



Current Affairs Reverse Engineering

CARE

AUGUST– 2026

MAINS

QUESTION & ANSWERS (EM)

<https://t.me/kpiasacademy/6154>

INDEX

❖ <i>Polity & Governance</i>	3
❖ <i>International Relations</i>	8
❖ <i>Economy</i>	13
❖ <i>Environment & Ecology</i>	28
❖ <i>S & T – Internal Security</i>	39
❖ <i>Health</i>	47
❖ <i>Social Justice</i>	48
❖ <i>History, Art & Culture</i>	51

Polity & Governance

Q1. Increasing the sanctioned strength of the Supreme Court is necessary but not sufficient to address judicial pendency in India. Discuss.

(GS Paper II – Judiciary / Justice Delivery / Governance)

Introduction	Judicial pendency is a major challenge to India's promise of speedy and effective justice . The Supreme Court (Number of Judges) Amendment Bill, 2026 seeks to increase the sanctioned strength of the Supreme Court from 34 to 38 judges , including the Chief Justice of India , by amending the Supreme Court (Number of Judges) Act, 1956 .
Body	Need for Increasing Supreme Court Strength 1. Rising pendency: As on 1 January 2026, around 92,101 cases were pending before the Supreme Court. In 2025, the Court received 75,410 fresh cases, but disposed of 65,615 cases, showing a persistent gap between institution and disposal. 2. More benches and better disposal: Additional judges can enable the Court to constitute more benches and hear more matters simultaneously. This can improve disposal capacity and reduce pressure on existing judges. 3. Constitution Bench requirement: Cases involving substantial questions of constitutional interpretation require a Constitution Bench of at least five judges. Higher judge strength can help the CJI constitute such benches more frequently without disturbing regular case hearings. 4. Constitutional basis: Under Article 124(1), the Supreme Court consists of the CJI and such number of other judges as Parliament may prescribe by law. Hence, Parliament can increase judge strength through ordinary legislation. Why It Is Not Sufficient - However, increasing judges alone cannot solve pendency. Judicial delay is also linked to vacancies in High Courts and subordinate courts, delayed appointments, frequent adjournments, weak case management, rising appeals and heavy government litigation. The backlog across Indian courts has crossed 5.5 crore cases, with most cases pending in lower courts.

	Way Forward India must fill vacancies, strengthen lower courts, improve case management, reduce unnecessary government litigation, expand e-courts, and promote ADR mechanisms.
Conclusion	Increasing Supreme Court strength is a necessary capacity reform, but speedy justice requires systemic judicial reforms across all levels. The aim must be a judiciary that is efficient, accessible, accountable and constitutionally responsive.

Q2. The e-Courts Mission Mode Project has the potential to transform access to justice in India. Discuss its achievements and challenges.

UPSC GS Paper II: Judiciary, Governance, e-Governance, Access to Justice

Introduction	The e-Courts Mission Mode Project, launched in 2007, seeks to make India's judiciary more accessible, transparent and efficient through digital technology. Its Phase III aims to create paperless, interoperable and AI-assisted courts.
Body	1. Improved Access to Justice - e-Filing allows petitions and applications to be filed online. More than 1.25 crore cases have been filed through the platform. Remote hearings through video conferencing have crossed 4.18 crore, reducing travel and cost for litigants. 2. Transparency and Case Tracking - The National Judicial Data Grid provides real-time data on pending and disposed cases. SMS, email alerts, the e-Courts Services Portal and mobile app enable litigants and lawyers to track case status and cause lists. 3. Citizen Assistance e-Sewa Kendras help litigants access case details, certified copies, e-filing, digital signatures, legal aid and virtual hearings. This bridges the digital divide. 4. Criminal Justice Integration - The ICJS connects courts with police, prisons, prosecution and forensic institutions, enabling faster exchange of FIRs, charge-sheets, orders and reports. 5. AI-Assisted Processes - AI tools support transcription, translation, legal research, filing scrutiny and paperless court management. Judgments are being translated into 18 Indian languages through eSCR. Challenges Digital divide, uneven infrastructure, cybersecurity risks, translation

	accuracy, training gaps and AI accountability remain concerns. Technology must not compromise due process or judicial independence.
Conclusion	Technology with Justice Values: The e-Courts Mission is a major step towards faster and more inclusive justice delivery. However, its success depends on combining technology with human oversight, legal safeguards, infrastructure, digital literacy and institutional reform. Digital courts should make justice not only quicker, but also more accessible, transparent and citizen-centred.

Q3. The constitutional obligation to respect national symbols does not necessarily imply compulsory participation in patriotic rituals. Examine this statement with reference to the status of Vande Mataram, the Prevention of Insults to National Honour (Amendment) Act, 2026 and relevant judicial principles.

(GS Paper II—Fundamental Rights, constitutional values and judicial judgments)

Introduction

Introduction	<i>Vande Mataram</i> played an important role in India's freedom struggle. In 1950, Constituent Assembly President Dr. Rajendra Prasad stated that it should be honoured equally with <i>Jana Gana Mana</i> . However, the Constitution neither designates it as the National Anthem nor expressly mentions a "National Song".
Body	Scope of Statutory Protection The 2026 Amendment substitutes Section 3 of the Prevention of Insults to National Honour Act, 1971. It penalises a person who intentionally: - prevents the singing of the National Anthem or National Song; or - disturbs an assembly engaged in such singing. Punishment may extend to three years' imprisonment, a fine or both. Under Section 3A, repeat convictions attract a minimum one-year imprisonment. However, the amendment does not: - compel anyone to sing; - prescribe a mandatory version; - require all six stanzas; or - criminalise respectful silence. Constitutional Issues Involved Freedom of Expression—Article 19(1)(a) - Includes both expression and the freedom to remain silent. - Non-participation cannot automatically be equated with disrespect.

	Freedom of Conscience—Article 25 - Protects genuinely held religious convictions. - It is relevant because the later stanzas invoke Durga, Lakshmi and Saraswati. Fundamental Duties—Article 51A - Require respect for national symbols. - However, they cannot override Fundamental Rights under Part III. Judicial Position: Bijoe Emmanuel In <i>Bijoe Emmanuel v. State of Kerala</i> (1986), Jehovah's Witness students respectfully stood during the National Anthem but declined to sing. The Supreme Court held that their expulsion violated Articles 19(1)(a) and 25. The judgment established that: - respect does not require compulsory singing; - peaceful silence differs from deliberate disruption; and - tolerance is an essential constitutional value. Way Forward - Interpret "disturbance" narrowly. - Protect genuine conscientious objection. - Issue clear enforcement guidelines. - Penalise obstruction, not peaceful non-participation.
Conclusion	Constitutional patriotism protects national honour without enforcing uniformity. Respectful silence must therefore remain protected in India's plural democracy.

Q4. Small rivers require a distinct rejuvenation strategy, but their restoration is also essential for improving the ecological health of larger river systems. Discuss with reference to the proposed Small River Rejuvenation Framework.

GS Paper II: Environmental governance and government programmes

Introduction	Small rivers are generally 50–150 km-long natural watercourses flowing within one or two districts. They may be seasonal or perennial. Rapid urbanisation, encroachment, sewage discharge and land-use changes have reduced many such rivers—including the Sahibi, Mithi, Musi and Cooum—to polluted drains. The proposed Small River Rejuvenation Framework , unveiled under the National Mission for Clean Ganga, seeks to address their distinct problems.
Body	Why Is a Distinct Strategy Required?

	• Localised catchments: Their limited geographical spread allows district-level planning and monitoring. • High pollution concentration: Low water flow makes them more vulnerable to sewage, sludge and industrial waste. • Urban–rural differences: Urban rivers face concretisation and sewage, while rural rivers experience agricultural runoff, erosion and reduced seasonal flow. • Physical degradation: Encroachments alter channels, riverbanks, floodplains and sediment movement. • Flow challenge: Maintaining sustained ecological flow is more difficult than carrying out one-time cleaning. • Site-specific ecology: Restoration must reflect local biodiversity, natural resources and land-use conditions. SRR Framework's Approach The framework prioritises rivers according to flow reduction, pollution, ecological importance and administrative feasibility. It proposes: • cost-effective, nature-based solutions; • pollution control and climate resilience; • reconnection with wetlands, ponds and floodplains; • geomorphological correction of channels and banks; and • convergence with Namami Gange, Swachh Bharat Mission and other existing schemes. How Will It Support Larger Rivers? • Healthy tributaries carry freshwater, nutrients, sediments and aquatic biodiversity into main rivers. Degraded tributaries instead transport sewage, garbage and sludge downstream. Restoring pollution closer to its source can therefore improve entire river basins and complement large-river programmes. Way Forward • River-specific plans should ensure ecological flow, sewage interception, floodplain protection, groundwater recharge and community monitoring. Success must be measured through sustained flow, water quality, connectivity and biodiversity—not merely waste removal.
Conclusion	Small rivers are the ecological capillaries of larger river basins. Their decentralised and nature-based rejuvenation is indispensable for local water security and basin-wide river health.

International Relations

Q5. The Makkah Joint Defence Agreement reflects the emergence of a new regional security architecture in West Asia. Discuss its implications for India.

(GS Paper II – International Relations)

Introduction	The Makkah Joint Defence Agreement (MJDA) signed by Saudi Arabia, Türkiye and Pakistan marks an important shift in West Asian security politics. The pact states that an armed attack on one member will be treated as an attack on all three, signalling a move towards collective deterrence and regional strategic autonomy beyond the traditional American security umbrella.
Body	Emerging Security Architecture in West Asia 1. Collective defence framework: The MJDA resembles NATO's Article 5 in principle, though it should not be equated with NATO because its operational commitments and enforcement mechanisms remain unclear. 2. Saudi security diversification: Saudi Arabia seeks to reduce dependence on the US and strengthen protection against Iranian missile threats, Houthi attacks, Red Sea insecurity and risks near Hormuz and Bab-el-Mandeb. 3. Türkiye's regional ambitions: Türkiye gains access to Saudi capital, defence markets and greater influence in West Asia, while expanding its drone and aerospace defence industry. 4. Pakistan's strategic relevance: Pakistan gains renewed importance in West Asia due to its military capability, nuclear status and long-standing defence ties with Saudi Arabia. Implications for India 1. Pakistan–Türkiye–China axis: Saudi Arabia's deeper defence ties with Pakistan and Türkiye, both close to China, may strengthen a strategic network along India's western flank. 2. India–Saudi balance: India has strong energy, investment and strategic ties with Saudi Arabia, but greater Saudi security dependence on Pakistan may give Islamabad diplomatic leverage, especially on Kashmir and OIC platforms. 3. Military modernisation concerns: Saudi financing and Turkish technology could strengthen Pakistan's drones, fighters and air-defence systems, affecting India's conventional military calculations.

	4. Indian Ocean security: If the pact expands into maritime security, it may affect the western Indian Ocean, where India seeks to remain a net security provider. Way Forward India should deepen IMEC and I2U2, strengthen Chabahar and INSTC, diversify Gulf partnerships with UAE, Oman and Qatar, improve ties with Greece, Cyprus, Armenia and Israel, and accelerate indigenous defence capabilities under Atmanirbhar Bharat.
Conclusion	The MJDA is not an immediate military threat, but it is a major strategic signal. India must respond through strategic balancing, stronger Gulf diplomacy, defence preparedness and maritime security, while preserving its strategic autonomy.

Q6. India's campaign for a non-permanent seat in the United Nations Security Council reflects both its global ambitions and the complexities of multilateral diplomacy. Discuss.

(GS Paper II – International Relations)

Introduction	India has launched its campaign for a non-permanent seat in the United Nations Security Council (UNSC) for the 2028-29 term. The election will be held in June 2027, and India is contesting against Tajikistan for one Asian seat. If elected, it will be India's 9th term on the UNSC.
Body	India's Global Ambitions India's candidature reflects its rising global profile. As a G20 member, major economy, large democracy and important voice of the Global South, India seeks a greater role in global decision-making. UNSC membership allows India to influence debates on: • terrorism and cross-border security • peacekeeping and conflict resolution • sanctions and international crises • maritime security and Indo-Pacific issues • reform of multilateral institutions It also strengthens India's long-standing demand for a permanent seat in a reformed UNSC. A strong victory would signal wider international acceptance of India's claim. Complexities of Multilateral Diplomacy • However, UNSC elections are not decided by stature alone. They are conducted through secret ballot in the UN General Assembly and require a two-thirds majority. Recent examples

	show unpredictability: Germany lost despite being a major economy, while Kyrgyzstan defeated the Philippines with support from smaller States, the OIC group and likely Chinese backing. - This shows that bloc politics, smaller-country solidarity, Global South sentiment, issue-based voting and great-power influence can shape outcomes. Tajikistan may also seek support from Central Asian and Islamic groupings. Why It Matters for India - UNSC membership is useful for countering hostile narratives, especially on terrorism. During Pakistan's 2025-26 UNSC term, India's diplomacy ensured that Pakistan could not effectively use the Council against India, while the UNSC condemnation of the Pahalgam terrorist attack helped India diplomatically.
Conclusion	India's UNSC campaign is both a statement of ambition and a test of diplomacy. Success will require sustained outreach across regions, sensitivity to Global South concerns and careful coalition-building. A strong mandate would reinforce India's role as a responsible stakeholder in global governance.

Q7. India–Uzbekistan relations have evolved from historical and cultural affinity into a multidimensional strategic partnership. Examine the significance of this partnership for India's engagement with Central Asia.

GS Paper II: India's bilateral relations and engagement with Central Asia

Introduction	India and Uzbekistan elevated their relationship to a Comprehensive Strategic Partnership during the Indian Prime Minister's August 2026 visit. Uzbekistan's central location, natural resources and regional influence make it an important pillar of India's engagement with Central Asia.
Body	Strategic Significance Economic cooperation: The countries aim to increase annual trade from over \$1 billion to \$5 billion by 2030. A possible Preferential Trade Agreement can improve market access in pharmaceuticals, engineering, automobiles and agriculture. Energy and mineral security: The long-term uranium-supply framework can diversify India's civil nuclear-fuel sources. Joint exploration, mining, processing and recycling can strengthen critical-mineral supply chains. Defence and security: Defence industries will explore co-development and co-production of military equipment. Exercise

	Dustlik, intelligence sharing and counterterrorism coordination can address extremism, organised crime, drug trafficking and cyber threats. • Connectivity and technology: Multimodal transport routes can reduce the cost of accessing landlocked Central Asia. UPI–UZQR interoperability extends India’s digital public infrastructure, while cooperation in artificial intelligence, cybersecurity, IT parks and space broadens technological engagement. • Soft power and diplomacy: Restoration of Fayaz Tapa and Kara Tapa reinforces ancient Buddhist and Silk Road connections. ITEC, ICCR scholarships, yoga and traditional medicine strengthen people-to-people relations. Uzbekistan also supports India’s permanent membership of a reformed UN Security Council. Challenges • Uzbekistan’s landlocked location raises freight costs. • Bilateral trade remains below its potential. • Non-tariff and investment barriers restrict market access. • Numerous agreements may face implementation delays. • Regional instability can affect trade and connectivity. Way Forward • Operationalise the uranium-supply framework. • Advance the Preferential Trade Agreement. • Develop reliable multimodal logistics corridors. • Remove regulatory barriers through the Joint Working Group. • Identify viable mineral and defence projects. • Ensure regular monitoring through the Foreign Ministers-led mechanism.
Conclusion	A result-oriented partnership can strengthen India’s resource security, economic interests, regional influence and durable strategic presence in Central Asia.

Q8. Drought is no longer an occasional climatic event but a defining developmental challenge. Discuss the need to shift from reactive relief to anticipatory drought resilience, with reference to the outcomes of UNCCD COP17.

GS Paper II: International environmental conventions and global cooperation

Introduction	Drought affects water, agriculture, biodiversity, livelihoods and economic stability simultaneously. At UNCCD COP17 in Mongolia,
---------------------	--

	India therefore called for a shift from post-disaster relief towards predictive, technology-enabled and community-based drought resilience.
Body	Need for Anticipatory Resilience • Climate change is increasing rainfall variability and prolonged dry spells. • Degraded soils retain less moisture and intensify agricultural drought. • Delayed action increases crop losses, groundwater stress and migration. • Relief-oriented systems address damage but do not reduce underlying vulnerability. • Catchment restoration and early warning can prevent dry spells from becoming crises. COP17 Contributions • The Drought Resilience Index uses AI and vulnerability mapping to assess national preparedness. The Drought Resilience Investment Facility seeks to mobilise public and private finance for water security, resilient agriculture and land restoration. COP17 also promoted nature-based solutions and made drought a standalone agenda from COP18. Challenges • Fragmented responsibilities across agriculture, water and forestry departments; • inadequate local soil-moisture monitoring; • promotion of water-intensive crops in dry regions; • degradation of grasslands and common property resources; • insecure land and grazing rights; and • a substantial global resilience-finance gap. Way Forward • Integrate satellites, AI and soil sensors for local forecasting. • Adopt trigger-based anticipatory financing. • Align crop incentives with agro-ecological conditions. • Restore catchments through ridge-to-valley planning. • Protect grasslands and other open natural ecosystems. • Promote regenerative agriculture and efficient irrigation. • Involve farmers, pastoralists and women in planning. • Mobilise blended finance for restoration projects.

Conclusion	Drought resilience must be built before rainfall fails. Combining science, healthy landscapes, predictable finance and local institutions can transform drought management from emergency response into long-term developmental security.
-------------------	---

Economy

Q9. Geographical Indication tags can transform India's traditional products into engines of rural development and export-led growth. Discuss.

(GS Paper III – Rural Economy / Exports / Intellectual Property Rights)

Introduction	Geographical Indication (GI) tags are a form of intellectual property protection given to products whose quality, reputation or characteristics are linked to a specific geographical origin. In India, GI protection is governed by the Geographical Indications of Goods (Registration and Protection) Act, 1999 . GI tags are increasingly being used to convert India's traditional products into instruments of heritage protection, rural livelihoods and export-led growth .
Body	Role of GI Tags in Rural Development 1. Protection of traditional knowledge: GI tags prevent imitation, misuse and unauthorised commercialisation of products such as Banarasi sarees, Channapatna toys, Pochampalli Ikat and Darjeeling Tea. 2. Better income for producers: By certifying authenticity and origin, GI tags improve market value. They help artisans, farmers, weavers and producer groups access premium markets and improve bargaining power. 3. Local employment and livelihood security: GI recognition supports rural clusters, handloom centres, handicraft workers and farmer producer organisations. For example, Muzaffarnagar Jaggery gained export access after GI recognition, benefiting local producer groups. Role in Export-Led Growth - GI tags build consumer confidence in global markets. Agencies such as APEDA promote GI agricultural products through quality improvement, capacity building and market promotion. GI products such as Salem Sago, Joha Rice and Tezpur Litchi have entered new export markets.

	- Free Trade Agreements also strengthen GI value by providing formal protection and reducing trade barriers. Negotiations such as the India–EU FTA and commitments by New Zealand show the growing trade importance of Indian GI products. Challenges and Way Forward - Challenges include low producer awareness, fake products, weak branding, limited authorised users and poor-quality standardisation. India must expand authorised user registration, strengthen enforcement, improve packaging, promote GI Trails, link GI products with e-commerce and secure GI protection in FTAs.
Conclusion	GI tags can become a bridge between tradition and markets . If supported by branding, exports and producer empowerment, they can transform India's traditional wealth into sustainable rural livelihoods and global brands.

Q10. Critical mineral security is becoming central to India's clean energy transition, industrial competitiveness and strategic autonomy. Discuss.

(GS Paper III – Resource Security / Energy Transition / Industrial Policy)

Introduction	Critical minerals are non-fuel metallic or non-metallic minerals essential for advanced technologies but vulnerable to supply disruption. Minerals such as lithium, cobalt, nickel, graphite, copper and rare earth elements are crucial for electric vehicles, batteries, renewable energy, semiconductors, defence and advanced manufacturing. India has identified 30 critical minerals to strengthen resource security.
Body	Why Critical Minerals Matter for India Clean Energy Transition - India's renewable energy, electric mobility and battery storage goals are mineral intensive. Lithium, cobalt and nickel power batteries, copper supports transmission systems, while rare earth elements are used in wind turbines and electric motors. Industrial Competitiveness - Critical minerals are inputs for semiconductors, AI hardware, electronics, telecommunications and advanced manufacturing. Secure supply chains are necessary for Make in India, green manufacturing and Viksit Bharat. Strategic Autonomy and Defence - High-purity minerals and rare earth magnets are used in missiles, jet engines, drones, satellites and defence electronics. Import dependence can therefore create national security vulnerabilities. Key Challenges

	- India remains import-dependent for lithium, cobalt, nickel and rare earth magnets. The biggest weakness lies in the “missing middle” of processing, refining and high-purity production, where China dominates global value chains. India also faces shallow exploration, limited private investment, weak recycling systems and absence of strategic mineral stockpiles. Way Forward - India must accelerate the National Critical Mineral Mission, expand deep exploration, build processing and refining capacity, promote recycling, attract private capital, diversify overseas supplies through KABIL, and create strategic mineral reserves.
Conclusion	Critical mineral security is not merely a mining issue; it is central to India’s energy transition, industrial resilience and national security. Possessing mineral reserves alone will not ensure strategic autonomy unless India builds the full value chain from exploration to refining, recycling and manufacturing. Therefore, India must shift from a resource-import mindset to a mine-to-market and circular economy strategy. A secure, diversified and sustainable critical mineral ecosystem will determine India’s ability to become a clean energy leader, advanced manufacturing hub and strategically autonomous power.

Q11. Nature-based solutions and climate-resilient agriculture are essential for ensuring India’s food security in the age of climate change. Discuss.

(GS Paper III – Agriculture / Climate Change / Food Security)

Introduction	Indian agriculture is highly vulnerable to climate change due to its dependence on monsoons, small landholdings and large rainfed area. Agriculture supports about 58% of India’s population, while nearly 60% of farming is rainfed. Rising temperatures, erratic rainfall and extreme weather events threaten crop yields, soil fertility and farmer incomes.
Body	Role of Climate-Resilient Agriculture Adaptation to Climate Shocks - Climate-resilient agriculture includes stress-tolerant crop varieties, adjusted sowing windows, better planting methods and improved water management. These practices reduce crop losses from droughts, heat stress and irregular monsoons. Food and Nutritional Security - Climate-resilient practices help stabilise crop production. This is important as India must ensure food security for a large population amid increasing climate uncertainty.

	3. Sustainable Soil and Water Management - Practices such as conservation agriculture, zero tillage, agroforestry and biochar improve soil health, water retention and nutrient use efficiency. 4. Climate Mitigation - Nature-based solutions reduce emissions by controlling residue burning, increasing soil carbon and supporting biodiversity. Biochar can sequester carbon and improve soil fertility. India's Policy Support - India has promoted climate-resilient agriculture through NAPCC, National Mission for Sustainable Agriculture, NICRA, National Agroforestry Policy, National Mission on Natural Farming and climate-resilient crop varieties released by ICAR. NICRA has identified 310 vulnerable agricultural districts and District Agriculture Contingency Plans have been prepared. Challenges and Way Forward Adoption remains limited due to low awareness, credit constraints, upfront costs, weak extension services and poor access to quality inputs. India must strengthen farmer awareness, localised climate planning, biochar adoption, stress-tolerant seeds, water-smart farming and institutional support.
Conclusion	Nature-based solutions and climate-resilient agriculture are not optional reforms but necessary safeguards for India's food security, farmer welfare and ecological sustainability. A successful transition requires combining scientific innovation with farmer-centric implementation, financial support and local climate governance.

Q12. PM MITRA Parks can strengthen India's textile manufacturing ecosystem by integrating infrastructure, employment and exports. Discuss.

(GS Paper III – Industrial Development / Textile Sector)

Introduction	India has a strong textile base, but the sector often suffers from fragmented production, high logistics cost, limited scale and weak integration across the value chain. The PM MITRA Mega Textile Parks scheme aims to address these gaps by creating seven integrated textile parks with an outlay of ₹4,445 crore.
Body	How PM MITRA Strengthens Textile Manufacturing 1. Integrated Value Chain PM MITRA follows the 5F vision — Farm to Fibre to Factory to Fashion to Foreign. This connects raw material, processing, manufacturing, design and exports in one ecosystem.

	2. Modern Infrastructure - The parks will provide plug-and-play facilities, developed factory sites, roads, power, water, Common Processing Houses, CETPs, design centres and testing centres. This reduces setup time and improves competitiveness. 3. Employment Generation - Each park is expected to generate around 3 lakh jobs, including direct and indirect employment. This is important for labour-intensive growth and women's employment in the apparel sector. 4. Investment and Exports - The scheme has already received investment interest worth ₹68,590 crore. Large parks can attract anchor investors and help India compete in global textile markets. 5. Regional Development - Parks in States such as Telangana, Tamil Nadu, Gujarat, Karnataka, Madhya Pradesh, Uttar Pradesh and Maharashtra can create new industrial clusters and reduce regional imbalance. Challenges - Timely execution, environmental compliance, water use, skill gaps, MSME inclusion and global competition remain key concerns. Way Forward India should ensure quick infrastructure completion, strong CETP monitoring, skill training, MSME linkages, export promotion and scheme convergence with logistics and industrial policies.
Conclusion	PM MITRA can transform India's textile sector from fragmented production to integrated global manufacturing. Its success will depend on converting infrastructure into jobs, exports, sustainable production and inclusive industrial growth.

Q13. Natural farming is increasingly being viewed as a resilience imperative rather than merely an ideological proposition. Discuss.

(GS Paper III – Agriculture / Environment / Food Security)

Introduction	Natural farming, or Prakritik Kheti, is a chemical-free farming system based on local biodiversity, on-farm biomass and natural biological processes. In the context of fertiliser import dependence, climate variability and rising input costs, it is being viewed as a resilience strategy for Indian agriculture.
Body	Why Natural Farming is Important Input sovereignty: It reduces dependence on imported

	fertilisers and market-bought inputs. • Soil health: Practices like Jeevamrutha, mulching and crop diversity improve soil microbes and organic matter. • Climate resilience: Mulching, Waaphasa and diversified cropping reduce water stress and crop failure risk. • Farmer income: Lower input costs can protect small farmers from debt cycles. • Circular economy: Crop residue, cattle dung and biomass are recycled within the farm. • Public health: Reduced agrochemical exposure benefits farmers, consumers and ecosystems. Challenges • Natural farming faces yield uncertainty, transition-period risks, labour burden, weak certification, market gaps and lack of crop-specific protocols. Sudden shifts may affect food security, as seen in global examples of poorly planned ecological transitions. Way Forward India should adopt a phased approach. Cluster-based “living landscapes” should be supported with Bio-input Resource Centres, FPOs, Krishi Sakhis, KVKs, soil testing, transition finance, crop insurance and market linkages. ICAR and State Agricultural Universities must generate region-specific scientific evidence.
Conclusion	Natural farming can strengthen India’s agricultural resilience only if it is supported by institutions, science and markets. The aim should not be abrupt replacement of conventional agriculture, but a gradual, farmer-centred transition towards low-input, climate-resilient and sustainable farming.

Q14. Bharat Taxi represents an attempt to make India’s platform economy more inclusive through cooperative ownership. Discuss.

(GS Paper III – Economy / Employment / Digital Economy)

Introduction	India’s platform economy has grown rapidly, especially in urban mobility. However, it has also raised concerns related to driver earnings, commission-based dependence, weak social security and limited worker participation in governance. Bharat Taxi, India’s first cooperative-led ride-hailing platform, seeks to address these issues through a driver-owned cooperative model.
Body	1. Cooperative Ownership Model • Bharat Taxi is registered under the Multi-State Cooperative

	Societies Act, 2002. • Drivers are called Sarathis and can become member-owners of the platform. • The model follows the idea of “Saarthi Hi Maalik”, meaning the driver is also the owner. • Sarathis can participate in decision-making through cooperative governance and representation in the Board of Directors. 2. Fairer Earnings for Drivers • Bharat Taxi follows a zero-commission model. • Drivers retain full fare earnings instead of paying ride-based commission. • The platform also follows a surge-free pricing model, making fares more transparent for passengers. • This can reduce income uncertainty among platform workers. 3. Social Security Support • Sarathis are facilitated to register on the e-Shram portal. • They may access welfare benefits such as Ayushman Bharat–PMJAY health cover. • Additional support includes accident insurance and group health insurance through institutional partnerships. • This is important because gig workers often remain outside formal labour protection. 4. Inclusive Mobility • Sarathi Didi allows women passengers to choose women drivers. • Bike Didi encourages women to participate as bike taxi drivers. • These initiatives support women’s safety and livelihood generation. 5. Role of Digital Public Infrastructure • Bharat Taxi is integrated with DigiLocker, UMANG and API Setu. • This supports paperless onboarding, digital verification, cashless payments and efficient service delivery. • It shows how Digital India infrastructure can support cooperative enterprises. Challenges • Competition from established private ride-hailing platforms. • Need to maintain service reliability and app quality. • Financial sustainability of the zero-commission model.
--	--

	- Ensuring transparent cooperative governance as the platform expands. - Maintaining safety, grievance redressal and social security delivery. Way Forward - Strengthen Sarathi participation in governance. - Expand city-level partnerships with metros, airports and traffic police. - Ensure universal e-Shram and insurance coverage for Sarathis. - Improve digital training, app performance and customer grievance systems. - Scale women-led mobility initiatives with safety and financial support.
Conclusion	Bharat Taxi is more than a ride-hailing application; it is a cooperative experiment in India's platform economy. By combining worker ownership, zero-commission earnings, digital public infrastructure, social security and inclusive mobility, it can offer a more equitable model of urban transport. Its success will depend on transparent governance, service quality and sustained welfare support for Sarathis.

Q15. Despite being the world's largest producer of coconuts, India has not fully realised the crop's potential for enhancing farmers' income and rural industrialisation. Examine. Suggest measures to develop an integrated and globally competitive coconut value chain.

(GS Paper III: Agriculture, food processing, exports and farmers' income)

Introduction	India ranks first in coconut production, contributing 31.24% of global output. The sector supports nearly 30 million people, including about 10 million farmers. However, its economic potential remains constrained by productivity gaps, aging plantations and inadequate value addition.
Body	Potential of the Coconut Sector Livelihood security: Coconut cultivation is dominated by small and marginal farmers and generates employment in harvesting, processing, handicrafts and trade. Farm diversification: Multi-tier farming combines coconut with fruits, spices and vegetables, improving land use and providing regular income. Value addition: Products such as virgin coconut oil, coconut milk, Neera, activated carbon and desiccated coconut offer

	higher returns than raw nuts. • Export growth: Coconut-product exports reached ₹7,038.35 crore in 2025–26, indicating rising global demand. • Circular economy: Shell, husk, fibre, wood and leaves can be converted into coir, fuel, handicrafts and industrial inputs. Constraints • The sector faces senile plantations, root wilt disease, climate stress and uneven access to quality seedlings. Fragmented holdings restrict mechanisation and aggregation. Shortage of trained climbers raises harvesting costs, while weak farm-gate processing forces growers to sell raw produce. Price volatility, inadequate testing facilities and difficulty in meeting international standards further limit competitiveness. Measures Required • Replace unproductive palms with high-yielding, climate-resilient varieties. • Promote micro-irrigation, multi-tier cropping and scientific crop-health management. • Strengthen FPOs for aggregation, processing, branding and direct marketing. • Establish integrated processing clusters and quality-testing laboratories near production centres. • Expand mechanical climbing services through Cocomitra and other skill programmes. • Improve MSP procurement of copra through NAFED and NCCF. • Promote research, traceability and certification for premium export markets.
Conclusion	The Coconut Promotion Scheme provides an opportunity to shift from production-centred support to a complete value-chain approach. Integrating productivity, processing, collectivisation and exports can make coconut farming remunerative, resilient and employment-intensive.

Q16. Solar irrigation need not worsen groundwater depletion if technology design and farmer incentives are aligned with local conditions. Discuss in the context of PM-KUSUM 2.0.

Relevance: GS Paper III: Agriculture, groundwater, renewable energy, farm subsidies and climate change

Introduction	PM-KUSUM has installed more than 2.5 million solar pumps in five years. Although solar power lowers irrigation costs and emissions, almost free electricity may encourage excessive pumping where groundwater is already under stress. The outcome, however, depends on the irrigation model and local conditions.
Body	Model-Based Outcomes - Grid-connected pumps allow farmers to sell unused electricity, converting conservation into income. Under Gujarat's Suryashakti Kisan Yojana, participating farmers recorded slower growth in energy and irrigation use and earned around ₹21,900 annually. - In the fee-for-service model, pump operators supply several farmers. Over-irrigating one farm reduces their ability to serve others, encouraging equitable distribution. Standalone pumps lack such incentives but remain useful in areas with poor grid access and low groundwater risk. Need for Regional Differentiation - Punjab and Haryana require measures to reduce pumping within already irrigated, water-intensive farming systems. Eastern India requires affordable irrigation because unreliable power and diesel costs restrict agricultural productivity. Hydrogeology, soil, crops and water-table depth must therefore guide deployment. Wider Benefits - Groundwater irrigation produces an estimated 45–62 million tonnes of CO₂ annually, while agricultural power subsidies exceed ₹1 lakh crore. Solarisation can reduce both burdens when combined with efficient water use. Way Forward PM-KUSUM 2.0 should: - Simplify grid connections and provide attractive buyback prices. - Link feeder solarisation with micro-irrigation and reduced-pumping payments. - Strengthen groundwater monitoring. - Promote shared pumps through cooperatives and water-user associations. - Retain standalone pumps in irrigation-deprived, low-risk regions.
Conclusion	The central issue is not solar irrigation itself but its design. Context-

	specific models can jointly advance groundwater security, clean energy and climate-resilient agriculture.
--	---

Q17. India's global leadership in makhana production has not yet been fully converted into an efficient, value-added and diversified export economy. Discuss the measures required to modernise the makhana value chain.

Introduction	India is the world's largest producer of makhana, with Bihar contributing nearly three-fourths of national production and 80–85% of global supply . However, labour-intensive cultivation, traditional processing, inadequate mechanisation and concentrated export markets prevent India from fully capturing its economic potential.
Body	Gaps in the Makhana Value Chain • Production constraints: Underwater harvesting is difficult, risky and dependent on skilled manual labour. • Limited mechanisation: Cleaning, roasting, popping and grading are largely undertaken with traditional equipment. • Weak supply response: Production increased by only 4–5% between FY2022 and FY2025 despite rapidly rising demand. • Low value addition: A large share is marketed as loose or simply popped makhana instead of branded, ready-to-eat products. • Export concentration: The US, Canada and UAE account for 77% of exports, increasing market vulnerability. • Quality variation: Uneven grading, processing and packaging affect price realisation in premium markets. Measures Required 1. Improve cultivation: Expand field-system farming, quality-seed production and high-yielding varieties such as Swarna Vaidehi and Sabour Makhana-1. 2. Promote mechanisation: Commercialise NRCM-developed seed washers, graders, roasting machines and popping equipment. 3. Strengthen FPOs: Enable aggregation, common processing, collective branding and better bargaining power. 4. Develop rural infrastructure: Establish shared drying, grading, packaging and storage facilities near production centres. 5. Encourage value addition: Support flavoured makhana, flour, ready-to-eat snacks and other innovative products.

	6. Improve quality: Introduce uniform standards, certification, traceability and modern packaging. 7. Diversify exports: Expand into premium-paying markets such as Germany, Australia and Nepal. 8. Strengthen skills: Scale the NRCM's train-the-trainers approach for cultivation, processing and marketing.
Conclusion	The National Makhana Board and the ₹476.03-crore Central Sector Scheme provide a strong institutional foundation. Integrating research, mechanisation, farmer collectivisation, branding and export diversification can convert India's production dominance into higher farmer incomes, rural employment and global competitiveness.

Q18. Regenerative agriculture can simultaneously address soil degradation, climate vulnerability and declining farm profitability in India. Discuss the major practices and policy measures required for its widespread adoption.

(GS Paper III—Agriculture, environmental conservation, climate change and sustainable development)

Introduction	Regenerative agriculture is a holistic approach that actively restores soil health, biodiversity and ecosystem functions while maintaining farm productivity. It differs from conventional sustainability by seeking ecological improvement rather than merely preventing further damage.
Body	Contribution to Agricultural Resilience Soil and Water Restoration • Green manuring, cover cropping and mulching increase organic matter and reduce erosion. • Micro-irrigation improves water-use efficiency. • Scientific nitrogen management reduces nutrient losses and nitrous oxide emissions. Biodiversity and Climate Action • Agroforestry stores carbon, moderates local temperatures and rejuvenates degraded land. • Natural farming limits chemical inputs and promotes biological formulations. • Crop rotation and multi-cropping strengthen ecological diversity. Farm Economy • Integrated Farming Systems combine crops, livestock, fisheries, horticulture and apiculture. • Diversification reduces crop-failure risks and creates multiple

	income sources. - Lower dependence on purchased inputs can improve net farm income. Policy Support The National Mission on Natural Farming supports clusters, Community Resource Persons and bio-input centres. PKVY promotes organic farming and certification, while Per Drop More Crop finances drip and sprinkler systems. - The Rainfed Area Development Programme supports cluster-based Integrated Farming Systems. The agroforestry component of PM-RKVY expands nurseries and quality planting material. Soil Health Cards provide scientific, plot-specific nutrient recommendations. Measures Required - Provide transition support to small and marginal farmers. - Expand locally available biological inputs. - Strengthen extension services through KVKs and Krishi Sakhis. - Develop credible certification and remunerative markets. - Integrate Soil Health Cards with crop planning. - Measure soil carbon, water use, biodiversity and farmer income. - Converge natural farming, irrigation, agroforestry and IFS schemes.
Conclusion	Regenerative agriculture can rebuild the ecological foundations of Indian farming. Its success requires locally adapted practices, scientific monitoring, institutional convergence and assured economic returns for farmers.

Q19. UPI has emerged as a foundational component of India's Digital Public Infrastructure. Discuss its contribution to financial inclusion and economic formalisation, and identify the challenges to its sustainable expansion.

GS Paper III—Digital economy, financial inclusion and infrastructure

Introduction	The Unified Payments Interface is an interoperable, real-time payment system developed by NPCI. In ten years, its annual transaction volume increased from 1.78 crore to over 24,162 crore, making it the backbone of India's digital-payment ecosystem.
Body	Contribution to India's Digital Economy Financial Inclusion UPI enables direct access to bank accounts through mobile

	applications. - UPI 123PAY extends digital payments to feature-phone users. - QR-based acceptance allows small vendors to receive payments without costly hardware. Economic Formalisation - Digital records improve transaction traceability. - Instant settlement encourages businesses to shift from cash. - Integration with IPOs, credit lines and recurring mandates expands access to formal financial services. Innovation and Competition - Its interoperable architecture allows banks and fintech firms to build services on common infrastructure. - UPI Lite, AutoPay and credit-card integration have broadened use cases. Global Influence UPI is operational in 11 foreign countries and accounted for around 49% of global real-time payment volume in 2024, demonstrating the export potential of India's digital public infrastructure. Challenges - Cyber fraud and social engineering threaten consumer confidence. - Connectivity gaps limit use in remote areas. - Rising volumes require scalable and reliable infrastructure. - Failed transactions need faster grievance resolution. - Data collection raises privacy and cybersecurity concerns. - International expansion requires wider merchant acceptance. - The ecosystem must remain affordable while ensuring provider sustainability. Way Forward - Strengthen fraud detection and regional-language awareness. - Expand low-connectivity and feature-phone solutions. - Improve system redundancy and dispute resolution. - Enforce privacy and cybersecurity standards. - Develop interoperable cross-border payment partnerships. - Maintain competition and accessible services.
Conclusion	UPI's next decade must combine innovation and global expansion with security, reliability, inclusion and consumer protection.

Q20. The MMDR Amendment Act, 2026 seeks to create a uniform mineral taxation framework while preserving the major revenue streams of mineral-producing States. Examine its significance for mineral security, industrial competitiveness and cooperative federalism.

GS Paper III: Mineral resources, critical minerals, energy security, infrastructure and industrial development

Introduction	The Mines and Minerals (Development and Regulation) Amendment Act, 2026 amends the MMDR Act, 1957 to establish a predictable fiscal regime for mining. Its new Section 9D restricts States from imposing taxes or cesses on mineral rights and mineral-bearing land except under conditions prescribed by the Central Government.
Body	Significance of the Amendment Uniform National Mineral Market • It reduces differences in mineral levies across States. • Lower fiscal fragmentation can improve supply chains and interstate mineral movement. • Predictability can encourage long-term investment in exploration, technology and infrastructure. Mineral and Energy Security • Rational taxation can make domestic extraction of critical minerals such as graphite and atomic minerals such as uranium commercially viable. • It can reduce import dependence and exposure to global supply disruptions. • It complements the National Critical Mineral Mission and overseas exploration by KABIL. Industrial Competitiveness • Minerals are essential inputs for steel, cement, aluminium, power, defence and renewable-energy industries. • Lower cumulative costs can improve the competitiveness of domestic manufacturing. • Reduced input-price pressure may ultimately benefit housing, electricity and infrastructure consumers. Protection of State Interests • States will continue receiving royalty, auction premium, dead rent and DMF contributions. • Nearly 90% of mining-sector revenue presently accrues to States. • Minor minerals such as sand, granite and marble remain under State control.

	- DMF and PMKKKY collections for mining-affected communities remain unchanged. Federal and Developmental Concerns - Mineral-producing States bear environmental degradation, displacement and infrastructure costs. - Central restrictions on their taxation powers may raise fiscal-autonomy concerns. - Increased mining could intensify ecological damage unless safeguards are enforced. - Revenue growth must translate into visible benefits for tribal and mining-affected communities. Way Forward Rules should be framed through Centre–State consultation. A transparent fiscal formula should account for mineral value, ecological costs and local development needs. DMF governance, mine closure, land restoration, recycling and domestic processing must be strengthened.
Conclusion	The amendment can advance mineral self-reliance, but its success requires balancing national market integration with federal autonomy, environmental sustainability and distributive justice.

Environment & Ecology

Q21. India's solar power sector has expanded rapidly, but its long-term success depends on resolving structural challenges in land, grid, finance, storage and manufacturing. Discuss. Suggest reforms to unlock India's solar energy potential. (GS Paper III – Renewable Energy / Infrastructure / Climate Change)

Introduction	India's solar sector has become a major pillar of its clean energy transition, with solar capacity expanding from about 3 GW in 2014 to 162.15 GW by June 2026. However, sustaining this momentum requires addressing structural constraints that affect project execution, grid reliability and investor confidence.
Body	Major Challenges in India's Solar Power Sector Land acquisition and ecological conflicts: Large solar parks need vast contiguous land. In agricultural or ecologically sensitive regions, land conversion raises concerns over

	livelihoods and biodiversity. For example, projects in Rajasthan have faced delays due to protection concerns linked to the Great Indian Bustard. 2. Transmission and grid integration gaps: Solar capacity has grown faster than transmission infrastructure. In high-generation States like Rajasthan and Gujarat, grid congestion and evacuation delays lead to curtailment, affecting investor confidence. 3. Intermittency and storage limitations: Solar power depends on daylight and weather. Affordable storage systems such as batteries and pumped hydro are still limited. Without storage, solar cannot provide reliable round-the-clock power. 4. Financial stress of DISCOMs: Weak finances of distribution companies cause payment delays to solar developers and affect long-term power purchase agreements. 5. Import dependence: India still depends heavily on imported solar modules, cells and upstream components. This exposes the sector to supply chain risks and weakens domestic value addition. 6. Policy uncertainty and financing constraints: Frequent changes in tariffs, duties and State policies create uncertainty. High cost of capital also affects smaller developers. 7. Skill-quality gap: Rapid rooftop solar expansion requires trained installers and technicians. Poor-quality installations can reduce efficiency and create safety risks. Reforms Needed - India should promote land pooling, leasing and agrivoltaics to reduce land conflicts. Transmission planning must move in parallel with solar parks through faster Green Energy Corridor implementation. Storage should be scaled through battery energy storage systems, pumped hydro and hybrid solar-wind-storage projects. - DISCOM reforms under RDSS, smart metering and timely tariff revision are essential. Domestic manufacturing must deepen from modules to polysilicon, wafers, cells and storage systems through PLI, R&D and technology partnerships. Stable policies, timely PPAs, green bonds, blended finance and sovereign guarantees can reduce investment risks. Finally, Skill India, ITIs and industry partnerships should create a certified solar workforce.
Conclusion	India's solar ambition cannot rest on capacity addition alone. It needs a

	complete ecosystem of land access, grid readiness, storage, domestic manufacturing, financial stability and skilled manpower to make solar power reliable, affordable and self-reliant.
--	--

Q22. Global environmental indices are useful tools for assessing sustainability, but they must be interpreted with methodological caution. Discuss with reference to India's performance in the Environmental Performance Index 2026.

(GS Paper III – Environment / Climate Change / Sustainable Development)

Introduction	Global environmental indices help countries assess their progress on sustainability, climate action and ecological governance . The Environmental Performance Index 2026 ranked India 176th out of 177 countries , with an overall score of 22.46 , while Estonia topped the index. This has revived the debate on India's environmental performance and the reliability of global ranking frameworks.
Body	Usefulness of Environmental Indices Policy benchmarking: The EPI provides a data-driven scorecard across 47 metrics, 12 issue categories and three policy objectives — Environmental Health, Ecosystem Vitality and Climate Change. It helps identify weaknesses in air quality, water quality, biodiversity, sustainable forestry and greenhouse gas reduction. Sustainability tracking: Such indices help measure progress towards the Sustainable Development Goals and Paris Agreement commitments. They also encourage governments to improve environmental reporting and accountability. Climate risk awareness: Other indices add different dimensions. The Climate Risk Index 2026 ranked India 9th most affected by climate-related disasters over 1995–2024, with 430 extreme weather events, \$170 billion losses and 80,000 fatalities. Need for Methodological Caution Methodology concerns: India had rejected the 2022 EPI ranking, arguing that some indicators were based on unfounded assumptions, extrapolations and unscientific methods. Wealth bias: EPI 2026 scores showed strong correlation with national wealth. This may disadvantage developing countries with large populations and developmental needs. Different indices, different outcomes: India ranks poorly in EPI but stands 23rd in CCPI 2026, showing that environmental performance, mitigation and vulnerability are different

	dimensions. Way Forward India must improve air and water quality, protect biodiversity, reduce tree cover loss, strengthen environmental data systems, accelerate clean energy transition and build climate-resilient infrastructure. It should also engage with global index-makers for fair and transparent methodology.
Conclusion	Environmental indices should not be treated as final judgments, but as diagnostic tools. India must use them for policy correction, while ensuring that global assessments respect climate equity, development needs and data reliability.

Q23. India's electric vehicle transition is both an environmental necessity and an industrial opportunity. Discuss.

(GS Paper III – Environment / Energy Security / Industrial Policy | 15 Marks)

Introduction	EVs as Clean Mobility Transition Electric Vehicles are vehicles powered by electric motors using energy stored in batteries. India's EV ecosystem has expanded rapidly, with EV sales growing nearly 46 times since 2016, while exports increased from USD 1.2 million in 2020 to USD 84 million in 2024. This shows that electric mobility is becoming a key driver of clean transport, energy security and industrial growth.
Body	Environmental Necessity 1. Reducing Urban Pollution - EVs have zero tailpipe emissions, helping reduce vehicular pollution in cities. This is important as transport contributes around 9% of India's total emissions. 2. Supporting Climate Commitments - India aims to reduce carbon intensity by 45% by 2030 and achieve net-zero emissions by 2070. EV adoption supports these goals by lowering dependence on fossil-fuel-based transport. 3. Cleaner Public Mobility - Electrification of buses, three-wheelers and last-mile transport can reduce congestion, noise pollution and local air pollution. Industrial and Economic Opportunity 1. Domestic Manufacturing Push - Schemes such as FAME India, PM E-DRIVE, PLI-Auto, PLI-ACC Battery and the National Mission on Manufacturing are promoting domestic EV production, battery manufacturing and component localisation.

	2. Export Potential - India is emerging as an EV export hub, with exports rising sharply and Indian-made EVs targeting markets such as Nepal, Indonesia, Japan and advanced economies. 3. Startup and Investment Ecosystem - Around 400 EV startups are working in charging infrastructure, battery innovation, software and low-cost manufacturing. This can generate jobs and strengthen innovation-led growth. Challenges - India still faces gaps in charging infrastructure, battery import dependence, high upfront costs, grid readiness, battery recycling and uneven State-level progress. Way Forward India must expand public charging networks, localise battery and critical mineral supply chains, promote battery recycling, electrify public transport, improve EV financing and strengthen State-level EV policies.
Conclusion	India's EV transition should not be viewed only as a climate measure. It is a strategic opportunity to reduce oil imports, improve urban air quality, build domestic manufacturing capacity and become part of global green supply chains. However, long-term success will depend on battery localisation, affordable technology, reliable charging infrastructure and circular economy systems. A well-planned EV transition can help India achieve clean mobility, energy security, green jobs and industrial competitiveness together.

Q24. The Supreme Court's clarification on mining near wetland conservation reserves highlights the need to strengthen India's wetland governance framework. Discuss.
(GS Paper III – Environment / Biodiversity Conservation)

Introduction	Wetlands are vital ecosystems that support biodiversity, groundwater recharge, flood moderation, carbon storage and local livelihoods. The Supreme Court's clarification that prior approval is required for mining within a 10-km radius of wetland conservation reserves, following the Asan Wetland case, highlights the growing role of judicial safeguards in wetland governance.
Body	Significance of the Clarification 1. Protection of Fragile Ecosystems Wetlands are sensitive to changes in hydrology, sediment flow and pollution. Mining near wetlands can affect aquatic biodiversity, migratory birds and ecological character.

	2. Strengthening Ramsar Commitments - The Asan Wetland Conservation Reserve, located at the confluence of the Asan and Yamuna rivers, was designated a Ramsar site in 2020. The Court's direction reinforces India's obligation to maintain the ecological character of internationally important wetlands. 3. Filling Regulatory Gaps - Neither the Ramsar Convention nor the Wetlands Rules, 2017 provide a statutory mining buffer around Ramsar sites. The Court's order therefore creates an additional layer of scrutiny through NBWL or MoEFCC approval. 4. Parity Across States - By extending the Asan principle to wetland conservation reserves across India, the Court seeks uniform ecological protection rather than State-wise inconsistency. Concerns and Limitations - The order does not create a universal statutory buffer for all Ramsar sites. Wetland governance remains fragmented between State Wetland Authorities, wildlife bodies, forest laws and environmental clearance procedures. Boundary demarcation, monitoring capacity and scientific impact assessment remain weak. Way Forward India needs clear wetland mapping, defined zones of influence, stronger State Wetland Authorities, cumulative impact assessments for mining, satellite-based monitoring and local community participation.
Conclusion	The Supreme Court's clarification is a timely safeguard, but long-term wetland protection cannot depend only on case-by-case judicial intervention. India must build a coherent wetland governance framework that combines scientific regulation, statutory clarity, ecological sensitivity and accountable enforcement. Wetlands should be treated as critical natural infrastructure for biodiversity, water security, climate resilience and sustainable development.

Q25. India's emergence as the world's leading ship recycling nation reflects the growing importance of circular economy in maritime development. Discuss.

(GS Paper III – Maritime Economy / Environment / Industrial Development)

Introduction	India became the world's leading ship recycling nation in 2025, with its global market share rising to 35.4%. This achievement reflects the transformation of ship recycling from conventional dismantling into a regulated, modern and circular-economy-based maritime industry.
---------------------	--

Body	Circular Economy and Resource Security - Ship recycling recovers steel and reusable materials from end-of-life vessels. The Alang-Sosiya cluster in Gujarat, which accounts for about 98% of India's ship recycling activity, produces nearly 3.50 million metric tonnes of steel annually through recycling. This reduces pressure on natural resources and supports domestic steel availability. Regulatory Transformation - India's progress has been supported by the Ship Recycling Act, 2019, Ship Recycling Rules, 2021 and Ship Recycling Regulations, 2026. These provide for yard authorisation, ship recycling plans, hazardous-material management, worker safety and reporting. Alignment with the Hong Kong Convention, which became legally binding in June 2025, has strengthened India's global credibility. Economic and Industrial Benefits - Ship recycling generates employment and supports ancillary industries such as transport, re-rolling mills, equipment supply and waste management. The Ship-breaking Credit Note Scheme links ship recycling with domestic shipbuilding by encouraging shipowners to recycle vessels at compliant Indian yards. Challenges - The sector must address hazardous-material risks, worker safety, environmental compliance, coastal pollution concerns and the need for continuous modernisation. Way Forward India should expand green-compliant recycling capacity, strengthen worker welfare, promote mechanised dismantling, improve waste-treatment systems, support EU green-listing and integrate recycled steel into domestic manufacturing.
Conclusion	India's leadership in ship recycling can become a pillar of sustainable maritime growth if capacity expansion is matched with environmental safeguards, global compliance and worker protection.

Q26. GOBARdhan can convert India's waste challenge into an energy security opportunity. Discuss.

(GS Paper III – Energy Security / Environment / Waste Management)

Introduction	India generates huge quantities of agricultural residue, cattle dung, press mud, municipal organic waste and biomass. The GOBARdhan Scheme — Galvanising Organic Bio-Agro Resources Dhan — aims to convert this waste into Compressed Biogas (CBG), organic manure and rural income. The new National Circular Bioenergy Scheme seeks
---------------------	--

	to increase domestic CBG production and strengthen India's bioenergy ecosystem.
Body	1. Conversion of Waste into Clean Fuel - GOBARDhan uses anaerobic digestion, where organic waste is broken down in the absence of oxygen to produce biogas. This biogas is purified and compressed to form CBG, which has properties similar to Compressed Natural Gas (CNG). Therefore, it can be used in transport, industry, commercial sectors and city gas networks. 2. Energy Security Benefits - India depends on imports for a significant share of its natural gas requirement. Domestic CBG production can reduce import dependence, protect India from global supply and price shocks, and support the transition towards cleaner fuels. Since CBG can be blended with CNG and PNG, it can be integrated into the existing gas infrastructure. 3. Rural Economy and Farmer Income - The scheme can create additional income opportunities for farmers, cooperatives, MSMEs and rural entrepreneurs by monetising cattle dung, crop residue and biomass. It can also support decentralised bioenergy plants in rural areas. 4. Environmental and Circular Economy Gains - GOBARDhan can reduce open dumping, unmanaged organic waste, methane emissions and stubble-burning pressures. The by-product from CBG plants can be used as organic manure, improving soil health and supporting sustainable agriculture. 5. Commercial Viability Measures - The new framework supports CBG projects through assured offtake, CBG blending obligations, stable administered pricing, capital assistance, pipeline infrastructure and credit guarantee support. These measures address earlier bottlenecks such as weak demand, high capital cost and poor market linkage. 6. Key Challenges - Major challenges include reliable feedstock aggregation, poor waste segregation, high initial investment, limited pipeline connectivity, quality standards and weak local institutional capacity. Way Forward India should strengthen village-level feedstock collection, promote source segregation, support MSMEs and cooperatives, expand pipeline connectivity, ensure timely offtake by city gas entities and build technical capacity among local bodies and entrepreneurs.
Conclusion	GOBARDhan can transform India's waste burden into a strategic energy asset. By linking waste management, rural income, clean fuel and

	circular economy, it can strengthen India's energy security. Its success will depend on strong local implementation, private investment, reliable feedstock systems and integration with India's broader clean energy transition.
--	---

Q27. India's energy transition must balance energy security, sustainability and affordability. Discuss.

(GS Paper III – Energy Security / Infrastructure / Environment)

Introduction	India's energy demand is rising due to economic growth, urbanisation and industrialisation. Therefore, India is expanding energy capacity while trying to ensure energy security, clean transition and affordable access. As of July 2026, India's total installed power capacity reached around 552 GW, and non-fossil capacity stood at 300.50 GW, more than 54% of total installed capacity.
Body	1. Energy Security • Coal remains important: Coal meets nearly 55% of India's primary energy needs and supports over 70% of electricity generation. • Domestic production: Higher coal production reduces dependence on imports. • Import reduction: Coal imports by thermal power plants declined by about 27.4% in FY2025-26. • Offshore exploration: The Samudra Manthan Scheme aims to strengthen offshore oil and gas exploration. • Nuclear expansion: India aims to raise nuclear capacity to 100 GW by 2047, improving long-term clean baseload power. 2. Sustainability • Solar growth: Solar capacity reached 164.59 GW, making it the largest component of India's renewable energy capacity. • Wind energy: India ranks fourth globally in wind power capacity. • Hydropower: Hydro supports grid stability as solar and wind expand. • Green Hydrogen Mission: Targets 5 MMT green hydrogen production by 2030. • GOBARdhan: Converts organic waste into Compressed Biogas, supporting circular economy and clean fuel. 3. Affordability and Access • PM Surya Ghar: Promotes rooftop solar and reduces household

	electricity bills. • PMUY and LPG expansion: LPG coverage increased from 55.9% in 2014 to 107.2% in 2026. • Clean cooking: Wider LPG access improves health, dignity and household energy security. 4. Key Challenges • Continued dependence on coal. • Intermittency of solar and wind power. • Need for storage and grid modernisation. • High cost of green hydrogen and emerging technologies. • Land, finance and transmission constraints. • Need to keep energy affordable for households, farmers and industries. Way Forward • Adopt a diversified energy mix. • Expand battery storage, pumped hydro and smart grids. • Promote domestic manufacturing of solar, wind, electrolyzers and storage systems. • Strengthen bioenergy and waste-to-energy systems. • Ensure responsible coal transition. • Keep energy policies people-centric and affordable.
Conclusion	India's energy transition must not be seen only as a shift from fossil fuels to renewables. It must ensure reliable supply, affordability, sustainability and self-reliance. A balanced strategy combining coal, renewables, nuclear, bioenergy, green hydrogen and emerging technologies can make India's energy system resilient and future-ready.

Q28. Forest fires in India, especially in the Himalayan region, require a shift from reactive response to technology-enabled and community-based prevention. Discuss.

(GS Paper III – Disaster Management / Environment)

Introduction	Forest fires are uncontrolled fires that consume vegetation, litter and organic matter. They have become a serious environmental and disaster-management challenge, especially in the Himalayan region. A Parliamentary Standing Committee recently flagged gaps in monitoring and recommended a geostationary satellite, dedicated NDRF response centres, and a National Pine-Needle Utilisation Policy for forest fire management.
---------------------	---

Body	1. Forest Fire Vulnerability in India - India's forest and tree cover is around 24% of its geographical area. - About 54.40% of India's forest area is vulnerable to occasional fires. - The forest fire season generally extends from November to June. - Fire incidents rise during March, April and May due to dry biomass and high temperatures. - Western and Eastern Himalayas form around 17% of India's landmass, but account for nearly 57% of forest fire incidents. 2. Major Causes Human activities: Burning for fresh grass, poaching, illegal tree cutting and shifting cultivation. Fuel load: Accumulation of dry leaves, branches and pine needles. Chir pine risk: Resin-rich pine needles, locally called Pirul, are highly inflammable. Climate stress: Rising temperatures, erratic rainfall, dry spells and lightning increase fire intensity. Local practices: Mohua/tendu leaf collection and jhum cultivation can trigger fires in some regions. 3. Impacts - Loss of vegetation, wildlife habitats and biodiversity. - Release of greenhouse gases such as CO₂, methane and nitrous oxide. - Forests may shift from carbon sinks to carbon sources, called carbon flipping. - Soil degradation and erosion, especially on Himalayan slopes. - Damage to agriculture, tourism, infrastructure and local livelihoods. - Smoke causes respiratory problems and air-quality deterioration. 4. Present Monitoring and Management Forest Survey of India issues satellite-based forest fire alerts to State Forest Departments. - Current monitoring uses foreign satellites such as AQUA and Suomi-NPP. - States are primarily responsible for forest fire prevention and control. - Methods include watch towers, fire watchers, fire lines, water
--------------------	--

	structures, remote sensing and community involvement. 5. Way Forward • Launch a geostationary satellite for continuous monitoring. • Set up dedicated NDRF regional response centres in the Himalayan region. • Implement a National Pine-Needle Utilisation Policy to reduce fuel load and create livelihoods. • Strengthen the National Action Plan on Forest Fire through community incentives. • Use GIS, MODIS data, early-warning systems and climate-risk mapping. • Train forest staff and forest-fringe communities for prevention and rapid response.
Conclusion	Forest fires must be treated as a climate-linked disaster, not merely a seasonal forest issue. India needs a combined strategy of technology, community participation, fuel-load management, legal enforcement and ecological restoration. A preventive and region-specific approach is essential to protect forests, biodiversity, livelihoods and climate resilience.

Science & Technology & Internal Security

Q29. India's success against Left-Wing Extremism shows that internal security challenges require an integrated security-development-governance approach rather than a purely force-based response. Discuss.

(GS Paper III – Internal Security)

Introduction	Left-Wing Extremism was one of India's most serious internal security challenges, affecting tribal and remote regions for decades. According to PIB, India became effectively free from Left-Wing Extremism by 31 March 2026, with no district remaining LWE-affected. This was achieved through an integrated strategy combining security operations, infrastructure expansion, rehabilitation, tribal welfare and governance outreach.
---------------------	---

Body	Integrated Strategy Against LWE 1. Strong security response: The government strengthened the security grid through fortified police stations, CAPF camps, specialised forces like CoBRA, DRG and Greyhounds, and better inter-agency coordination. Technology such as drones, UAVs, satellite imagery and AI-based data analysis improved surveillance and intelligence-led operations. 2. Policy shift: The National Policy and Action Plan to address LWE, 2015 replaced fragmented responses with a whole-of-government approach. It combined dialogue, security and coordination, along with schemes such as Security Related Expenditure, Special Infrastructure Scheme and Special Central Assistance. 3. Development and connectivity: Roads, mobile towers, banks, post offices, schools, ITIs and Skill Development Centres expanded governance presence in remote areas. PIB notes that 15,189 km of roads and 9,497 mobile towers were created in affected regions. 4. Rehabilitation and welfare: Surrendered cadres were provided financial assistance, stipends, skill training and livelihood support. Tribal welfare programmes such as EMRS, PM-JANMAN and Dharti Aaba Janjatiya Gram Utkarsh Abhiyan helped reduce alienation. 5. Visible outcomes: LWE-affected districts declined from 126 in 2014 to zero by March-April 2026. Naxal-related incidents fell from 870 in 2014 to 33 in 2026, showing the weakening of extremist networks.
Conclusion	India's anti-LWE experience shows that internal security cannot be solved by force alone. Lasting peace requires the state to act both as a protector and provider. Security created space for development, development built trust, and trust enabled welfare delivery. The next challenge is to consolidate these gains through continuous governance, tribal livelihood support, community participation and protection of local dignity.

Q30. India's recent space sector reforms are aimed at strengthening space sovereignty and promoting technology-led economic growth. Discuss.

(GS Paper III: Space technology, science and technology, indigenisation)

Introduction	India's space programme has moved from a largely government-led model to a broader ecosystem involving private enterprises, start-ups,
---------------------	--

	commercial services, international partnerships and human spaceflight ambitions. Space sovereignty means the ability to independently develop, launch, operate and use space technologies for national development and strategic autonomy.
Body	1. Expansion of India's Space Ecosystem - India's space ecosystem is expanding rapidly. Registered space start-ups increased from 1 in 2014 to around 440 in 2026. India's space economy is valued at USD 9 billion and is projected to reach USD 40-45 billion in the next decade. Private investment has also increased sharply, showing growing confidence in the sector. 2. Major Space Sector Reforms a) Private Sector Participation - India opened its space sector to private participation in 2020, allowing industry and start-ups to participate in satellites, launch systems and space applications. b) Indian Space Policy 2023 - The Indian Space Policy 2023 expanded private participation across the space value chain and defined the roles of NSIL and IN-SPACe. c) Institutional Support - NSIL acts as the commercial arm of ISRO, while IN-SPACe provides a single-window mechanism for private space activities. Liberalised FDI rules and targeted funds have further supported private investment. 3. Strengthening Space Capabilities - India has operationalised indigenous launch vehicles such as PSLV, GSLV, GSLV Mk III and SSLV. These support Earth observation, communication, navigation, space science and commercial launches. - India's missions such as Chandrayaan-3, Aditya-L1, XPoSat, SPADEX and NavIC show growing technological maturity. NavIC strengthens India's navigation autonomy and supports strategic and civilian applications. 4. Future Space Ambitions - India's future roadmap includes Gaganyaan, Bharatiya Antariksh Station, Chandrayaan-4, Chandrayaan-5/LUPEX and the Venus Orbiter Mission. These missions will strengthen human spaceflight, sample-return capability, lunar exploration and planetary science.

	5. Significance a) Strategic Autonomy - Indigenous launch vehicles, NavIC and satellite systems reduce dependence on foreign technologies. b) Economic Growth - Start-ups, private investment and commercialisation through NSIL are expanding India's space economy. c) National Development - Space applications support agriculture, disaster management, communication, transport and governance. d) Global Standing - India's foreign satellite launches and international cooperation agreements show its rising global role. 6. Challenges - Key challenges include high mission costs, dependence on critical components, need for strong regulation, space debris, cybersecurity risks, shortage of skilled manpower and balancing commercial growth with national security.
Conclusion	India's space reforms are strengthening self-reliance, strategic autonomy, innovation, private participation and global leadership. With timely execution of missions, strong regulation, private-sector support and skilled manpower, India can emerge as a major global space power.

Q31. NASA's invitation to ISRO to join its Moon Base programme reflects the growing importance of space diplomacy in India's strategic and technological rise. Discuss.
(GS Paper III – Space Technology / GS Paper II – International Relations)

Introduction	Space exploration is increasingly becoming a domain of scientific cooperation, strategic competition and technological leadership. NASA's invitation to ISRO to join its Moon Base programme under the Artemis Accords reflects India's growing importance in global lunar exploration.
Body	Significance for India Space diplomacy: It deepens India-U.S. strategic cooperation in advanced technology. Lunar science: ISRO can gain exposure to lunar south pole research and long-term surface operations. Human spaceflight: It supports India's future ambitions,

	including the Bharatiya Antariksha Station by 2035 and a crewed lunar mission by 2040. • Chandrayaan link: Experience from Chandrayaan-4 can strengthen lunar sample-return and surface-science capabilities. • Private sector: The programme can open opportunities for Indian space start-ups and manufacturers. • Global role: India can shape norms for peaceful and responsible lunar exploration. Challenges • India must manage technology-sharing limits, high mission costs, human spaceflight readiness and strategic balancing between different lunar initiatives such as Artemis and the China-Russia-led ILRS. Way Forward India should define a clear role, invest in indigenous lunar technologies, strengthen human spaceflight capacity, involve private industry and preserve strategic autonomy while cooperating with global partners.
Conclusion	Participation in NASA's Moon Base programme can help India move from lunar exploration to long-term lunar presence. It should be used to strengthen national capabilities, not merely as symbolic participation in a global programme.

Q32. Safe atmospheric re-entry is as important as launching astronauts into space. Explain this statement with reference to the thermal protection and recovery systems of India's Gaganyaan mission.

(GS Paper III: Space technology, indigenisation and scientific achievements)

Introduction	Gaganyaan seeks to demonstrate India's ability to send astronauts into a 400-km Low Earth Orbit and return them safely. Re-entry is particularly critical because the Crew Module enters the atmosphere at nearly 7,500–8,000 metres per second and encounters temperatures of about 1,800°C in some regions.
Body	Challenges during re-entry • Re-entry heating mainly results from the rapid compression of atmospheric gases ahead of the spacecraft. This creates a high-temperature shock layer around the module. The process also involves rapidly changing aerodynamic forces and deceleration. Once re-entry begins, it cannot normally be aborted, while astronauts have little time to correct system failures manually. Role of the thermal protection system

	Gaganyaan's double-walled Crew Module contains a pressurised inner structure and an unpressurised external structure carrying an ablative Thermal Protection System (TPS). Its blunt shape produces a detached shock wave and high aerodynamic drag, thereby reducing direct heat transfer and slowing the capsule. The ablative shield provides protection through: • low thermal conductivity, which limits inward heat flow; • pyrolysis, or heat-driven chemical decomposition; • formation of an insulating char layer; • outgassing, which creates a relatively cooler boundary layer; and • controlled erosion, which carries absorbed heat away. The system is appropriate for Gaganyaan because it is reliable under fluctuating heat loads and suits a single-use Crew Module. Integrated recovery system • After atmospheric deceleration, ten parachutes of four types are deployed sequentially. Following splashdown, the Crew Module Uprighting System keeps the capsule correctly positioned for maritime recovery. India has tested these capabilities through SRE-1, CARE, TV-D1 and Integrated Air Drop Tests.
Conclusion	Therefore, Gaganyaan's success depends on an integrated safety chain involving guidance, module orientation, thermal protection, parachute deployment, uprighting and recovery. Its successful demonstration will establish India's complete human-spaceflight capability and support future programmes such as the Bharatiya Antariksh Station.

Q33. India's pursuit of defence self-reliance has strengthened its military preparedness, industrial capacity and strategic autonomy. Discuss the progress achieved and the challenges that must be addressed to realise India's defence ambitions by 2047.

(UPSC GS Paper III—Security challenges, defence technology, indigenisation and achievements in science and technology)

Introduction	Defence self-reliance means possessing the domestic capacity to design, develop, manufacture, maintain and upgrade military systems. It reduces dependence on foreign suppliers and ensures uninterrupted defence preparedness during conflicts, sanctions and supply-chain disruptions.
Body	Progress Towards Atmanirbharta 1. Higher Investment and Production • India's defence budget increased to ₹7.85 lakh crore in 2026–27, while capital expenditure reached ₹2.19 lakh crore. Defence

	production recorded ₹1.78 lakh crore in 2025–26. 2. Growth of Defence Exports - Defence exports increased 56-fold from 2013–14 to ₹38,424 crore in 2025–26, reaching more than 80 countries. This reflects the growing international acceptance of Indian defence products. 3. Procurement and Indigenisation Reforms - The Defence Acquisition Procedure 2020 prioritises domestic procurement. Ten Positive Indigenisation Lists cover 5,521 items. The Defence Acquisition Council has granted Acceptance of Necessity for over ₹6 lakh crore of DRDO-designed systems. 4. Innovation and Industrial Participation - Schemes such as iDEX, ADITI and the Technology Development Fund support start-ups, MSMEs and advanced technologies. DRDO has signed 2,180 technology-transfer agreements. Defence corridors and the SRIJAN-DEEP platform are strengthening domestic supply chains. 5. Operational and Technological Gains - The Army has achieved approximately 91% ammunition self-sufficiency. Indigenous capability has expanded across missiles, air defence, hypersonic propulsion, fighter aircraft, helicopters, warships and submarines. Continuing Challenges - Dependence on imported engines, sensors, seekers and advanced materials - Delays between development, testing and induction - Uncertain orders for private manufacturers - Difficulty in converting prototypes into procurement contracts - Limited coordination among DRDO, industry, academia and armed forces Roadmap to 2047 - India must increase long-term R&D investment, provide predictable orders, simplify testing and encourage joint design with genuine technology transfer. Domestic intellectual property and critical supply chains require greater protection.
Conclusion	India must progress from domestic assembly to independent technological capability. This will strengthen strategic autonomy, operational readiness and its position as a reliable global defence partner.

Q34. Generative biology has the potential to transform healthcare, but its dual-use nature may also amplify biological risks. Discuss its applications and concerns. Suggest a suitable governance framework, with particular reference to India.

GS Paper III—Artificial intelligence, biotechnology, healthcare and security

Introduction	Generative biology combines artificial intelligence with synthetic biology to design new DNA, RNA and protein sequences. Its potential was demonstrated when AI models designed complete bacteriophage genomes, of which 16 produced viable phages after laboratory synthesis. This marks a transition from reading and modifying genomes to designing biological functions.
Body	Transformative Applications Healthcare AMR control: Customised phages can target multidrug-resistant bacteria. Gene delivery: Engineered viral vectors can deliver CRISPR to specific tissues. Drug and vaccine discovery: AI can optimise antigens, antibodies and therapeutic proteins. Precision oncology: Oncolytic viruses may selectively destroy cancer cells. Scientific Advancement - AI can explore genetic combinations beyond human trial-and-error capacity. - It can shorten literature review, modelling and experimental-design cycles. - It can support genomics, protein engineering and pandemic preparedness. Major Concerns Dual-use risk: Therapeutic design tools may be misused to develop harmful biological agents. Capability amplification: AI can make skilled laboratories faster and more effective at biological engineering. Ecological uncertainty: Accidental release may create unforeseen ecosystem effects or species-barrier risks. Screening gaps: Novel sequences may evade systems that identify only known pathogens. Patent ambiguity: Ownership of AI-generated biological entities remains unclear. Governance Framework

	• Mandate KYC and screening for commercial DNA-synthesis orders. • Shift from sequence-matching to function-based risk assessment. • Red-team biological AI models against harmful prompts. • Regulate access to frontier models and high-end computing through graduated, auditable controls. • Strengthen laboratory biosafety and institutional dual-use review. • Update the Biological Weapons Convention to address AI-generated pathogens. India's Priorities The IndiaAI Mission should support biomedical models, secure computing, quality biological datasets and trusted researcher access.
Conclusion	India should pursue controlled acceleration—promoting medical innovation while increasing safeguards according to capability and risk. AI sovereignty and biosecurity must advance together.

Health

Q35. Misleading food claims are a public health and consumer protection concern. Discuss with reference to FSSAI's recent regulatory action.

(GS Paper II – Governance / Public Health)

Introduction	Food regulation is not limited to ensuring that food products contain permitted ingredients. It also includes regulating how food products are advertised, labelled and promoted. FSSAI's recent action against misleading food claims, including notices to several food companies, highlights the need for evidence-based food communication.
Body	Why Misleading Food Claims are a Concern 1. Consumer Protection • Claims such as “100% pure,” “healthy,” “natural,” “energy” or “immunity-boosting” can influence consumer behaviour. If such claims are not scientifically supported, they mislead consumers. 2. Public Health • India is facing rising concerns related to obesity, unhealthy

	diets and lifestyle diseases. Unsupported claims may make consumers believe that packaged food is healthier than it actually is. 3. Children's Nutrition - Products marketed around children's health, such as malt-based drinks or baby foods, require stricter scrutiny because parents may rely heavily on nutritional claims. 4. Digital Marketplaces - FSSAI's scrutiny of e-commerce listings is important because online product descriptions and banners may differ from physical labels and directly influence purchase decisions. Challenges - Online claims change rapidly. - Consumers may not read nutrition labels carefully. - Claims may remain on some platforms even after correction. - Companies may use indirect promotional language to create similar impressions. Way Forward FSSAI should ensure continuous monitoring, evidence-based approval of claims, accountability of e-commerce platforms, stronger penalties for repeat violations and consumer awareness on reading nutrition labels.
Conclusion	FSSAI's action is a step towards transparent food governance. In a growing packaged-food market, protecting consumers requires not only safe food but also truthful, evidence-based and responsible food claims.

Social Justice

Q36. Bottom of Form Q. Government school closures in the name of rationalisation can weaken the Right to Education and deepen social inequality. Discuss.

(GS Paper II – Education / Social Justice)

Introduction	Government schools are the main educational support system for poor, rural and marginalised children. A recent NITI Aayog report stated that nearly 94,000 government schools were closed in the past decade, contributing to a 2.26 crore decline in government school enrolment.
---------------------	--

	This raises concerns about Right to Education, neighbourhood schools and social equity .
Body	Rationalisation and School Closures - School rationalisation means merging or closing low-enrolment schools and shifting children to nearby institutions. While the NEP 2020 supports rationalisation, it also warns that the concept of neighbourhood schools should not be weakened. Impact on Right to Education - The RTE Act, 2009 guarantees free and compulsory education for children aged 6–14 years. However, when nearby government schools close, children are forced to travel longer distances. In parts of Jammu and Kashmir, children reportedly travel 4–6 km daily, weakening the neighbourhood school principle. Deepening Social Inequality - The impact is not uniform. Government schools are mainly used by poor households, SCs, STs, minorities, backward communities and rural families. Girls are often withdrawn first when schools become distant due to safety and mobility concerns. Migrant and displaced children are also at greater risk of dropping out. Governance Concerns - States such as Uttar Pradesh, Madhya Pradesh and Jammu and Kashmir have witnessed major closures. In Madhya Pradesh, lakhs of children were found without school records or at risk of dropping out. The RTE has fallen short due to weak enforcement, inactive School Management Committees, teacher vacancies and limited legal capacity of poor parents. Way Forward India must protect neighbourhood schools, conduct social impact assessments before closures, provide safe transport, fill teacher vacancies, revive SMCs and create Centre-State monitoring of RTE compliance.
Conclusion	School rationalisation is acceptable only when it improves access, quality and efficiency. It becomes problematic when it shuts the nearest government school for poor, rural, SC/ST, minority and girl children. The Right to Education cannot be fulfilled merely by formal enrolment; it requires a nearby, functional, well-staffed and inclusive school. Therefore, India must ensure that rationalisation is guided by

	equity, neighbourhood access, teacher availability and community participation. Government schools should be strengthened as instruments of social justice and constitutional democracy, not treated only as units of administrative cost.
--	---

Q37. The debate on applying the creamy layer principle to SC/ST reservations raises complex questions of equality, historical justice and constitutional limits. Discuss.
(GS Paper II – Constitution / Social Justice)

Introduction	Reservation in India is not merely a poverty-alleviation measure; it is a constitutional tool to correct historical exclusion, social discrimination and inadequate representation. Recently, the Centre opposed pleas before the Supreme Court seeking application of the creamy layer principle to SC/ST reservations, arguing that such exclusion is not applicable to SC/ST categories.
Body	Creamy Layer and Sub-Categorisation - The creamy layer principle was introduced in the Indra Sawhney judgment, 1992 for OBC reservations, to exclude socially and economically advanced individuals from availing quota benefits. - However, sub-categorisation is different. It divides an existing reserved quota among internal groups to ensure benefits reach the most deprived communities within that category. In the Davinder Singh judgment, 2024, the Supreme Court recognised heterogeneity among SC/ST communities and allowed States to undertake sub-categorisation within SC/ST lists. Centre's Position - The Centre argues that SC/ST disadvantage cannot be equated with ordinary economic backwardness. SCs face historical disadvantage rooted in untouchability, while STs face marginalisation due to geographical isolation, distinct cultures and social backwardness. Therefore, income alone cannot capture their continued social discrimination. - Legally, the Centre has relied on Articles 341 and 342, under which SC/ST lists are notified by the President and any inclusion or exclusion can be done only by Parliament. It also argues that courts cannot direct the executive to adopt a particular reservation policy merely because an alternative appears fairer. Issues Involved - Supporters of creamy layer argue that elite capture within reserved categories must be prevented. However, opponents caution that applying income-based exclusion to SC/STs may dilute constitutional safeguards and ignore continuing caste stigma and structural discrimination.

	Way Forward India needs a holistic empirical study on representation, educational access and socio-economic conditions of reserved category beneficiaries. Sub-categorisation may be used carefully where evidence shows crowding out, but creamy layer exclusion for SC/STs should not be introduced without legislative clarity, social consensus and constitutional safeguards.
Conclusion	The objective should be to make reservation more equitable, not weaker. India must balance internal equity within reserved categories with the broader constitutional promise of social justice, dignity and substantive equality for historically oppressed communities.

History & Culture

Q38. India's heritage conservation strategy has moved beyond monument protection to include tourism, digitisation, repatriation and technology-enabled preservation. Discuss.

(GS Paper I: Indian culture, heritage, art and architecture)

Introduction	India's cultural heritage reflects its civilisational continuity and national identity . It includes monuments, antiquities, manuscripts, museums, sacred relics, languages, oral traditions, films and knowledge systems. Hence, heritage conservation is not only about protecting old structures, but also about preserving India's historical memory, promoting tourism, supporting research and strengthening cultural identity.
Body	Monument and Heritage Site Conservation - India has strengthened monument conservation through schemes like Adopt a Heritage 2.0, which develops visitor-friendly amenities at Protected Monuments of National Importance. Similarly, PRASHAD focuses on pilgrimage and heritage destinations, while Swadesh Darshan promotes integrated tourism infrastructure across thematic circuits. Institutional Protection through ASI and NMMA - The Archaeological Survey of India (ASI) safeguards centrally protected monuments and supports scientific restoration. The National Mission on Monuments and Antiquities (NMMA) creates a national database of monuments and antiquities,

	helping in conservation planning and protection against illegal trafficking. 3. Repatriation of Cultural Treasures - India has intensified efforts to bring back sacred relics and antiquities taken abroad through colonial exploitation, foreign occupation and illegal trafficking. Repatriation of relics and antiquities restores cultural pride and reconnects objects with their civilisational context. 4. Digitisation of Knowledge Heritage - The Gyan Bharatam Mission, National Manuscript Survey, JATAN software and digital museum repositories help preserve manuscripts, artefacts and archival resources. This expands public access and protects fragile heritage from physical loss. 5. Technology and AI in Heritage Conservation - Modern tools such as LiDAR, GIS mapping, drone surveys and AI are being used for heritage documentation. Platforms like BHASHINI, BharatGen and Adi-Vaani support language preservation and access to cultural knowledge. Challenges - Major challenges include physical decay of monuments, encroachment, shortage of trained conservation professionals, illegal trafficking, digital divide and the need to balance tourism with heritage protection. Way Forward India must strengthen scientific conservation, expand digital documentation, improve visitor amenities, promote community participation, integrate heritage with urban planning and develop sustainable tourism models.
Conclusion	India's heritage strategy now combines preservation, public access, tourism, technology and cultural diplomacy. A sustainable approach must protect monuments while also preserving manuscripts, languages, antiquities, museums and living traditions. This will ensure that India's cultural heritage remains a source of identity, knowledge and development for future generations.