21 – Right to Life:** The death penalty must satisfy the requirements of just, fair and reasonable procedure.
- **Article 14 – Equality before Law:** Unequal access to legal assistance and inconsistent sentencing raise concerns about fairness and non-discrimination.
- **Bachan Singh v. State of Punjab (1980):** Established the rarest of rare doctrine and made life imprisonment the rule and death penalty the exception.
- **Machhi Singh v. State of Punjab (1983):** Elaborated circumstances for applying the rarest of rare doctrine.
- **Judicial safeguards:** High Court confirmation, appellate review, review petitions, curative petitions and mercy petitions provide layers of protection, but cannot completely eliminate judicial error.

Challenges in India's Criminal Justice System

- **Investigative deficiencies:** Poor forensic capacity, custodial abuse, inadequate evidence collection and unreliable witness handling.
- **Unequal legal representation:** Financial and social disadvantages affect the quality of defence available to accused persons.
- **Trial court sentencing:** A large number of death sentences at the trial stage raises concerns about consistency in application of the rarest of rare doctrine.
- **Delay in justice:** Prolonged proceedings and years on death row create additional suffering.

- **Weak deterrence framework:** Low certainty of detection and conviction undermines deterrence more than the severity of punishment can compensate for.
- **Legislative over-expansion:** Increasing the number of capital offences may reflect punitive political responses rather than evidence-based criminal policy.

Global Perspective

- **United Kingdom:** Abolished the death penalty for murder in 1965 and completed abolition for all crimes in 1998, reflecting a shift towards rehabilitation and human rights.
- **United States:** Retains capital punishment in several states, while others have abolished it or imposed moratoriums, reflecting the federal nature of criminal justice policy and continuing debate over deterrence and wrongful convictions.
- **China:** Retains and extensively uses capital punishment, although execution figures remain classified and are widely believed to be among the highest globally.

Way Forward

A. Reconsider the retention of capital punishment

- Introduce a formal moratorium on executions as an immediate step towards reviewing India's capital punishment framework.
- Commission a comprehensive review of capital offences, sentencing practices and treatment of death-row prisoners.

B. Restrict the scope of capital punishment

- Remove the death penalty for offences that do not involve intentional killing.
- Ensure punishment is proportionate to the gravity of the offence and based on sound criminological evidence.

C. Strengthen criminal investigation

- Improve forensic infrastructure, scientific investigation, witness protection and accountability of investigating agencies.
- Shift the focus from severity of punishment to certainty of detection and conviction.

D. Ensure effective legal representation

- Strengthen legal aid for persons facing capital punishment at every stage of trial, appeal and mercy proceedings.
- Ensure access to competent lawyers, independent review of evidence and adequate sentencing hearings.

E. Reform sentencing practices

- Develop uniform sentencing guidelines to reduce arbitrary application of the death penalty.
- Strengthen judicial scrutiny of mitigating circumstances, including socio-economic background, mental condition and possibility of rehabilitation.

F. Move towards abolition

Gradually transition towards abolition of capital punishment through legislative review, institutional reform and evidence-based criminal justice policy.

Conclusion

Criminal justice must prioritise fairness and certainty over severity. Given the irreversible nature of the death penalty and the risk of judicial error, India should reconsider its retention and focus on effective investigation, legal aid and human dignity.

Q. *Capital punishment requires a criminal justice system capable of ensuring near-infallible justice, whereas India's system continues to face institutional and procedural shortcomings. Critically examine the rationale for retaining the death penalty and suggest measures for reform.* ***15 Marks***

1.2. INTERNATIONAL RELATIONS

1.2.1. STRENGTHENING PARTNERSHIPS IN A CHANGING INDO-PACIFIC

Context

India's participation in the ASEAN, East Asia and QUAD summits highlights the growing importance of Asian diplomacy. Amid rising geopolitical tensions, India's challenge is to strengthen regional partnerships while protecting its strategic autonomy and national interests.



Introduction

The Indo-Pacific has emerged as a major centre of global economic and geopolitical competition. India must deepen its engagement with Asian partners to safeguard maritime security, strengthen economic resilience and promote a stable, inclusive regional order.

Recent Developments

1. **ASEAN-India and East Asia Summits:** PM Modi attended the 23rd ASEAN-India Summit and 21st East Asia Summit in Manila, promoting disaster management, early warning systems, cybersecurity, nuclear energy, critical minerals and space cooperation.
2. **QUAD Leaders' Summit:** India, the USA, Japan and Australia strengthened cooperation in maritime surveillance, cybersecurity, critical supply chains and undersea cable connectivity, while supporting freedom of navigation and regional stability.
3. **ASEAN-India Maritime Cooperation Year 2026:** The initiative aims to deepen maritime security, regional connectivity, marine research and the **Blue Economy**, strengthening India's maritime engagement with Southeast Asia.

Significance of Strengthening India's Partnerships in Asia

1. **Geopolitical and Strategic Significance:** Stronger partnerships with ASEAN, Japan, Australia and the USA help **balance China's influence**, promote a **free, open and inclusive Indo-Pacific**, protect freedom of navigation and strengthen India's **strategic autonomy** and leadership in the Global South.
2. **Economic and Trade Significance:** Deeper Asian engagement expands **trade, investment and export markets**, integrates India into regional supply chains for semiconductors, electronics and pharmaceuticals, improves maritime connectivity and promotes the **Blue Economy** through sustainable fisheries, marine research and offshore renewable energy.
3. **Maritime and Defence Security:** Cooperation with QUAD and ASEAN strengthens **maritime surveillance, intelligence sharing and freedom of navigation**, counters piracy, illegal fishing and trafficking, protects energy supply routes and promotes defence technology transfer, joint production and military exercises, as demonstrated by the **BrahMos deal with the Philippines**.
4. **Diplomatic, Institutional and Soft Power Significance:** Engagement through **ASEAN centrality, East Asia Summit and multilateral platforms** promotes dialogue, peaceful dispute resolution and inclusive regional governance, while India's historical, Buddhist and civilisational links strengthen its **soft power, cultural diplomacy and people-to-people relations**.
5. **Non-Traditional and Emerging Security Cooperation:** Asian partnerships strengthen **cybersecurity, digital public infrastructure, energy security and critical technology capabilities** through cooperation in AI, semiconductors, space and critical minerals, alongside joint action on **climate change, disaster management, early warning systems and humanitarian assistance**.

Major Challenges Associated with India's Asian Partnerships

1. **Geopolitical Rivalry and Strategic Balancing:** Intensifying **US-China competition**, China's growing military and economic influence in Southeast Asia and unresolved **India-China border disputes** complicate India's strategic choices, while uncertainties in India-US trade and technology relations challenge its **strategic autonomy**.
2. **Economic Imbalances and Weak Regional Integration:** India's persistent **trade deficit with ASEAN** (approximately $45.2 billion in 2024–25), delays in reviewing **AITIGA**, regulatory barriers and high logistics costs limit export competitiveness and integration into regional manufacturing and supply chains.
3. **Connectivity Deficits and Myanmar Instability:** Delays in the **India-Myanmar-Thailand Trilateral Highway** and **Kaladan Multi-Modal Transit Transport Project**, combined with Myanmar's political instability, disrupt India's Northeast's connectivity with Southeast Asia and increase cross-border logistical and security challenges.
4. **Institutional Divisions and Diplomatic Constraints:** Divergent strategic interests among **ASEAN members**, particularly regarding China and the South China Sea, weaken regional consensus and **ASEAN centrality**, while competing expectations among India's partners make diplomatic balancing difficult.

5. **Maritime, Non-Traditional and Technological Security Threats: South China Sea disputes**, piracy, terrorism, cyberattacks, illegal fishing and trafficking threaten regional stability, while climate-related disasters and dependence on concentrated **critical mineral and advanced technology supply chains** create additional vulnerabilities.

Important Indian Policy Initiatives and Frameworks

1. **Act East Policy (2014):** Strengthens India's **economic, strategic and cultural engagement** with Southeast Asia.
2. **SAGAR (2015):** Promotes **maritime security and regional growth** through cooperation with Indian Ocean countries.
3. **Indo-Pacific Oceans Initiative (IPOI):** Promotes **maritime cooperation, ocean security and sustainable ocean management** across the Indo-Pacific.
4. **MAHASAGAR (2025):** Expands India's vision of **maritime security, regional cooperation and shared prosperity** across the wider Indian Ocean and beyond.
5. **QUAD:** Provides a platform for India, the US, Japan and Australia to promote a **free, open and inclusive Indo-Pacific** through practical cooperation.

Way Forward: Strengthening India's Asian Partnerships

1. **Strategic Multi-alignment:** India should maintain balanced relations with major powers while strengthening **ASEAN centrality** to safeguard strategic autonomy and promote regional stability.
2. **Economic Integration:** India should expedite the **AITIGA review** and integrate with regional supply chains in semiconductors, electronics, pharmaceuticals and critical minerals.
3. **Regional Connectivity:** India should accelerate the **India-Myanmar-Thailand Trilateral Highway** and **Kaladan Project** to strengthen connectivity between Northeast India and Southeast Asia.
4. **Maritime and Security Cooperation:** India should deepen cooperation through **QUAD and ASEAN** in maritime surveillance, defence partnerships, cybersecurity and disaster management.
5. **Sustainable and People-centric Partnerships:** India should strengthen cooperation in **climate resilience, renewable energy, education and cultural exchanges** to build long-term regional trust.

Conclusion

India's Asian diplomacy must move beyond summit-level engagement towards tangible economic, strategic and developmental outcomes. A balanced, inclusive and implementation-oriented approach will strengthen India's regional leadership and contribute to a stable Indo-Pacific.

Q. *Evaluate the economic and strategic dimensions of India's Look East Policy in the context of the post-Cold War international scenario.* ***12.5 marks***

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GENERAL STUDIES 3

2.1. ECONOMY

2.1.1. TURNING BATTERY WASTE INTO STRATEGIC MINERAL WEALTH



Context

Rising demand for critical minerals, coupled with China's dominance in mineral processing, has exposed India's vulnerability to global supply-chain disruptions, making battery recycling an important source of domestic mineral resources.

Introduction

End-of-life lithium-ion batteries represent an untapped reservoir of critical minerals such as lithium, cobalt and nickel. With over 8.7 million EVs on Indian roads by FY 2025–26, the anticipated rise in spent batteries presents an opportunity to recover valuable minerals and strengthen India's resource security.

Background: India's Battery Waste and Critical Mineral Scenario

- **Import dependence:** India remains heavily dependent on imports for critical minerals, while China dominates their processing and refining.
- **Untapped mineral resources:** End-of-life lithium-ion batteries contain valuable minerals such as lithium, cobalt and nickel, which can be recovered through recycling.
- **Informal recycling dominance:** A significant share of discarded batteries enters informal recycling channels, where inefficient and unsafe manual processes result in substantial material losses.
- **Low recovery efficiency:** Informal recycling reportedly recovers only 10–20% of materials, compared with over 90% in formal recycling facilities.
- **Untapped economic potential:** Battery recycling could potentially meet around 10–12% of India's lithium demand for EV battery manufacturing.

Significance of Battery Recycling for India

1. **Strengthening Critical Mineral Security**
    - Provides a domestic secondary source of lithium, cobalt and nickel, reducing excessive dependence on imports.
    - Acts as a strategic buffer against geopolitical tensions, resource nationalism and global supply-chain disruptions.
    - Complements domestic mining and international mineral partnerships.
2. **Developing Domestic Processing Capabilities**
    - Creates opportunities to develop indigenous mineral extraction, refining and processing technologies.

- Reduces India's dependence on foreign processing infrastructure, particularly China's dominance.
- Promotes technological self-reliance in the battery manufacturing ecosystem.

3. **Promoting Circular Economy**
   - Converts end-of-life batteries from an environmental liability into an economically valuable resource.
   - Encourages resource recovery, reuse and recycling instead of the linear model of extraction, consumption and disposal.
   - Reduces pressure on virgin mineral extraction and associated environmental degradation.
4. **Environmental Sustainability**
   - Prevents hazardous battery waste from entering landfills and informal disposal channels.
   - Reduces pollution risks associated with unsafe battery dismantling and processing.
   - Improves resource efficiency and supports India's broader climate and sustainability commitments.
5. **Economic and Industrial Opportunities**
   - Encourages investment in recycling infrastructure, advanced processing technologies and material recovery.
   - Generates employment across battery collection, transportation, testing and recycling.
   - Creates a new industrial ecosystem involving EV manufacturers, recyclers and research institutions.

Major Challenges in Developing India's Battery Recycling Ecosystem

1. **Dominance of the Informal Sector**
   - A substantial volume of discarded batteries flows through informal networks.
   - Manual dismantling and inefficient extraction techniques result in low material recovery and occupational hazards.
   - Lack of integration between informal waste collectors and formal recycling facilities limits resource recovery.
2. **Technological and Research Limitations**
   - Different battery chemistries make identification, segregation and mineral recovery complex.
   - Limited indigenous processing capabilities and inadequate R&D constrain efficient mineral extraction.
   - Achieving higher recovery rates and purity while minimising environmental damage remains a technological challenge.
3. **Economic Viability and Investment Risks**
   - Low volumes of end-of-life EV batteries currently limit the utilisation of recycling facilities.
   - High initial investment, long gestation periods and uncertain revenue streams discourage private investment.

- Recycled mineral prices and changing battery technologies create additional business uncertainty.

4. **Inadequate Collection and Reverse Logistics**
   - Weak collection networks and limited consumer awareness make spent battery retrieval difficult.
   - Absence of attractive buy-back mechanisms discourages EV users from returning used batteries.
   - Fragmented collection systems increase transportation and handling costs.
5. **Regulatory and Standardisation Gaps**
   - Inadequate standardisation of battery composition, recycled mineral quality and second-life applications creates operational difficulties.
   - Limited testing and certification infrastructure affects the reliability of recovered materials.
   - Weak implementation and monitoring of existing waste management regulations can encourage informal disposal.
6. **Uncertainty over Future Battery Technologies**
   - Rapid changes in battery chemistry may alter the economic value and composition of recyclable materials.
   - Recycling facilities designed around particular battery chemistries may face technological obsolescence.

Existing Government Initiatives

A. Battery Waste Management Rules, 2022

- Introduced the principle of Extended Producer Responsibility (EPR), making battery producers responsible for ensuring the collection and environmentally sound management of waste batteries.
- Provides a regulatory framework for battery collection, recycling and reuse.
- Encourages the development of an organised battery recycling ecosystem.

B. National Critical Mineral Mission (NCMM), 2025

- Aims to strengthen domestic exploration, mining, processing and recycling of critical minerals.
- Seeks to reduce import dependence and improve the resilience of critical mineral supply chains.

However, regulatory frameworks and mineral security initiatives need stronger integration with domestic battery recycling and material recovery.

Way Forward: Building a Sustainable Battery Recycling Ecosystem

1. **Integrate Recycling into Strategic Resource Planning**
   - Incorporate recycled critical minerals into India's national critical mineral stockpile strategy.
   - Establish predictable demand for recycled minerals through appropriate procurement and utilisation targets.

- Encourage recovery of individual minerals rather than limiting recycling outputs to intermediate products such as black mass.

2. **Strengthen R&D and Technological Capabilities**
   - Promote collaboration between industries, IITs, research institutions and battery manufacturers.
   - Develop advanced recycling technologies to improve mineral recovery rates, purity and cost efficiency.
   - Encourage indigenous technologies suitable for diverse battery chemistries.
3. **Establish Standards and Testing Infrastructure**
   - Introduce uniform standards for battery characterisation, recycled mineral quality and second-life applications.
   - Establish testing and certification facilities to ensure the safety and reliability of recovered materials.
   - Promote Design for Recycling and Repurposing at the battery manufacturing stage.
4. **Strengthen Collection and Reverse Logistics**
   - Encourage EV manufacturers, dealerships and service centres to introduce remunerative take-back and buy-back programmes.
   - Develop accessible collection centres and formalise the participation of informal waste collectors.
   - Improve consumer awareness regarding the safe disposal and return of spent batteries.
5. **Ensure Financial Viability of Recycling Industries**
   - Provide access to patient capital, concessional financing and suitable investment incentives.
   - Encourage public-private partnerships to establish recycling facilities before the expected surge in battery waste.
   - Develop a supportive investment ecosystem to manage initial low-capacity utilisation and long gestation periods.
6. **Promote Second-Life Applications**
   - Before recycling, assess whether retired EV batteries can be reused for stationary energy storage, particularly renewable energy integration.
   - Develop safety, performance and quality standards for second-life batteries.
   - Adopt a hierarchy of reuse, repurposing and recycling to maximise resource utilisation.

Conclusion

Battery recycling offers a strategic opportunity to integrate resource security with environmental sustainability and industrial growth. India must transform end-of-life batteries from hazardous waste into valuable secondary mineral resources. A robust recycling ecosystem can strengthen circular economy, reduce import dependence and advance India's strategic autonomy.

Q. *India's transition to electric mobility offers an opportunity to enhance critical mineral security while addressing battery waste. Examine the role of battery recycling in achieving these objectives and suggest measures to develop a sustainable recycling ecosystem.* ***15 Marks***

2.1.2. STRENGTHENING HOMEBUYER PROTECTION IN INDIA'S REAL ESTATE SECTOR



Context

On November 12, 2026, representatives of the **Forum for People's Collective Efforts (FPCE)** met Cabinet Secretariat officials to discuss reforms to the **Real Estate (Regulation and Development) Act, 2016**, following their appeal to Prime Minister Narendra Modi.

Introduction

The **RERA Act, 2016**, was enacted to regulate India's real estate sector and protect homebuyers. However, concerns over delayed possession, weak enforcement and ineffective grievance redressal have renewed demands for comprehensive reforms after a decade.

Major Reforms Proposed by FPCE to Strengthen RERA

1. **Separation of Responsibilities: MoHUA** should promote real estate development, while the **Department of Consumer Affairs** should independently protect homebuyers' interests.
2. **National Appellate Tribunal: A National Real Estate Appellate Tribunal** should replace state tribunals to ensure uniform interpretation of RERA and equal justice across India.
3. **Legally Binding Sale Agreements: The Agreement for Sale** should become a statutory part of the RERA Act to prevent unfair contractual conditions imposed by builders.
4. **Statutory Exit Option:** Homebuyers should be allowed to cancel bookings due to personal hardships and receive full refunds within one month if cancelled within the first year.
5. **Automatic Compensation:** Builders should submit details of all affected buyers in delayed or deficient projects so that RERA can facilitate compensation without requiring individual complaints.

Major Challenges in the Implementation of RERA

1. **Weak Institutional Capacity**: Vacancies, inadequate staffing, poor regulatory accountability and uneven implementation across states **weaken RERA's effectiveness**.
2. **Delayed Justice and Poor Enforcement**: Lengthy litigation, overlapping legal remedies and non-compliance with RERA orders prevent homebuyers from receiving **timely refunds and compensation**.
3. **Consumer Vulnerability**: **Information asymmetry**, unfair builder agreements and limited legal awareness leave homebuyers at a disadvantage against powerful real estate developers.
4. **Financial and Economic Risks**: **Project delays**, diversion of buyers' funds and financial insecurity can trap household savings and impose significant economic hardship on middle-class families.

5. **Federalism and Implementation Concerns**: A **national appellate tribunal and automatic compensation mechanisms** may create centralisation, administrative complexity and financial burdens on smaller developers unless supported by adequate safeguards.

Way Forward: Making RERA More Effective

1. **Institutional Independence and Accountability:** Separate promotional and regulatory functions, ensure merit-based appointments, fill vacancies and introduce regular audits to strengthen regulatory independence and transparency.
2. **Time-Bound Justice and Enforcement:** Strengthen State RERAs, ensure speedy dispute resolution, enforce regulatory orders strictly and introduce **digital grievance redressal mechanisms**.
3. **Stronger Financial and Contractual Safeguards:** Introduce standardised sale agreements, monitor project-wise fund utilisation and enforce stricter accountability on developers to prevent **fund diversion and unfair practices**.
4. **Accessible and Proactive Consumer Protection:** Introduce **automatic compensation, a balanced statutory exit mechanism, legal awareness campaigns and alternative dispute resolution** to protect homebuyers from financial distress.
5. **Cooperative Federalism and Outcome-Based Governance:** Establish uniform regulatory standards, improve Centre-State coordination and publish performance dashboards to ensure **consistent implementation and citizen-centric accountability**.

Conclusion

RERA's next phase must move beyond project registration towards **effective enforcement, accessible justice and financial protection**. Strengthening institutional accountability and consumer-centric regulation is essential to transform homeownership from a financial risk into a secure foundation of inclusive urban development.

Q. *"An effective regulatory framework is essential for promoting infrastructure development while safeguarding consumer interests." In this context, critically examine the role of RERA in strengthening India's real estate sector.* ***15 marks***

2.2. ENVIRONMENT

2.2.1. COP31 AND GLOBAL CLIMATE GOVERNANCE

Context



The 31st Conference of Parties (COP31), being held in Antalya, Türkiye, in November 2026, has brought the credibility of global climate commitments into focus. Developing countries are demanding the fulfilment of existing promises on climate finance, adaptation and technology transfer before accepting new ambitious targets.

Introduction

COP31 highlights a fundamental weakness in global climate governance: the widening gap between international climate commitments and their actual implementation, particularly in providing adequate financial and technological support to vulnerable developing countries.

COP31: Significance and emerging priorities

1. **Protection of vulnerable countries:** Small Island Developing States (SIDS), which contribute minimally to global greenhouse gas emissions, face disproportionately severe consequences from sea-level rise, coastal erosion, extreme weather events and ocean warming.
2. **Shift from commitments to implementation:** Unlike earlier climate negotiations that largely focused on setting emission-reduction targets, COP31 is increasingly concerned with ensuring that countries fulfil their existing financial and mitigation commitments.
3. **Climate finance as a central negotiating issue:** Developing countries are demanding predictable, accessible and adequate financial resources to implement climate adaptation and mitigation measures.
4. **Adaptation finance:** COP30 had called for a substantial expansion of adaptation finance, including efforts to triple it by 2035. COP31 faces the challenge of translating such commitments into actual financial flows.
5. **Fossil fuel transition:** The absence of a formal roadmap for transitioning away from fossil fuels following COP30 has revived concerns about the pace and credibility of global decarbonisation.
6. **Climate technology transfer:** Developing countries require affordable access to renewable energy technologies, energy storage systems, climate-resilient infrastructure and low-carbon industrial technologies.

Climate finance: The central pillar of COP31 negotiations

1. **Climate Finance Commitments:** The NCQG agreed at COP29 envisages mobilising at least **$300 billion annually by 2035** for developing countries, while COP30 emphasised scaling up adaptation finance to strengthen climate resilience.
2. **Loss and Damage Financing:** The Loss and Damage Fund aims to support climate-vulnerable countries facing irreversible losses due to extreme weather events, sea-level rise and other climate impacts; however, its limited funding remains a major concern.
3. **Implementation and Equity Challenges:** Inadequate and delayed finance, excessive dependence on loans and unequal access to funds widen the gap between developing countries' NDC commitments and implementation capacity, undermining trust between developed and developing nations.

Global Stocktake and the role of IPCC

1. **Global Stocktake (GST):** It is a periodic assessment under the Paris Agreement to evaluate collective progress towards achieving its climate goals, including mitigation, adaptation and means of implementation.

2. **Second Global Stocktake:** The preparations and discussions associated with the next assessment cycle are important because they will evaluate whether countries are collectively progressing towards the Paris Agreement's temperature goals.
3. **Importance of scientific assessment:** The Intergovernmental Panel on Climate Change (IPCC) provides scientific assessments of climate change, its impacts, vulnerabilities and mitigation options.

Major Challenges Associated with Global Climate Governance

1. **Financial challenges**
   - **Inadequate climate finance:** The financial commitments made by developed countries remain insufficient in relation to the actual requirements of developing countries for mitigation and adaptation.
   - **Uncertainty over financial mobilisation:** The $300-billion annual goal by 2035 raises questions regarding the contribution of public finance, private investment, multilateral development banks and other sources.
2. **Geopolitical and diplomatic challenges**
   - **North-South divide:** Developed and developing countries continue to disagree over historical responsibility, financial obligations, emission-reduction targets and technology transfer.
   - **Geopolitical conflicts:** Wars and international tensions divert financial resources towards defence and reconstruction, reducing the political and economic attention given to climate action.
3. **Technological and infrastructural challenges**
   - **Technology divide:** Developing countries often lack access to affordable renewable energy technologies, advanced battery storage, green hydrogen and carbon capture technologies.
   - **Grid infrastructure limitations:** Large-scale renewable energy integration requires modern transmission networks, storage systems and flexible electricity markets.
4. **Environmental and developmental challenges**
   - **Unequal climate vulnerability:** Countries contributing the least to global emissions often experience disproportionately severe climate impacts.
   - **Climate-induced displacement:** Sea-level rise, droughts, floods and extreme weather events threaten livelihoods, food security and human settlements.
5. **Institutional challenges**
   - **Weak enforcement mechanisms:** The Paris Agreement relies heavily on nationally determined commitments and transparency mechanisms rather than legally binding emission-reduction targets backed by punitive enforcement.
   - **Implementation deficit:** The gap between countries' announced climate commitments and actual domestic policy implementation undermines global climate governance.

Way Forward: India's Position and Significance in COP31

1. **Climate Finance and CBDR-RC:** India should advocate adequate, predictable and accessible climate finance from developed countries, guided by CBDR-RC, to address historical responsibilities and bridge the climate financing gap.
2. **Equitable and Nationally Determined Transition:** India should promote nationally determined energy transition pathways rather than uniform targets, considering energy security, coal dependence, poverty reduction and developmental priorities.
3. **Technology Transfer and Green Infrastructure:** India should demand affordable clean technology transfer and international cooperation while promoting investments in renewable energy, battery storage, green hydrogen and modern electricity grids.
4. **Climate Adaptation and Resilience:** India should push for greater adaptation finance, disaster risk reduction, early warning systems and climate-resilient infrastructure to protect vulnerable communities and address climate-induced displacement.
5. **Institutional Accountability and Implementation:** India should support stronger transparency, monitoring and reporting mechanisms under the Paris Agreement to bridge the gap between climate commitments and actual implementation while ensuring equity.

Conclusion

COP31 must mark a transition from climate diplomacy based on ambitious announcements to accountable implementation. Equitable finance, technology transfer and a just energy transition are essential to building trust and achieving meaningful global climate action.

Q. *Write a review on India's climate commitments under the Paris Agreement (2015) and mention how these have been further strengthened in COP26 (2021). In this direction, how has the first Nationally Determined Contribution intended by India been updated in 2022?* ***15 Marks***

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