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QUESTION & ANSWERS

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Polity & Governance

Q1. Critically examine the challenges faced in the implementation of the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and suggest measures to make India's skill development ecosystem more transparent, accountable, and outcome-driven.

Introduction

The Pradhan Mantri Kaushal Vikas Yojana (PMKVY), launched in 2015 under the Ministry of Skill Development and Entrepreneurship (MSDE), is the flagship initiative of the Skill India Mission aimed at providing free skill training to enhance youth employability. However, recent revelations of large-scale irregularities, including fake documentation, absentee trainees, and fund misuse, have raised serious concerns about transparency and governance within the scheme.

Body

1. Key Challenges in Implementation:

- a) **Widespread Corruption and Fund Misuse:** Multiple Training Partners (TPs) inflated attendance records, diverted funds, and reported non-existent training centres, resulting in large-scale financial leakages.
- b) **Weak Monitoring and Transparency:** Oversight remains inconsistent. The National Skill Development Corporation (NSDC) has faced criticism for not disclosing details of defaulters under the Right to Information (RTI) Act, undermining public accountability.
- c) **Skill-Industry Mismatch:** Courses are often outdated and disconnected from evolving market needs in areas like AI, robotics, and green energy. The lack of collaboration between industry and training institutions has led to low placement outcomes.
- d) **Inadequate Infrastructure and Accessibility:** Training centres in rural and semi-urban regions suffer from limited facilities, poor digital infrastructure, and lack of qualified trainers.
- e) **Regional Disparities and Administrative Gaps:** States such as Uttar Pradesh, Delhi, Madhya Pradesh, and Rajasthan account for the highest number of blacklisted centres, reflecting weak coordination and uneven implementation capacity.

2. Measures to Strengthen the Scheme:

- a) **Strengthen Monitoring and Accountability:** Adopt real-time biometric attendance, geo-tagging of centres, and AI-based

	<p>data verification. Link future funding to placement performance rather than enrolment numbers.</p> <p>b) Digital Transformation: Expand the Skill India Digital Hub (SIDH) for end-to-end online tracking of trainees, certification, and job linkages. Integrate PMKVY with the Academic Bank of Credits (ABC) for credit portability.</p> <p>c) Regional and Sectoral Customisation: Align training modules with local economic needs—such as agro-processing, renewable energy, and tourism—to create region-specific employment opportunities.</p> <p>d) Convergence with Other Schemes: Link PMKVY with MUDRA, PM Vishwakarma, and Start-Up India to facilitate access to credit and entrepreneurship mentoring.</p> <p>e) Strengthen Institutional Oversight: Enhance inter-agency coordination between MSDE, NSDC, and State Skill Missions through periodic audits, third-party evaluation, and social accountability frameworks.</p>
Conclusion	<p>The PMKVY remains vital to realising India’s demographic dividend, but its credibility depends on ensuring transparency, accountability, and industry linkage. Transforming PMKVY from a training-oriented to an employment- and outcome-oriented model, supported by robust digital monitoring and convergence with national missions, will be key to building a future-ready, skilled workforce for India’s economy.</p>

Q2. “The Supreme Court’s 2025 order directing the removal of stray dogs from public spaces has reignited debates on reconciling public safety with animal welfare and legal compassion.” Critically analyse the challenges and policy measures needed for humane and effective stray dog management in India.

Introduction	<p>The Supreme Court’s 2025 directive to remove stray dogs from public spaces and relocate them to shelters under the Animal Birth Control (ABC) Rules, 2023, was issued amid a sharp rise in dog-bite incidents and rabies deaths across India. While aimed at protecting public safety, the order has sparked ethical, legal, and administrative debates on balancing human welfare with animal rights, given India’s existing legal framework that promotes humane management through sterilisation and vaccination.</p>
Body	<p>1. Background: India’s Stray Dog Crisis</p> <ul style="list-style-type: none"> India has over 80 million stray dogs, among the world’s largest populations.

- According to WHO, **59,000 people die globally each year due to rabies**, 40% being children under 15; **India accounts for 36% of these deaths.**
- Despite ongoing sterilisation under the **ABC Programme**, issues like limited funding, poor infrastructure, and overcrowded shelters have undermined effectiveness.

2. Legal Framework for Stray Dog Management

1. Prevention of Cruelty to Animals Act, 1960

- Section 11 criminalises cruelty towards animals.
- Sections 428–429 IPC penalise killing or maiming of animals.

2. Animal Birth Control (ABC) Rules, 2023

- Mandates the **Capture–Neuter–Vaccinate–Return (CNVR)** method, not permanent confinement.
- Ensures sterilisation, vaccination, and return of dogs to original localities.
- Provides for **feeding zones** and local **dispute-resolution committees.**

3. Judicial Precedents

- Earlier **Supreme Court rulings (AWBI cases)** upheld CNVR as humane and barred culling.
- The 2025 “no-release” directive marks a shift, potentially conflicting with ABC Rules.

3. Key Challenges in Implementation

- **Inadequate Shelter Infrastructure:** Municipal shelters are overcrowded; Delhi’s centres house only 80–200 dogs each.
- **Funding Shortfalls:** NGOs managing sterilisation programmes face delays in municipal reimbursements.
- **Manpower Deficit:** Insufficient veterinary staff limits sterilisation coverage.
- **Legal Ambiguity:** The “no-release” order contradicts statutory ABC provisions.
- **Public Health Gaps:** Inconsistent availability of **anti-rabies vaccines** and poor surveillance.
- **Ethical Concerns:** Permanent confinement risks cruelty, while culling violates humane principles.

4. Ethical Dimensions

Ethical Domain	Core Concern	Constitutional / Moral Basis
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Human Safety vs. Animal Rights	Protecting people from bites while ensuring animal welfare	Article 21 (Right to Life) & Article 51A(g) (Compassion to Living Beings)
Public Health Ethics	Preventive sterilisation and vaccination vs. reactive removal	Utilitarian approach – greatest good for greatest number
Environmental Ethics	Overfeeding and waste mismanagement sustain stray populations	Ecological balance and One Health principle
Governance Ethics	Humane administration vs. populist culling	Rule of law and procedural justice

5. Policy Measures for Humane Management

A. Administrative & Technological Reforms

1. **AI-Based Dog Census:** Use GIS mapping, drones, and QR-coded collars to track sterilisation and vaccination.
2. **Mobile ABC Units:** On-site sterilisation and treatment vans for rural and semi-urban zones.
3. **Smart Feeding Zones:** Controlled feeding with automatic dispensers and CCTV monitoring.
4. **Predictive Analytics:** Forecast population trends for proactive interventions.

B. Institutional & Financial Mechanisms

1. **“Adopt-a-Ward” CSR Model:** Corporates to sponsor ABC and vaccination drives.
2. **Dedicated Stray Animal Fund:** Integrate with Smart Cities Mission for sustainable funding.
3. **Capacity Building:** Training municipal staff and veterinary officers for humane handling.

C. Legal and Policy Reforms

1. **Update ABC Rules:** Clarify “no-release” conditions consistent with humane principles.
2. **Mandatory Microchipping:** Ensure accountability for pet abandonment.
3. **Uniform SOPs:** National framework for stray management and rabies control.

D. Social and Ethical Interventions

	<ol style="list-style-type: none"> 1. Education: Dog-safety and rabies awareness modules in schools. 2. Community Engagement: Certification for responsible feeders and caretakers. 3. Public Health Coordination: Integrate stray management with One Health strategy. <p>6. Global Best Practices</p> <ul style="list-style-type: none"> • Bhutan: “One Health” approach combining sterilisation, vaccination, and education. • Netherlands: Achieved zero stray dogs through mass sterilisation and strong pet laws. • Singapore: Public awareness and strict anti-abandonment penalties reduced stray populations.
<p>Conclusion</p>	<p>The Supreme Court’s directive stems from legitimate public safety concerns but risks undermining established humane practices under the ABC Rules, 2023.</p> <p>A sustainable solution lies in integrating technology, law, ethics, and governance — ensuring humane sterilisation, efficient waste management, community participation, and transparent data-driven monitoring.</p> <p>India must pursue a One Health approach where human safety and animal welfare coexist, creating compassionate yet safe urban ecosystems.</p>

Q3. “The Draft Seed Bill 2025 appears to be designed more for corporations than cultivators.” Critically examine this statement in the context of key provisions of the Bill and the concerns raised by farmer groups and seed conservers.

(GS-II – Governance; Role of State; Rights of farmers; Issues with corporatisation of agriculture)

<p>Introduction</p>	<p>Seeds form the foundation of agricultural productivity and farmer autonomy. In this context, the Draft Seed Bill 2025 seeks to replace the Seeds Act 1966 and regulate the modern seed market through mandatory registration, quality control, and digital traceability. While the government claims it will curb fake seeds and improve accountability, several provisions have raised apprehensions that the Bill may disproportionately favour seed corporations over small cultivators and traditional seed systems.</p>
<p>Body</p>	<p>The Bill mandates registration and VCU testing for all seed varieties</p>

	<p>except farmers’ traditional seeds. Farmer groups argue that the standardised VCU criteria favour uniform hybrids produced by large companies, making it difficult for indigenous and climate-resilient varieties to qualify for sale.</p> <ul style="list-style-type: none"> • The requirement for QR-coded digital traceability and continuous online reporting ensures accountability, but imposes a significant digital burden on community seed banks, FPOs, and women’s collectives. These groups are treated as commercial entities and must meet the same compliance standards as corporations—an approach critics say undermines community-led seed conservation. • The proposed Central Accreditation System allows nationally accredited companies to operate across states with minimal oversight, effectively easing compliance for big firms. In contrast, farmers still lack a simple compensation mechanism. Crop failure due to faulty seeds requires litigation in civil courts, making redress inaccessible for smallholders. • Moreover, the Bill’s provision permitting foreign organisations to conduct VCU testing raises concerns about easier entry of GM, gene-edited, and patented seeds, potentially encouraging biopiracy and increasing farmer dependency.
Conclusion	<p>While the Seed Bill 2025 attempts to strengthen seed quality regulation, its design risks centralising control within large corporations and marginalising traditional, diverse seed systems. A more farmer-centric framework must ensure simplified compliance, accessible compensation, and stronger safeguards for India’s genetic heritage.</p>

Q4. Why is the cultivation of cannabis illegal in India while the sale and consumption of bhang remains permitted? Discuss the legal framework, recent judicial interpretation, and policy challenges.

GS Paper II (Polity & Governance — Laws, Rights), GS Paper IV / Ethics (legal-ethical tensions)

Introduction	<p>Cannabis regulation in India is governed by the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985. While the Act strictly prohibits the cultivation of any cannabis plant, it excludes cannabis leaves (bhang) from its definition, creating a legal distinction between growing the plant and consuming leaf-based preparations.</p>
Body	<p>Legal Framework</p> <ul style="list-style-type: none"> • Section 2(iii), NDPS Act: Defines cannabis as <i>charas</i> (resin)

and *ganja* (flowering/fruited tops); excludes leaves and seeds.

- **Bhang:** Since leaves are excluded, bhang is not treated as a narcotic drug.
- **Section 8(b):** Prohibits cultivation of “any plant of the genus *cannabis*” except for medical or scientific use.
- **State Powers:** States regulate the sale and distribution of bhang through licensing.

Judicial Clarification

- **Kerala High Court (Nov 2025):**
 - Growing any cannabis plant—flowering or not—constitutes illegal cultivation.
 - Cultivation includes growing in pots, terraces, or gardens.
 - Offence lies in *act of cultivation*, not in whether the plant contains narcotic parts.

Reason for Legal Distinction

1. **NDPS Act targets intoxicating components** — resin and flowering tops.
2. **Bhang (leaves)** historically used in cultural and religious contexts; hence exempted.
3. **Cultivation ban prevents easy access** to intoxicating parts that develop later.
4. **Policy approach** aims to control drug misuse while allowing traditional uses.

Policy Challenges

- **Confusion** due to complex definitions (leaves legal, plant illegal).
- **State variations:** Some license bhang; others ban it completely.
- **Industrial hemp potential** remains underutilised.
- **Strict NDPS penalties** impact small cultivators and users disproportionately.

Debate on reform: Balancing cultural practices, economic potential, and public health concerns.

Conclusion

The legality of bhang alongside the prohibition on cannabis cultivation reflects India’s attempt to balance cultural traditions with stringent narcotics control. However, evolving judicial clarity and ongoing debates on medicinal, industrial, and harm-reduction approaches indicate the need for a more coherent and updated regulatory framework.

Q5. “The proposal to bring Chandigarh under Article 240 raises significant issues related to federalism, historical identity, and administrative restructuring.” Discuss.

Introduction	Chandigarh, a Union Territory and the shared capital of Punjab and Haryana since 1966, has recently been at the centre of political controversy after the Centre proposed the Constitution (131st Amendment) Bill 2025 to place it under Article 240 , empowering the President to directly make regulations for certain Union Territories. The move has triggered strong opposition in Punjab, reviving debates about federalism, emotional identity, and constitutional guarantees.
Body	<p>Historical Context</p> <ul style="list-style-type: none">• Chandigarh was developed as the new capital of Punjab after Partition when Lahore went to Pakistan.• Under the Punjab Reorganisation Act, 1966, Haryana was carved out and Chandigarh became a temporary joint capital, with a 60:40 property division.• It was expected that Haryana would build a separate capital, but it has not materialised for nearly six decades. <p>Core Concerns</p> <ol style="list-style-type: none">1. Federalism & Power Balance<ul style="list-style-type: none">• Bringing Chandigarh under Article 240 will allow the Centre to legislate bypassing Parliament, raising concerns about central overreach.• Seen as weakening the spirit of cooperative federalism and diluting state participation in shared administrative spaces.2. Historical & Emotional Identity<ul style="list-style-type: none">• Punjab views Chandigarh not only as an administrative unit but as a symbol of post-Partition reconstruction and Punjabi cultural identity.• Fear that central control represents a step toward ending Punjab’s claim over the city.3. Reorganisation Commitments & State Rights<ul style="list-style-type: none">• Punjab argues that transferring Chandigarh to Punjab was a formal promise made in 1970.• Bringing it under Article 240 is seen as reversing the arrangement without consultation.4. Administrative Implications

- Chandigarh would get an **independent Administrator / Lt. Governor**, replacing the Punjab Governor.
- Centre would gain power to amend existing Acts through regulation instead of Parliamentary oversight, affecting local governance and autonomy.

Arguments in Support of the Move

- Could streamline governance and law-making procedures for the UT.
- May enable larger central funding and institutional development.
- Possibility of eventually establishing a **Legislative Assembly** for Chandigarh.

Arguments Against the Move

- Violates the understanding of a **temporary shared arrangement**.
- Seen as “snatching away” the capital from Punjab.
- Another example of **growing centralisation** like J&K state reorganisation, BBMB control debate, and Panjab University Senate restructuring.

Way Forward

- **Consensus-based decision-making** with consultation of Punjab, Haryana, UT administration and constitutional experts.
- Explore **clear legal framework** resolving long-pending disputes, including separate capital for Haryana.
- Strengthen **cooperative federalism mechanisms** such as Inter-State Council.
- Consider creating a **Mayor-in-Council governance model** for better democracy and local participation.

Conclusion

The controversy over Chandigarh reflects deeper questions about **identity, federalism, and constitutional commitments** in India’s evolving political landscape. Any change must balance historical promises, democratic consent and pragmatic administrative needs. The issue demands careful negotiation rather than unilateral constitutional amendment to ensure lasting legitimacy and regional harmony.

Q6. “The four labour codes seek to simplify India’s labour regime, but have also raised concerns about dilution of workers’ rights.” Critically examine.

GS-II (Polity & Governance – Labour laws, Welfare)

Introduction

India has consolidated **29 central labour laws into four labour codes**

– the **Code on Wages**, **Code on Social Security**, **Industrial Relations Code**, and **Occupational Safety, Health and Working Conditions (OSH) Code**. They aim to create a unified framework for **wages, social security, industrial relations and workplace safety**, and became operational from **21 November 2025**.

Body

How the Codes simplify and modernise labour laws

1. Uniform wage and social security framework

- *Code on Wages* defines “wage” uniformly and introduces a **National Floor Wage**, ensuring a minimum standard across states.
- Time-bound wage payment and **compulsory wage slips** improve transparency.

2. Expanded social security net

- *Code on Social Security* merges nine laws, formally recognises **gig and platform workers**, and mandates a **social security fund** for them.
- **Fixed-term workers** get parity with permanent workers and **gratuity after one year**, widening protection.

3. Ease of doing business & compliance reduction

- *Industrial Relations Code* and **OSH Code** merge multiple Acts, offer **single registration, common licences and e-filings**, and decriminalise many offences by replacing imprisonment with fines.
- Higher thresholds for **factory licence** and for **government approval for retrenchment/closure (300 workers)** are intended to give firms flexibility and encourage formalisation.

4. Improved workplace safety and dignity

- OSH Code mandates **annual health check-ups, safety committees**, written **appointment letters**, and allows **women to work night shifts** with safeguards.

Concerns and criticisms

1. Hire-and-fire, job insecurity

- Trade unions argue that the higher retrenchment threshold and **fixed-term employment** may legitimise easier hiring and firing, increasing precarity.

2. Right to strike curtailed

- Extending **strike-notice conditions** to all industries and including **mass casual leave** in the definition of strike are

	<p>seen as diluting a key collective bargaining tool.</p> <p>3. Centralisation and weak enforcement</p> <ul style="list-style-type: none"> ○ States fear reduced flexibility in fixing wages and designing labour regimes. ○ Without strong labour inspection and grievance redress, code-based protections may remain on paper. <p>4. Gig and informal workers – promise vs. delivery</p> <ul style="list-style-type: none"> ○ Though recognised, gig/platform workers depend on future schemes and aggregator contributions; quantum and coverage of benefits remain uncertain.
<p>Conclusion</p>	<p>The labour codes are a major structural reform aimed at creating a simpler, investor-friendly labour regime while extending minimum wage and social security to a wider workforce. However, concerns over job security, collective bargaining, and actual implementation, especially for informal and gig workers, mean that the balance between flexibility and protection is not yet fully achieved. Going forward, consultative rule-making with trade unions and states, strong enforcement mechanisms, and worker-centric social security schemes will be crucial to ensure that the codes translate into “formalisation with fairness” rather than flexibility without security.</p>

Q7. The Indian Constitution is often referred to as a “living document.” Analyse its ability to adapt to changing circumstances.

<p>Introduction</p>	<p>The Indian Constitution is called a “living document” because it evolves with societal needs, policy priorities, and emerging challenges, while preserving its foundational democratic values. Its framers designed it to provide stability yet remain adaptable to changing circumstances.</p>
<p>Body</p>	<p>1. Flexible yet Balanced Amendment Procedure</p> <p>The Constitution can be amended through Article 368, allowing evolution without compromising basic principles. Over 100 amendments reflect this dynamism:</p> <ul style="list-style-type: none"> • 73rd–74th Amendments deepened grassroots democracy. • 101st Amendment (GST) modernised economic federalism. • 86th Amendment expanded the right to education. <p>This demonstrates its ability to respond to political, social, and economic transitions.</p> <p>2. Judicial Interpretation Keeps It Contemporary</p> <p>The Supreme Court plays a crucial role in renewing constitutional</p>

	<p>meaning.</p> <ul style="list-style-type: none"> • Basic Structure Doctrine protects core values while allowing change. • Article 21 has been expanded to include rights such as privacy, clean environment, livelihood, and digital rights. • Progressive judgments (e.g., decriminalising Section 377, right to internet access) reflect evolving societal values. <p>3. Adaptability to Federal and Administrative Changes</p> <ul style="list-style-type: none"> • The Constitution accommodates reorganisation of states, decentralisation, and emerging models of governance like cooperative and competitive federalism. Institutions evolve through conventions, reforms, and judicial oversight. <p>4. Capacity to Address New-Age Challenges</p> <ul style="list-style-type: none"> • The constitutional framework extends to issues like data protection, cybersecurity, environmental sustainability, and technology governance, showing its relevance in the digital age.
Conclusion	<p>The Indian Constitution remains a “living document” because it grows through amendments, judicial interpretation, evolving political practices, and its ability to address new challenges. This balance of continuity and change ensures its enduring relevance in guiding India’s democratic journey.</p>

Q8. “The PoSH Act, 2013 was a landmark step in guaranteeing women a safe workplace, but its design and implementation today lag behind social and technological realities.” Discuss the key challenges under the PoSH framework and suggest suitable reforms.

(GS-II (Polity & Governance – Vulnerable sections))

Introduction	<p>The <i>Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013</i> operationalised the Vishakha Guidelines (1997) and recognised workplace sexual harassment as a violation of Articles 14, 15, 19 and 21. It expanded the definition of “workplace” and mandated Internal Complaints Committees (ICCs) in establishments with ≥ 10 workers. Yet, a decade later, both substantive gaps and weak implementation dilute its impact.</p>
Body	<p>Substantive / Design Challenges</p> <ol style="list-style-type: none"> 1. Narrow treatment of consent <ul style="list-style-type: none"> ○ The Act does not explicitly recognise “informed

consent” or consent obtained through **power imbalance, manipulation or emotional coercion**, especially in teacher–student or boss–subordinate relationships.

2. Emotional and psychological harassment under-addressed

- The law focuses more on visible, “provable” acts but is weaker on **grooming, manipulation, betrayal of trust**, which may not leave clear evidence but cause deep psychological harm.

3. Short limitation period

- Complaints must be filed within **3 months (extendable by 3 months)**, even though survivors subjected to coercive relationships may take much longer to recognise the abuse and gather courage and evidence.

4. Digital-age harassment not fully captured

- The Act does not lay down detailed protocols on **disappearing messages, encrypted chats, single-view images**; ICCs are often ill-equipped to handle such evidence.

5. No clear framework for inter-institutional harassment

- Misconduct by visiting faculty or professionals across multiple campuses/institutions lacks a coordinated response mechanism, allowing **repeat offenders** to escape scrutiny.

Implementation & Institutional Gaps

1. Non-constitution / improper constitution of ICCs

- The Supreme Court (2023) flagged “**serious lapses**”: many ministries, universities, sports bodies and PSUs either lack ICCs or have illegally constituted ones (no external member, inadequate women representation).

2. Low awareness, especially in informal sector

- Over 80% of women workers are in the **informal sector**, where Local Committees (LCs) are weak, poorly publicised, and logistically hard to access, making the law largely invisible.

3. Power imbalance and fear of retaliation

- Survivors fear loss of job, grades, recommendations or reputational damage within tightly knit institutional spaces; provision for action against “malicious complaints” can be misused to intimidate them.

4. Procedural delays and “legalism”

- ICCs often mimic court-like processes without training in **gender sensitivity or trauma-informed inquiry**, leading to over-reliance on direct evidence and dismissal of pattern-based complaints.

Reforms and Way Forward

1. Substantive amendments

- Explicitly recognise **informed consent**, emotional coercion and abuse of authority as sexual harassment; expand the law’s illustrations to include **digital and psychological abuse**.

2. Revisiting limitation period

- Introduce a **longer or flexible time limit**, especially in cases involving manipulation, or allow discovery-based limitation where the survivor realises the misconduct later.

3. Digital evidence protocols

- Frame Rules for **collection, preservation and appreciation of digital evidence**, and mandate **technical training** for ICC/LC members.

4. Stronger monitoring & accountability

- Designate nodal authorities at Central/State level to:
 - maintain data on ICC/LC constitution and case disposal,
 - link compliance to **licensing, accreditation, grants and contracts** for institutions.

5. Victim-centric processes

- Provide counselling, protection from retaliation, academic/employment safeguards, and treat “malicious complaint” proceedings as a **rare exception** with high threshold.

6. Capacity building & outreach

- Regular training for ICCs; targeted campaigns for students, interns, gig and informal workers on rights and complaint mechanisms.

Conclusion

The PoSH Act was a **watershed in recognising women’s right to dignity and safety at work**, but law on paper is insufficient. As the Supreme Court has cautioned, without strict adherence to enforcement and a proactive approach by State and non-State actors, the promise of

PoSH remains largely symbolic. Updating the Act to address **power, psychology and technology**, and strengthening its implementation architecture, is essential to make workplaces genuinely safe and equitable in 2025 and beyond.

International Relations

MAIN PRACTICE QUESTION

Q9. “India–Bhutan relations have evolved from a treaty-based friendship to a comprehensive strategic partnership founded on mutual sensitivity, development cooperation, and shared geopolitical concerns.” Discuss in the context of the Indian Prime Minister’s 2025 visit to Bhutan.

Introduction

India–Bhutan relations, rooted in the 1949 Treaty of Friendship and modernised in 2007, represent one of South Asia’s most stable and mutually respectful bilateral partnerships. The Indian PM’s 2025 state visit to Bhutan reaffirmed this trajectory by deepening cooperation in energy, connectivity, digital integration, human development, and security—demonstrating how a small–big neighbour relationship can be managed with sensitivity and strategic convergence.

Body

1. Evolution of the Relationship: From Treaty to Strategic Partnership

a) Treaty foundation with respect for sovereignty

- The 2007 revision of the 1949 Treaty replaced “guidance” with “cooperation,” committing both countries to respect sovereignty and refrain from allowing activities harmful to each other’s security.
- This transformed the relationship into one of **mutual agency**, not dependence.

b) Institutionalised high-level engagement

- Regular visits reflect political confidence and ensure continuity in economic and strategic cooperation.
- The 2025 visit further consolidated this institutional trust.

2. Development Cooperation: Expanding Economic and Energy Partnership

a) Hydropower as the backbone

- Joint inauguration of the **1,020 MW Punatsangchhu-II Project**, raising Bhutan’s installed capacity by 40%.

- Resumption of work on **Punatsangchhu-I** signals renewed momentum.
- Hydropower accounts for two-thirds of Bhutan's exports to India and supports Bhutan's carbon-negative status.

b) New MoUs widening the scope beyond hydropower

- Renewable energy partnership extending to green energy.
- Cooperation in health and mental wellness (NIMHANS–PEMA Secretariat).
- Indicates a shift to diversified development cooperation.

c) Strengthening Bhutan's development plans

- India committed **₹10,000 crore** for Bhutan's 13th Five-Year Plan, including PTA, HICDPs, and economic stimulus measures.
- A ₹40 billion concessional LoC for energy infrastructure further reflects India's role in long-term capacity-building.

3. Connectivity: Transforming Bhutan's Integration with India and the Region

a) Historic rail connectivity

MoUs for the **Kokrajhar–Gelephu** and **Banarhat–Samtse** rail links:

- Reduces logistic costs and enhances market access.
- Strategic for Bhutan's economic diversification.

b) Gelephu Mindfulness City (GMC)

- India supports this 2,600 sq. km flagship economic and spiritual hub.
- Immigration check-posts at Hatisar and Darranga, and multimodal logistics facilities at Jogighopa, align Bhutan with India's **Act East** and **Neighbourhood First** policies.

c) Digital and space connectivity

- Expansion of UPI integration for cross-border payments.
- Joint Plan of Action on Space Cooperation for communication, remote sensing and development services.

4. Cultural and People-to-People Bonds

1. Participation in the Kalachakra ceremony underscores deep Buddhist linkages.
2. Land allotted in Varanasi for a Bhutanese temple represents cultural reciprocity.
3. Nehru–Wangchuck scholarships enhance educational and human capital ties.

	<p>4. Hosting of the Piprahwa relics symbolizes shared civilisational heritage.</p> <p>5. Shared Security and Geopolitical Convergence</p> <p>a) Strategic geography and border stability</p> <p>1. Bhutan's location near the Chumbi Valley and close to the Siliguri Corridor makes its stability vital for India's strategic calculus.</p> <p>b) Security cooperation</p> <ul style="list-style-type: none">• Training of the Royal Bhutan Army by India, joint border management, and intelligence cooperation provide a foundation of trust. <p>c) Doklam and beyond</p> <ul style="list-style-type: none">• The 2017 Doklam standoff demonstrated Bhutan's reliance on India amidst Chinese assertiveness.• Operation All Clear (2003) reflects Bhutan's commitment to India's internal security. <p>d) Regional stability</p> <ul style="list-style-type: none">• The partnership counters destabilising influences and maintains peace in the eastern Himalayas.
<p>Conclusion</p>	<p>India–Bhutan relations have matured into a holistic, future-oriented partnership grounded in shared values, development priorities, and strategic interests. The 2025 PM visit reinforced this evolution by strengthening cooperation in energy, connectivity, technology, culture, and security. As the geopolitical landscape becomes more complex, India and Bhutan continue to demonstrate how asymmetry can be managed through mutual trust, sensitivity, and long-term strategic interdependence—making the relationship a stabilising anchor in the Himalayan region.</p>

Q10. “India’s position in the World Happiness Report 2025 highlights structural challenges in enhancing well-being. Discuss the key factors behind India’s ranking and suggest policy measures to improve national happiness.”

(GS – Paper II - Important International Institutions)

<p>Introduction</p>	<p>The World Happiness Report (WHR) 2025, released by Oxford's Wellbeing Research Centre with Gallup and UN-SDSN, ranks India at 118th, reflecting marginal improvement from 2024 but still signalling deep structural constraints. The index evaluates subjective well-being based on indicators like social support, freedom, trust, generosity, and life expectancy.</p>
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Body

Factors Behind India's Low Ranking

- **Economic Disparities:** Despite high GDP growth, income inequality, informal employment, and uneven regional development reduce perceived life satisfaction.
- **Social Support Deficits:** Fragmented community relationships, urban stress, and weak social safety nets diminish perceived security and belonging.
- **Health and Life Expectancy:** Limited access to quality healthcare, high out-of-pocket expenditure, and post-pandemic vulnerabilities affect well-being.
- **Freedom & Personal Choice:** Restrictions due to economic dependence, gender gaps, and bureaucratic hurdles limit perceived freedom.
- **Low Trust Levels:** Concerns over corruption, service delivery, and institutional inefficiency reduce trust in public systems.
- **Urban Stress & Social Isolation:** Rising mental health issues, long working hours, pollution, and weak work-life balance reduce subjective happiness.

Policy Measures to Improve Happiness

- **Strengthen Social Protection:** Expansion of targeted welfare, pension coverage, food security, and unemployment support.
- **Focus on Public Health:** Higher investment in primary healthcare, mental health support, and preventive care.
- **Enhance Social Capital:** Promote community centres, citizen engagement, and local-level participatory governance.
- **Reduce Inequality:** Progressive taxation, skill development, MSME support, and job diversification.
- **Institutional Trust-Building:** Transparency, speedy service delivery, anti-corruption reforms, and digital governance.
- **Improve Urban Well-being:** More green spaces, cleaner air, reduced congestion, and better public transport.

Conclusion

India's WHR ranking reflects not only economic challenges but also deficits in social trust, health, and community networks. A multi-dimensional approach combining inclusive growth, strong social protection, and community-based well-being initiatives is essential to build a happier and more resilient society.

Q11. India's proposals at the 2025 G20 Summit reflect an agenda that integrates global security, development cooperation, and technological equity. Discuss the significance of India's six major initiatives announced at Johannesburg.

Relevance: GS Paper-2- International relations, Groupings and Agreement

Introduction	India's six major initiatives at the G20 Summit 2025 highlight its evolving role as a country that bridges global development gaps while addressing emerging security and technological challenges. The proposals demonstrate India's attempt to shape multilateral systems around inclusivity, resilience, and equity—core priorities for the Global South.
Body	<p>1. G20 Initiative on Countering the Drug-Terror Nexus: Advancing Global Security</p> <p>India's proposal recognises drug trafficking—especially synthetic opioids like fentanyl—as a major source of funding for terrorism.</p> <p>Significance:</p> <ul style="list-style-type: none">• Positions India as a leader in global security cooperation.• Promotes intelligence sharing, border management, and blocking illicit financial flows.• Addresses a transnational threat that destabilises societies and fuels extremism. <p>2. G20–Africa Skills Multiplier Initiative: Strengthening Development Partnerships</p> <p>India's plan to train 1 million certified trainers in Africa over 10 years supports long-term human capital development.</p> <p>Significance:</p> <ul style="list-style-type: none">• Deepens India–Africa cooperation, aligning with the “Global South solidarity” narrative.• Strengthens vocational capacity and employment ecosystems across African nations.• Projects India as a development partner rather than a donor. <p>3. Global Traditional Knowledge Repository: Preserving Civilisational Wisdom</p> <p>This initiative aims to digitally document traditional knowledge systems from across the world, inspired by Indian Knowledge Systems (IKS).</p> <p>Significance:</p> <ul style="list-style-type: none">• Promotes cultural diplomacy and India's soft power.• Prevents misappropriation and supports research in medicine, agriculture, and sustainability.• Creates global norms for knowledge-sharing based on respect

and authenticity.

4. Global Healthcare Response Team: Enhancing Crisis Preparedness

A multinational medical response team to support health emergencies and climate-induced disasters.

Significance:

- Builds on India's leadership during the COVID-19 pandemic (e.g., Vaccine Maitri).
- Strengthens quick-response capacity for outbreaks, natural disasters, and humanitarian crises.
- Enhances global health security and resilience.

5. Open Satellite Data Partnership: Democratizing Technology Access

India proposed a framework for **free and interoperable satellite data sharing** among G20 nations.

Significance:

- Supports early warning, disaster response, agriculture monitoring, and climate mapping.
- Reduces technological inequality for developing nations.
- Promotes open-access geospatial systems crucial for climate resilience and SDG progress.

6. Critical Minerals Circularity Initiative: Supporting Clean Energy Transition

This initiative focuses on recycling, urban mining, and second-life batteries.

Significance:

- Helps reduce dependence on geopolitically sensitive mineral supply chains.
- Supports sustainable manufacturing, e-mobility, and renewable energy systems.
- Promotes resource efficiency and long-term energy security for the Global South.

Conclusion

India's six proposals collectively underscore a strategic vision that blends **security, development, and technological fairness**. They strengthen India's position as a leading voice of the Global South, offering practical, scalable solutions to global challenges. At Johannesburg, India demonstrated that emerging powers can shape global governance through initiatives rooted in inclusivity, resilience, and shared prosperity.

Economy

Q12. The launch of India's first Household Income Survey (HIS 2026) marks a significant step toward evidence-based policymaking, but ensuring data accuracy and public trust remains a challenge. Discuss.

(250 words, GS Paper III – Economy / Inclusive Growth / Government Policies)

Introduction

India's first **Household Income Survey (HIS)**, scheduled for **2026** by the **Ministry of Statistics and Programme Implementation (MoSPI)**, aims to directly measure household incomes and link them with social, occupational, and expenditure data. This initiative addresses a long-standing data gap, as existing surveys like the **Periodic Labour Force Survey (PLFS)** and **Household Consumption Expenditure Survey (HCES)** rely on indirect or partial indicators of income.

Body

1. Significance of the Survey

- **Direct Income Measurement:** For the first time, HIS will collect detailed data on wages, business income, agriculture earnings, pensions, and welfare transfers.
- **Evidence-Based Policymaking:** Enables accurate assessment of income inequality, welfare distribution, and regional disparities.
- **Holistic Dataset:** Combines income, expenditure, asset ownership, and debt data — offering a complete economic picture.
- **Evaluation of Policy Goals:** Assists in assessing programmes like *Doubling Farmers' Income*, *DBT impact*, and *social welfare inclusion*.

2. Key Challenges

- **Data Sensitivity:** Over **95% of respondents** in pilot tests found income questions intrusive, reflecting privacy and trust concerns.
- **Recall Errors:** Respondents often misreport income or expenses due to memory lapses.
- **Underreporting of Income:** Fear of taxation or misuse may lead to inaccurate data, particularly among higher-income groups.
- **Capacity Constraints:** Enumerators need better training, regional language fluency, and standardized data collection

	<p>tools.</p> <ul style="list-style-type: none"> • Urban Resistance: Affluent households and gated communities reluctant to share data — leading to sampling bias. <p>3. Steps to Improve Reliability</p> <ul style="list-style-type: none"> • Public Awareness Campaigns: Build trust by clarifying data confidentiality and purpose. • Enumerator Training: Emphasize cultural sensitivity and local engagement. • Self-Compilation Mechanism: Allow private submissions for affluent groups to ensure honest disclosure. • Integration with Other Surveys: Link HIS data with PLFS and HCES for cross-validation. • Use of Technology: Digital data collection, anonymization, and AI-based consistency checks.
<p>Conclusion</p>	<p>The Household Income Survey (HIS 2026) represents a transformative move towards data-driven governance and inclusive economic planning. However, its success will depend on overcoming trust deficits, ensuring methodological rigor, and maintaining transparency. Reliable income data can redefine India’s understanding of inequality and guide equitable policy interventions, making it a cornerstone for future socio-economic reforms.</p>

Q13. Why is the government working on new SEZ norms, and how can the proposed “Reverse Job Work” policy help address the current challenges faced by India’s Special Economic Zones?

(GS Paper 3 – Indian Economy | Export Promotion)

<p>Introduction</p>	<p>India’s Special Economic Zones (SEZs) were established to promote exports, attract FDI, and generate employment through a globally competitive environment. However, changing global trade dynamics—especially steep US tariffs—have reduced competitiveness, prompting the government to work on new SEZ norms to integrate SEZs with the domestic market.</p>
<p>Body</p>	<p>Reasons for New SEZ Norms:</p> <ol style="list-style-type: none"> 1. Tariff Pressure: Several SEZ units catering to the US market have become unviable, leading to requests for de-notification. 2. Export Slowdown: SEZ exports in FY25 stood at \$172 billion, with only 2% catering to the domestic market. 3. Structural Issues: Decline in operational units (e.g., gems and

	<p>jewellery units dropped from 500 to 360).</p> <ol style="list-style-type: none">4. Low R&D and FDI: Minimal investment in innovation; absence of investment protection agreements.5. Comparative Lag: Indian SEZs have underperformed compared to China's integrated manufacturing zones. <p>Reverse Job Work Policy – The Reform Proposal:</p> <p>The Reverse Job Work Policy proposes allowing SEZ units to undertake production or processing for the Domestic Tariff Area (DTA) instead of being restricted to exports.</p> <p>Key Benefits:</p> <ul style="list-style-type: none">• Optimal Utilisation: Helps use idle labour and equipment during export slowdowns.• Efficiency Boost: Strengthens linkages between SEZs and the domestic economy.• Job Protection: Keeps factories and artisans engaged, especially in labour-intensive sectors.• Export Competitiveness: Sustains production capacity and prevents closures. <p>Concerns:</p> <p>Ensuring parity in duty exemptions between SEZ and domestic units is crucial to avoid unfair advantages.</p>
Conclusion	Reforming India's SEZ framework through new norms and the Reverse Job Work policy can enhance industrial resilience, integrate SEZs with the domestic economy, and revive export-led growth. A balanced approach combining fiscal fairness, innovation, and FDI facilitation is essential to make SEZs engines of sustainable development.

Q14. "India's fisheries sector is undergoing a structural transformation driven by sustainability, digital governance, and livelihood enhancement." In the context of World Fisheries Day 2025, critically examine.

(GS-III – Economy, Environment, Food Security, Blue Economy)

Introduction	India's fisheries sector, contributing 8% of global fish output and supporting over 30 million livelihoods, has evolved from traditional capture fisheries to a modern, technology-enabled blue economy. World Fisheries Day 2025 showcased this structural shift, highlighting coordinated governmental reforms focused on sustainability, digital governance, and value addition.
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Body

1. Strengthening Marine Resources

- The **Sustainable Harnessing of Fisheries in the EEZ Rules (2025)** represents a major governance reform enabling regulated deep-sea fishing. By prioritising Fisher Cooperatives and prohibiting destructive practices, the rules aim to shift pressure away from overexploited coastal waters. Digital Access Passes via **ReALCRaft** ensure transparency, while deployment of 36,000+ transponders and the **NABHMITRA** system enhances safety and monitoring.
- The **Marine Fisheries Census 2025**, India's first fully digital and geo-referenced enumeration, strengthens evidence-based policymaking by covering 1.2 million households across 5,000 villages.

2. Enhancing Fisher Livelihoods

- The **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**, with a ₹20,312 crore outlay, has created extensive infrastructure—730 cold storages, 26,348 transport units, and 6,410 fish kiosks. It has also rolled out 100 Climate-Resilient Coastal Fishermen Villages and provided 60% assistance for women, promoting inclusive growth.
- The **PM-MKSSY** expands aquaculture insurance and strengthens traceability, while the **FIDF** offers concessional finance for harbours, landing centres, and cold-chain infrastructure.

3. Critical View

- Despite progress, challenges persist: coastal overfishing, habitat degradation, climate vulnerability, and limited access to institutional credit for small-scale fishers. Export dependency also exposes the sector to global market volatility.

Conclusion

Together, these reforms indicate a decisive transition toward sustainable, digitised, and livelihood-centric fisheries governance. To fully realise a resilient blue economy, India must strengthen ecological stewardship, expand cooperative-led deep-sea fishing, and accelerate climate-adaptive infrastructure for coastal communities.

Q15. Identify the issues related to stubble burning. Explain how effective policy planning can transform this crisis into an opportunity.

(GS-III (Agriculture, Environment))

Introduction	Stubble burning refers to the practice of setting fire to crop residue—mainly from paddy—to quickly clear fields for the next sowing cycle. It has become a major contributor to seasonal air pollution in North India, particularly affecting Delhi–NCR during winter. Recognising its severity, the Supreme Court has directed the Centre to formulate a national policy framework to discourage the practice and support farmers.
Body	<p>Issues Associated with Stubble Burning</p> <ul style="list-style-type: none">• Severe Air Pollution: Burning stubble releases methane, carbon monoxide, volatile organic compounds and carcinogenic PAHs, creating dense smog and health hazards.• Inadequate Alternatives: Farmers lack affordable residue-management options, and the narrow sowing window compels them to burn stubble for quick field preparation.• Low Mechanisation: Technologies such as the Happy Seeder and Super-SMS are insufficient in number, expensive, and inaccessible to small and marginal farmers.• Policy-Driven Constraints: The Punjab Preservation of Subsoil Water Act (2009) shifted paddy transplantation to later dates, causing stubble disposal to coincide with winter, worsening pollution.• Agricultural Degradation: Burning destroys soil nutrients, organic carbon and beneficial microbes, reducing soil fertility and moisture retention. <p>Turning Crisis into Opportunity Through Effective Policy Planning</p> <ul style="list-style-type: none">• Promoting Organic Manure: Crop residue contains valuable NPK nutrients worth over ₹1,000 crore annually. Converting stubble into organic fertiliser can enrich soil and reduce chemical load.• Replicating the Chhattisgarh 'Gauthan Model': Community collection centres can convert donated stubble into compost using cow dung and enzymes, generating rural livelihoods.• Bioenergy and Biomass Power Plants: Paddy straw can be used for biomass-based electricity generation. Proposed projects, such as 5 MW biomass plants, show economic potential.

	<ul style="list-style-type: none"> • Incentivising Crop Diversification: Long-term reduction in paddy cultivation—by promoting maize, pulses, oilseeds, fruits and vegetables—can reduce residue generation.
Conclusion	Stubble burning is not a farmer-driven problem but a systems-driven crisis shaped by policy distortions, ecological stress, and technological gaps. With targeted incentives, sustainable residue-management solutions, and crop diversification, the challenge can be transformed into an environmental and economic opportunity for rural India.

Q16. “The recent fall of the rupee to historic lows against the US dollar reflects both global and domestic vulnerabilities. Discuss the macroeconomic implications of a persistently weak rupee for India and examine the role of the RBI in managing exchange rate volatility.”

(GS-III: Indian Economy – External sector)

Introduction	The rupee recently breached its historic low (around ₹89–90 per US dollar), reflecting global headwinds (strong dollar, risk-off sentiment) and domestic pressures (record goods trade deficit, FPI outflows, uncertainty over India–US trade deal). A persistently weak rupee has wide-ranging macroeconomic implications for India’s external sector and growth.
Body	<p>Macroeconomic implications of a weak rupee</p> <p>(a) External sector and inflation</p> <ul style="list-style-type: none"> • Imported inflation: Costlier crude oil, fertilizers, edible oils and critical intermediates → higher CPI and WPI. • Widening Current Account Deficit (CAD): Higher import bill (especially oil & gold) with limited export elasticity can push CAD beyond sustainable levels. <p>(b) Growth and investment</p> <ul style="list-style-type: none"> • Corporate balance sheets: Firms with unhedged external commercial borrowings face higher debt-servicing burden. • Capex & confidence: Volatile rupee raises risk premium, increasing cost of capital for government and private sector. <p>(c) Distributional impacts</p> <ul style="list-style-type: none"> • Winners: Exporters and IT/ITeS firms gain in rupee terms; remittances rise in local currency. • Losers: Households (fuel, essentials), MSMEs dependent on imported inputs, and sectors like aviation, electronics.

(d) Financial stability

- Sharp depreciation can trigger **FPI outflows**, stress on EM currencies (“EM currency sell-off”), and pressure on banking system via asset quality in stressed sectors.

Role of RBI in managing rupee volatility

- **Managed float regime:** RBI does not target a fixed level but aims to **smooth volatility**.
- **Forex intervention:**
 - Sells dollars from **forex reserves (~US\$ 690 bn range)** in spot and forward markets to curb disorderly moves.
 - Uses **forwards/NDF intervention** to influence offshore expectations.
- **Liquidity & rates:** Calibrated use of **liquidity management, policy corridor and interest-rate signalling** to influence capital flows.
- **Macro-prudential tools:** Encouraging hedging, regulating external commercial borrowings and NRI deposits to reduce currency mismatches.
- **Communication:** Forward guidance – reiterating that India’s external position is comfortable (reserves, low short-term external debt) helps anchor expectations.

Conclusion

A weak rupee is not automatically “bad” if depreciation is **orderly** and improves export competitiveness, but **disorderly and sharp falls** raise inflation, CAD and financial-stability risks. India needs a mix of **prudent macro-fundamentals (manageable CAD, sustainable fiscal path), strong forex buffers and credible RBI intervention**, along with structural policies to boost exports and reduce import dependence, to ensure that rupee volatility does not derail growth.

Environment & Ecology

Q17. The recent CITES report has highlighted gaps in India’s wildlife import regulation, especially concerning captive-bred claims. Discuss the challenges and measures needed to strengthen India’s compliance with CITES obligations.

(GS Paper 3 – Environment and Biodiversity Conservation (International Treaties: CITES, CBD, IUCN)).

Introduction	The <i>Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)</i> verification mission has cautioned India against importing critically endangered species such as gorillas, chimpanzees, and snow leopards without robust verification systems. It flagged risks of wild-caught animals being falsely declared as captive-bred.
Body	<p>Challenges in India's Wildlife Import Regulation:</p> <ol style="list-style-type: none">1. Weak Verification Mechanism: Limited scrutiny of source and purpose codes (e.g., <i>C – captive bred, Z – zoo</i>).2. Legal Loopholes: Imports from commercial breeding facilities contradict India's <i>Wildlife (Protection) Act, 1972</i>, which permits exchange only between recognized zoos.3. Lack of Traceability: Inadequate tracking of origins, especially for species imported via transit countries like UAE.4. Institutional Gaps: Poor coordination between <i>MoEFCC</i>, Customs, and CITES authorities.5. Contradictory Records: Discrepancies in documentation with countries like Czech Republic, Tunisia, and Guyana. <p>Measures to Strengthen Compliance:</p> <ul style="list-style-type: none">• Enforce strict verification and traceability through digital wildlife trade monitoring.• Review and update import protocols aligning with CITES Appendices and source-country verification.• Conduct independent audits of captive-bred claims.• Enhance inter-agency coordination and capacity building within <i>MoEFCC</i>.• Strengthen international collaboration with the CITES Secretariat for transparency.
Conclusion	The CITES report serves as a wake-up call for India to tighten its wildlife import controls. Strengthened due diligence, transparency, and global cooperation are essential to ensure that India's biodiversity governance aligns with international conservation commitments.

Q18. Discuss the significance of the Forest Advisory Committee's recommendation for uniform penal provisions under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980, in the context of recent amendments to forest conservation rules.

(GS PAPER III – Environment Conservation)

Introduction	The Forest Advisory Committee (FAC) under the Ministry of Environment, Forest and Climate Change (MoEFCC) has recently
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recommended **uniform penal provisions** under the *Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980* (formerly the Forest Conservation Act, 1980). This move aims to standardize penalties for violations and ensure consistent enforcement across states, strengthening India's forest governance framework.

Body

1. Rationale for the Recommendation:

- Earlier, **different quantum of penalties** was imposed for similar violations due to **absence of common guidelines**.
- The FAC's review and committee report (2024) called for **rationalisation** of penalties through **Penal Compensatory Afforestation (CA)** and **Penal Net Present Value (NPV)** to ensure fairness and proportionality.

2. Key Provisions under the Adhiniyam and Rules:

- **Mandatory Central Approval:** No diversion of forest land for non-forest purposes without prior approval of the Central Government.
- **Penal Compensatory Afforestation:** Imposed in addition to legal penalties; involves reforestation equivalent to or greater than the area used in violation.
- **Penal NPV:** Monetary value imposed up to five times the normal NPV rate for violations; based on Supreme Court's 2017 directives.
- **2025 Amendment Rules:**
 - *Optional protected forest notification* for CA land.
 - *Double afforestation requirement* for critical mineral mining.
 - *Working permissions* for linear projects like roads and transmission lines.

3. Legal and Policy Context:

- Rooted in the **Forest Conservation Act, 1980**, which centralized forest diversion decisions post the **42nd Constitutional Amendment (1976)**.
- The **Forest (Conservation) Amendment Act, 2023** renamed the law and expanded its scope to include certain lands outside recorded forest areas.
- The **T.N. Godavarman (1996)** case broadened the definition of 'forest' and led to judicial oversight over deforestation.
- Supreme Court's 2017 and 2024 orders guided the creation of **penal NPV mechanisms** and adherence to broader definitions.

	<p>4. Significance of the Reform:</p> <ul style="list-style-type: none"> • Promotes uniformity and transparency in penalty enforcement. • Enhances deterrence against illegal forest diversion. • Strengthens accountability of State Governments in reporting violations. • Supports India’s commitments to carbon neutrality, biodiversity conservation, and sustainable land use. • Encourages digital mapping and monitoring of forest lands through modern technologies.
<p>Conclusion</p>	<p>The FAC’s recommendations mark a crucial step in harmonizing India’s forest governance framework. By integrating legal uniformity, ecological restoration, and accountability, the reform ensures a balance between developmental imperatives and environmental conservation. Going forward, consistent enforcement, state-level capacity building, and community participation will be key to achieving sustainable forest management in line with India’s climate and biodiversity goals.</p>

Q19. “The Tropical Forests Forever Facility (TFFF), launched at COP30, represents a major shift in global forest finance from donor-driven aid to performance-based climate cooperation.” Discuss its significance, key features, and challenges in ensuring equitable and sustainable forest conservation.

Relevance: GS Paper-3(Environment),

<p>Introduction</p>	<p>The Tropical Forests Forever Facility (TFFF), launched at COP30 in Belém, Brazil (2025), is a Brazil-led global fund to finance the conservation of tropical forests through performance-based payments. With participation from 53 countries, it aims to mobilize USD 125 billion from sovereign, philanthropic, and private investors, marking a shift from donor-based to self-sustaining climate finance.</p>
<p>Body</p>	<p>Significance</p> <ol style="list-style-type: none"> 1. Global South Leadership: Led by Brazil, the TFFF empowers developing nations like Indonesia and DRC to design and manage global forest finance, promoting climate equity. 2. Innovative Financing: Operates via the Tropical Forest Investment Fund (TFIF), investing in green bonds and excluding fossil-fuel assets; rewards countries USD 4 per hectare of protected forest.

3. **Ecosystem Valuation:** Recognizes standing forests as **economic assets** providing carbon, water, and biodiversity services.
4. **Inclusion of IPLCs:** At least **20% of payouts** go to **Indigenous Peoples and Local Communities**, ensuring **climate justice**.
5. **Complementary Mechanism:** Works alongside **REDD+** and the **Green Climate Fund**, offering **long-term, non-debt-creating finance**.

Key Features

Aspect	Details
Scale	Supports 1 billion hectares across 70 tropical nations
Monitoring	Satellite-based canopy verification
Funding Mix	Sovereign + private capital in 1:4 ratio
Governance	Equal representation of forest & sponsor countries; World Bank as trustee
Safeguards	Excludes coal, oil, gas, deforestation-linked sectors

India's Role

- Joined as an **observer**, supporting equitable climate finance.
- Highlighted need for **early net-zero by developed nations** and **adaptation finance**.
- Achieved **36% emission intensity reduction (2005–2020)** and created **2.29 billion tonnes CO₂ sink**, aligning with TFFF goals.

Challenges

- **Verification Issues:** Accuracy of satellite data at community level.
- **Financial Stability:** Dependent on investor confidence and returns.
- **Equitable Access:** Risk of elite capture; weak governance in recipient states.
- **Coordination:** Requires alignment across 50+ nations and agencies.

Way Forward

- Ensure **transparent governance** with IPLC representation.
- Promote **South–South cooperation** for shared best practices.
- Integrate TFFF with **NDCs** and **One Planet Finance System**.
- Strengthen **capacity-building** for carbon accounting and monitoring.

Conclusion

The TFFF is a transformative initiative redefining forest finance by **rewarding conservation, not exploitation**. Its success depends on **transparency, inclusion, and financial resilience**, potentially making it the “**Paris Agreement for Forests**” — a global model for nature-positive and equitable climate action.

Q20. “Dugongs are indicators of coastal ecosystem health, yet their populations in India are critically threatened.” Discuss the ecological significance of dugongs, major threats to their survival, and the measures required for their conservation.

(GS-III – Environment & Biodiversity)

Introduction

Dugongs (*Dugong dugon*), also called **sea cows**, are herbivorous marine mammals found mainly in the **Palk Bay–Gulf of Mannar, Andaman & Nicobar Islands, and Gulf of Kutch**. Listed as **Vulnerable (IUCN)** and **Schedule I (WLP 1972)**, their rapidly declining populations make them one of India’s most threatened marine species.

Body

Ecological Significance of Dugongs

Dugongs are **keystone species**, crucial for the health and productivity of seagrass ecosystems. Their grazing regulates seagrass growth, improves nutrient cycling, and sustains carbon-rich benthic habitats.

Key ecological functions:

- Maintain **healthy seagrass meadows** through natural grazing.
- Enhance **blue carbon storage**, as seagrass beds are major carbon sinks.
- Support fish breeding, invertebrates, and coastal fisheries.
- Improve sediment quality by releasing trapped nutrients.
- Serve as **indicator species** of clean and stable shallow-water ecosystems.

Major Threats to Dugongs in India

India’s dugong population (<250 individuals) suffers from multiple anthropogenic pressures. Their low reproductive rate further worsens the risk.

Key threats include:

- **Fishing-net entanglement (bycatch)** – the biggest cause of mortality.
- **Seagrass habitat degradation** due to:
 - dredging and port expansion
 - bottom trawling
 - coastal construction & tourism

- **Pollution and toxic contamination:**
 - Heavy metals (arsenic, mercury, cadmium, lead, chromium) found in stranded dugongs.
- **Climate change impacts:** rising sea temperatures and seagrass die-offs.
- **Small and fragmented populations** leading to genetic isolation.
- **Slow reproduction:** calves born once every 3–5 years.

Measures Required for Conservation

A multi-layered approach involving habitat protection, fisheries regulation, and community engagement is essential.

- **Expand protected areas** like the 448 sq km Palk Bay Dugong Conservation Reserve.
- **Ban destructive gear** (gillnets, trawlers) in dugong zones; offer alternative livelihoods.
- **Restore seagrass meadows** through mapping and transplantation.
- **Strengthen monitoring** using drones, acoustic surveys, and community reporting.
- **Control pollution** by enforcing coastal effluent standards.
- **Community-led conservation** with incentives for fishers reporting sightings or releasing entangled dugongs.
- **Awareness campaigns** targeting coastal villages, schools, and tourism operators.

Conclusion

Dugongs are ecological guardians of India's coastal habitats. Protecting them requires not only scientific measures but also strong governance, sustainable fisheries, and community participation. A strengthened dugong conservation strategy can serve as a model for safeguarding India's wider marine biodiversity.

Q21. India has slipped from 10th to 23rd rank in the CCPI 2026 despite advances in renewable energy. What key factors caused this decline, and what structural challenges impede India's low-carbon transition? Suggest measures to align India's climate pathway with the 1.5°C goal.

(GS–III: Climate Change, Energy Transition, Environmental Governance)

Introduction

India's fall from **10th to 23rd rank** in the *Climate Change Performance Index (CCPI) 2026* reflects a growing mismatch between its long-term climate ambitions and short-term energy choices. While India remains

	<p>a strong global advocate of <i>CBDR</i> and leads initiatives like <i>ISA</i>, the CCPI notes that structural dependence on fossil fuels continues to undermine overall climate performance.</p>
Body	<p>Reasons for India's Decline in CCPI 2026</p> <ol style="list-style-type: none">Absence of a Coal Exit Timeline<ul style="list-style-type: none">India has no national coal phase-out plan, and new coal blocks continue to be auctioned, signalling policy inconsistency. This is the primary reason for the ranking drop.High Dependence on Fossil Fuels<ul style="list-style-type: none">India remains among the world's largest producers of coal, oil and gas. Fossil subsidies and infrastructure lock-ins persist, slowing energy transition.Low Score in Renewable Energy Component<ul style="list-style-type: none">Despite achieving 50% installed non-fossil capacity, the <i>actual energy mix</i> remains dominated by coal. Grid-scale RE projects have also triggered land conflicts, displacement and water stress, reflecting weak social safeguards.Weak Carbon Pricing and Policy Gaps<ul style="list-style-type: none">Experts highlight uneven and inadequate carbon price signals, missing interim milestones for 2035 and 2040, and lack of sector-wise decarbonisation pathways.Misalignment with 1.5°C Pathway<ul style="list-style-type: none">India's Net Zero 2070 target is not aligned with the global 1.5°C pathway. State-level accountability remains weak and civil society consultation limited. <p>Major Structural Challenges for India</p> <ul style="list-style-type: none">Coal-dependent industrial growthInadequate environmental safeguards for RE sitingFragmented governance across Centre and StatesSocio-economic risks for coal-dependent regionsClimate vulnerability impacting adaptation priorities
Conclusion	<p>India's fall in CCPI 2026 underscores the widening gap between its <i>long-term climate ambition</i> and <i>short-term fossil-fuel-driven energy pathway</i>. While renewable capacity and policy frameworks indicate strong intent, the absence of a coal-exit strategy, weak carbon pricing, and governance gaps continue to dilute overall climate credibility. Moving forward, India must adopt time-bound coal phase-down, strengthen state-level accountability, and prioritise a just, inclusive</p>

and sustainable energy transition to realign with the 1.5°C pathway and reclaim climate leadership.

Q22. The Supreme Court's recall of the Vanashakti judgment has reignited the debate on ex post facto environmental clearances. Analyse how the decision reflects the tension between environmental rule of law and developmental priorities in India.

(GS-III: Environment (EIA Framework))

Introduction

Environmental clearance (EC) under the Environment (Protection) Act, 1986 and the EIA Notification 2006 is **designed as a preventive tool**, ensuring that environmental costs are evaluated *before* a project begins. The Supreme Court's recent recall of the **Vanashakti (May 2025)** judgment— which had struck down retrospective clearances—has reopened the debate on whether **ex post facto** ECs violate environmental jurisprudence or are necessary for balancing developmental needs.

Body

Environmental Rule of Law: Why Strict Prior Clearance Matters

1. Preventive Principle at the Core of EIA

- Screening → Scoping → Appraisal → Public Hearing can occur meaningfully **only before** construction.
- Ensures transparency and public participation.

2. Environmental Jurisprudence under Article 21 & 51A(g)

- Right to a clean environment recognized as part of Article 21.
- Citizens' duty to protect the environment mandates stricter compliance.

3. Polluter Pays Principle

- Designed for *compensation after damage*, not to *validate illegality*.
- Justice Bhuyan's dissent emphasised that regularising violations erodes accountability.

4. Risk of Creating a Precedent for Violations

- Encourages “**construct first, comply later**” behaviour.
- Weakens deterrence and public trust in environmental governance.

Developmental Priorities: Why the Majority Favoured a Balanced Approach

1. Economic Costs of Demolition

- Public projects worth thousands of crores (airports,

	<p>AIIMS campuses, highways) risk demolition.</p> <ul style="list-style-type: none">○ Reconstruction may cause <i>more</i> pollution. <p>2. Administrative Realities</p> <ul style="list-style-type: none">○ Many violations arose from procedural delays, not mala fide intent.○ Ex post facto clearances bring violators <i>into compliance</i> instead of shutting them down. <p>3. Proportionality Test</p> <ul style="list-style-type: none">○ CJI's majority view: the law must consider "real-world consequences".○ Heavy penalties + mandatory remediation uphold the "polluter pays" principle without halting development. <p>4. Infrastructure & Public Interest</p> <ul style="list-style-type: none">○ Socially critical projects (hospitals, roads, irrigation) cannot abruptly stop without hurting public welfare.○ Retrospective EC may be justified where demolition does not advance environmental goals. <p>Where the Tension Lies</p> <ul style="list-style-type: none">• Strict Prior Clearance protects ecological integrity but may slow key infrastructure.• Retrospective Clearance supports development but risks weakening environmental norms.• The recall shows India's struggle to balance preventive environmental governance with the practical needs of a growing economy.
<p>Conclusion</p>	<p>The recall of the Vanashakti judgment represents a pivotal moment in India's environmental governance trajectory. It highlights the friction between a rigorous, rule-based environmental clearance regime and developmental imperatives demanding flexibility. A calibrated framework—neither rigid nor permissive—will uphold environmental rule of law while enabling India's developmental aspirations.</p>

Q23. India's position at COP30 reaffirmed climate justice and equity but also exposed the structural limitations of global climate negotiations."Examine India's key concerns regarding climate finance, CBAM, and adaptation support in the context of COP30.

Relevance: GS Paper – 2: Interests Effect of Policies & Politics of Countries on India's Interests International Treaties & Agreements Paper – 3: Environmental Pollution &

Degradation

<p>Introduction</p>	<p>India's interventions at COP30 were anchored in the principles of climate justice, equity, and Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). While India pushed for fair climate action and strengthened support for developing nations, COP30 also exposed the deep structural limitations in global climate governance—especially around finance, trade-related climate measures, and adaptation.</p>
<p>Body</p>	<p>India's Position at COP30: Climate Justice, Equity, and Structural Limitations of Global Climate Negotiations</p> <p>1. Climate Finance: Core of India's Negotiation Strategy</p> <p>India's Key Concerns</p> <ul style="list-style-type: none"> • Finance as a legal obligation: India stressed that developed countries must fulfil Article 9.1 of the Paris Agreement, which mandates them—not developing nations—to provide climate finance. • Predictable, grant-based finance: India criticised the loan-heavy climate finance architecture that burdens developing economies with debt. • Demand for clear definition: India called for a universally accepted definition of climate finance to prevent developed nations from overstating contributions through repackaged development aid. • Scale of need vs. current flows: <ul style="list-style-type: none"> ○ As per the 2025 Adaptation Gap Report, developing countries require USD 310–365 billion annually by 2035. ○ Current adaptation finance: ~USD 26 billion. • Unmet pledges: India flagged that the Glasgow promise to double adaptation finance to USD 40 billion by 2025 is unlikely to be achieved. • Baku-to-Belém Roadmap: India urged mobilisation of the USD 1.3 trillion/year climate finance goal set at COP29. <p>Structural Limitation Exposed</p> <p>There is no enforcement mechanism under UNFCCC compelling developed nations to deliver finance, allowing persistent under-delivery and widening trust deficits.</p> <p>2. Opposition to CBAM: Fairness in Trade and Climate Policy</p> <p>India's Position</p>

India, along with the BASIC and LMDC groups, strongly opposed the EU's **Carbon Border Adjustment Mechanism (CBAM)**, arguing that:

- It is a **disguised trade barrier** rather than genuine climate action.
- It unfairly penalises developing economies with lower historical responsibility.
- It violates the spirit of **CBDR-RC**, as it transfers the burden of decarbonisation onto exporters in the Global South.
- It risks **inflating export costs**, reducing competitiveness of Indian industries like steel, aluminium, and cement.

Structural Limitation Exposed

Climate negotiations increasingly intersect with **unilateral trade measures** that bypass the multilateral climate framework. COP30 lacked mechanisms to regulate climate-related trade policies, leaving developing nations vulnerable.

3. Adaptation Support: India's Push for Vulnerable Nations

India's Key Concerns

- Adaptation must have **equal priority** as mitigation, especially for climate-vulnerable countries.
- India welcomed the **NAP Implementation Alliance** but demanded clarity on who will finance adaptation.
- India stressed that adaptation is not charity but a **global responsibility**, given the disproportionate impact on the Global South.
- The lack of clear commitments under the **Global Goal on Adaptation (GGA)** and the voluntary nature of the 59 indicators weaken accountability.
- India highlighted that **triple adaptation finance by 2030** is an aspiration without concrete funding commitments from developed nations.

Structural Limitation Exposed

- Adaptation finance remains **unpredictable, voluntary, and insufficient**, despite being critical for developing nations facing immediate climate impacts.

Conclusion

India's stance at COP30 reaffirmed the principles of **equity, justice, and differentiated responsibility**, reflecting the needs of developing nations. However, COP30 also revealed the persisting structural constraints of global climate governance:

- **No binding climate finance commitments,**

- **Unregulated climate-linked trade barriers like CBAM, and**
- **Voluntary, underfunded adaptation mechanisms.**

These limitations highlight the enduring imbalance within global climate negotiations, where ambition and responsibility remain asymmetrically distributed between developed and developing countries.

Q24. “Why are the world’s fold mountain systems located along the margins of continents? Bring out the association between the global distribution of fold mountains and earthquakes and volcanoes.”

Introduction

Fold mountains such as the Himalayas, Alps, Andes and Rockies are mainly located along the **margins of continents** because these regions coincide with zones of active **plate convergence**, where compressional forces deform, fold and uplift crustal material. Their distribution also overlaps with global belts of earthquakes and volcanoes, reflecting the unified dynamics of plate tectonics.

Body

1. Why Fold Mountains Occur Along Continental Margins

Fold mountains form primarily at **convergent plate boundaries**:

- **Continent–continent collision** (e.g., Himalayas) produces massive folding of sedimentary strata and crustal thickening.
- **Ocean–continent collision** (e.g., Andes, Rockies) results in subduction of the oceanic plate, compressing sediments at continental margins.
- These margins host thick sedimentary basins which get folded during convergence, while continental interiors (cratons) remain tectonically stable and do not experience such large-scale orogeny.

2. Association with Earthquakes and Volcanoes

The spatial pattern of fold mountains aligns with global **seismic** and **volcanic** zones due to shared tectonic processes.

- Convergent margins accumulate stress, releasing it as **frequent earthquakes**, seen in the Himalayas, Japan, Chile and Alaska.
- Subduction zones generate magma that forms **volcanic arcs** parallel to fold mountains (e.g., Andean volcanoes, Cascades).
- The **Circum-Pacific Ring of Fire** hosts both fold mountains and nearly 75% of the world's volcanoes and 80% of its earthquakes.
- The **Alpine–Himalayan Belt** is highly seismic due to continent–continent collision, though volcanism is limited except in

	Mediterranean subduction zones.
Conclusion	Fold mountains occur along continental margins because these areas are the most active zones of plate convergence, compression and uplift . Their strong association with earthquake belts and volcanic arcs highlights the interconnected nature of orogeny, seismicity and volcanism within the broader framework of plate tectonics.

Science & Technology

Q25. Discuss the significance of India's AI Governance Guidelines (2025) in balancing innovation with accountability. How can India ensure ethical and inclusive AI governance?

Relevance: GS Paper-3(S&T), GS Paper-4(Ethics)

Introduction	The India AI Governance Guidelines (2025) released by the Ministry of Electronics and Information Technology (MeitY) mark India's first comprehensive framework for regulating Artificial Intelligence (AI). Guided by the principle of "Do No Harm" , the framework aims to balance innovation, safety, and accountability while positioning India as a responsible global AI leader ahead of the AI Impact Summit 2026 .
Body	1. Significance of the Guidelines: <ul style="list-style-type: none">• Human-centric approach: The guidelines emphasise fairness, transparency, and inclusivity in AI development and deployment.• Balanced Regulation: Instead of a standalone AI law, India relies on existing laws like the IT Act (2000) and Digital Personal Data Protection Act (2023) — ensuring flexibility and avoiding over-regulation.• Institutional Framework: Establishment of the AI Governance Group (AIGG), AI Safety Institute (AISl), and Technology & Policy Expert Committee (TPEC) ensures a coordinated, "whole-of-government" oversight.• Infrastructure and Access: Initiatives such as AIKosh, subsidised GPU access, and integration with Digital Public Infrastructure (Aadhaar, UPI) strengthen AI capacity.

	<ul style="list-style-type: none"> • Risk Mitigation: Introduction of an India-specific risk assessment framework and a National AI Incident Database enables accountability. • Ethical Concerns: Provisions for AI content labelling, copyright reforms, and grievance redressal protect users from misinformation and bias. <p>2. Ensuring Ethical and Inclusive Governance:</p> <ul style="list-style-type: none"> • Promote AI literacy and capacity building through the IndiaAI Mission. • Strengthen indigenous LLMs to safeguard data sovereignty. • Encourage voluntary ethical codes, algorithmic audits, and transparent reporting. • Integrate cultural and linguistic diversity in AI datasets for equitable inclusion. • Foster international collaboration on AI safety standards.
Conclusion	<p>The India AI Governance Guidelines mark a decisive shift from reactive regulation to proactive governance, enabling innovation while safeguarding citizens’ rights. By focusing on accountability, inclusivity, and human-centric ethics, India can build a globally trusted AI ecosystem—an approach defining the “Responsible AI for Bharat” vision.</p>

Q26. India’s launch of BIRSA-101 marks a milestone in indigenous genomic medicine. Evaluate the significance of this CRISPR-based gene therapy for Sickle Cell Disease (SCD) and discuss the challenges that remain in ensuring equitable access and long-term safety.”

(GS – III Science & Technology)

Introduction	<p>India’s unveiling of BIRSA-101, its first indigenous CRISPR-based gene therapy for Sickle Cell Disease (SCD), represents a major scientific milestone. Developed at CSIR-IGIB and transferred to the Serum Institute of India, it aligns with the national goal of eliminating SCD—especially prevalent among tribal communities—by 2047.</p>
Body	<p>Significance of BIRSA-101</p> <p>1. Technological Atmanirbhar Bharat</p> <ul style="list-style-type: none"> • The therapy uses an indigenous enFnCas9 CRISPR platform, reducing dependence on Western patents and drastically lowering the cost of gene therapy (globally priced at ₹20–25 crore).

2. Public Health Breakthrough for Tribal Regions

- SCD disproportionately affects India's tribal belt. A one-time curative therapy can reduce chronic pain crises, anaemia, organ damage and premature mortality.

3. Corrects the Root Genetic Defect

- Unlike therapies that increase foetal haemoglobin, BIRSA-101 directly **repairs the HBB gene mutation**, offering long-term correction.

4. Strengthens India's Genomic Ecosystem

- The IGIB-SII model mirrors India's vaccine success, expanding national capability in precision medicine.

5. Expands Future Therapeutic Pipeline

- The platform can be adapted for thalassaemia and other hereditary disorders, positioning India as a global hub for **affordable gene therapies**.

Challenges to Access and Long-Term Safety

- **High initial cost** and limited gene therapy infrastructure in tribal districts.
- **Regulatory and ethical concerns** regarding off-target edits, long-term monitoring and informed consent.
- **Low awareness and weak screening systems** under the National SCD Elimination Mission.
- **Scientific uncertainties** around durability of gene correction and off-target risks.

Logistical and social barriers, including health literacy gaps and access to specialised centres.

Conclusion

BIRSA-101 signals India's transition from *technology user* to *technology creator* in genomic medicine. Ensuring success, however, requires strong regulation, expanded infrastructure, community engagement, and equitable access. With sustained support, BIRSA-101 can become a global model for low-cost gene therapy and advance India's vision of a **Sickle-Cell-Free Nation by 2047**.

Q27. Gene editing technologies such as CRISPR-Cas9 are transforming modern biotechnology. Discuss their potential applications and advantages. Also highlight the major ethical, biosafety, and security concerns associated with gene editing.

(GS-III – Agriculture, Biotechnology)

Introduction

Gene editing refers to technologies that enable precise, targeted modifications in the DNA of living organisms. Tools such as CRISPR-Cas9, TALENs, Zinc Finger Nucleases, and Meganucleases act as

programmable “molecular scissors” that cut DNA at specific locations. Among these, **CRISPR-Cas9 has emerged as the most efficient, rapid, and cost-effective system**, making gene editing accessible to modern science. With applications across medicine, agriculture, and biotechnology, gene editing represents a major leap in human ability to alter biological systems.

Body

1. Potential Applications and Advantages

(a) Medicine

- Enables correction of disease-causing genetic mutations responsible for disorders like sickle cell anaemia, cystic fibrosis, and muscular dystrophy.
- Opens possibilities for targeted gene therapy and personalized medicine.
- Can potentially provide **lifelong resistance** to certain infections by installing protective genetic variants.

(b) Agriculture

- Accelerates development of climate-resilient crops (drought, salt, or heat tolerance).
- Improves pest and disease resistance, reducing dependence on pesticides.
- Enhances yield, shelf life, and nutritional value—addressing hunger and malnutrition.

(c) Biotechnology & Other Uses

- Helps create improved GMOs for industry and environmental cleanup.
- Used in de-extinction efforts (e.g., editing elephant DNA to resemble woolly mammoth).
- Allows development of compact, fast-growing plants ideal for urban and indoor farming.

2. Ethical, Biosafety & Security Concerns

(a) Ethical Concerns

- Germline editing introduces **heritable and irreversible changes**, raising moral and societal dilemmas.
- Possibility of “designer babies,” eugenics, and widening economic and social inequality.
- Concerns over altering human evolution without complete understanding of genome complexity.

(b) Biosafety Risks

	<ul style="list-style-type: none"> • Off-target mutations may inadvertently damage healthy genes. • Long-term developmental and health impacts remain uncertain. • Risk of disrupting ecological or genetic balance in plants, animals, or humans. <p>(c) Security Risks</p> <ul style="list-style-type: none"> • Gene editing is recognized by global agencies as a potential biosecurity threat. • Low-cost tools could be misused to create harmful biological agents or vaccine-resistant pathogens. • Could aid bioterrorism if regulatory oversight is weak.
Conclusion	<p>Gene editing holds transformative promise in addressing genetic diseases, enhancing crop resilience, and advancing biotechnology. However, its power demands rigorous ethical oversight, robust biosafety frameworks, and global coordinated governance to prevent misuse. Balancing innovation with responsibility will determine whether gene editing becomes a tool for human progress or a source of new risks.</p>

Government Policies

Q28. The Election Commission of India has initiated a nationwide Special Intensive Revision (SIR) of electoral rolls to address concerns regarding inaccuracies, illegal enrolments, and migrant disenfranchisement. Discuss the need for SIR, the key challenges involved in its implementation, and the way forward to ensure inclusive and error-free electoral rolls.

(GS – PAPER II – Government Policies & Interventions)

Introduction	<p>The Special Intensive Revision (SIR) is a comprehensive house-to-house verification of India’s electoral rolls undertaken under Section 21(3) of the RPA 1950. It aims to rebuild accurate, citizen-only, error-free rolls amidst rising concerns of illegal enrolments, Aadhaar-based inaccuracies, migration, and data gaps.</p>
Body	<p>Why SIR Was Needed</p> <ul style="list-style-type: none"> • Aadhaar-related risks: CAG (2021) and Standing Committee flagged weak verification during 2010–12 Aadhaar enrolment, enabling illegal immigrants to obtain Aadhaar and enter rolls. • Mass errors accumulated: Due to rapid migration, urbanisation

and non-reporting of deaths.

- **Duplicate / bogus voters:** ECINET analysis shows lakhs of duplicate entries across states.
- **Migrant misalignment:** Over **15 crore internal migrants** face residency-based exclusion or double entries.
- **Electoral integrity:** Inflated rolls distort turnout, constituency representation and public trust.
- **ECI's constitutional obligation:** Under **Articles 324 & 326**, to ensure only eligible citizens are enrolled.

Key Challenges in Implementing SIR

- **Documentation gaps:** Marginalised groups lack birth certificates/parent documents; rigid criteria may cause wrongful exclusion.
- **Citizenship verification dilemma:** ECI is **not legally empowered** to determine citizenship—this lies with MHA.
- **Operational constraints:** Shortage of BLOs, training gaps, flood-prone areas (Bihar), linguistic barriers.
- **Technology limitations:** Aadhaar data errors, mismatched records, low rural internet access (20% households).
- **High migrant mobility:** Seasonal migration makes “ordinary residence” (Sec. 20) hard to prove.
- **Political perception risks:** Allegations of partisan deletions may erode trust.
- **Appeal burden:** DM/CEO-level appeals may rise due to large-scale deletions.

Way Forward

- **Flexible documentation:** Accept Aadhaar, ration card, voter ID (as advised by SC, July 2025).
- **Tech-enabled verification:** Biometric cross-checks, AI duplicate detection, ECINET integration with civil databases.
- **Strengthen BLO capacity:** More recruitment, training, transport support for remote areas.
- **Migrant-friendly reforms:** Mobile enrolment units; legally protect voting rights at original residence; expand pilot **remote voting** (e.g., Bihar's E-SECBHR blockchain model).
- **Transparency:** Political party BLAs and civil society monitoring for non-partisan verification.
- **Phased implementation:** Start with high-risk constituencies; extend timelines to reduce errors.

Conclusion

A well-implemented SIR is crucial for **free, fair, and inclusive elections**, but must balance integrity with accessibility. By ensuring flexible documentation, strong monitoring, and migrant-sensitive reforms, India can achieve electoral rolls that are accurate, transparent and democratic.

Q29. “The Digital Personal Data Protection (DPDP) Rules, 2025 aim to strengthen digital privacy in India, yet concerns remain about transparency, delayed implementation and institutional independence.” Examine.

(GS Paper II – Government Policies & Interventions)

Introduction

The Digital Personal Data Protection (DPDP) Rules, 2025 operationalise the DPDP Act, 2023—India’s first comprehensive privacy legislation following the Supreme Court’s *Puttaswamy* (2017) judgment. The Rules seek to empower citizens through informed consent, data erasure, digital grievance redressal and a digital-by-design Data Protection Board. However, concerns persist over transparency, state exemptions, RTI dilution and slow implementation.

Body

Key Strengths of the DPDP Rules

(a) Citizen-centric rights

- Informed consent, easy withdrawal, right to erasure, correction, and digital nominees.
- Stronger safeguards for children, including ban on profiling and targeted advertising.

(b) Digital-by-Design Governance

- Data Protection Board of India (DPBI) functions completely online—speeding up grievance redress and enabling Ease of Living.

(c) Graded compliance

- Reduced burden for startups/MSMEs; stricter obligations (DPO, DPIA, audits) for Significant Data Fiduciaries.

(d) Awareness and inclusion

- Rules based on wide stakeholder consultations and global benchmarks.

Concerns & Criticisms

(a) Dilution of RTI Act

- Amendment to Section 8(1)(j) removes public interest exception.
- Could weaken social audits, anti-corruption efforts and

transparency.

(b) Government exemptions

- Broad permissions for state agencies to process data without proportional safeguards raise concerns of surveillance and misuse.

(c) Institutional independence

- DPBI is a subordinate office under MeitY → conflict of interest between regulator and promoter of digital industry.

(d) Delayed implementation

- Most privacy protections deferred for 12–18 months, pushing meaningful enforcement to 2026–27.

(e) Ambiguity

- Insufficient clarity on cross-border data transfer, sensitive data processing and government accountability.

Way Forward

- Ensure **DPBI autonomy** through independent appointments and parliamentary oversight.
- Restore **public interest override** under RTI to balance privacy with transparency.
- Narrow government exemptions; adopt necessity–proportionality tests.
- Fast-track core privacy protections and define cross-border data flow rules.
- Strengthen citizen awareness and build privacy-by-design into all public digital services.

Conclusion

The DPDP Rules, 2025 mark a major step in India’s journey toward a rights-based digital ecosystem. Yet the success of the framework depends on independent enforcement, restoration of transparency safeguards, and timely implementation. A balanced, citizen-first approach is essential to secure both privacy and democratic accountability in India’s growing digital economy.

Public Health

Q30. The Transplantation of Human Organs and Tissues (Amendment) Rules, 2025 aim to simplify corneal transplantation and expand access to eye-donation services. Discuss the significance of these reforms and the challenges that remain in ensuring equitable eye-care in India.

(GS Paper 2 – Health, Governance)

Introduction	The Transplantation of Human Organs and Tissues (Amendment) Rules, 2025, notified under THOTA 1994, remove the mandatory requirement for clinical specular microscopes in corneal transplant centres. The reform aims to democratise access to corneal transplantation and strengthen India's National Organ Transplant Programme (NOTP).
Body	<p>Significance of the 2025 Amendment</p> <ul style="list-style-type: none">• Eases Infrastructure Requirements: Removal of the mandatory Clinical Specular Microscope lowers barriers for small and rural eye hospitals, making corneal transplant centres easier to establish.• Boosts Eye Donation: Encourages more institutions to participate in corneal retrieval and storage, addressing the chronic shortage of donor corneas.• Strengthens NOTP: Aligns with the government's goal of equitable access by ensuring that high-quality transplantation services reach Tier-2, Tier-3 and tribal regions.• Addresses Corneal Blindness: India has 1.2 million corneal blind persons, with 25,000–30,000 new cases annually (IJO data). The amendment widens service availability and promotes early intervention.• Reduces Costs: Smaller centres avoid high-cost equipment, making corneal transplantation financially viable.• Promotes Ethical and Safe Transplantation: Strengthens regulated pathways under THOTA and enhances accountability in eye banking. <p>Challenges</p> <ul style="list-style-type: none">• Shortage of trained corneal surgeons and technicians persists, especially in rural India.• Limited awareness about eye donation continues to constrain

	<p>donor availability.</p> <ul style="list-style-type: none"> • Logistical gaps in eye-banking such as cold-chain management and tissue transport. • State-level variation in THOTA implementation affects uniform access. • Socio-cultural resistance to eye donation remains a barrier in several regions.
Conclusion	<p>The 2025 amendment is a progressive step toward accessible, affordable, and equitable corneal transplantation. Sustained investment in awareness, capacity building, and eye-banking systems is essential for reducing India's corneal blindness burden.</p>

Q31. India has recorded a 21% decline in TB incidence between 2015 and 2024, nearly double the global average. Discuss the key factors behind this progress and examine the remaining challenges in achieving the target of a TB-Free India by 2025.

(GS PAPER II – Governance, Health, Social Justice)

Introduction	<p>The WHO Global TB Report 2025 highlights a 21% decline in India's TB incidence—from 237 per lakh (2015) to 187 per lakh (2024)—one of the steepest reductions among high-burden nations and almost double the global decline of 12%. This progress reflects strengthened surveillance, improved diagnostics, and community-centric interventions under the National TB Elimination Programme (NTEP). However, significant gaps remain before India can realise its ambitious 2025 elimination target.</p>
Body	<p>Key Factors Behind India's Progress</p> <ol style="list-style-type: none"> 1. Strengthened Surveillance & Case Detection <ul style="list-style-type: none"> • Active case-finding, house-to-house screenings and targeted tests in high-risk groups. • Missing TB cases reduced from 15 lakh (2015) to less than 1 lakh (2024) 2. Technological Interventions <ul style="list-style-type: none"> • Deployment of CB-NAAT/GeneXpert, TrueNat, digital X-rays. • Faster confirmation of drug-resistant TB and improved reporting. 3. Decentralisation of TB Services <ul style="list-style-type: none"> • Diagnostic and treatment services extended to district/sub-

district levels.

- Medical College Task Force: **560 colleges** supporting diagnosis and research.

4. Community Participation

- **Pradhan Mantri TB Mukh Bharat Abhiyan (PMTBMBA)** mobilised volunteers and corporates.
- Awareness campaigns increased early reporting and adherence.

5. Nutritional and Social Support

- **Ni-kshay Poshan Yojana:** ₹1,000/month nutrition support, ₹3,202 crore disbursed.
- **EDNS supplements** for underweight patients improved recovery.

6. Digital Health Infrastructure

- **Ni-kshay Portal** enabled real-time case tracking, DBT monitoring, adherence checks.

7. Improved Treatment Coverage & Success

- Coverage increased from **53% (2015)** to **92% (2024)**.
- Treatment success rate reached **90%**, above global average (88%).

Persistent Challenges to Achieving TB-Free India by 2025

1. Burden of MDR-TB

- India remains a major contributor to global MDR-TB cases.
- Treatment remains **costly, toxic, and prolonged**, affecting adherence.

2. Social Determinants of Health

- **Malnutrition, overcrowding, poor ventilation, tobacco use,** and poverty sustain transmission.
- India accounts for a large share of global undernutrition-linked TB.

3. Private Sector Participation

- Despite improvements, **under-reporting** persists in private healthcare facilities.
- Quality of diagnosis and treatment remains uneven.

4. Delayed Care-Seeking Behaviour

- Mild early symptoms and stigma cause diagnostic delays.
- Leads to increased transmission and higher mortality.

5. Health System Capacity Gaps

- Human resource shortages, rural diagnostic gaps, and supply

	<p>chain delays affect service delivery.</p> <ul style="list-style-type: none"> • Variations in performance across states. <p>6. Financial and Logistical Constraints</p> <ul style="list-style-type: none"> • Sustaining DBT, nutritional support, and community-based models requires continued funding. • Post-COVID health fatigue also poses operational challenges.
<p>Conclusion</p>	<p>India's 21% decline in TB incidence reflects the success of robust surveillance, expanded diagnostics, decentralised service delivery, and community mobilisation. However, eliminating TB by 2025 remains extremely challenging given the persistence of MDR-TB, social determinants, and health-system gaps. A realistic pathway forward requires sustained investments, stronger private sector integration, enhanced nutrition support, and accelerated adoption of new diagnostics and shorter regimens. Continued political commitment, coupled with community-driven action, remains essential to achieving a TB-free India in the near future.</p>

Modern History

Q32. "Batukeshwar Dutt's life reflects not only the courage of a revolutionary but also the tragedy of a nation's selective memory." Discuss.

(Relevance: UPSC GS-I Modern Indian History)

<p>Introduction</p>	<p>Batukeshwar Dutt, born on 18 November 1910, was a key revolutionary of the Hindustan Socialist Republican Association (HSRA) and the co-actor in the iconic Central Assembly bombing of 1929 alongside Bhagat Singh. While his act shook the British Empire and remains central to revolutionary nationalism, independent India relegated him to the margins of historical memory. His life embodies both immense sacrifice and the deep neglect of lesser-known freedom fighters.</p>
<p>Body</p>	<p>1. Revolutionary Contribution of Batukeshwar Dutt</p> <p>Dutt emerged as a committed revolutionary in his youth after meeting Bhagat Singh in Kanpur.</p> <ul style="list-style-type: none"> • He played a decisive role in the Central Assembly bombing (8 April 1929) meant as a symbolic protest against repressive colonial laws.

- He courted arrest willingly, raised slogans of “Inquilab Zindabad,” and helped popularise the HSRA’s ideology through leaflets titled “*To Make the Deaf Hear.*”
- Dutt endured **harsh imprisonment** in Multan, Jhelum, Trichinopoly, Salem and the Andamans, observing multiple hunger strikes demanding humane treatment for political prisoners.
- He rejoined the freedom movement after release and was again jailed during the **Quit India Movement**.

These contributions place him among the most steadfast revolutionaries of the era.

2. Life After Independence: A Story of Neglect

Despite profound sacrifices, Dutt received little support in independent India.

- The coal depot allotted by the Bihar government proved unviable, leaving him in deep economic distress.
- The intervention of President Rajendra Prasad resulted only in a token **six-month nomination** to the Legislative Council.
- His long illness in the 1960s was met with sympathy but limited institutional support.
- Even though his **state funeral** was attended by the highest constitutional authorities, the recognition did not translate into sustained national memory.

3. Erasure from Public Memory and Selective Commemoration

Dutt’s diminishing visibility reflects how India selectively honours its revolutionaries.

- The Parliament building — where Dutt and Bhagat Singh staged their historic protest — does **not display their portraits**, though others such as V. D. Savarkar are prominently placed.
- Parliamentary protests in 2014 demanding their inclusion were ignored.
- His life survives largely through the writings of fellow revolutionary Chaman Lal Azad in *Bhagat Singh aur Dutt ki Amar Kahani (1966)*, now out of print.
- Lack of representation in textbooks, museums, and public monuments further deepens his invisibility.

4. Human Bonds and Emotional Legacy

Dutt shared a close emotional and ideological bond with Bhagat Singh’s family.

- **Bhagat Singh's mother, Mata Vidyawati**, stayed with Dutt during his final days, even selling a gifted poem to fund his treatment.
- Revolutionary comrades like Shiv Verma and Kiran Das remained by his side.
- However, such camaraderie could not compensate for the absence of state support, symbolising the personal tragedy behind national neglect.

5. Larger Lessons: How India Remembers Its Revolutionaries

Dutt's story reveals deeper issues in India's historical memory:

- Overemphasis on a few iconic figures while many equally significant revolutionaries remain forgotten.
- Weak archival, educational, and memorialisation practices.
- Post-independence politics influencing which historical narratives are foregrounded.
- Recognising Dutt restores the broader, diverse spectrum of revolutionary nationalism that shaped India's freedom struggle.

Conclusion

Batukeshwar Dutt's life epitomises the courage, commitment, and sacrifice of India's revolutionary movement — yet also highlights the painful reality of selective remembrance in post-independence India. Honouring his legacy requires not merely ceremonial gestures but integrating such forgotten revolutionaries into national memory, educational curricula, and public consciousness. Remembering Dutt is therefore not only about the past but also about fulfilling the moral responsibility of the nation he helped liberate.

