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QUESTION & ANSWERS (EM)

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Polity & Governance

Q1. The right of an accused to legal representation is an essential part of the rule of law and fair trial. In this context, examine whether Bar Associations can collectively refuse to represent an accused.

Introduction	A Bar Association cannot collectively refuse to represent an accused or prevent advocates from appearing for a particular person. Such resolutions are unconstitutional, illegal and against professional ethics , as every accused has the right to a fair trial and legal representation.
Body	Constitutional Basis Article 22(1): Right to Legal Representation - Article 22(1) provides that no arrested person shall be denied the right to consult and be defended by a legal practitioner of his choice. Article 21: Right to Fair Trial - The Supreme Court has held that the right to fair trial is part of the right to life and personal liberty under Article 21. Article 14: Equality before Law - Even an unpopular accused is entitled to equal protection of law. Justice cannot depend on public opinion. Article 39A: Equal Justice and Legal Aid - Article 39A directs the State to ensure equal access to justice and free legal aid for those facing economic or other disabilities. Supreme Court's View - In A.S. Mohammed Rafi v. State of Tamil Nadu (2010), the Supreme Court held that Bar Association resolutions refusing to defend an accused are null and void. The Court observed that every person, however disliked by society, has a right to be defended in a court of law. Professional Ethics - Under the Bar Council of India Rules, an advocate is generally bound to accept briefs in courts where he practises. An individual advocate may refuse a case in special circumstances, but a Bar Association cannot impose a collective boycott or threaten members. Why Legal Representation Matters

	• Ensures fair trial and due process • Prevents mob justice • Protects the rights of the accused, victim and society • Strengthens public trust in the judiciary • Ensures that conviction is based on evidence, not emotion
Conclusion	Legal representation does not mean support for the alleged crime. It is a constitutional safeguard that ensures justice through law, evidence and procedure. Therefore, Bar Associations must uphold professional ethics and the rule of law instead of obstructing access to justice.

Q2. India's cooperative movement is being repositioned as a major pillar of inclusive growth, rural development and grassroots economic empowerment. Discuss in the light of recent reforms under the vision of "Sahkar Se Samriddhi".

(UPSC GS Paper II: Governance, Cooperative Federalism, Rural Development, Welfare Institutions)

Introduction	Cooperatives are voluntary, democratic and member-owned institutions based on the principle of "one member, one vote." India's cooperative movement, inspired by Vasudhaiva Kutumbakam and driven by "Sahkar Se Samriddhi" , is being modernised to promote collective prosperity, rural enterprise and inclusive development. The Ministry of Cooperation, established on 6 July 2021 , has launched over 152 initiatives to strengthen the sector.
Body	Current Status of Cooperatives India has one of the world's largest cooperative ecosystems, with over 8.5 lakh cooperatives, nearly 32 crore members, coverage across about 30 sectors, and reach in almost 98% of rural India. Cooperatives play a key role in: • Providing credit, markets and storage to farmers. • Supporting dairy producers, fishers, artisans and workers. • Linking nearly 10 crore women through Self-Help Groups. • Expanding grassroots institutions such as PACS, dairy and fisheries cooperatives. Recent Reforms and Initiatives PACS as Rural Growth Centres • Model bye-laws have enabled PACS in 32 States/UTs to undertake over 25 activities, including retail, storage, healthcare, fuel and digital services. Digital Transformation • The transformation of 50,000 PACS into e-PACS, ERP adoption, online audits and multilingual software are improving

	transparency and service delivery. Infrastructure and Market Linkage - The decentralised grain storage plan through cooperatives has created storage capacity in PACS. Cooperatives are also being linked with FPOs, dairy expansion and fisheries development. New National Institutions - Institutions such as National Cooperative Exports Limited, National Cooperative Organics Limited and Bharatiya Beej Sahakari Samiti aim to strengthen exports, organic products and quality seeds. New-age Cooperatives - Initiatives such as Sahakar CBS, Sahakar Sahyogi and Bharat Taxi show the expansion of cooperatives into banking technology, AI-based services and mobility platforms. Challenges - Regulatory overlap between State Registrars, RBI and other agencies. - Weak governance, elite capture and poor transparency. - Inadequate capital, warehouses, cold chains and market linkages. - Digital and operational gaps in rural cooperatives. - Socio-cultural barriers limiting women and marginalised groups. - Competition from fintech firms, banks and private agribusinesses. Way Forward - Harmonise cooperative regulation with single-window compliance. - Ensure regular elections, audits and professional boards. - Link cooperatives with NABARD, MUDRA, CGTMSE, ONDC and GeM. - Promote women and marginalised community leadership. - Strengthen branding, certification, digital platforms and capacity building through Tribhuvan Sahkari University.
Conclusion	A modern cooperative sector can become a strong instrument of inclusive growth, rural prosperity, women-led development and Viksit Bharat. However, the success of “Sahkar Se Samridhi” depends on transparent governance, technology adoption, financial strength and active member participation.

Q3. Trial in absentia under the Bharatiya Nagarik Suraksha Sanhita, 2023 seeks to prevent absconding accused persons from delaying justice. Examine its scope, safeguards and concerns in the context of fair trial:

(UPSC GS Paper II – Polity, Governance, Criminal Justice Reforms, Internal Security)

Introduction	Trial in absentia means a criminal trial conducted in the absence of the accused. It has gained attention after the Special NIA Court in Jammu issued a non-bailable warrant against Hafiz Saeed in connection with the Pahalgam terror attack investigation. Since such accused persons may evade Indian courts, Section 356 of BNSS, 2023 provides for trial in absentia in limited cases.
Body	Scope under BNSS - Under Section 356 of BNSS, if a person declared a proclaimed offender has absconded to avoid trial and there is no immediate possibility of arrest, the court may proceed with inquiry, trial and judgment in his absence. However, this provision does not apply to every accused. It applies only to a proclaimed offender under Section 84 of BNSS. Under Section 84(4), a person may be declared a proclaimed offender if he is accused of an offence punishable with: Imprisonment of 10 years or more Life imprisonment Death penalty Thus, trial in absentia is restricted to serious offences. Change from CrPC - Under the earlier CrPC, provisions such as Section 82, Section 299 and Section 317 allowed proclamation, recording of evidence in absence of absconding accused, or exemption from personal attendance in limited cases. - However, the CrPC did not allow a full-fledged trial in absentia. As a result, many serious cases remained pending for years until the accused was arrested. BNSS addresses this gap. Safeguards for Fair Trial Section 356 provides important procedural safeguards: - Court must record reasons in writing. - Two consecutive arrest warrants must be issued with a gap of at least 30 days. - Notice must be published in a local or national newspaper. - The accused gets 30 days to appear. - Notice must be displayed at the accused's last known residence. - A relative or friend must be informed.

	• Trial cannot begin until 90 days after framing of charges. • If the accused has no lawyer, the court must appoint a State-funded defence lawyer. • Witness depositions may be recorded through audiovisual means. • If the accused later appears, the court may allow cross-examination of witnesses. Significance • Trial in absentia strengthens the criminal justice system by preventing accused persons from defeating justice through deliberate absence. It is especially useful in terrorism, cross-border conspiracy, organised crime and fugitive cases. It supports speedy trial, victim justice and national security. Concerns • However, it also raises concerns. The accused may not be able to personally instruct counsel, challenge evidence or effectively participate in defence. State-appointed lawyers may face limitations in representing an absent accused. Hence, misuse must be avoided. Way Forward • The provision should be used only in exceptional cases involving serious offences. Courts must strictly follow safeguards, ensure competent legal aid, preserve audiovisual records and allow meaningful cross-examination if the accused later appears.
Conclusion	Trial in absentia under BNSS is a significant criminal justice reform. It balances the need for speedy justice and national security with the accused's right to fair trial. Its legitimacy will depend on strict judicial scrutiny and faithful adherence to due process.

Q4. “One Nation, One Election” has been justified on grounds of administrative efficiency and economic savings. Critically examine the constitutional and federal challenges associated with its implementation.

(GS Paper II – Constitution, Federalism, Elections)

Introduction	One Nation, One Election (ONOE) refers to the proposal to synchronise elections to the Lok Sabha and State Legislative Assemblies within a common electoral cycle. The Constitution (129th Amendment) Bill, 2024 seeks to institutionalise ONOE through a new Article 82A and amendments to Articles 83 and 172. The proposal is justified on grounds of reducing election expenditure, minimising Model Code of Conduct (MCC) disruptions, optimising administrative
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	manpower and ensuring governance continuity.
Body	Arguments in Favour • Administrative efficiency: Frequent elections require repeated deployment of civil servants, teachers, police and CAPF, affecting routine governance. • Reduced MCC disruption: A single election cycle may reduce repeated policy freezes caused by MCC. • Cost savings: Simultaneous elections may reduce duplication in election logistics, security movement and polling arrangements. • Voter convenience: A common election window may reduce voter fatigue and help migrant workers participate more easily. Constitutional Challenges • Basic Structure concerns: In Kesavananda Bharati, the Supreme Court held that parliamentary democracy and free and fair elections are part of the Constitution's basic structure. Any reform weakening democratic accountability may face scrutiny. • Collective responsibility: India's parliamentary system requires the executive to enjoy legislative confidence. Fixed election cycles may create problems if a government loses majority mid-term. • Constructive no-confidence motion: The proposed German-style model may distort India's parliamentary convention by allowing weak governments to remain in office unless an alternative majority is shown. • Extension or curtailment of terms: Synchronisation may require shortening or extending Assembly terms, affecting the democratic mandate of voters under Articles 83 and 172. Federal Challenges • Impact on regional parties: Simultaneous elections may create a "wave effect", where national issues dominate State elections, weakening regional parties and local concerns. • State autonomy: Aligning State Assembly terms with the Lok Sabha may reduce the independent constitutional identity of States. • Local body issue: Panchayat and municipal elections are protected under the 73rd and 74th Amendments and conducted by State Election Commissions. Including them may affect decentralisation, while excluding them weakens the claim of full savings. Practical Concerns

	ONOE also requires large-scale EVM/VVPAT capacity, security deployment and electoral roll coordination. It may concentrate MCC restrictions nationally instead of eliminating governance disruption.
Conclusion	ONOE may improve administrative efficiency, but its implementation must not weaken federalism, parliamentary accountability and free elections . A durable reform requires broad political consensus, constitutional safeguards and parallel reforms in campaign finance, criminalisation of politics and Election Commission autonomy.

Q5. The Foreign Contribution (Regulation) Act is not merely a funding regulation but a framework to balance civil society activity with transparency, sovereignty and democratic accountability. Discuss in the light of the 2026 reforms.

(GS Paper II – Governance)

Introduction	The Foreign Contribution (Regulation) Act (FCRA) regulates the acceptance and utilisation of foreign contributions by Indian individuals, associations, NGOs, trusts and companies. In an interconnected world, foreign funding supports welfare activities, but it also raises concerns related to foreign influence, sovereignty, public order and democratic accountability .
Body	FCRA as a Governance Framework 1. Transparency - FCRA requires organisations to obtain registration or prior permission. - Foreign funds must be received through a designated banking channel. - Donor identity, amount received and purpose of utilisation must be disclosed. 2. Accountability - Organisations must file annual audited returns. - The system creates a traceable chain from foreign source to ground-level use. 3. Sovereignty and Security - FCRA regulates foreign-funded activities that may affect India's sovereignty, security, public order, electoral processes or democratic institutions. - It protects domestic institutions from unregulated foreign influence. 4. Enabling Genuine Work - The Act does not ban genuine civil society activity. - Foreign contribution can support education, healthcare,

	rural development, disaster relief, environment, culture and scientific research. 5. Public Confidence - Registered, disclosed and audited foreign funding improves trust in voluntary organisations. - It protects both beneficiaries and donor intent. Significance of 2026 Reforms 1. Purpose and Area-Based Registration - Registration must specify the approved purpose and State/UT of operation. - This improves activity-wise and location-wise monitoring. 2. Enhanced Reporting - Annual returns require project-wise and activity-wise utilisation details. - Disclosure of the ultimate foreign donor improves fund traceability. 3. Active Organisation Requirement - Minimum utilisation requirement ensures that only functioning organisations retain live registration. 4. Asset Management Safeguards - The proposed Designated Authority framework manages assets created from foreign contribution when registration ceases. - Provisional vesting, restoration on renewal, and judicial appeal provide safeguards. Concerns - Compliance burden may affect smaller organisations. - Delays in renewal can disrupt genuine welfare activities. - Excessive regulation may create fear among civil society actors. Way Forward - Ensure time-bound approvals and renewals. - Provide clear compliance guidance to smaller organisations. - Maintain judicial review and grievance redressal. - Balance national security with legitimate civil society space.
Conclusion	FCRA should be viewed as a registration and disclosure regime, not a blanket restriction on civil society. Proper implementation of the 2026 reforms can strengthen transparency, sovereignty and democratic accountability while enabling genuine global partnerships.

International Relations

Q6. India–Indonesia relations have evolved from civilisational and anti-colonial solidarity to a strategic partnership in the Indo-Pacific. Discuss the significance of the recent Prime Ministerial visit to Indonesia and examine the challenges in the relationship.

(UPSC GS Paper II: International Relations)

Introduction	India and Indonesia share deep civilisational, maritime and anti-colonial links . Their relationship was elevated to a Comprehensive Strategic Partnership in 2018 . The recent State Visit of the Indian Prime Minister to Indonesia marked a new phase in cooperation across defence, maritime security, critical minerals, digital infrastructure, space, agriculture and culture.
Body	Significance of the Visit 1. Defence and Maritime Security - Indonesia signed a USD 200 million contract to procure two batteries of BrahMos supersonic cruise missiles. - It also placed the first-ever export order for India's Astra air-to-air missile system. - Both countries extended cooperation on Maritime Safety and Security. - Joint development of Sabang Port, near the Strait of Malacca, can improve India's maritime surveillance and naval logistics. 2. Indo-Pacific and Strategic Convergence - Indonesia is India's closest maritime neighbour in Southeast Asia and a key pillar of the Act East Policy and SAGAR vision. - Deployment of an Indonesian Liaison Officer at IFC-IOR, Gurugram will enhance maritime domain awareness. 3. Critical Minerals and Industrial Cooperation - Agreements on rare earth magnets, steel supply chains and a proposed SAIL–Indonesia stainless-steel slab facility can help India secure EV, battery and electronics supply chains. - This reduces dependence on China-dominated mineral networks. 4. Technology, Space and Digital Public Infrastructure - The Indonesia Open Network modelled on India's ONDC

	reflects India's digital public infrastructure outreach. - Space cooperation was extended, including support through Biak Telemetry, Tracking and Command facilities. 5. Soft Power and Education - India will assist in restoring the Prambanan Temple Complex. Tagore–Dewantara Year 2026–27 will strengthen cultural diplomacy. - A branch campus of IIM Bangalore is proposed in Indonesia. Challenges - Indonesia follows Bebas-Aktif foreign policy and is cautious about the Quad and anti-China alignments. - Bilateral trade of around USD 28–30 billion remains skewed in Indonesia's favour. - India depends heavily on Indonesian palm oil and coal. - China's strong presence in Indonesia's infrastructure and nickel-based EV supply chains limits India's economic influence. - Non-tariff barriers and absence of a bilateral CECA constrain trade expansion. Way Forward - Fast-track AITIGA review and explore a bilateral CECA. - Operationalise Sabang Port through a time-bound framework. - Build joint ventures in nickel, rare earths and EV battery chains. - Respect Indonesia's ASEAN Centrality while deepening practical maritime cooperation. - Expand defence co-production, digital connectivity, education and cultural exchanges.
Conclusion	India–Indonesia ties are central to a stable, inclusive and rules-based Indo-Pacific. By combining maritime security, defence exports, critical minerals, digital cooperation and cultural diplomacy, both countries can strengthen Global South cooperation and support India's vision of Viksit Bharat 2047.

Q7. India–Japan relations have moved beyond economic cooperation into strategic, technological and Indo-Pacific cooperation. Discuss in the context of the 16th India–Japan Annual Summit 2026.

(UPSC GS Paper II: International Relations, Bilateral Relations, Indo-Pacific)

Introduction	India and Japan share a Special Strategic and Global Partnership
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	rooted in civilisational links, democratic values and shared concerns in the Indo-Pacific. The 16th India–Japan Annual Summit 2026 showed that the relationship has moved beyond trade and investment into defence, technology, clean energy, connectivity and global governance.
Body	Strategic and Defence Cooperation - The summit marked a major breakthrough through the UNICORN Project, the first India–Japan defence co-development programme. Cooperation in Maritime Domain Awareness, naval Maintenance, Repair and Overhaul, joint military exercises and the proposed 2+2 Ministerial Meeting reflects the growing security dimension of the partnership. This is significant for maintaining a rules-based maritime order in the Indo-Pacific. Economic Security and Connectivity - Both countries adopted a Joint Declaration on Economic Security Cooperation, focusing on semiconductors, critical minerals, ICT, clean energy and pharmaceuticals. Japan's continued support for high-speed rail, metro projects, industrial corridors and North-East connectivity strengthens India's infrastructure and manufacturing ecosystem. Technology and Clean Energy Partnership - The launch of the India–Japan AI Strategic Dialogue, cooperation in the LUPEX Moon Mission, and progress in quantum technologies highlight a future-oriented technological partnership. Clean energy cooperation through green hydrogen, clean ammonia, solar technologies and the Cooperative Biogas for Growth Initiative support India's energy transition. Indo-Pacific and Global Governance - Both countries reaffirmed their commitment to a Free and Open Indo-Pacific, freedom of navigation under UNCLOS, Quad cooperation, counter-terrorism and UNSC reforms. Japan's support for India's role in disaster risk reduction and global governance further strengthens strategic convergence. Challenges - However, issues such as trade imbalance, project delays, regulatory barriers, limited people-to-people exchanges and China-linked supply-chain dependence remain concerns.
Conclusion	Thus, the 16th Annual Summit shows that India–Japan ties are no longer limited to economic cooperation. They have become central to India's Act East Policy, Indo-Pacific strategy, technological self-reliance and the broader vision of Viksit Bharat 2047.

Q8. India–New Zealand relations are evolving from friendly ties into a structured strategic partnership. Discuss in the context of the roadmap to 2030.

(GS Paper II – International Relations)

Introduction	India and New Zealand share friendly relations based on Commonwealth links, democratic values, common law traditions and people-to-people ties. Diplomatic relations were established in 1952, while historical links go back to Indian soldiers fighting alongside ANZAC forces in Gallipoli in 1915. The announcement of the India–New Zealand Strategic Partnership: Roadmap to 2030 marks a shift from traditional goodwill to a structured strategic partnership.
Body	How the Roadmap Deepens the Partnership • Political engagement: The Roadmap institutionalises regular meetings between Prime Ministers, Foreign Ministers, Cabinet Ministers, parliamentarians and senior officials, giving continuity to bilateral cooperation. • Defence and maritime security: It strengthens the 2025 Defence Cooperation MoU, naval exercises, maritime visits, hydrography cooperation and a Mutual Logistics Support Arrangement. • Indo-Pacific cooperation: New Zealand’s engagement with India’s Indo-Pacific Oceans Initiative, especially the Maritime Security pillar, reflects shared interest in a rules-based Indo-Pacific and UNCLOS-based maritime order. • Counter-terrorism and cyber security: The Roadmap provides for a Joint Working Group on Counter-Terrorism, cyber dialogue, narcotics control and law-enforcement cooperation. • Trade and economy: It sets an aspirational target of doubling bilateral trade to NZ\$7 billion by 2030 and supports progress on the India–New Zealand Free Trade Agreement. • Agriculture and primary industries: Cooperation in horticulture, forestry, animal husbandry, dairying and food technology can support India’s agricultural productivity and post-harvest systems. • People and culture: The Indian diaspora, forming nearly 5% of New Zealand’s population, acts as a cultural and economic bridge. • Multilateral cooperation: New Zealand supports India’s candidature for a permanent seat in a reformed UNSC and India’s entry into the NSG. Challenges

	• Dairy-sector sensitivities may delay trade negotiations. • New Zealand's economic dependence on China may limit deeper strategic alignment. • Limited direct air connectivity restricts tourism, education and trade. • Labour mobility and transnational extremism concerns need careful handling.
Conclusion	The roadmap to 2030 transforms India–New Zealand ties into a more structured, strategic and Indo-Pacific-oriented partnership. Its success will depend on managing contentious issues while advancing cooperation in trade, maritime security, agriculture, technology, disaster resilience and people-to-people relations.

Economy

Q9. “The Goods and Services Tax has transformed India’s indirect tax system, but its success depends as much on cooperative federalism and administrative efficiency as on tax unification.” Discuss.

(UPSC GS Paper III: Indian Economy, Taxation, Formalisation and Ease of Doing Business)

Introduction	The Goods and Services Tax (GST), introduced on 1 July 2017 through the Constitution (101st Amendment) Act, 2016, is a destination-based indirect tax levied on the supply of goods and services. It replaced multiple Central and State levies and sought to create a unified national market under the principle of “One Nation, One Tax.”
Body	Transformative Role of GST • Unified tax structure: GST subsumed several indirect taxes such as excise duty, service tax, VAT, entry tax and luxury tax, reducing fragmentation. • Elimination of cascading: The Input Tax Credit mechanism limits the “tax-on-tax” effect and improves production efficiency. • National market integration: Uniform tax principles have reduced inter-State barriers and facilitated smoother movement of goods. • Ease of doing business: Common registration, electronic returns and online payments have simplified tax administration. • Formalisation: Invoice-based credit and digital reporting have

	encouraged businesses to enter the formal economy. • Benefits to consumers: Greater transparency and reduced cascading can lower the effective tax burden. • Revenue efficiency: A wider tax base and digital trail improve compliance and revenue mobilisation. Role of Cooperative Federalism • GST rests on shared fiscal powers under Article 246A. The GST Council under Article 279A enables the Centre and States to jointly decide rates, exemptions and procedures. Its functioning is therefore crucial for balancing national uniformity with State fiscal interests. Continuing Challenges • Multiple rates and classification disputes • Compliance burden on MSMEs • Delayed refunds and Input Tax Credit disputes • Technology and connectivity constraints • Tax evasion through fake invoices • Revenue uncertainty for States • Exclusion of petroleum products and alcohol Way Forward • GST reforms should focus on rate rationalisation, simplified returns, faster refunds, protection of genuine taxpayers, stronger GSTN infrastructure and predictable revenue arrangements for States. Consensus-based decision-making in the GST Council must remain central.
Conclusion	GST has significantly modernised India's indirect tax regime, but it remains a continuing reform. Its long-term success depends on simplification, trust, digital efficiency and cooperative fiscal federalism.

Q10. Climate change is emerging as a serious threat to India's dairy economy. Discuss its impact on milk production and suggest climate-smart measures to protect livestock productivity and smallholder livelihoods.

(UPSC GS Paper III: Agriculture, Livestock Economy, Climate Change, Food Security)

Introduction	India is the world's largest milk producer, and dairy provides regular income to millions of rural households. A recent study highlighted that rising temperature, humidity, heatwaves and evapotranspiration are reducing milk yield, especially in Haryana's high milk-producing belt of the trans-Gangetic plains.
Body	Climate Impact on Dairy Production

	Heat Stress and Milk Yield - High temperature above 38°C, combined with humidity above 70%, significantly reduces milk production. Lactating animals divert energy from milk production to body-temperature regulation, causing reduced appetite, panting, sweating, higher cortisol levels and impaired milk ejection. During intense summers, milk yield may decline by 20–30%. Greater Vulnerability of Buffaloes - Buffaloes are more heat-sensitive because their dark skin absorbs more solar radiation and they have fewer sweat glands. The study found that a unit increase in potential evapotranspiration can reduce milk yield by around 1.4 litres per buffalo per day. Breed-Specific Impact - Cross-bred cattle also suffer during heatwaves. Indigenous breeds such as Sahiwal and Haryana show better resilience due to loose skin, efficient sweating, lower metabolic heat production and stronger adaptation to local parasites and pathogens. Systemic Dairy Stress - Climate change also reduces fodder quantity and quality, increases water scarcity, raises disease risks and increases feed costs. This affects smallholder farmers, consumers, nutrition security and rural income. Heat-related stressors already cause an estimated loss of 3.2 million tonnes of milk, which may rise sharply by the 2050s. Way Forward Climate-Smart Dairy Systems - India should integrate Temperature-Humidity Index and Potential Evapotranspiration into regional early warning systems. Low-Cost Adaptation - Shade, ventilation, sprinklers, foggers, wallowing ponds and improved feeding practices should be promoted. Breed Resilience - Indigenous and thermo-tolerant breeds must be conserved through programmes such as Rashtriya Gokul Mission. Fodder and Veterinary Support - Climate-resilient fodder, fodder banks, veterinary extension and farmer training are essential.
Conclusion	India's dairy policy must shift from productivity-only planning to resilience-oriented livestock management. Protecting smallholder farmers, conserving indigenous breeds and building climate-smart dairy systems are essential for sustaining milk production in a warming world.

Q11. El Niño remains a major macroeconomic risk for India despite the declining share of agriculture in GDP. Examine how a weak monsoon can affect agriculture, inflation and economic growth. Suggest measures to drought-proof the Indian economy.

(UPSC GS Paper III: Agriculture, Inflation, Food Security, Economic Growth, Disaster)

Introduction	El Niño, marked by abnormal warming of the central and eastern equatorial Pacific Ocean, can weaken the Indian south-west monsoon. Though agriculture's share in GDP has declined, India remains a monsoon-sensitive economy because agriculture supports nearly 46% of the workforce and influences food prices, rural demand and macroeconomic stability. Recent concerns have increased after a nearly 40% monsoon deficit in the first month.
Body	Impact of Weak Monsoon on Agriculture A deficient monsoon directly affects the kharif crop cycle. • Lower sowing: Paddy, pulses, oilseeds and coarse cereals may witness delayed or reduced sowing. • Crop switching: Farmers may shift from water-intensive crops to low-water crops such as pulses. • Yield loss: Heat and moisture stress reduce productivity. • Farm income shock: Lower output reduces farmers' marketable surplus and purchasing power. Thus, a weak monsoon creates both a production shock and an income shock in rural India. Impact on Inflation A weak monsoon can trigger supply-side food inflation. • Prices of cereals, pulses, vegetables, edible oils, onions, potatoes and tomatoes may rise. • Lower fodder availability can also raise milk and livestock-product prices. • Food inflation can spill over into headline inflation, complicating RBI's monetary policy. This creates a growth-inflation trade-off, where policy must control prices without hurting recovery. Impact on Economic Growth The impact spreads beyond agriculture through the rural demand multiplier. • Demand for tractors, two-wheelers, FMCG, farm equipment and rural construction weaken. • Lower output may reduce agri-exports and increase imports. • Food imports and fertiliser support can widen the current

	account deficit and fiscal burden. - Poor reservoir storage can affect irrigation, drinking water and hydropower generation. Measures to Drought-Proof the Economy - Expand micro-irrigation, watershed development and groundwater recharge. - Promote drought-resistant and short-duration crop varieties. - Rationalise water-intensive cropping in stressed regions. - Link IMD forecasts with crop advisories, fertiliser planning and market alerts. - Strengthen buffer stocks, price stabilisation funds and import preparedness. - Shift from only crop insurance to ex-ante risk reduction through public investment. - Support rural demand through credit, MGNREGA and targeted income support.
Conclusion	El Niño is a climatic shock, but its economic damage is not inevitable. India must move from reactive drought relief to proactive climate-resilient planning. Drought-proofing agriculture is essential for protecting food security, rural livelihoods and macroeconomic stability.

Q12. Life insurance in India is not merely a household protection instrument but also an important pillar of sovereign fiscal stability. Discuss.

(UPSC GS Paper III: Indian Economy, Financial Markets, Public Debt Management, Insurance Sector)

Introduction	Life insurance protects families against financial risks, especially the loss of income due to the death of an earning member. However, it also performs a major macroeconomic function by converting household premiums into long-term funds invested in Government Securities, thereby supporting government borrowing and public expenditure.
Body	How Life Insurance Funds Government Expenditure The process works through a simple chain: Households → Insurance Premiums → Life Insurance Companies → Government Securities → Government Borrowing → Public Infrastructure and Development When households pay premiums, life insurers invest a significant share of these funds in Central Government dated securities. These securities help finance expenditure on roads, railways, hospitals, schools, irrigation, defence and welfare programmes.

Why Government Securities Suit Life Insurers

- Life insurance policies often continue for **20 to 40 years**. Therefore, insurers need safe and long-term assets to match future claims and maturity obligations.

Government Securities are preferred because they offer:

- **Sovereign guarantee** and low default risk
- **Predictable returns**
- **Long maturity periods**
- **High liquidity**
- Suitability for **Asset-Liability Matching**

Life Insurance as Patient Capital

- Life insurers provide **patient capital**, meaning long-term investment that remains stable despite short-term market volatility.

Unlike **Foreign Portfolio Investors**, life insurers do not exit quickly during:

- Global financial crises
- Oil price shocks
- Geopolitical tensions
- Currency volatility

This makes them **counter-cyclical investors**, stabilising the government borrowing programme during uncertain periods.

Role of LIC

- LIC is the largest institutional holder of Government of India debt. It holds around **19% of outstanding Central Government Securities**, with about **₹20.2 lakh crore** invested in Central Government Securities and over **₹32.3 lakh crore** in government and government-guaranteed securities.
- IRDAI designates LIC as a **Domestic Systemically Important Insurer**, showing its importance for insurance markets, capital markets and sovereign borrowing.

Concerns

- Life insurance penetration declined from **3.2% of GDP** during the pandemic peak to **2.7% in FY25**.
- Rural and informal households remain underinsured.
- Mis-selling and claim delays weaken public trust.
- Frequent regulatory changes may affect long-term savings mobilisation.

Way Forward

- Expand insurance literacy and rural coverage.

	• Strengthen claim settlement and product transparency. • Promote long-term traditional insurance products. • Ensure stable regulation. • Deepen the Government Securities market through wider institutional participation.
Conclusion	Life insurance is both a social-security instrument and a fiscal stabiliser . As India moves towards Viksit Bharat 2047 , deeper insurance penetration will strengthen household protection, infrastructure financing and sovereign fiscal resilience.

Q13. India's toy industry reflects the potential of combining cultural heritage with modern manufacturing and export competitiveness. Discuss the role of government initiatives in strengthening India's toy ecosystem.

(GS Paper III: Manufacturing, MSMEs, Exports, Innovation, Industrial Policy)

Introduction	India's toy industry has a legacy of nearly 5,000 years , from clay toys of the Indus Valley Civilisation to modern STEM and electronic toys. Today, the sector is emerging as a contributor to manufacturing, exports, innovation, employment and cultural preservation .
Body	Growth of India's Toy Ecosystem India's toy sector is gaining momentum due to: • Large consumer base: India has a population of over 1.4 billion, with a significant young population. • Rising incomes: Growing purchasing power is increasing demand for modern and educational toys. • STEM learning: Parents are preferring educational, skill-based and cognitive-development toys. • Digitalisation: E-commerce has improved market access, while smart toys using AI, AR and VR are gaining popularity. Export and Economic Performance India's toy exports have grown significantly: • Overall toy exports rose from US\$152.7 million in 2017–18 to US\$384.7 million in 2025–26. • Imports of traditional and educational toys declined by 66%. • India achieved a toy trade surplus of US\$152 million in 2025–26, compared to a deficit of US\$213.01 million in 2017–18. • Employment in Games and Toys more than doubled from 8,685 in 2018–19 to 17,693 in 2023–24. Government Initiatives • National Action Plan for Toys, 2020: Promotes toys based on Indian culture, values and history.

	• Quality Control Order, 2020: Made BIS certification compulsory for toy safety. • Tariff measures: MFN tariff on toys increased to 70% in 2023, supporting domestic manufacturing. • Toycathon and e-Toycathon: Encourage innovative toys based on Indian heritage and learning needs. • e-Toys Lab: Supports indigenous electronic toy design and training. • ODOP and GI tagging: Promote traditional toys like Channapatna Toys, Thanjavur Doll and Leather Toys of Indore. • GST reduction: GST on toys reduced from 12% to 5%, improving affordability. • Districts as Export Hubs: More than 10 districts identified with toy and doll export potential. Challenges • Competition from global manufacturers. • Need for better design, branding and packaging. • Limited scale among artisans and MSMEs. • Compliance with global safety standards. • Need for technology adoption in smart and electronic toys. Way Forward • Strengthen toy clusters with common facilities and design centres. • Expand BIS certification support for MSMEs. • Promote GI toys through e-commerce and exports. • Use FTAs for zero-duty market access. • Encourage STEM, electronic and sustainable toys.
Conclusion	India's toy industry represents the idea of "local to global" by combining traditional craftsmanship with modern innovation. With sustained policy support, quality standards and export promotion, the sector can strengthen Atmanirbhar Bharat, create employment, preserve cultural heritage and contribute to Viksit Bharat 2047.

Q14. Can compressed biogas aid India's energy security? Discuss the opportunities and challenges in scaling up the biogas sector in India.

(GS Paper III – Energy Security / Renewable Energy / Agriculture)

Introduction	India imports nearly 85% of its crude oil needs, and around 90% of its LPG imports pass through the Strait of Hormuz. In the context of West Asian instability and global energy shocks, Compressed Biogas
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	can become an important domestic alternative fuel for improving India's energy security.
Body	How CBG Can Aid Energy Security • Import substitution: CBG is chemically similar to CNG and can be used in transport, cooking, heating and electricity generation, reducing dependence on imported fossil fuels. • Domestic renewable fuel: It is produced through anaerobic digestion of organic matter such as cattle dung, agricultural waste, municipal solid waste and food waste. • Waste-to-wealth model: CBG converts waste into energy and supports the goals of GOBARdhan and circular economy. • Rural income support: Farmers can earn additional income by supplying biomass, dung and crop residues to CBG plants. • Climate benefits: It reduces methane emissions from unmanaged organic waste and supports India's clean energy transition. Government Initiatives • The SATAT initiative, launched in 2018, targeted 5,000 CBG plants by 2023, but only 132 plants were completed by June 2026. • Under GOBARdhan, grants of up to ₹50 lakh per district were offered for community biogas plants. • The government allocated ₹564 crore for biomass collection machinery and ₹994 crore for pipelines connecting biogas plants to the gas grid. • From FY26, gas distributors must blend CBG into supply, starting at 1% and rising to 5% by FY29. Challenges • High upfront technology cost makes projects less viable. • Poor biomass collection and storage infrastructure limits feedstock availability. • Private investment remains weak due to uncertain returns. • Access to formal credit is difficult for smaller project developers. • Pipeline and gas-grid connectivity remain inadequate. • Excessive use of food crops such as maize as feedstock may affect crop diversity and food security, as seen in Germany. Way Forward • Promote feedstock from livestock manure, agricultural residues and municipal organic waste, similar to Denmark's

	model. • Provide fiscal incentives such as tax holidays, accelerated depreciation and viability gap funding. • Ensure assured offtake and stable pricing for CBG producers. • Strengthen biomass aggregation, cold storage, transport and pipeline infrastructure. • Link CBG policy with waste management, rural employment, climate goals and farmer income.
Conclusion	CBG can aid India's energy security by reducing import dependence, managing organic waste and supporting rural livelihoods. However, India must avoid crop-diversion risks and build a waste-based, financially viable and infrastructure-supported CBG ecosystem. If implemented well, it can become a strong pillar of India's clean energy transition and Atmanirbhar Bharat.

Q15. Farm mechanization can improve agricultural productivity, but access to modern machinery remains unequal for small and marginal farmers. Discuss the role of the Sub-Mission on Agricultural Mechanization in addressing this gap.

(GS Paper III – Agriculture)

Introduction	Farm mechanization refers to the use of machines, equipment and modern technologies in agricultural operations such as land preparation, sowing, irrigation, plant protection, harvesting and post-harvest management. In India, where small and marginal farmers dominate agriculture, mechanization is essential for improving productivity, reducing labour drudgery and ensuring timely farm operations. The Sub-Mission on Agricultural Mechanization, launched in 2014–15 under Rashtriya Krishi Vikas Yojana, aims to “reach the unreached” by improving access to farm machinery for small farmers, women, Scheduled Castes, Scheduled Tribes, Farmer-Producer Organizations, Self-Help Groups and rural entrepreneurs.
Body	Role of SMAM in Farm Mechanization • Affordable access to machinery: SMAM promotes Custom Hiring Centres and Farm Machinery Banks, enabling small farmers to rent machines instead of purchasing costly equipment. • Financial support: The scheme provides subsidy support through Direct Benefit Transfer, covering 40% of machinery cost for general beneficiaries and 50% for small and marginal farmers, SC/ST farmers and beneficiaries in North-Eastern States. • Support to institutions: It provides assistance to SHGs, FPOs

	and local institutions for setting up Farm Machinery Banks, strengthening collective access to machines. • Focus on underserved regions: Special support is given to the North-Eastern Region, including up to 100% subsidy for small machinery and 95% support for Farm Machinery Banks. • Promotion of advanced technology: SMAM supports Hi-Tech Hubs, post-harvest mechanization and drone-based precision agriculture. • Drone adoption: With ₹52.50 crore support, ICAR, KVKs and State Agricultural Universities conducted 40,928 Kisan Drone demonstrations across 40,918 hectares. • Women empowerment: The scheme earmarks 30% of funds for women farmers, improving their participation in mechanized farming. Achievements • ₹9,404.47 crore central assistance released since inception. • 21.61 lakh agricultural machines distributed. • 27,554 Custom Hiring Centres, 646 Hi-Tech Hubs and 25,608 Farm Machinery Banks established. Challenges • Small and fragmented landholdings reduce machine viability. • High cost of advanced machines remains a barrier. • Lack of trained operators and repair services affects adoption. • Awareness about subsidies and rental services remains limited. • Drone-based agriculture needs skill development and regulatory clarity. Way Forward • Promote small, affordable and crop-specific machinery. • Strengthen FPO-based Custom Hiring Centres. • Train rural youth as machine operators, drone pilots and repair technicians. • Improve awareness through demonstrations and IEC campaigns. • Link mechanization with post-harvest management, climate-smart agriculture and crop-residue management.
Conclusion	SMAM is an important intervention for making farm mechanization inclusive, affordable and productivity-enhancing. By combining subsidies, rental services, institutional support and emerging technologies like drones, it can help small and marginal farmers overcome structural constraints and move Indian agriculture towards

efficiency, sustainability and higher incomes.

Q16. “Tourism can become a powerful instrument of employment generation, regional development and India’s soft power.” Examine the potential of India’s tourism sector, the challenges restricting its growth and the measures required to make it globally competitive.

(GS Paper III – Indian Economy, Employment, Infrastructure and Sustainable Development)

Introduction	India possesses diverse natural landscapes, historical monuments, spiritual centres, medical facilities and cultural traditions. International tourist arrivals reached 20.57 million in 2024 , compared with 17.91 million in 2019. India aims to attract 100 million international visitors by 2047 , while its tourism economy is projected to reach USD 523 billion by 2034 .
Body	Potential of India’s Tourism Sector • Employment generation: Tourism creates direct jobs in hotels, travel and transport, along with indirect employment in agriculture, handicrafts, construction and retail. • Inclusive regional growth: Expansion into Tier-II, Tier-III and rural destinations can distribute economic opportunities beyond metropolitan cities. • Entrepreneurship: It supports homestays, food services, tourist guides, local transport operators and handicraft producers. • Foreign-exchange earnings: International tourists generate revenue through accommodation, shopping, transport and recreation. • Infrastructure development: Tourism demand encourages investment in airports, roads, sanitation, digital connectivity and public amenities. • Soft-power promotion: Heritage, spirituality, cuisine, yoga and cultural diversity strengthen India’s global image. • Emerging segments: Medical, wellness, spiritual, eco-tourism and MICE tourism offer significant growth opportunities. Major Challenges • Regulatory fragmentation: Hospitality projects require numerous licences, while tourism lacks uniform industry status across States. • Poor last-mile connectivity: Smaller destinations face inadequate roads, sanitation, public transport, signage and digital access. • High taxation: Premium hotel rooms, tourist transport and

	aviation-related costs make India less competitive than Southeast Asian destinations. • Safety concerns: Harassment, overcharging and unregulated services weaken the principle of Atithi Devo Bhava. • Skill shortage: India lacks adequately trained tourist guides, hotel workers and frontline service personnel. • Visa barriers: Complex and expensive visa procedures discourage inbound tourism. • Environmental stress: Overtourism causes overcrowding, water scarcity, waste generation, unplanned construction and disaster risks in fragile destinations. Measures Required • Grant uniform industry status to tourism and include hospitality projects in infrastructure classifications. • Establish single-window clearance and time-bound approval systems. • Integrate tourism planning with airports, highways, urban development and economic corridors. • Improve last-mile connectivity, sanitation, signage and wayside amenities. • Expand e-Visas, visa-on-arrival and long-duration multiple-entry visas. • Develop destinations according to scientifically assessed carrying capacity. • Promote renewable energy, water conservation and responsible waste management. • Standardise tourist police, multilingual assistance centres and grievance mechanisms. • Strengthen skill development in foreign languages, digital tools and visitor management. • Accelerate projects under Swadesh Darshan, under which 76 projects worth ₹5,290 crore were sanctioned.
Conclusion	India must shift from promoting isolated attractions to developing complete, safe and sustainable destinations. Coordinated action by the Union government, States, local bodies, communities and private investors can transform tourism into a driver of decentralised prosperity, cultural diplomacy and Viksit Bharat 2047.

Q17. The Strait of Hormuz is not merely a maritime chokepoint but a major determinant of India's energy and macroeconomic security. In this context, examine the implications of the proposed transit fee and suggest measures to reduce India's vulnerability to disruptions in West Asia.

(GS Paper III: Energy Security and Indian Economy)

Introduction	The Strait of Hormuz, located between Iran and Oman, connects the Persian Gulf with the Gulf of Oman and the Arabian Sea. It is among the world's most important energy chokepoints, carrying nearly one-fifth of global oil and LNG flows before the recent conflict. The proposed 20% US transit fee, although subsequently withdrawn, highlighted India's vulnerability to geopolitical disruptions in West Asia.
Body	Implications for India • Energy-supply risk: Around 40% of India's crude oil, 60% of LNG and 90% of LPG imports from West Asia pass through Hormuz. India's overall import dependence exceeds 88% for crude oil. • Higher import bill: At a crude price of USD 75 per barrel, the proposed levy could have added USD 15, raising the landed cost above USD 90 per barrel. • Macroeconomic pressure: Every USD 1 rise in crude prices can increase India's annual oil import bill by up to USD 2 billion. The fee could have added nearly USD 9 billion annually to the oil import bill alone. • Inflationary impact: Higher fuel costs raise transport, fertiliser, electricity, food-distribution and industrial-production expenses. • External-sector stress: Costlier energy imports widen the trade deficit and current account deficit, increase demand for dollars and weaken the rupee. • Fiscal burden: Government absorption of price increases may raise subsidy expenditure or reduce fuel-tax revenues. • Industrial disruption: LNG shortages may require gas rationing for fertiliser, power and other gas-dependent industries. • Maritime insecurity: Increased freight and war-risk insurance premiums raise the landed cost of commodities. Measures to Reduce Vulnerability • Diversify suppliers: Expand long-term sourcing agreements with Russia, the US, Africa, Latin America and other non-Hormuz suppliers. • Strengthen strategic reserves: Expand strategic petroleum

	reserves and improve emergency stock-release mechanisms. • Accelerate energy transition: Promote renewables, green hydrogen, biofuels, electric mobility and domestic energy production. • Improve maritime preparedness: Strengthen coordination among the Navy, ports, shipping firms, insurers and energy companies. • Protect navigation rights: Continue diplomatic advocacy for free, non-discriminatory passage through international waterways. • Build supply-chain resilience: Diversify transport routes, LNG terminals, storage facilities and import infrastructure. • Promote regional de-escalation: Engage with Iran, Oman, the US and Gulf countries to maintain uninterrupted commercial navigation.
Conclusion	The Hormuz fee controversy demonstrated that India's energy security remains closely linked to geopolitical stability in West Asia. A combination of source diversification, strategic reserves, maritime preparedness and clean-energy transition is necessary to protect economic growth, price stability and strategic autonomy.

Q18. Rural credit is a key pillar of inclusive growth in India. Discuss the role of institutional reforms, policy measures and digital platforms in strengthening rural credit delivery.

(GS Paper III – Agriculture / Inclusive Growth / Banking)

Introduction	Rural credit plays a crucial role in supporting agriculture, allied activities, rural enterprises and household consumption needs. India's rural credit system has gradually evolved from informal lending to a diversified institutional framework driven by NABARD, Scheduled Commercial Banks, Regional Rural Banks, Cooperative Banks and Small Finance Banks. Recent data reflects this shift: 51% of rural households rely exclusively on formal credit sources, while over 27% use both institutional and non-institutional channels.
Body	Institutional Reforms Strengthening Rural Credit • NABARD as apex institution: NABARD strengthens rural finance through refinance support, rural infrastructure financing, institutional development and supervision of Cooperative Banks and RRBs. • Expansion of banking network: Rural branches of Scheduled Commercial Banks increased from 41,464 in 2014 to 56,193 by July 2025, improving access to formal banking.

	• RRBs and Cooperative Banks: 28 RRBs with over 22,000 branches in 700 districts focus on small farmers, agricultural labourers, artisans and rural entrepreneurs. Cooperative institutions such as PACS, StCBs and DCCBs provide last-mile credit. • Small Finance Banks: 11 SFBs support unserved and underserved groups through low-cost, technology-driven credit delivery. Policy Measures • Priority Sector Lending: Banks must earmark 18% of eligible credit for agriculture, with sub-targets of 14% for non-corporate farmers and 10% for small and marginal farmers. • Ground Level Credit: The GLC target for FY 2025–26 is ₹32.50 lakh crore, including ₹5 lakh crore for animal husbandry, dairying and fisheries. • Modified Interest Subvention Scheme: Under MISS, short-term loans through KCC are available at 7% interest, reduced to 4% for prompt repayment. • SHG-Bank Linkage and DAY-NRLM: Over 10.05 crore rural women have been mobilised into more than 90.90 lakh SHGs, improving women-led financial inclusion. Digital Platforms and Financial Inclusion PMJDY has opened over 58.63 crore accounts, with 77.8% in rural and semi-urban areas. Platforms such as Jan Samarth Portal, e-KCC, and Jan Dhan Darshak App have made credit access more transparent, faster and technology-enabled. The e-KCC portal enables loan processing in about two days. Challenges • Dependence on informal credit still persists. • Small and marginal farmers need easier and timely access. • Financial literacy remains uneven. • PACS digitisation and allied-sector credit require further strengthening.
Conclusion	Rural credit is central to inclusive rural development, agricultural growth and livelihood resilience. By combining institutional expansion, targeted policies and digital platforms, India can make rural finance more affordable, accessible and efficient, thereby strengthening the foundation of inclusive growth.

Q19. The Investment Friendliness Index can strengthen competitive and cooperative federalism in India. Discuss its significance and challenges in improving State-level investment ecosystems.

(GS Paper III – Economy / Investment / Industrial Growth)

Introduction	The Investment Friendliness Index (IFI) 2026, released by NITI Aayog, is a homegrown, data-driven framework to assess the investment readiness of 28 States and 8 Union Territories. It evaluates States across eight pillars such as infrastructure, business climate, resources, regulatory ease, institutional environment, financial health and environmental resilience. The Index supports the vision of Viksit Bharat @2047 by encouraging State-level reforms.
Body	Significance of the Index • Promotes competitive federalism: By ranking States and UTs, the Index encourages healthy competition among States to improve their investment climate. • Strengthens cooperative federalism: It enables peer learning, adoption of best practices and Centre-State collaboration in reforms. • Evidence-based policymaking: The Index uses 84 indicators and investor perception surveys, helping States identify specific reform gaps. • Supports private investment: India needs higher investment to achieve developed economy status by 2047. Since investment decisions depend heavily on State-level factors such as land, power, logistics, skilled labour and regulatory efficiency, the Index can guide reforms. • Addresses regional imbalance: Nearly 85% of FDI inflows are concentrated in Maharashtra, Karnataka, Gujarat, Delhi and Tamil Nadu. IFI can help lagging States improve competitiveness. • Improves investor confidence: Transparent rankings and State Profiles help investors understand the strengths and weaknesses of different jurisdictions. Challenges • Regional disparities: The gap between Gujarat's score of 56.6 and Lakshadweep's 24.5 shows deep structural differences. • Land and approval delays: Investors continue to face long approval timelines, difficulties in land access and weak single-window systems. • Skill shortages: Several States face lack of skilled labour and talent migration.

	• Infrastructure gaps: Poor Road quality, weak last-mile connectivity, inadequate warehousing and limited airport connectivity affect investment. • Fiscal stress: High debt and weak fiscal health reduce the ability of States to invest in infrastructure and incentives. • Environmental risks: Pollution, flood risks and weak climate-resilient infrastructure can reduce industrial productivity. Way Forward States must operationalise genuine single-window clearances, simplify land allotment, strengthen skilling through Skill India Mission and PMKVY, expand infrastructure under PM Gati Shakti, improve fiscal sustainability, and build climate-resilient industrial ecosystems.
Conclusion	The Investment Friendliness Index marks a shift from one-time ease-of-doing-business rankings to a continuous reform framework. If used effectively, it can improve State-level governance, attract investment, reduce regional disparities and accelerate India's journey towards Viksit Bharat @2047.

Q20. India's recent inflationary pressure is driven more by supply-side and cost-push factors than by excess demand. Discuss. Suggest suitable policy measures to manage such inflation.

(GS Paper III – Indian Economy)

Introduction	Inflation is the sustained rise in the general price level over a period of time, reducing the purchasing power of money. India's recent inflationary trend, with WPI inflation hovering close to 10% in June, shows renewed price pressure. However, this rise is not mainly due to excess demand, but due to fuel costs, manufactured goods price pressures and food supply shocks.
Body	Why Recent Inflation is Supply-Side and Cost-Push 1. Fuel and Power Price Pressure • Fuel and power prices are strongly influenced by international crude oil prices. Since India imports a large share of its crude oil requirement, rising oil prices enter the economy as imported inflation. Fuel also raises transport, logistics, electricity and production costs, creating economy-wide price pressure. 2. Manufactured Goods Inflation • Manufactured goods prices are largely cost-determined. When demand rises, factories can often increase output if spare capacity exists. But when input costs such as fuel, power, chemicals, metals and transport rise, producers pass these costs into final prices. Hence, manufactured goods inflation is mainly cost-push.

	inflation. 3. Food Inflation Due to Supply Shocks - Food prices are highly sensitive to monsoon, rainfall, irrigation and crop conditions. Poor monsoon or El Niño-related stress can reduce agricultural output. Since food supply cannot be increased immediately in the short run, prices rise quickly. Thus, food inflation is largely a supply-shock problem. Why Excess Demand is Not the Main Cause - In demand-pull inflation, prices rise because demand exceeds supply. But the present inflation pattern shows pressure from fuel, food and industrial input costs. For manufactured goods, demand can be met by higher production when capacity is available. For food items, prices rise mainly when supply falls. Therefore, treating current inflation only as demand-driven may lead to excessive reliance on monetary tightening. Policy Measures Needed 1. Strengthen Irrigation and Agricultural Resilience - India must reduce dependence on monsoon rainfall through irrigation infrastructure, water storage and climate-resilient agriculture. 2. Use Countercyclical Fuel Tax Policy - When crude oil prices rise sharply, the government can reduce customs and excise duties on fuel to limit price transmission. 3. Improve Food Supply Chains - Better storage, cold chains, transport and market linkages can reduce food price volatility. 4. Coordinate Monetary and Fiscal Policy - RBI's inflation targeting should be supported by fiscal and supply-side measures, as interest rates alone cannot reduce global oil prices or increase food supply. 5. Reduce Imported Inflation Vulnerability - India should promote energy diversification, efficient logistics and domestic alternatives to reduce exposure to global crude oil shocks.
Conclusion	India's recent inflation is mainly a cost-push and supply-side phenomenon, driven by fuel prices, manufactured goods input costs and food supply shocks. Therefore, inflation management requires a balanced approach combining monetary policy, fiscal intervention, fuel tax management, irrigation investment and supply-chain reforms to protect growth, livelihoods and price stability.

Q21. Cotton is not merely a crop but a complete agricultural-industrial value chain in India. Discuss its significance and examine recent initiatives taken to improve productivity, farmer income and global competitiveness.

(GS Paper III – Agriculture)

Introduction	Cotton is called “ White Gold ” due to its high economic value in India’s agriculture, textile industry and export economy. India is the only country cultivating all four recognised cotton species , ranks first globally in cotton acreage , and ranks second in cotton production and consumption . Cotton production stood at 290.91 lakh bales in 2025–26 , while domestic consumption reached 328 lakh bales .
Body	Significance of Cotton Sector 1. Livelihood Support - Cotton supports around 6 million farmers and provides employment to nearly 40–50 million people in processing, trade and related activities. 2. Textile and Industrial Linkage - It connects the complete farm-to-fibre-to-factory-to-fashion-to-foreign value chain, supporting spinning, weaving, garments, exports and rural industry. 3. Export Potential - India exported about 18 lakh bales in 2024–25, while cotton exports in value terms reached US\$ 11.49 billion in FY25. 4. By-product Economy - Cottonseed provides edible oil, deoiled cake, animal feed, linters, hulls, biomass fuel and absorbent/surgical cotton. Recent Initiatives 1. MSP and CCI Procurement - The Cotton Corporation of India undertakes MSP procurement when market prices fall below support levels. In 2025–26, CCI procured 105.09 lakh bales worth ₹41,530 crore. 2. Mission for Cotton Productivity - Launched in 2025–26, the mission has a provision of ₹5,659.22 crore and aims to raise cotton production to 498 lakh bales by 2031 through climate-resilient, pest-resistant and high-yielding varieties. 3. NFSM Special Project on Cotton - Demonstrations of High-Density Planting System, Closer Spacing Planting System and ELS cotton technology recorded significant yield gains.

	4. Kapas Kisan App and Kasturi Cotton Bharat - The Kapas Kisan App digitises procurement through registration, slot booking and Aadhaar-linked payments. Kasturi Cotton Bharat strengthens branding through certification, QR-based traceability and blockchain. Challenges - India's cotton sector faces rain-fed dependence, pest attacks, low productivity, climate variability, price volatility and quality concerns.
Conclusion	Cotton remains central to India's agriculture, textiles, exports and rural livelihoods. A combined focus on MSP support, productivity enhancement, digital procurement, traceability, branding and value addition can strengthen India's position in the global cotton economy.

Q22. The UDAN scheme has democratised air travel in India, but regional aviation still faces sustainability challenges. Discuss how Modified UDAN seeks to address these challenges.

(GS Paper III – Infrastructure)

Introduction	The Regional Connectivity Scheme–UDAN was launched in 2016 to make air travel affordable, accessible and inclusive for common citizens. It has expanded connectivity to underserved and unserved regions, while the newly launched Modified UDAN seeks to make regional aviation more sustainable and resilient.
Body	Achievements of UDAN 1. Expansion of Regional Connectivity - UDAN has connected smaller towns, remote regions, hilly areas and island locations with major urban centres. It has improved access to places such as Tezpur, Pasighat, Diu, Pithoragarh and Rourkela. 2. Affordable Air Travel - The scheme made regional air travel affordable through fare support, Viability Gap Funding and operational concessions. 3. Economic and Social Benefits - UDAN has reduced travel time, supported tourism, improved access to healthcare and emergency services, and strengthened local economic activity. 4. Passenger Facilitation - Initiatives such as UDAN Yatri Cafés, Flybrary and free Wi-Fi services have improved passenger comfort.

	Sustainability Challenges 1. Low Passenger Demand - Many regional routes face limited passenger traffic in the initial years. 2. High Operating Costs - Smaller airports and regional routes often face high recurring costs and limited revenues. 3. Route Discontinuation - Some routes and airports became inactive after the initial subsidy period, showing the need for longer operational support. 4. Difficult Terrain - Remote and hilly regions require specialised aircraft, helicopters and helipads. How Modified UDAN Addresses These Issues 1. Infrastructure Development - Modified UDAN proposes new airport development from unserved airstrips to expand regional aviation infrastructure. 2. O&M Support - It provides Operation and Maintenance support for smaller aerodromes to keep services functional. 3. Helipad Development - The scheme promotes modern helipads for difficult regions where conventional airports may not be feasible. 4. Viability Gap Funding - Continued VGF support will help airlines sustain operations until passenger demand improves. 5. Indigenous Aviation Capacity - Use of HAL Dhruv helicopters and HAL Dornier aircraft supports Atmanirbhar Bharat and remote-area operations.
Conclusion	UDAN shifted Indian aviation from a metro-centric model to a more inclusive regional network. Modified UDAN builds on this by focusing on infrastructure, viability, last-mile connectivity and indigenous capacity , making regional aviation more inclusive and sustainable.

Q23. The Start-up Village Entrepreneurship Programme represents a shift from welfare-based rural development to enterprise-led grassroots transformation. Discuss.

(GS Paper III – Rural Economy / Inclusive Growth)

Introduction	The Start-up Village Entrepreneurship Programme (SVEP),
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	launched in 2016 as a sub-scheme of DAY-NRLM, supports rural non-farm enterprises through finance, training, mentoring and community-led institutional support. By June 2026, it had supported 4.32 lakh rural enterprises, showing its role in rural livelihood diversification.
Body	SVEP as Enterprise-Led Rural Transformation 1. Moving Beyond Welfare Delivery - SVEP treats rural households not only as beneficiaries but as potential entrepreneurs. - It promotes self-employment, income generation and local enterprise creation. 2. Non-Farm Livelihood Diversification - The programme supports small enterprises outside agriculture. - This reduces overdependence on farming and strengthens the rural non-farm economy. 3. Community-Based Institutional Support SHGs and their federations identify potential entrepreneurs. BRC-EPs coordinate implementation at block level. CRP-EPs provide mentoring, training and credit facilitation. 4. Financial Inclusion and Credit Linkages - SVEP provides access to the Community Enterprise Fund, bank linkages and convergence with schemes such as Pradhan Mantri Mudra Yojana. - This helps first-generation entrepreneurs overcome credit barriers. 5. Social Inclusion - The programme has a strong focus on women, SC/ST, Minority and OBC communities. - Around 86% of entrepreneurs belong to socially disadvantaged groups, making SVEP an inclusive entrepreneurship model. Impact 1. Income and Enterprise Growth - QCI evaluation found that SVEP-supported enterprises showed strong profitability and income contribution. - Continuous mentoring improved enterprise survival and business management. 2. Women's Economic Empowerment - Women are not only beneficiaries but also entrepreneurs and

	community resource persons. - This improves their confidence, savings and social standing. 3. Local Employment Generation - Rural enterprises create jobs within villages and reduce distress migration. Challenges - Weak market linkages may limit enterprise scaling. - Rural entrepreneurs need continuous mentoring beyond enterprise formation. - Access to timely credit, quality inputs and digital tools remains uneven. - Some enterprises may remain low-productivity without value addition and market integration. Way Forward - Strengthen SHG federations and CRP-EP cadres. - Improve market linkages, branding and digital platforms. - Ensure timely credit through banks and MUDRA convergence. - Promote cluster-based rural enterprises and value addition. - Use MIS-based monitoring for enterprise performance and fund utilisation.
Conclusion	SVEP shows that entrepreneurial talent exists in every village when supported by institutions, finance and mentoring. By shifting rural development from welfare dependence to enterprise-led local growth, SVEP can strengthen livelihoods, empower women and contribute to a self-reliant rural economy.

Environment & Ecology

Q24. Hydrogen-powered trains can contribute to India's green mobility transition, but their large-scale adoption faces technological and infrastructural challenges. Discuss.

Introduction	Hydrogen-powered trains use hydrogen fuel cells to generate electricity by combining hydrogen with oxygen. India's first hydrogen train on the Jind-Sonipat route marks an important step towards low-emission rail transport and green mobility.
Body	Significance - They can reduce dependence on diesel-powered trains. - They support India's broader energy transition and clean transport goals.

	- Hydrogen trains are useful on routes where full electrification may be costly. - They produce mainly water vapour and heat, reducing local emissions. - They can promote India's emerging hydrogen economy and clean technology ecosystem. - Domestic participation by companies such as Medha can support Make in India in railway propulsion. Challenges - Hydrogen is highly flammable and must be stored at 200–500 bar. - Fueling stations and storage systems require high investment. - Green hydrogen production is still limited and costly. - Fuel cell technology remains expensive and partly import-dependent. - Hydrogen transportation is technically difficult. - Electrification may remain cheaper and more efficient on high-traffic routes. Way Forward - Use hydrogen trains first on short and non-electrified routes. - Develop indigenous fuel cells and storage technologies. - Expand green hydrogen production. - Frame strict safety standards for hydrogen rail operations. - Compare life-cycle costs with diesel and electric trains.
Conclusion	Hydrogen trains are not an immediate replacement for electric railways, but they can become an important clean transport option in selected corridors. Their success will depend on safety, cost reduction, green hydrogen supply and indigenous technology development.

Q25. India's tiger conservation model shows that wildlife protection requires science-based monitoring, strong institutions and community participation. Discuss.

(GS Paper III – Environment and Biodiversity)

Introduction	India has emerged as a global leader in tiger conservation. On the occasion of International Tiger Day , India's achievement becomes significant as the country is home to nearly 70% of the world's wild tigers , with the All India Tiger Estimation 2022 placing India's tiger population at 3,682 . This reflects the success of long-term policy support, scientific management and community participation.
Body	Ecological Importance of Tigers Tigers are apex predators and umbrella species. Their

conservation helps protect forests, rivers, prey species and several other forms of biodiversity. Healthy tiger habitats also provide ecosystem services such as **water regulation, soil conservation, carbon storage, climate moderation and livelihood support.**

Institutional Framework

India's tiger conservation rests on a strong governance architecture.

- **Project Tiger:** It is a flagship Centrally Sponsored Scheme implemented by the **Ministry of Environment, Forest and Climate Change** to secure viable tiger populations in natural habitats.
- **National Tiger Conservation Authority:** It provides scientific, technical and financial guidance, approves **Tiger Conservation Plans**, and monitors tiger reserve management.
- **Wildlife Protection Act, 1972:** Section 38V requires every State government to prepare a Tiger Conservation Plan for each tiger reserve.
- **Wildlife Crime Control Bureau:** It strengthens action against poaching and illegal wildlife trade.

Science-Based Monitoring

- India has built a robust monitoring system. The **All-India Tiger Estimation** is conducted every four years by the **NTCA** and the **Wildlife Institute of India**. It estimates tigers, prey species, co-predators and habitat quality.
- Technology has further strengthened conservation. **M-STRIPES** uses GPS, GPRS and remote sensing for field monitoring, while camera traps and AI-based tools help identify individual tigers through unique stripe patterns.

Landscape-Based Conservation

- Tiger reserves follow a **core-buffer-corridor approach**. Core areas receive strict protection, buffer areas balance conservation with local livelihoods, and corridors allow safe tiger movement and genetic exchange. This prevents isolation of tiger populations.

Community Participation

- Tiger conservation cannot succeed through enforcement alone. Local communities living around tiger habitats must be involved through **eco-development, livelihood support, responsible eco-tourism and benefit-sharing**. This reduces conflict and builds local ownership.

Challenges

	India still faces issues such as: • habitat fragmentation • poaching and illegal wildlife trade • human-wildlife conflict • corridor degradation • climate change impacts • livelihood pressure around reserves Way Forward • India must secure connected and climate-resilient tiger landscapes, strengthen frontline staff, expand technology-based monitoring, promote community-based conservation and deepen global cooperation through platforms such as the International Big Cat Alliance and Global Tiger Forum.
Conclusion	India's tiger conservation model proves that biodiversity protection is most effective when law, science, institutions, technology and people's participation work together. The next phase must move beyond tiger numbers and focus on healthy habitats, safe corridors and community-supported conservation.

Q26. The white-bellied heron case highlights the need for species-sensitive and basin-level environmental governance in Himalayan river systems. Discuss.

(GS Paper III – Environment and Biodiversity)

Introduction	The white-bellied heron is one of the world's rarest birds and is listed as Critically Endangered on the IUCN Red List. In India, it is protected under Schedule I of the Wildlife Protection Act, 1972. Its remaining Indian population is concentrated mainly in the Lohit river basin of Arunachal Pradesh, which supports a major share of the species.
Body	Why the Lohit Basin is Ecologically Important • The species depends on fast-flowing Himalayan rivers, shallow waters, fish availability and mature riparian forests. It uses different parts of the river landscape for feeding, nesting and roosting. Therefore, the Lohit basin cannot be treated only as a project site; it must be seen as a connected ecological unit. Threat from Hydropower Development The proposed hydropower project may affect the bird by: • altering the natural river flow • increasing water turbidity • destroying riparian forests • submerging feeding and nesting habitats • increasing the risk of local extinction

	For a species with a very small population, even limited habitat disturbance can have irreversible consequences. Governance Concerns - The major concern is that the bird was not included in the project's Environmental Impact Assessment. This reflects a narrow site-specific assessment approach. For riverine species, impact assessment must consider the entire basin, including feeding, nesting and movement areas. - Further, compensatory afforestation cannot fully replace old-growth riverine forests because such ecosystems develop over long periods and perform specific ecological functions. Way Forward - India should adopt a basin-level impact assessment, prepare a species-specific conservation plan, protect mature riparian forests, regulate sand extraction, fish poisoning, pollution and unregulated tourism, and involve local communities in biodiversity monitoring.
Conclusion	The white-bellied heron case shows that development in fragile Himalayan ecosystems must follow the precautionary principle. India needs science-based, basin-level and species-sensitive environmental governance to ensure that infrastructure development does not lead to silent extinction.

Q27. The repeated delay in finalising the Western Ghats Eco-Sensitive Area notification reflects the challenge of balancing ecological security with federal and livelihood concerns. Discuss.

(GS Paper III – Environment and Biodiversity)

Introduction	The Western Ghats are one of the world's eight "hottest hotspots" of biodiversity and a UNESCO World Heritage Site. Recently, the MoEFCC reissued the draft notification for the 7th time to declare parts of the Western Ghats as an Eco-Sensitive Area, after earlier drafts remained unfinalised due to differences with States.
Body	Need for Eco-Sensitive Area Protection The proposed ESA covers 56,825.7 sq. km across six States — Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu. The region performs vital ecological functions: - Acts as the water tower of Peninsular India, giving rise to rivers such as Godavari, Krishna, Kaveri, Periyar and Sharavathi. - Regulates the south-west monsoon by acting as an orographic barrier.

	• Supports high endemism, including species like Nilgiri Tahr, Lion-tailed Macaque and Nilgiri Langur. • Provides carbon sequestration, forest-based livelihoods and ecological stability. Key Provisions of the Draft Notification • The draft proposes to prohibit commercial mining, quarrying, sand mining, new thermal power plants, red-category industries and large construction projects. Hydel projects will be regulated. It also clarifies that agriculture, plantations and day-to-day livelihood activities will remain unaffected. Reasons for Delay The notification has faced resistance due to: • Centre-State deadlock over conservation versus development. • Disputes over village boundaries and ESA demarcation. • Fear of impact on farming, plantations, infrastructure and local livelihoods. • Lack of adequate ecological fiscal transfers to compensate States for conservation costs. • Repeated drafts creating regulatory uncertainty. Way Forward • The final notification should be based on field verification, scientific mapping and local consultation. A cooperative federalism approach is needed to address State concerns. Traditional livelihoods must be clearly protected, while high-impact activities should be strictly regulated. Conservation-linked incentives, eco-tourism, NTFP-based livelihoods and community participation can reduce resistance.
Conclusion	The Western Ghats ESA issue is not a choice between conservation and development. It requires sustainable development, where ecological security, local livelihoods and State-level priorities are harmonised through science-based and livelihood-sensitive governance.

Q28. Data centres are critical for India's digital economy, but their expansion raises concerns over resource use and environmental governance. Discuss.

(GS Paper III – Digital Economy / Infrastructure / Environment)

Introduction	Data centres are becoming the backbone of India's digital economy, supporting cloud computing, artificial intelligence, digital payments, e-governance, data localisation and cybersecurity. However, recent opposition to mega data centre projects in Visakhapatnam and Thane shows that digital infrastructure also has a large physical footprint in terms of land, water, electricity and environmental impact.
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Body	Importance of Data Centres Digital sovereignty: Domestic data centres help store and process Indian users' data within the country, reducing dependence on foreign infrastructure. AI and cloud economy: AI models, enterprise cloud services, UPI transactions, e-commerce and digital governance require high-capacity computing infrastructure. Investment and infrastructure growth: Large data centre projects can attract foreign investment, improve digital connectivity and support India's ambition to become a global technology hub. Strategic relevance: Secure domestic data infrastructure is important for financial services, government records, defence-linked systems and critical digital platforms. Concerns Associated with Expansion Water stress: Data centres require cooling systems. In water-stressed cities, this may compete with drinking water and municipal needs. Energy pressure: Mega and AI data centres need continuous electricity. Large power demand can strain local grids and increase dependence on fossil fuels if renewable sourcing is weak. Environmental impact: Construction, diesel generators, cooling systems, noise and emissions may affect nearby residential areas, reservoirs and ecologically sensitive zones. Limited local benefits: Data centres are capital-intensive but generate fewer permanent jobs after construction, creating concerns over unequal cost-benefit sharing. Weak transparency: Unclear data on water use, power demand, emissions and public consultation can reduce trust among local communities. Way Forward - India needs a sustainable data centre governance framework. Project approvals should require verified disclosure of water, power, cooling technology and emissions. Data centres must use treated wastewater, closed-loop cooling, rainwater harvesting, renewable energy and battery-based backup. Site selection should avoid water-stressed, densely populated and ecologically sensitive areas. Public consultation, real-time monitoring and local benefit-sharing must be made mandatory.
Conclusion	Data centres are essential for India's digital future, but they must be

	treated as resource-intensive infrastructure , not merely technology investment. India's data centre growth should be guided by digital sovereignty, ecological sustainability and local accountability .
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Q29. Flash floods in India are not merely natural disasters but outcomes of climatic extremes interacting with human vulnerability. Discuss.

(GS Paper III – Disaster Management)

Introduction	Flash floods are sudden floods that occur within a short period after intense rainfall or sudden water release. In India, they are increasingly reported in the Himalayas, Brahmaputra basin, west coast, Central India and urban areas . Recent Assam floods show that flash floods must be understood not only as natural events but as disasters shaped by climate change, fragile terrain and human vulnerability .
Body	Climatic and Natural Drivers 1. Extreme rainfall: Short-duration intense rainfall can produce rapid surface runoff, especially when soil is already saturated. 2. Climate change: A warmer atmosphere holds more moisture. This increases the intensity of precipitation and raises the risk of flash floods. 3. Himalayan geomorphology: Steep slopes, narrow valleys, high relief and fragile rocks accelerate runoff and debris flow. 4. Glacial lake risks: In Himalayan regions, melting glaciers are expanding glacial lakes. Sudden overflow or breach can trigger destructive floods. Human Vulnerability Factors 1. Poor land-use planning: Construction on floodplains, riverbeds and unstable slopes increases exposure to sudden flooding. 2. Deforestation and slope disturbance: Loss of vegetation reduces soil stability and increases erosion, landslides and runoff. 3. Weak drainage infrastructure: Urban areas with concrete surfaces and inadequate drains face rapid waterlogging and flash floods. 4. Inadequate early warning: Sparse weather stations, limited real-time data and poor last-mile communication reduce preparedness. Way Forward India must shift from a relief-centric approach to risk-informed disaster management. This requires more Automatic Weather Stations, satellite-based monitoring, Doppler radars, updated hazard maps and community-based early warning systems. Land-use regulation

	should prevent construction in high-risk zones. Natural buffers such as wetlands, forests, mangroves and drainage channels must be restored. Infrastructure should be designed for future climate risks.
Conclusion	Flash floods are triggered by climatic extremes, but their destructive impact is magnified by unsafe development and weak preparedness. India needs climate-resilient infrastructure, scientific forecasting and accountable land-use planning to reduce future losses.

Science & Technology & Internal Security

Q30. Quantum computing has the potential to transform cybersecurity, climate modelling, materials science and logistics, but its practical use is limited by noise, decoherence and error rates. Discuss the significance of quantum computing and examine India's preparedness through the National Quantum Mission.

(UPSC GS Paper III: Science and Technology, Emerging Technologies, Cybersecurity)

Introduction	Quantum computing is an emerging technology based on the principles of quantum mechanics . Unlike classical computers that use bits as 0 or 1, quantum computers use qubits , which can exist in multiple states due to superposition . Along with entanglement and interference , this enables quantum computers to solve certain complex problems much faster than classical computers.
Body	Significance of Quantum Computing Cybersecurity and Cryptography: Quantum computers can challenge present encryption systems. At the same time, technologies like Quantum Key Distribution can enable highly secure communication. Climate Modelling: Quantum computers can help simulate complex climate systems and improve long-term climate prediction. Materials Science: They can help discover new materials, alloys, superconductors and energy-efficient technologies. Molecular Simulation and Drug Discovery: Quantum computers can simulate molecules and chemical reactions, supporting drug design and advanced chemistry. Logistics and Optimisation: They can improve supply chains, traffic systems, scheduling and search-based decision-making.

	Challenges • Decoherence: Qubits lose their quantum state due to interaction with heat, light or electromagnetic interference. • High error rates: Present quantum systems are still noisy and fragile. • Need for extreme cooling: Many quantum processors require temperatures near absolute zero. • Expensive hardware: Quantum systems need advanced infrastructure and specialised materials. • Skill gap: India needs more trained quantum scientists, engineers and technicians. • Cybersecurity risk: Future quantum computers may break existing cryptographic systems. India's Preparedness: National Quantum Mission India sanctioned the National Quantum Mission in April 2023 with an allocation of over ₹6,000 crore. It aims to make India a leading nation in quantum technologies by 2031. Key components include: • Development of quantum computers with 20–50 qubits in 3 years, 50–100 qubits in 5 years and up to 1000 qubits in 8 years. • Quantum-secured communication over 2,000 km within India. • Development of inter-city Quantum Key Distribution networks. • Four Thematic Hubs in Quantum Computing, Quantum Communication, Quantum Sensing and Metrology, and Quantum Materials and Devices. • Initiatives by DRDO, SETS and C-DOT in quantum-safe encryption, post-quantum cryptography and quantum-secure communication. Way Forward • India should invest in Quantum Error Correction, develop indigenous quantum hardware and software, promote academia-industry collaboration, support deep-tech start-ups and build a strong quantum-skilled workforce. Quantum-safe cybersecurity must also be adopted early to protect critical digital infrastructure.
Conclusion	Quantum computing can become a strategic technology for the future. However, its success depends on overcoming noise, decoherence and error correction challenges. Through the National Quantum Mission, India has an opportunity to build deep-tech self-reliance, strengthen cybersecurity and contribute to Viksit Bharat 2047.

Q31. Helium is emerging as a strategic resource for future technologies. Discuss its importance and examine the vulnerabilities in the global helium supply chain in the context of China's recent export ban.

(UPSC GS Paper III: Science and Technology, Critical Minerals/Strategic Resources)

Introduction	China's temporary ban on helium exports in July 2026 has highlighted the growing strategic importance of helium in the global technology economy. Though China produces only around 1.6% of global helium and imports more than 80% of its own requirement, the move comes at a time when global helium supply is already under pressure due to Russian export restrictions and tensions in West Asia.
Body	Why Helium is Strategically Important • Critical for future technologies: Helium is essential for semiconductors, quantum computers, MRI machines, optical fibres and space missions. • Ultra-low cooling: Its boiling point is around -269°C, making it useful for cooling MRI magnets, quantum devices and semiconductor wafers. • Chemically inert: Since helium does not react easily, it is safe for sensitive scientific and industrial processes. • Space technology: Agencies such as ISRO, NASA and SpaceX use helium to pressurise rocket fuel tanks. • Leak detection: Its small atomic size allows it to detect tiny leaks in precision engineering systems. Global Supply Vulnerabilities • Concentrated production: The U.S. supplies around 43% of global helium, while Qatar supplies around 33%, especially to Asia. • Geopolitical risks: Qatar-linked supply is vulnerable because it depends on movement through the Strait of Hormuz, a region affected by West Asian tensions. • Russian restrictions: Russian helium exports require high-level approval through 2027, adding supply uncertainty. • Loss of buffer: The U.S. privatised its Federal Helium Reserve in 2024, reducing its ability to stabilise supply shocks. • China's export ban: China may be trying to preserve helium for its domestic chip industry and medical sector. Why Storage and Transport are Difficult • Helium liquefies only at -269°C, requiring expensive cryogenic systems. • It can be transported only in vacuum-jacketed stainless-steel vessels, made by very few companies globally.

	If delayed, helium can boil off into the atmosphere, causing wastage.
Conclusion	Helium is no longer just an industrial gas; it is a strategic input for technological sovereignty . India must diversify imports, promote helium recycling, explore domestic recovery and build strategic reserves to support its semiconductor, space, healthcare and quantum technology ambitions .

Q32. The successful orbital launch of Vikram-I marks a turning point in India's space sector reforms. Discuss its significance and the challenges ahead for India's private space ecosystem.

(GS Paper III – Science & Technology / Space Technology)

Introduction	The launch of Vikram-I by Skyroot Aerospace from the Satish Dhawan Space Centre, Sriharikota , on 18 July 2026 marks a major milestone in India's space programme. It was the first orbital rocket launch by a private Indian company from Indian soil , placing payloads such as SCOPE and Grahaa into Low Earth Orbit (LEO) .
Body	Significance of Vikram-I Private orbital capability: Vikram-I makes India one of the few countries where private industry has demonstrated orbital launch capability, alongside the U.S. and China. Success of space reforms: The launch reflects the impact of 2020 space-sector reforms, the Indian Space Policy 2023, and the creation of IN-SPACe for authorising and promoting private space activities. Public-private partnership model: Though developed by Skyroot, the mission was supported by ISRO through testing, trajectory analysis, stage preparation, launch-pad integration and safety support. IN-SPACe enabled clearances and mission readiness reviews. Boost to small satellite market: Vikram-I, a 4-stage rocket with 3 solid stages and a liquid upper stage, can launch small satellites into LEO. This is important for Earth observation, communication, internet constellations, climate monitoring and defence applications. Technological advancement: Its use of carbon-fibre composite airframe and 3D-printed liquid engine RAMAN-I shows India's growing capability in advanced, lightweight and rapid-manufacturing rocket technologies. Commercial opportunities: The launch opens possibilities for India to offer dedicated "cab service" style launches for small

	satellites in the global market. Challenges Ahead • Technology reliability: 3D-printed engines and composite bodies require strict quality control, testing and inspection. • Global competition: The small-satellite launch market is competitive and cost-sensitive. • Space debris: Rising LEO activity needs strong debris mitigation norms. • Funding and scale: Start-ups need sustained venture capital, testing facilities and supply-chain support. • Regulatory clarity: Coordination among ISRO, IN-SPACe and NSIL must remain smooth. Way Forward India should expand private access to testing facilities, strengthen IN-SPACe's single-window role, support indigenous components, promote reusable launch technologies and frame strict space sustainability norms.
Conclusion	Vikram-I is not merely a rocket launch; it symbolises India's transition from an ISRO-led space programme to a broader NewSpace economy. With sustained reforms and institutional support, India can emerge as a major player in global commercial space launches.

Q33. Declining global terrorism numbers do not necessarily indicate a safer world. Examine the emerging trends in global terrorism and discuss India's counter-terrorism strategy.

(GS Paper III – Internal Security)

Introduction	The Global Terrorism Index 2026 reported that terrorism-related deaths declined by 28% and incidents by 22% in 2025. However, this does not indicate a safer world, as terrorism is becoming more concentrated, decentralised, adaptive and digitally driven.
Body	Emerging Global Trends 1. Geographical Concentration • Nearly 70% of terrorism-related deaths are concentrated in Pakistan, Burkina Faso, Nigeria, Niger and the Democratic Republic of the Congo. The Sahel region accounts for over half of global fatalities. 2. Conflict-Governance Nexus • Around 99% of terrorism-related deaths occur in countries affected by armed conflict or political instability, showing that terrorism thrives where governance and institutions are

	weak. 3. Border-Centric Terrorism - More than 60% of attacks occur within 100 km of international borders, enabling infiltration, arms trafficking, recruitment and terror financing. 4. Digital and Decentralised Terrorism - Terror groups increasingly use lone-wolf attacks, small autonomous cells, encrypted platforms, cryptocurrencies, dark web networks and online radicalisation, making prevention difficult. Threats to India - India faces cross-border terrorism, proxy warfare, urban terrorism, cyber terrorism, terror financing through organised crime, internal insurgencies and maritime threats. Its long coastline and proximity to narcotics-trafficking regions increase vulnerabilities. India's Counter-Terrorism Strategy 1. Legal Strengthening - India has strengthened laws such as UAPA, NIA Act, PMLA, BNS 2023 and Arms Amendment Act. 2. Institutional Capacity - Institutions like NIA, MAC, NATGRID, CCTNS 2.0 and police modernisation programmes support intelligence-led action. 3. Proactive Doctrine - India follows a zero-tolerance, intelligence-led and pre-emptive approach against terrorism and its sponsors. 4. Global Cooperation - India works through FATE, BHARATPOL, INTERPOL linkages and counter-terror platforms to counter terror financing and transnational networks.
Conclusion	Terrorism is not disappearing; it is reorganising. India must combine border security, cyber monitoring, intelligence fusion, terror-financing probes, community policing and international cooperation to counter this evolving threat.

Health

Q34. Despite multiple nutritional interventions, anaemia continues to remain a serious public-health challenge in India. Examine the significance of the revised Anaemia Mukh Bharat Abhiyaan in addressing the problem through a lifecycle and continuum-of-care approach.

(UPSC GS Paper II: Public Health, Nutrition, Women and Child Welfare, Government Policies and Interventions)

Introduction	Anaemia is a condition marked by inadequate haemoglobin or reduced oxygen-carrying capacity of blood. In India, it affects children, adolescent girls, women of reproductive age and pregnant women on a large scale. NFHS-5 reported anaemia among 67.1% of children below five years, 57% of women aged 15–49 years and 52.2% of pregnant women , making it a major nutrition, health and human-capital challenge.
Body	Significance of the Revised Abhiyaan • Lifecycle approach: The expanded 7×7×7 framework includes Low Birth Weight babies aged 0–6 months, recognising that anaemia prevention must begin in infancy and continue through adolescence, pregnancy and lactation. • From prophylaxis to therapy: The programme moves beyond routine Iron-Folic Acid supplementation to active diagnosis, case-based treatment and management of severe or non-responsive cases. • Continuum of care: The **T4 strategy—Test, Treat, Talk and Track—**ensures screening, treatment, counselling, referral and follow-up, reducing beneficiary dropouts. • Dietary correction: The new Eating Right intervention promotes diversified and iron-rich diets, addressing the nutritional roots of anaemia. • Digital accountability: Integration of JANANI, RBSK and U-WIN records into a unified portal enables beneficiary-level tracking, better planning and identification of regional gaps. • Community mobilisation: Jan Chetna and Jan Bhagidari seek to de-normalise fatigue and poor nutrition while improving treatment adherence. • Cross-sectoral convergence: A whole-of-government approach links health, nutrition, education and women and child development departments.

	Challenges Weak testing infrastructure, poor IFA compliance, limited dietary diversity, shortage of trained personnel and uneven State capacity may constrain implementation.
Conclusion	The revised Anaemia Mukht Bharat Abhiyaan represents a shift from a supplementation-centric programme to an integrated system of prevention, treatment and tracking. Its success will depend on strong State-level implementation, reliable digital follow-up and sustained community participation.

Q35. Ayurveda has strong civilisational credibility, yet its global acceptance remains limited compared to Traditional Chinese Medicine. Examine the challenges and suggest measures in light of NITI Aayog's roadmap for making Ayurveda global. (UPSC GS Paper II: Health, Government Policies, International Cooperation)

Introduction	Ayurveda is India's traditional system of medicine with a strong focus on preventive, personalised and holistic healthcare . NITI Aayog's report, " Strategic Roadmap for Making Ayurveda Global ," seeks to transform Ayurveda into a globally trusted healthcare system by 2047 .
Body	Current Global Position - Ayurveda's global presence is expanding. Its exports increased from USD 1.09 billion in 2014 to USD 2.16 billion in 2023, reaching nearly 150 countries. It is formally recognised in about 30 countries, while research on Ayurveda spans nearly 70 countries. The establishment of the WHO Global Traditional Medicine Centre at Jamnagar and inclusion of Ayurveda, Siddha and Unani in ICD-11 have improved its international visibility. Key Challenges Regulatory Gaps - Many countries do not recognise Ayurveda as a formal medical system. The absence of a uniform international regulatory framework limits its clinical acceptance. Evidence Deficit - Ayurveda's personalised treatment approach makes conventional Randomised Controlled Trials difficult, affecting global scientific confidence. Limited Global Workforce - India has over 3.55 lakh Ayurveda practitioners, but most are located within India. This restricts international service delivery. Quality and Insurance Issues - Inconsistent manufacturing standards, contamination concerns, high compliance costs and limited insurance coverage weaken Ayurveda's credibility.

	Competition from TCM - Traditional Chinese Medicine has stronger global licensing, insurance coverage, overseas centres and international standards. NITI Aayog's Roadmap Short Term - Create a Mission Steering Group, Global Ayurveda Register, global information portal, WHO-GMP-equivalent certification and export-focused pharmacopoeia. Medium Term - Promote product registration, insurance pilots, Mutual Recognition Arrangements, Ayush Chairs, medical value travel hubs and multi-country trials. Long Term - Integrate Ayurveda into at least 20 national health systems and secure insurance coverage in at least 10 countries.
Conclusion	Ayurveda's globalisation requires scientific validation, quality assurance, practitioner mobility, regulatory harmonisation and credible branding. If implemented effectively, the roadmap can convert India's traditional knowledge into both soft power and healthcare leadership.

Q36. India's fight against hepatitis requires an integrated public health approach combining prevention, screening, treatment and surveillance. Discuss.

(GS Paper II – Health)

Introduction	Hepatitis is an inflammation of the liver caused by hepatitis viruses, other infections, toxic substances such as alcohol and drugs, or autoimmune diseases. Among the five main hepatitis viruses — A, B, C, D and E — Hepatitis B and C are the most serious as they can lead to chronic liver disease, cirrhosis and liver cancer. Recognising hepatitis as a public health problem, India launched the National Viral Hepatitis Control Program in 2018.
Body	India's Integrated Approach to Combat Hepatitis 1. Prevention through Immunisation and Safe Practices India's strategy focuses on preventing infection through immunisation, safe injection practices, sanitation and awareness. Hepatitis B is vaccine-preventable and is covered under the Universal Immunisation Programme. Hepatitis A and E, which spread through contaminated food and water, require safe drinking water, hygiene and sanitation. Hepatitis C prevention depends on harm reduction, safe injection practices and safe medical procedures.

2. Screening and Early Detection

- The **National Viral Hepatitis Control Program** provides screening and diagnosis services. Early detection is important because many hepatitis infections are **asymptomatic** or show only mild symptoms, leading to delayed diagnosis.
- As per the given data, till March 2026, about **21.06 crore beneficiaries** were screened under the programme.

3. Free Diagnostics and Treatment

- The programme provides **free diagnostics and drugs** to people in need, especially for the management of **Hepatitis B and C**. Around **6.12 lakh Hepatitis B and C patients** were treated through **1,153 treatment sites** across the country.
- Hepatitis C can be cured in many cases through **Direct-Acting Antiviral drugs**, while chronic Hepatitis B is managed with antiviral medication as per national guidelines.

4. Integration with National Health Programmes

India's hepatitis control strategy is linked with several existing programmes:

- **RMNCH+A programme:** universal screening of pregnant women for Hepatitis B and newborn birth dose.
- **Universal Immunisation Programme:** Hepatitis B vaccination.
- **National AIDS Control Program:** screening of high-risk groups for Hepatitis B and C.
- **National Tuberculosis Elimination Program:** use of existing machines for molecular testing.
- **Blood Transfusion Services:** linkage of positive donors for further management.
- **Integrated Disease Surveillance Program:** monitoring of outbreak-prone Hepatitis A and E.

5. Digital Monitoring

- The programme uses the **NVHCP-MIS portal** for paperless recording, reporting, patient management and monitoring. This strengthens accountability and continuity of care.

Significance of India's Approach

1. Health Systems Approach

- India's model links prevention, screening, diagnosis, treatment and monitoring, making it more comprehensive.

2. Financial Protection

- Free diagnostics and drugs reduce out-of-pocket expenditure and

	improve access for vulnerable groups. 3. Maternal and Newborn Protection - Screening of pregnant women and timely Hepatitis B birth dose help prevent mother-to-child transmission. 4. Alignment with Global Goals - The WHO strategy aims to eliminate viral hepatitis as a public health problem by 2030 through reduction in new infections and deaths. India's programme supports this broader global objective. Challenges - Many infections remain undetected due to the asymptomatic nature of hepatitis. - Hepatitis B and C can progress silently to cirrhosis and liver cancer. - Public awareness about transmission, testing and treatment remains limited. - Unsafe injections, unsafe medical procedures and infected blood exposure continue to pose risks. - Poor sanitation and unsafe drinking water contribute to Hepatitis A and E transmission. Way Forward India should expand screening, strengthen universal vaccination, ensure free treatment access, promote safe injection and blood transfusion practices, and improve sanitation. Greater integration with maternal health, immunisation, HIV, TB and surveillance systems is needed. Awareness campaigns around World Hepatitis Day can improve testing, reduce stigma and encourage early treatment.
Conclusion	India's fight against hepatitis requires a sustained public health systems approach. The National Viral Hepatitis Control Program, supported by immunisation, surveillance, free diagnostics, treatment and digital monitoring, provides a strong framework. Its success will depend on early detection, wider awareness, safe practices and continued integration with existing national health programmes.

Social Justice

Q37. “The Employees’ Provident Funds Scheme, 2026 seeks to balance workers’ immediate financial needs with long-term retirement security while strengthening employer accountability.” Examine.

(UPSC GS Paper II: Social Justice, Labour Welfare, Government Policies and Social Security)

Introduction	The Employees’ Provident Funds Scheme, 2026 , notified under the Code on Social Security, 2020 , replaces the EPF Scheme, 1952. It modernises provident-fund administration by simplifying partial withdrawals, clarifying contribution rules and strengthening protection for contract workers.
Body	Major Reform Features • Simplified withdrawals: The earlier 13 categories have been consolidated into essential needs, housing needs and specified special circumstances. • Improved liquidity: Members can withdraw for illness, education, marriage and housing after fulfilling prescribed conditions, generally after 12 months of membership. • Minimum balance safeguard: A member must ordinarily retain 25% of the aggregate fund balance, protecting part of the retirement corpus. • Unemployment protection: Full withdrawal is permitted after one year of unemployment. • Contribution flexibility: The mandatory contribution remains generally 12% each by employee and employer, while employees may voluntarily contribute above the wage ceiling or at a higher rate. • Contract-worker protection: Even where a contractor deposits contributions, the principal employer remains ultimately liable, reducing evasion through outsourcing. • Continuity for international workers: Existing coverage and withdrawal provisions continue, subject to Social Security Agreements. Significance • The scheme improves access to savings during emergencies, simplifies compliance and enhances accountability. It also aligns provident-fund regulation with the broader labour-code framework and gives workers greater flexibility in retirement

	planning. Concerns - Frequent withdrawals may erode retirement savings. Digital exclusion, delayed employer deposits, low worker awareness and weak enforcement against defaulting contractors may limit its benefits. Retaining only 25% may also be inadequate for low-income workers. Way Forward - EPFO should strengthen real-time contribution alerts, grievance redressal, multilingual awareness, financial counselling and digital tracking of contractors and principal employers.
Conclusion	The 2026 Scheme is a worker-oriented reform, but its success depends on balancing short-term liquidity, long-term social security and effective employer compliance.

Q38. India's emergence as a sporting nation depends on building a complete ecosystem from grassroots participation to international excellence. Discuss with reference to the Khelo India programme.

(GS Paper II / III – Youth Affairs, Sports Development and Human Capital)

Introduction	Sports have become an important instrument of youth development, national integration, public health and international recognition. India's recent sporting progress reflects a shift from isolated individual achievements to a more structured ecosystem. The Khelo India programme is central to this transformation as it seeks to build a strong foundation for sports from the grassroots to elite levels.
Body	Khelo India as a Grassroots Sports Ecosystem Mass Participation and Sporting Culture - Khelo India promotes sports as a people's movement by encouraging participation across schools, universities, rural areas and urban centres. Competitions under the Khelo India platform provide young athletes with exposure, confidence and a pathway to higher levels of competition. Talent Identification and Athlete Pathway - The programme focuses on identifying talented athletes early and supporting them through structured training. Initiatives such as KIRTI strengthen transparent and merit-based talent identification using assessment centres, technology and data-driven tools. Infrastructure and Training Support - Khelo India supports training centres, academies and sports

infrastructure. This helps reduce the gap between talent and opportunity, especially for athletes from non-metropolitan and disadvantaged backgrounds.

Use of Sports Science

- A modern sporting nation requires more than physical training. Khelo India promotes the use of **sports science, psychology, nutrition and technology** to improve athlete performance and long-term development.

Inclusive Sports Development

- The expansion of Khelo India into university, winter, para, beach, water and tribal games reflects a broader vision of inclusion. It helps bring diverse groups, regions and sporting disciplines into the national sports framework.

Complementary Role of Other Initiatives

- The **Target Olympic Podium Scheme** supports elite athletes through specialised training, international exposure, equipment and professional assistance. This ensures that athletes who emerge from grassroots systems receive support at the highest level.
- The sports goods manufacturing initiative also links sports development with **domestic manufacturing, innovation, employment and self-reliance**.

Significance

Khelo India contributes to:

- building a strong pipeline of future athletes
- improving India's international sporting performance
- promoting discipline, confidence and health among youth
- strengthening national pride and social cohesion
- linking sports with employment and economic opportunities

Challenges

- Despite progress, India still faces challenges such as uneven access to sports facilities, shortage of quality coaches, weak sports culture in many schools, limited sports science support at local levels, and difficulty in ensuring continuity from grassroots participation to elite performance.

Way Forward

- India should strengthen school and university sports, improve coaching quality, expand sports science support, ensure maintenance of infrastructure and deepen coordination between local training centres, academies and elite athlete schemes.

	Greater attention must also be given to nutrition, mental health, injury management and career security of athletes.
Conclusion	Khelo India represents India's transition from a medal-focused approach to a system-based sporting model . By combining participation, infrastructure, talent identification, sports science and elite support, it can help India transform its youth potential into sustained international sporting excellence.

Q39. Education in India is both a constitutional commitment and a tool of inclusive development. Discuss the role of PM Vidyalaxmi Scheme in promoting equitable access to quality higher education.

(GS Paper II – Education / Social Justice)

Introduction	Education is central to social mobility, human capital formation and inclusive development . The Constitution gives importance to education through the Directive Principles of State Policy, local self-government provisions, Fifth and Sixth Schedules for tribal areas, and the Seventh Schedule , where education is placed in the Concurrent List . In this context, the PM Vidyalaxmi Scheme seeks to ensure that financial constraints do not prevent meritorious students from accessing quality higher education.
Body	Role of PM Vidyalaxmi in Educational Inclusion 1. Removing financial barriers: The scheme provides collateral-free and guarantor-free education loans to students admitted on merit to designated Quality Higher Educational Institutions (QHEIs). This benefits students from families without assets or financial security. 2. Supporting affordability: It provides 3% interest subvention for eligible students with annual family income up to ₹8 lakh, reducing the repayment burden during higher education. 3. Promoting merit-based access: The benefit is linked to admission in recognised quality institutions, ensuring that deserving students can study in top-ranked public and private institutions. 4. Digital and transparent delivery: A unified portal allows students to apply for loans, select banks, track applications, claim interest subvention and raise grievances, strengthening digital governance and reducing procedural barriers. 5. Advancing NEP 2020 and SDG 4: The scheme supports the objective of inclusive and equitable quality education and helps create a skilled and future-ready workforce. Challenges

	However, concerns remain regarding digital access gaps, low awareness among rural students, possible bank-level delays, limited interest-subvention slots and the need for academic handholding of first-generation learners. Way Forward The scheme should be supported by college-level help desks, awareness drives, time-bound loan processing, social inclusion monitoring and counselling support for students from disadvantaged backgrounds.
Conclusion	PM Vidyalaxmi is an important step towards making higher education merit-based rather than income-dependent. If implemented effectively, it can strengthen educational equity, improve employability and contribute to India's long-term inclusive growth.

History & Culture

Q40. The S'antal Hul of 1855 was not merely an uprising against colonial rule but also a struggle against land alienation, displacement and the erosion of community belonging. Discuss.

(UPSC GS Paper I: Modern Indian History, Tribal Uprisings and Indian Society)

Introduction	The Santal Hul of 1855, led by Sido and Kanhu Murmu from Bhognadih, was one of the most significant tribal uprisings against British rule. Beginning on 30 June 1855, it emerged from rising revenue demands, indebtedness, exploitation by intermediaries and the weakening of Santal control over land. The rebellion also represented a wider struggle to protect dignity, cultural autonomy and community belonging.
Body	Colonial Settlement and Creation of a Homeland In 1832, the British demarcated Damin-i-Koh along the Rajmahal Hills and encouraged Santals to settle there. Their objectives were to clear forests, expand cultivation and increase revenue. Through collective labour, the Santals: - Cleared forests and cultivated uncultivated land. - Established villages and family settlements. - Developed social and emotional attachment to the region. Thus, a colonial revenue project gradually became a Santal homeland. Causes of the Santal Hul The conditions that supported settled life were progressively destroyed. Rising revenue demands: Higher rents reduced the economic

security of cultivators.

- **Indebtedness:** Exploitative loans trapped Santal families in recurring debt.
- **Intermediary exploitation:** Moneylenders, zamindars, traders and revenue officials increased pressure on cultivators.
- **Land alienation:** Debt and unequal contracts weakened Santal control over land.
- **Administrative injustice:** The colonial system provided little access to justice or grievance redressal.
- **Social humiliation:** Insults to Santal elders and women intensified resentment.

The rebellion therefore arose from both material exploitation and the erosion of dignity and autonomy.

Rebellion Against Internal Dispossession

The Hul was directed against colonial officials, revenue authorities, moneylenders, zamindars and other exploitative intermediaries.

Its significance extended beyond physical displacement. A community may continue living in the same geographical area but still become dispossessed when it loses:

- Control over land
- Economic security
- Social dignity
- Access to justice
- Cultural autonomy

The Hul was therefore a struggle against both colonial rule and internal uprooting.

Suppression and Migration

The British suppressed the uprising with extensive military force. Its aftermath accelerated the dispersal of Santal families towards Purnea, Malda, Burdwan, Jalpaiguri and Assam's tea plantations.

Displaced Santals became labourers in:

- Tea gardens
- Agricultural estates
- Road-building projects
- Distant colonial settlements

Thus, suppression did not end movement but converted displacement into labour migration.

Memory, Language and Identity

- Geographical dispersal did not erase Santal identity. Oral traditions, songs, festivals, shared origin narratives and

	memories of the Hul preserved community unity. - The development of the OI Chiki script by Raghunath Murmu in 1925 strengthened linguistic and cultural assertion. The inclusion of Santali in the Eighth Schedule in 2003 further recognised its importance. Contemporary Relevance - Santals continue to face land alienation, livelihood insecurity, distress migration, educational barriers and inadequate protection for migrant workers. Mining, dams, infrastructure and commercial acquisition continue to threaten tribal land and community life. Way Forward - Strengthen tribal land and forest rights. - Expand secure local livelihood opportunities. - Improve protection for seasonal migrant workers. - Promote Santali-medium education and teacher availability. - Support OI Chiki while recognising regional script diversity. - Give tribal uprisings greater space in historical education. - Preserve oral traditions and cultural institutions.
Conclusion	The Santal Hul represented resistance to colonial exploitation as well as the destruction of land rights, dignity and belonging. Although suppression scattered Santal communities, shared memory, language and cultural traditions preserved their identity. The Hul remains an enduring symbol of indigenous resistance, cultural survival and the struggle for justice.

Q41. Sarnath's inscription on the UNESCO World Heritage List reflects India's civilisational heritage and the global significance of Buddhism. Discuss.

(GS Paper I – Indian History, Indian Culture)

Introduction	Sarnath, located near Varanasi in Uttar Pradesh, is one of the most sacred Buddhist sites. Its inscription on the UNESCO World Heritage List as India's 45th World Heritage Site recognises not only its archaeological value but also India's deep civilisational, spiritual and philosophical contribution to the world.
Body	Sarnath as India's Civilisational Heritage 1. Associated with Buddha's First Sermon - Sarnath is the place where Lord Buddha delivered his first sermon after attaining enlightenment. - This event is known as Dharmachakra Pravartan, or the turning of the wheel of Dharma.

	- It marks the beginning of the spread of Buddhist teachings. 2. Living Spiritual Tradition - Sarnath has remained a major centre of Buddhist pilgrimage and devotion for nearly 2,500 years. - Its significance is not limited to monuments; it represents a continuing cultural and spiritual tradition. 3. Archaeological and Architectural Importance - The site includes important remains such as Chaukhandi Stupa, Dhamek Stupa and Dharmarajika Stupa. - These monuments reflect centuries of Buddhist faith, patronage, monastic life and sacred architecture. Global Significance of Buddhism 1. Universal Message - Sarnath symbolises Buddhist values of wisdom, compassion, peace and harmony. - These ideas continue to influence societies across Asia and the world. 2. Buddhist Pilgrimage Network - Sarnath is among the key Buddhist pilgrimage destinations. - Its recognition strengthens India's role as the civilisational homeland of Buddhism. 3. Cultural Diplomacy - The UNESCO status can enhance India's engagement with Buddhist-majority countries and strengthen cultural diplomacy. Significance for India - It strengthens Uttar Pradesh's Buddhist Circuit. - It can promote heritage tourism and local economic activity. - It increases responsibility for conservation, visitor management and authentic historical interpretation. Way Forward - Ensure scientific conservation of archaeological remains. - Develop responsible tourism infrastructure. - Provide multilingual interpretation for global pilgrims. - Protect the sacred character of the site while managing tourist footfall.
Conclusion	Sarnath's UNESCO recognition is a tribute to India's ancient spiritual heritage and Buddhism's global legacy. It reinforces India's role as a source of universal values and highlights the need to preserve heritage as a shared responsibility of humanity.