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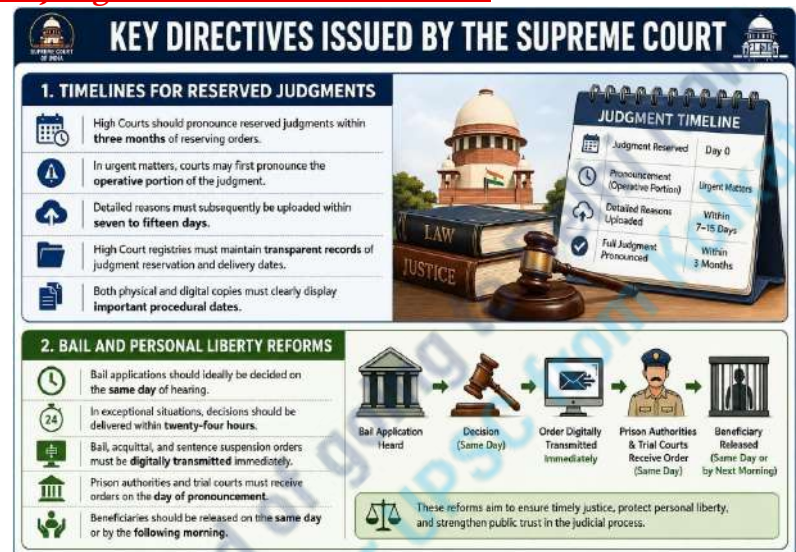


MAINS ANALYSIS

POLITY AND GOVERNANCE

Fast-Tracking Judicial Judgments and Bail Deliveries

The Supreme Court, exercising its powers under Article 142, has issued landmark directions to reduce delays in judicial decision-making and bail processing. By prescribing strict timelines for pronouncing reserved judgments and communicating bail orders, the Court has sought to strengthen the right to speedy justice and protect personal liberty. These directions aim to address systemic inefficiencies that often result in prolonged uncertainty and unnecessary detention.



Institutional Accountability Framework

- Registries must automatically alert the Chief Justice when judgments remain pending beyond three months.
- The concerned bench receives a final two-week period to deliver the judgment.
- Continued non-compliance may result in withdrawal and reassignment of the case.
- The reassigned bench may conduct a fresh hearing if necessary.
- Litigants can file applications seeking early pronouncement of pending judgments.
- Such applications must be listed within two working days.

Constitutional

Significance Protection

of Article 21

- Delayed judgments can violate the constitutional right to life and personal liberty.
- Speedy justice is an essential component of a fair legal process.
- Prolonged uncertainty undermines public confidence in the justice delivery system.

Use of Article 142

- The Supreme Court used Article 142 to ensure complete justice.
- The directions fill administrative gaps in the absence of specific legislation.
- The judgment reflects a proactive approach towards judicial reforms.

Human and Socio-Economic Importance

- A large majority of prisoners in India are undertrials awaiting legal outcomes.
- Delayed bail decisions disproportionately affect poor and marginalized communities.
- Prolonged detention often causes financial hardship for entire families.
- Delays contribute significantly to overcrowding in prisons across the country.
- Faster decisions help protect dignity, liberty, and livelihood opportunities.

Benefits for Judicial Efficiency

- Timely judgments prevent loss of judicial memory regarding complex arguments.
- Judges can write more accurate decisions when facts remain fresh.
- Faster disposal reduces unnecessary rehearing of cases.
- Improved efficiency enhances public trust in judicial institutions.
- Predictable timelines strengthen accountability within the judiciary.



Challenges In Implementation

Judicial Vacancies

- High Courts continue to operate with substantial shortages of judges.
- Existing vacancies increase workload and slow down case disposal rates.

Heavy Case Backlogs

- Judges handle large volumes of cases on a daily basis.
- Limited time remains available for drafting detailed judgments.

Digital Infrastructure Constraints

- Many courts and prisons still lack robust digital communication systems.
- Technology gaps may hinder implementation of same-day bail communication.

System-Wide Delays

- Delays are not limited to lower courts and High Courts alone.
- Even the Supreme Court has faced criticism for delayed reserved judgments.

Way Forward

- Judicial vacancies should be filled through faster appointment processes.
- Retired judges may be appointed under Article 224A to reduce pendency.
- Courts should adopt modern case-management and tracking systems.
- Oral arguments should become more structured and time-efficient.
- The e-Courts Project should be expanded across all levels of the judiciary.
- Integration with the Interoperable Criminal Justice System should be accelerated.
- Similar timelines should gradually extend to district and subordinate courts.

The Supreme Court's directions represent a significant step towards ensuring timely justice and protecting personal liberty. However, deadlines alone cannot solve the problem of judicial delays. Sustainable improvement requires judicial appointments, technological modernization, administrative reforms, and greater institutional accountability. Only through a combination of procedural discipline and structural reforms can India build a faster, more accessible, and citizen-centric justice delivery system.

After Maoism: Winning the Trust of India's Adivasis

On 31 March 2026, India officially declared itself Maoism-free, marking the end of a long internal security challenge. However, the Union Home Minister emphasized that the real mission remains incomplete until every resident of Bastar is fully integrated into the national mainstream. The next phase of governance must therefore focus not on security operations, but on building trust, justice, and inclusive development for Adivasi communities.



Beyond Welfare: Addressing Core Tribal Concerns

Infrastructure development remains important, but deeper structural concerns determine public trust.

Positive Developments

- Expansion of roads improves connectivity and market access.



- Mobile communication towers enhance digital inclusion.
- Welfare schemes improve access to healthcare, education, and livelihoods.

Persistent Concerns

However, tribal communities continue to focus on issues commonly summarized as:

- **Jal** (water), **Jungle** (forests) and **Zameen** (land)

These concerns directly affect identity, livelihoods, and cultural survival.

PESA Act: Foundation of Tribal Self-Governance

About PESA

The Panchayats (Extension to Scheduled Areas) Act, 1996, was enacted to strengthen self-governance in tribal regions.

Key Features

- Recognizes the Gram Sabha as the central institution of local governance.
- Protects tribal customs, traditions, and community resources.
- Enables local communities to participate in development decisions.
- Supports resolution of disputes through traditional practices.
- Provides safeguards against exploitation of tribal resources.

Challenges in PESA

Implementation Uneven

Implementation

- Different states have interpreted and implemented PESA differently.
- Many provisions remain inadequately implemented.
- The spirit of decentralised governance is often diluted.

Weakening of Gram Sabha Authority

- State governments have sometimes attempted to reduce Gram Sabha powers.
- In certain cases, consultation has been prioritised over consent.
- Such changes weaken community participation in decision-making.

Concerns Over Consent

- Reports have emerged regarding fabricated or manipulated consent records.
- This undermines democratic legitimacy and public confidence.

Why Trust Matters

Security Success Alone Is Not Enough

- Military success can reduce violence but cannot create lasting peace.
- Long-term stability depends upon public trust in state institutions.
- Tribal communities evaluate governance through justice and service delivery.

Constitutional Guarantees Shape Expectations

- Adivasi communities are increasingly aware of their constitutional rights.
- They expect meaningful participation in governance processes.
- Development must respect both rights and cultural identity.

Importance of Gram Sabha-Centred Governance

Empowering Local Communities

- Gram Sabhas provide a platform for direct community participation.
- They ensure decisions reflect local needs and priorities.
- They strengthen accountability and transparency.

Promoting Sustainable Development

- Community involvement improves implementation of welfare programmes.
- Local knowledge supports better natural resource management.
- Development becomes more inclusive and socially acceptable.

Way Forward

Strengthen PESA Implementation

- Ensure uniform and faithful implementation across all Scheduled Areas.



- Protect the decision-making authority of Gram Sabhas.
- Prevent dilution of tribal self-governance provisions.

Deepen Participatory Governance

- Involve tribal communities in planning and monitoring development projects.
- Encourage continuous dialogue between administration and local communities.
- Promote transparency in land, forest, and resource-related decisions.

Focus on Rights-Based Development

- Balance infrastructure expansion with protection of tribal rights.
- Improve access to education, healthcare, and livelihood opportunities.
- Respect traditional institutions and cultural practices.

India's victory against Maoism represents a major achievement in internal security. However, durable peace in Bastar and other tribal regions will depend on trust rather than force. The real challenge now is to strengthen constitutional guarantees, empower Gram Sabhas, and ensure that development respects tribal rights, identity, and aspirations. Only by placing Adivasi communities at the centre of governance can India transform security gains into lasting peace and inclusive progress.

Ethics at the Heart of AI

While AI is redefining the future of innovation, its real value will be determined by how effectively it upholds human rights, strengthens democracy and promotes inclusive growth rather than merely enhancing computational capabilities.

Opportunities offered by AI

1. **AI-led growth:** AI enhances efficiency across manufacturing, services, agriculture and logistics, boosting productivity and innovation. The NITI Aayog estimates that AI could add **around US\$500 billion to India's GDP by 2025**.
2. **Smart Governance:** AI-based crop advisory, smart traffic management and healthcare diagnostics.
3. **Precision Healthcare:** AI facilitates early disease detection, precision medicine, medical imaging and telemedicine, especially in underserved regions. Eg: cancer diagnosis
4. **Precision Agriculture:** AI supports precision farming through weather forecasting, pest detection, soil analysis and yield prediction, improving farm productivity. AI-enabled crop advisory under the **Digital Agriculture Mission**.
5. **Personalized Learning:** BHASHINI promotes AI-powered language translation across Indian languages.
6. **Enhancing National Security and Disaster Management:** AI improves surveillance, cybersecurity, intelligence analysis, disaster prediction and emergency response. Eg: Mausam GPT

Why the challenge is no longer technological but governance-centric?

1. **Threat to Privacy and Data Security:** AI relies on massive datasets, increasing risks of surveillance, data breaches and unauthorized profiling. Eg: The Justice K.S. Puttaswamy v. Union of India recognised privacy as a Fundamental Right.
2. **Algorithmic Bias:** Biased datasets can lead to discriminatory outcomes in recruitment, policing, lending and healthcare. The UNESCO warns that AI may reinforce existing social inequalities.
3. **Misinformation and Deepfakes:** Generative AI enables the creation of realistic fake videos, images and audio, threatening elections and public trust. The World Economic Forum ranks misinformation and disinformation among the top global risks.
4. **Job Displacement and Labour Market Disruption:** Automation may replace routine and repetitive jobs, requiring large-scale reskilling and workforce transition. The International Labour Organization highlights AI's significant impact on employment patterns.
5. **Lack of Transparency and Accountability:** The "black boxes" nature of AI makes it difficult to explain decisions or assign responsibility for errors.
6. **AI-Enabled Cyber Threats:** AI-powered cyberattacks are increasingly recognised as an emerging national security challenge.
7. **AI Divide:** Limited access to AI infrastructure and digital skills may widen inequalities between countries and within societies.



Ethical Principles in AI and suggested measures for better cooperation

1. **Human-Centric AI:** : UNESCO **Recommendation on the Ethics of AI (2021)** places human dignity at the core of AI governance.
 2. **Algorithmic Fairness:** The OECD AI Principles emphasize fairness and non-discrimination.
 3. **Transparency and Explainability:** AI decisions should be understandable, traceable and explainable, particularly in critical sectors such as healthcare, policing and finance.
 4. **Algorithmic Accountability:** The **G20 Hiroshima AI Process** stresses responsible AI governance.
 5. **Privacy and Data Protection:** AI should respect individual privacy through informed consent, data minimisation and secure processing. The **Digital Personal Data Protection Act, 2023** provides India's legal framework for data protection.
 6. **Adopt a Comprehensive AI Governance Framework:** Develop a risk-based regulatory framework balancing innovation with ethics through the IndiaAI Mission.
 7. **Reskill the Workforce:** Strengthen AI literacy, digital skills and lifelong learning to mitigate job displacement. Eg: FutureSkills PRIME and the IndiaAI FutureSkills initiative.
 8. **Foster Global Cooperation:** Collaborate through the Global Partnership on AI (GPAI), UNESCO, OECD and the G20 Hiroshima AI Process to establish interoperable ethical standards.
- Ultimately, the goal should be not just Artificial Intelligence, but Responsible Intelligence—where innovation advances hand in hand with dignity, accountability and social justice.



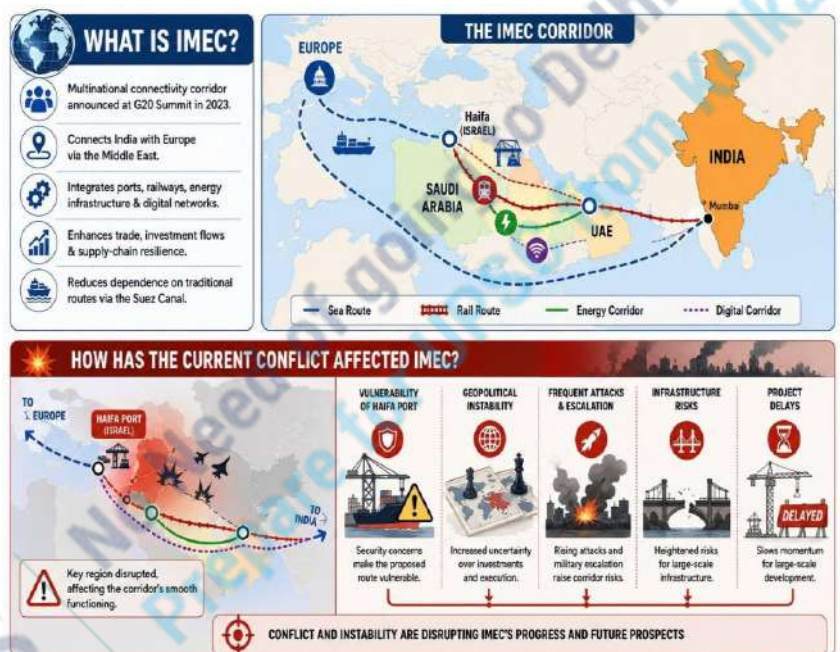
INTERNATIONAL AFFAIRS

IMEC: Balancing Connectivity Ambitions and Geopolitical Realities

The ongoing conflict in West Asia has exposed the fragility of global trade networks and highlighted the dangers of excessive dependence on strategic chokepoints. In this context, the India-Middle East-Europe Economic Corridor (IMEC), envisioned as a transformative connectivity initiative, has acquired greater strategic significance. At the same time, the conflict has created fresh geopolitical and security challenges that could delay its implementation and test its long-term viability.

Lessons from the Iran Conflict

- The Iran-Israel conflict has demonstrated that military superiority alone cannot guarantee strategic success.
- The conflict has exposed the vulnerability of global trade and energy supply chains.
- The Strait of Hormuz remains one of the world's most critical maritime chokepoints.
- India remains highly dependent on maritime routes for its energy imports and trade.
- The conflict has reinforced the need to diversify trade routes and connectivity networks.
- Modern conflicts increasingly involve asymmetric warfare, making traditional deterrence less effective.



Major Challenges Before IMEC

- Political instability in West Asia continues to threaten the smooth implementation of the corridor.
- Security concerns may discourage investors from committing long-term capital to the project.
- Strategic competition among regional powers could complicate coordination among participating countries.
- Energy security concerns may divert policy attention away from connectivity initiatives.
- Large infrastructure projects require sustained political commitment, which may be difficult during periods of conflict.

Navigating the Challenges

- India should work with partners to develop alternative routes that bypass conflict-prone regions.
- The corridor should evolve into a flexible framework capable of adapting to changing geopolitical realities.
- Greater cooperation with the UAE and Saudi Arabia can strengthen the project's resilience.
- Additional logistics hubs and transit points should be developed to reduce dependence on single routes.
- European partners should be encouraged to deepen their participation in financing and implementation.
- Green energy networks, digital infrastructure, and industrial corridors should be integrated into IMEC planning.
- Participating countries should establish mechanisms to manage geopolitical risks and disruptions.

The Iran-Israel conflict has simultaneously strengthened the strategic rationale for IMEC and complicated its implementation. While geopolitical tensions have exposed vulnerabilities in the proposed corridor, they have also underscored the urgent need for diversified and resilient connectivity networks. If India and its partners can adapt the project to evolving regional realities, IMEC can emerge as a transformative initiative that enhances trade, energy security and economic integration across Asia, the Middle East and Europe.



China's Role in the International Order

Amid rising geopolitical tensions, economic uncertainty, and shifts in global power balances, China is increasingly presenting itself as a major stakeholder in the international order. Recent visits by leaders of the United States, Russia, France, and the United Kingdom highlight China's growing diplomatic importance. Through its emphasis on multilateralism, economic cooperation, and strategic engagement, China seeks to project itself as an influential actor in shaping global governance.

China's Relations with Major Powers

China-United States Relations

- China and the United States remain the world's two largest economies.
- Both countries emphasize the need to maintain strategic stability despite differences.
- Economic interdependence continues to shape bilateral relations significantly.
- Managing competition while avoiding direct conflict remains a key objective.

Taiwan Issue Remains Central

- China considers Taiwan an inseparable part of its national territory.
- The Taiwan issue remains the most sensitive aspect of China-United States relations.
- Beijing strongly opposes any moves supporting Taiwanese independence.
- Stability in the Taiwan Strait is viewed as essential for regional peace.

China-Russia Strategic Partnership

- China and Russia continue to deepen strategic cooperation across multiple sectors.
- Their partnership is based on principles of non-alliance and mutual coordination.
- Both countries cooperate in areas including energy, trade, and security.
- The relationship contributes to their shared vision of a multipolar world order.

China's Engagement with Europe

- China continues to maintain strong economic and diplomatic relations with European nations.
- Economic cooperation remains an important pillar of China-Europe relations.
- Trade and investment linkages create significant mutual dependencies.
- China seeks stable relations despite differences on geopolitical issues.

Economic Cooperation as a Tool of Global Influence Trade Is Viewed as a Foundation for Peace

- China argues that economic interdependence promotes stability among nations.
- Global supply chains have created deep connections between national economies.
- Trade cooperation helps reduce incentives for conflict and confrontation.
- Economic engagement remains central to China's foreign policy approach.

China's Contribution to Global Growth

- China remains one of the largest contributors to global economic expansion.
- Its manufacturing capacity supports international production and supply chains.
- The country continues opening sectors to foreign investment and cooperation.
- Economic growth in China influences markets across the world.



Importance of Global Connectivity

- China supports infrastructure and connectivity projects to enhance international trade.
- Improved connectivity can strengthen economic integration among countries.
- Cross-border infrastructure projects create opportunities for regional development.
- Such initiatives also enhance China's economic and geopolitical influence.

Implications for India

Opportunities for India-China Cooperation

- India and China are among the world's largest emerging economies.
- Both countries share interests in economic growth and development.
- Cooperation in trade, climate change, and global governance remains possible.
- People-to-people exchanges can improve mutual understanding and trust.

Areas of Concern

- Strategic competition between India and China continues in several areas.
- Border disputes remain a major source of bilateral tensions.
- China's expanding regional influence generates security concerns for India.
- Trade imbalances continue to affect the economic relationship.

Need for Balanced Engagement

- India must engage China while protecting its strategic interests.
- Constructive dialogue can help manage differences and reduce tensions.
- Cooperation and competition are likely to coexist in the relationship.
- A stable bilateral relationship benefits regional and global stability.

Challenges to China's Global Role

Trust Deficit Among Nations

- Several countries remain concerned about China's strategic intentions and actions.
- Territorial disputes continue to affect China's relations with neighbours.
- Differences over human rights and governance generate international criticism.
- Building trust remains essential for China's long-term global leadership aspirations.

Geopolitical Rivalries

- Intensifying competition between major powers complicates global governance.
- Strategic rivalries often limit cooperation on common global challenges.
- Conflicts in different regions increase uncertainty in international relations.
- China must navigate these tensions while maintaining its global ambitions.

China's growing economic strength, diplomatic outreach, and strategic influence have positioned it as a key actor in the evolving international order. By advocating multilateralism, economic cooperation, and a greater role for developing countries, China seeks to shape global governance according to its vision. However, geopolitical rivalries, trust deficits, and regional disputes continue to pose challenges. For countries like India, the rise of China presents both opportunities for cooperation and challenges requiring careful strategic management.

In West Asia Pause, Questions for India, Especially About Its Place at the Table

The recent pause in the Iran-Israel conflict has temporarily reduced tensions in West Asia, but it has also exposed critical questions about India's strategic influence in the region. Despite deep economic, energy, and diaspora linkages with West Asia, India found itself largely absent from key diplomatic negotiations, raising concerns about whether proximity and partnerships are translating into meaningful geopolitical leverage.

Why Does the West Asia Crisis Matter for India?

West Asia Is Vital to India's Core Interests

- The region remains a major source of India's crude oil and natural gas imports.
- Millions of Indians live and work in Gulf countries, contributing significant remittances.
- Regional instability directly affects India's energy security and economic stability.



- Disruptions in maritime routes can adversely impact India's trade and supply chains.

The Strait of Hormuz Remains a Strategic Chokepoint

- A significant share of India's energy imports passes through the Strait of Hormuz.
- Any escalation in regional conflict can threaten global oil supplies and raise prices.
- Increased energy costs can worsen inflation and current account pressures.
- Maritime insecurity can disrupt commercial shipping and trade flows.

Key Questions Raised for India

Limited Influence Despite Strong Relationship

- India maintains friendly relations with Iran, Israel, Saudi Arabia, and the United States.
- However, these relationships did not translate into a visible role during the crisis.
- India remained largely outside the diplomatic processes shaping regional outcomes.
- The episode highlights the gap between connectivity and strategic influence.

Strategic Autonomy Requires Greater Capability

- Strategic autonomy is meaningful only when supported by diplomatic and economic power.
- Maintaining multiple partnerships alone does not guarantee geopolitical relevance.
- Influence depends on the ability to shape outcomes during moments of crisis.
- Nations must convert relationships into actionable strategic leverage.

Overdependence on External Powers

- Expectations that major powers will automatically protect India's interests may be misplaced.
- Great powers primarily act according to their own strategic calculations.
- India must strengthen independent capabilities to safeguard national interests.
- Excessive reliance on external actors can reduce strategic flexibility.

Challenges Emerging from Regional Instability

Security and Economic Risks

- Continued instability can endanger Indian citizens residing in the Gulf region.
- Higher oil prices can adversely affect growth and fiscal stability.
- Trade routes linking India with Europe and West Asia may face disruptions.
- Regional conflicts can create long-term uncertainty for investors and businesses.

Rise of Fragile States

- Persistent instability in neighbouring regions can create security spillovers.
- Fragile states may become hubs for extremism, trafficking, and organized crime.
- Such developments can indirectly affect India's security environment.
- Regional disorder complicates India's diplomatic and economic engagements.

Way Forward

Strengthening India's Regional Role

- India should deepen engagement with all major stakeholders in West Asia.
- Diplomatic initiatives must move beyond economic cooperation to strategic influence.
- Greater investments in maritime security and regional connectivity are essential.
- India should actively participate in emerging regional security architectures.

Building Strategic Capabilities

- Energy diversification can reduce vulnerabilities arising from regional crises.
- Stronger economic and military capabilities will enhance India's diplomatic weight.
- India must develop crisis-management mechanisms for diaspora protection.
- Strategic partnerships should be leveraged to expand India's regional influence.

The West Asia crisis demonstrates that proximity, economic ties, and goodwill alone do not guarantee geopolitical relevance. While India enjoys strong relations across the region, influence ultimately depends on the capacity to shape outcomes during critical moments. As global power politics become increasingly complex, India must convert its economic presence and strategic partnerships into tangible diplomatic leverage to secure a meaningful seat at the table.



West Asia Crisis on India and Role of BRICS

West Asia has emerged as a critical theatre where **geopolitics, geoeconomics and energy security intersect**. For India, the region represents **not only a major source of hydrocarbons but also a vital hub for trade, investment, diaspora engagement and connectivity initiatives** such as the India-Middle East-Europe Economic Corridor.

Consequently, recurring conflicts in the region expose structural vulnerabilities in India's development trajectory and strategic calculus.

Implications of the West Asia Crisis for India

- 1. Energy Insecurity and Import Dependence:** West Asia supplies nearly **60% of India's crude oil imports** and a significant share of LNG requirements; disruptions expose India to supply shocks and volatile energy prices.
 - 2. Imported Inflation and Cost-Push Pressures:** Higher crude prices increase transportation, fertilizer and manufacturing costs, leading to inflationary pressures in economy. The RBI identifies crude oil volatility as a major external risk to inflation.
 - 3. Current Account and Fiscal Stress:** Rising energy import bills widen the trade deficit and Current Account Deficit (CAD), exerting pressure on the rupee and fiscal balances.
 - 4. Maritime Security and Chokepoint Vulnerability:** Instability around the **Strait of Hormuz and Bab-el-Mandeb threatens Sea Lines of Communication (SLOCs)**, increasing freight charges, insurance premiums and delivery timelines.
 - 5. Supply Chain and Trade Disruptions:** Red Sea disruptions have forced vessels to reroute around the Cape of Good Hope, increasing transit time by **10–15 days** and raising logistics costs for Indian exporters and importers.
 - 6. Diaspora Security and Remittance Risks:** More than **9 million Indians live and work in Gulf countries**; prolonged instability could affect employment, welfare and remittance inflows. (Source: Ministry of External Affairs)
 - 7. Food and Fertilizer Security Concerns:** Higher energy prices increase fertilizer production and transportation costs, affecting agricultural productivity and food-price stability.
 - 8. Geo-economic Disruption of Connectivity Initiatives:** Strategic projects such as the India-Middle East-Europe Economic Corridor and Chabahar-linked corridors may face delays, undermining India's connectivity and trade ambitions.
 - 9. Strategic Autonomy and Diplomatic Balancing Challenges:** India's close ties with Israel, Iran, Saudi Arabia and UAE require careful balancing amid regional rivalries, testing its policy of multi-alignment.
- To what extent can BRICS promote Regional Stability and Collective Energy Security?**
- 1. Producer-Consumer Energy Framework:** With the inclusion of major energy producers such as Iran, Saudi Arabia, UAE and Russia alongside large consumers like India and China, BRICS can facilitate dialogue on stable energy supplies and pricing mechanisms.
 - 2. Diversification of Energy Sources and Supply Chains:** BRICS enables member countries to diversify energy imports, reduce excessive dependence on any single region and enhance resilience against geopolitical disruptions.
 - 3. Alternative Financial Architecture:** The **New Development Bank** can finance energy infrastructure, cross-border connectivity and renewable energy projects, reducing dependence on traditional Western-dominated financial institutions.
 - 4. Promotion of Local Currency Trade:** Greater use of local currency settlements and stable energy supply arrangements can reduce the impact of oil price volatility on domestic inflation and import bills.
 - 5. Cooperation in Renewable Energy Transition:** BRICS members possess complementary strengths in solar energy, green hydrogen, biofuels and critical minerals, creating opportunities for collaborative clean-energy partnerships.
 - 6. Strengthening Maritime and Energy Supply Resilience:** BRICS cooperation on maritime security, logistics connectivity and alternative transport corridors can reduce disruptions in **critical chokepoints** such as Hormuz and Bab-el-Mandeb.
 - 7. Enhancing South-South Cooperation:** BRICS provides a platform for developing countries to articulate common concerns regarding energy access, affordability and energy justice.



8. Diplomatic Engagement and Confidence Building: Regular summits and ministerial interactions create avenues for dialogue among countries with diverse interests, helping reduce mistrust and encouraging peaceful engagement. ***However, BRICS Faces Significant Constraints***

1. **Absence of a Collective Security Architecture:** Unlike military alliances like NATO, BRICS lacks institutional mechanisms to manage or resolve regional conflicts directly.
2. **Divergent Strategic Interests:** Competing geopolitical priorities among members often limit consensus on sensitive security issues. **Eg: India-China border tensions.**
3. **Asymmetrical Power Structure :** due to growing dominance of China, BRICS may become **China-centric**.
4. **Weak Institutionalization:** BRICS remains primarily a consultative forum with limited enforcement capabilities.
5. **Limited Ability to Influence Active Conflicts:** Despite peace-oriented declarations, BRICS' influence remains normative rather than operational. **Eg. Differing stands on Russia-Ukraine conflict.**

INDIA'S CLAIM FOR PERMANENT MEMBERSHIP OF UNSC: REFORMING GLOBAL GOVERNANCE

The United Nations Security Council (UNSC), established in 1945 to maintain international peace and security, reflects the post-World War II geopolitical order. However, the emergence of new economic and strategic powers, coupled with the growing influence of the Global South, has intensified calls for comprehensive reforms to make the Council more representative, credible and effective.

Need for Reforms?

1. **Outdated Post-War Power Structure:-** The UN has expanded from **51 founding members in 1945 to 193 member states today**, but the permanent membership remains unchanged.
Representation Deficit:- Africa and Latin America lack permanent representation despite constituting a significant share of UN membership. **Eg: African Union comprises 54 UN member states (about 28% of the UN membership)** but has no permanent seat.
2. **Institutional Gridlock:-** The unrestricted veto power of the P5 frequently blocks collective action, even during humanitarian crises, undermining timely decision-making. **Eg: Russia and China have repeatedly vetoed resolutions on Syria, while the US has vetoed multiple Gaza-related resolutions.**
3. **Rise of Multipolarity:-** The emergence of India, Brazil, African economies and other middle powers demands a more representative global governance architecture aligned with present-day power realities.
4. **Underrepresentation of Global South:-** The concerns of developing countries like climate finance, food security and equitable growth receive inadequate attention within the current UNSC structure. **Eg: Developing countries account for nearly 85% of the world's population, yet their opinion is undermined by the hegemony of P5.**

India's bid for Permanent Membership

1. **Democratic Legitimacy:-** India represents the aspirations of over **1.4 billion people** and upholds democratic values, constitutional governance and the rule of law, strengthening the representative character of the UNSC.
2. **Rising Economic and Strategic Power:-** As one of the fastest-growing major economies, India plays a pivotal role in shaping global trade, finance and strategic stability.
3. **Voice of the Global South:-** India consistently advocates equitable global governance. **Eg: During its G20 Presidency (2023), India championed the inclusion of the African Union as a permanent G20 member.**
4. **Reform Consensus:-** The **G4 (India, Japan, Germany and Brazil)** jointly advocates UNSC reforms, while India's permanent membership has been supported by countries including the US, France, Russia and the UK.
5. **Maritime and Indo-Pacific Security Provider:-** India plays a crucial role in securing critical Sea Lines of Communication (SLOCs), counter-piracy operations and humanitarian assistance in the Indian Ocean Region. **Eg: SAGAR Doctrine.**

Challenges in India's bid to reforms

1. **Reform Deadlock:-** The **Uniting for Consensus (Coffee Club)** has consistently resisted the G4 proposal, advocating only an increase in non-permanent seats.



2. **Institutional Inertia:-** Any amendment to the UN Charter requires ratification by **two-thirds of UN members, including all five permanent members (P5)**, making reforms extremely difficult.
3. **Resistance from China:-** China remains the **only P5 member that has not explicitly supported India's UNSC bid due to geopolitical rivalry**.
4. **Competing Claims:-** Countries such as Brazil, Germany, Japan and African nations also seek permanent membership, making agreement on seat allocation contentious.
5. **Consensus Deficit:-** UN member states remain divided over key issues such as the number of permanent seats, veto powers and regional representation, delaying negotiations.

The UNSC can remain relevant only by embracing **reformed multilateralism** that reflects contemporary geopolitical realities rather than the post-war order. Advancing text-based negotiations, building broader consensus among member states and ensuring equitable representation of the Global South would enhance the Council's legitimacy and effectiveness. In this context, India's inclusion would strengthen a more representative, credible and responsive global governance architecture.



ECONOMY

How China's Reduced Oil Imports Have Helped India

The West Asia conflict and risks around the Strait of Hormuz have raised concerns about global oil supplies and prices. However, a sharp decline in China's crude oil imports has unexpectedly provided relief to major Asian importers, including India. By reducing its demand, China has eased competition for available crude supplies, helping moderate oil prices and limiting the impact of supply disruptions.



Impact on India

Current Account Stability	Inflation Management	Fiscal Benefits
- Lower oil prices reduce India's import bill significantly every year. - Reduced import costs help contain the current account deficit. - External sector vulnerabilities decline when energy costs remain moderate.	- Cheaper crude reduces transportation and production costs across sectors. - Lower fuel prices help contain inflationary pressures in the economy. - Consumers benefit indirectly through reduced cost-push inflation effects.	- Lower energy costs reduce subsidy burdens on government finances. - Improved macroeconomic stability supports growth and investment confidence. - Reduced import expenditure strengthens overall economic resilience.

Risks Going Forward

Possible Recovery in Chinese Demand

- Economic recovery in China could rapidly increase crude import demand.
- Higher Chinese purchases may tighten global oil supplies again.
- Competition among Asian importers could intensify significantly.

Strait of Hormuz Uncertainty

- Any disruption in Hormuz could still trigger major supply shocks.
- Oil prices may surge regardless of China's demand conditions.
- Energy-importing countries remain vulnerable to geopolitical tensions.

India's Import Dependence

- India continues to import a large share of its crude requirements.
- Long-term vulnerability remains despite short-term relief from lower prices.
- Energy security requires diversification and domestic capacity expansion.



Way Forward

- Expand strategic petroleum reserves to strengthen supply security nationally.
- Diversify crude import sources across regions and supplier countries.
- Accelerate renewable energy and electric mobility adoption nationwide.
- Improve energy efficiency to reduce dependence on imported fuels.
- Strengthen long-term energy partnerships with reliable producer nations.

China's reduced oil imports have provided India with an important but temporary advantage by easing pressure on global crude markets and moderating oil prices. While this has supported India's energy security, inflation management, and external stability, the benefit may not last if Chinese demand revives or geopolitical disruptions intensify. Therefore, India must use this window to strengthen long-term energy resilience and reduce dependence on imported oil.

The RBI and Its Growing Fiscal Role

The Reserve Bank of India (RBI) recently transferred a record surplus of **₹2.87 lakh crore** to the Union Government for FY26. While this strengthens government finances and provides fiscal space, it also highlights the RBI's evolving role beyond monetary management. The growing significance of reserve management earnings raises important questions regarding central bank independence, fiscal federalism, and the changing relationship between monetary and fiscal policy.

Significance of Growing Fiscal Role Provides Fiscal Space to Government

- Surplus transfers support government expenditure without increasing taxation.
- They reduce pressure on additional market borrowing requirements.
- Fiscal resources become available without immediate economic production costs.
- Such transfers strengthen budgetary flexibility during periods of fiscal stress.

Supports Macroeconomic Stability

- Strong RBI finances enhance confidence in monetary institutions.
- Adequate reserves strengthen India's ability to manage external shocks.
- Stable reserve management contributes to exchange rate stability.
- Financial sector confidence benefits from a robust central bank balance sheet.

Concerns Associated with RBI's Growing Fiscal Role

Central Bank Independence

- Excessive fiscal reliance on RBI transfers may blur institutional boundaries.
- Monetary decisions could face perceptions of fiscal influence.
- Central bank credibility depends upon maintaining operational autonomy.
- Independence remains crucial for effective inflation and monetary management.

Fiscal Centralisation

- RBI surplus transfers accrue entirely to the Union Government.
- Such transfers are not included within Finance Commission devolution formulas.





- States receive no automatic share from these large fiscal resources.
- This may strengthen fiscal centralisation within India's federal structure.

Revenue Volatility

- RBI profits depend significantly on market conditions and reserve returns.
- Foreign exchange gains can fluctuate sharply across years.
- Such transfers cannot become predictable substitutes for tax revenues.
- Overdependence may create future fiscal uncertainties for governments.

Implications for Fiscal Federalism

Limited Benefits for States

- States continue facing expenditure responsibilities in health, education, and welfare sectors.
- Borrowing restrictions under Article 293 constrain state-level fiscal flexibility.
- Despite large public-sector transfers, states do not share RBI surplus receipts.
- This creates debate regarding equity within India's fiscal architecture.

Need for Greater Transparency

- Growing fiscal importance of RBI transfers requires broader public discussion.
- Policymakers must examine implications for federal fiscal balance.
- Accountability mechanisms should accompany increasing fiscal significance.
- Institutional clarity remains essential for preserving public trust.

Way Forward

Maintain Institutional Balance

- RBI must continue prioritising monetary and financial stability objectives.
- Surplus transfers should remain consistent with Economic Capital Framework principles.
- Fiscal authorities should avoid treating such transfers as routine revenues.
- Strong institutional separation should safeguard central bank credibility.

Strengthen Fiscal Federalism

- Broader discussions on sharing benefits of public-sector resource transfers are necessary.
- States should receive greater fiscal flexibility to meet developmental responsibilities.
- Fiscal reforms must balance national priorities with cooperative federalism principles.
- Transparent reporting can improve accountability and policy coordination.

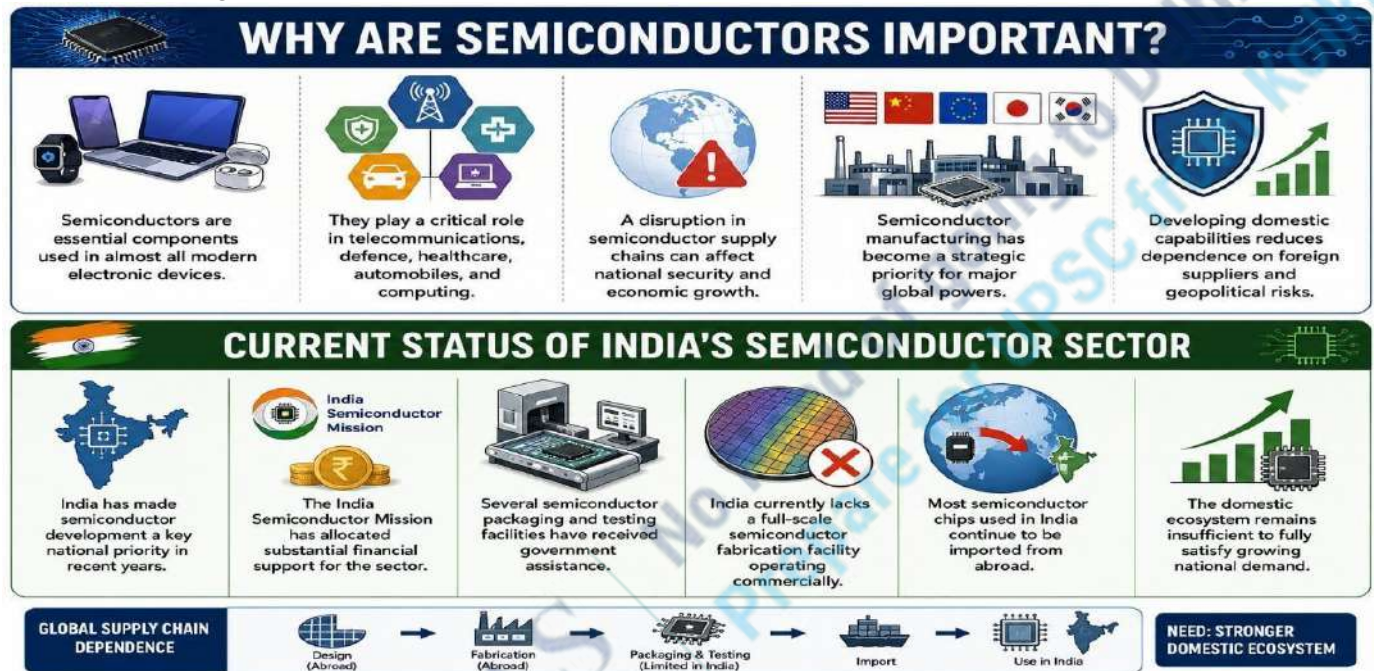
The record RBI surplus transfer reflects both India's strong reserve management framework and the increasing intersection between monetary and fiscal policy. While these transfers provide valuable fiscal support to the Union Government, they also raise concerns regarding central bank independence, fiscal centralisation, and federal equity. Going forward, maintaining institutional autonomy while ensuring transparent and balanced fiscal governance will be essential for preserving economic stability and public trust.



SCIENCE TECHNOLOGY

India's Semiconductor Journey: Building a Self-Reliant Chip Ecosystem

Semiconductors have become the backbone of the modern digital economy, powering everything from smartphones and automobiles to defence systems and artificial intelligence. Recognizing their strategic importance, India has launched ambitious initiatives under the India Semiconductor Mission (ISM). However, a recent NITI Aayog report highlights that India's semiconductor ecosystem is still not fully prepared to meet domestic demand and must strengthen local manufacturing, design capabilities, and research infrastructure to achieve technological self-reliance.



Major Challenges Facing India

Dependence on Imports

- India remains heavily dependent on foreign countries for semiconductor supplies.
- Global disruptions can create shortages affecting critical sectors of the economy.
- Geopolitical tensions may threaten access to essential semiconductor technologies.

Absence of Mature Fabrication Facilities

- Semiconductor fabrication plants require massive investments and advanced technologies.
- Establishing fabrication units involves long gestation periods before commercial production.
- Building globally competitive fabrication capabilities requires sustained policy support.

Technology and Equipment Constraints

- Chip manufacturing requires highly specialized machinery sourced from a few countries.
- Access to advanced semiconductor equipment remains restricted and strategically controlled.
- India must secure reliable access to critical technologies and production equipment.

Talent and Skill Gaps

- Semiconductor manufacturing requires highly trained engineers and technical specialists.
- India needs greater investment in semiconductor-focused education and research programs.
- Industry-academia collaboration must be strengthened to build skilled manpower.



Strategic Opportunities for India

Focus on Chip Packaging and Testing

- Chip packaging represents a less complex and less expensive segment of production.
- India can quickly build competitive advantages in packaging and testing services.
- Strong domestic demand provides a large market for such facilities.

Design-Led Growth Strategy

- India already possesses significant strengths in software and chip design.
- Domestic firms can expand into semiconductor architecture and system design.
- Design capabilities can complement future manufacturing ambitions effectively.

Building Trusted Partnerships

- India can collaborate with technologically advanced countries to strengthen capabilities.
- Partnerships with the United States, Japan, European Union, and South Korea are important.

Such cooperation can provide access to technology, expertise, and investments.

Role of Research and Innovation

- India must strengthen semiconductor research and development capabilities significantly.
- Greater investment is needed in materials science and advanced chip technologies.
- Artificial Intelligence can be leveraged for semiconductor design and engineering.
- Research institutions should work closely with industry to accelerate innovation.

Capital Investment Requirements

- Semiconductor manufacturing requires extremely high levels of long-term investment.
- Industry estimates suggest substantial financial commitments over several years.
- Investments should focus on projects with strategic value and economic viability.
- Stable policy support is essential to attract both domestic and foreign investors.

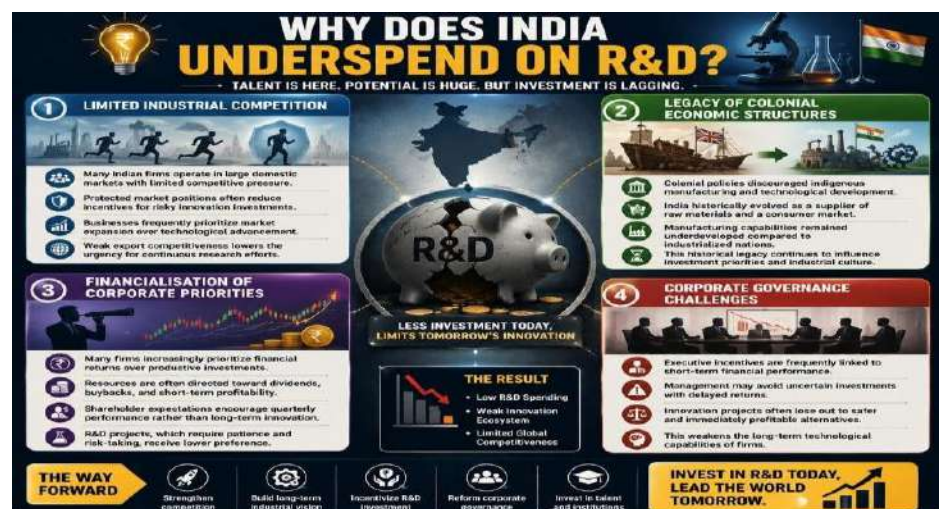
Way Forward

- India should continue expanding semiconductor packaging and testing infrastructure.
- Research and development capabilities must receive sustained policy and financial support.
- Academic institutions should create specialized semiconductor education programs.
- Public-private partnerships should be encouraged to accelerate ecosystem development.
- International collaborations should focus on technology transfer and skill development.
- Policies should prioritize long-term ecosystem building rather than short-term outcomes.

India's semiconductor ambitions are driven by both economic necessity and strategic considerations. While the country currently faces challenges related to manufacturing capacity, technology access, and skilled manpower, it possesses significant strengths in design talent, market size, and policy commitment. By focusing on research, innovation, packaging, trusted partnerships, and gradual capacity building, India can develop a resilient semiconductor ecosystem and emerge as an important player in the global chip industry.

R&D Underspending in India: Systemic and Cultural Causes

Research and Development (R&D) is a critical driver of innovation, productivity, industrial competitiveness, and long-term economic growth. Despite being one of the world's largest economies, India's R&D expenditure remains around 0.6–0.7% of GDP, significantly lower than major innovation-driven economies. The challenge is not attributable to a single factor but emerges from a combination of systemic, structural, and cultural constraints.





Cultural and Institutional Factors

Low Tolerance for Risk and Failure

- Innovation inherently involves uncertainty, experimentation, and possible failures.
- Indian business culture often remains cautious toward high-risk investments.
- Firms prefer predictable returns over uncertain technological breakthroughs.
- This discourages ambitious research and frontier technology development.

Weak Industry–Academia Linkages

- Collaboration between universities and industries remains limited.
- Research outcomes often fail to translate into commercial applications.
- Technology transfer mechanisms are relatively underdeveloped.
- Innovation ecosystems remain fragmented across sectors.

Inadequate Research Ecosystem

- Public and private R&D spending remains insufficient compared to global leaders.
- India faces shortages of advanced research infrastructure and funding support.
- High-quality scientific talent often migrates to countries offering better opportunities.
- Limited commercialization pathways reduce incentives for innovation.

Implications for India

Economic

Consequences

- Low R&D investment constrains productivity growth and industrial competitiveness.
- Dependence on imported technologies increases strategic vulnerabilities.
- Domestic firms struggle to move up global value chains.
- Innovation deficits weaken long-term economic growth prospects.

Strategic Consequences

- Technological dependence affects sectors such as semiconductors, defence, and AI.
- India risks falling behind in emerging technologies shaping future economies.
- Innovation gaps can limit strategic autonomy and national competitiveness.

Way Forward

Strengthening Innovation Ecosystems

- Increase public and private R&D expenditure toward at least 2% of GDP.
- Expand research grants, innovation funds, and venture capital support.
- Strengthen industry-academia partnerships and technology transfer mechanisms.
- Promote mission-driven research in strategic sectors.

Encouraging Long-Term Corporate Investments

- Provide tax incentives and regulatory support for corporate R&D.
- Reform executive incentive structures to reward long-term innovation.
- Foster competitive markets that encourage continuous technological upgrading.
- Build a culture that accepts experimentation and productive failure.

India's R&D underinvestment is neither purely structural nor purely cultural; it reflects the interaction of historical legacies, market incentives, corporate priorities, and institutional weaknesses. Addressing this challenge requires a comprehensive strategy that promotes innovation, rewards long-term thinking, and strengthens research ecosystems.

Sustained investment in R&D will be essential for India's ambition to become a technologically advanced and globally competitive economy.



SOCIAL ISSUES

Argumentative Indian must also listen, spirit of *samvad* must not be lost

India possesses a rich tradition of **samvad (constructive dialogue and exchange of ideas)** rooted in ancient philosophical debates. However, contemporary public discourse increasingly prioritizes winning arguments over understanding diverse perspectives. In a complex and interconnected world, preserving the spirit of *samvad* is essential for intellectual growth, effective diplomacy, and strategic decision-making.

What is Spirit of Samvad?

Dialogue as a Search for Truth

- Ancient Indian traditions viewed debate as a collective pursuit of knowledge and wisdom.
- The objective was understanding reality rather than merely defeating an opponent.
- Intellectual engagement encouraged openness to alternative viewpoints and self-reflection.
- Samvad promoted learning, mutual respect, and continuous refinement of ideas.

Distinction Between Debate and Dialogue

- Debate often seeks victory by proving one's position superior to others.
- Dialogue focuses on understanding, learning, and discovering common ground.
- Constructive conversations strengthen relationships while competitive arguments may create divisions.
- Healthy democracies require a balance between assertion and listening.

Reasons Behind India's Increasingly Argumentative Culture

Historical and Psychological Factors

- Colonial experiences created a strong urge to defend national identity and perspectives.
- Many Indians remain sensitive to external criticism due to historical experiences.
- Foreign observations are sometimes viewed through lenses of suspicion and insecurity.
- Defensive reactions often prevent objective evaluation of constructive criticism.

Influence of Social Media and Polarization

- Social media platforms reward confrontation and quick rebuttals over thoughtful engagement.
- Public discussions increasingly become contests for validation and ideological dominance.
- Nuanced conversations are often replaced by binary and polarized narratives.
- The pressure to respond immediately discourages reflective thinking.

Why Listening Matters in the Modern World

Strategic and Diplomatic Benefits

- Nations improve policies by learning from international experiences and best practices.
- Constructive criticism can reveal weaknesses and opportunities for improvement.
- Diplomatic success often depends on building trust rather than winning arguments.
- Listening enhances strategic adaptability in a rapidly changing global environment.

Promoting Innovation and Growth

- New ideas emerge when diverse viewpoints are considered seriously.
- Collaborative problem-solving produces better outcomes than intellectual isolation.
- Openness to feedback strengthens institutions and policymaking processes.
- Learning from others accelerates social and economic development.

Way Forward

Reviving the Culture of Samvad

- Educational institutions should encourage critical thinking alongside respectful dialogue.
- Public discourse should prioritize evidence-based discussions over emotional reactions.
- Policymakers must cultivate openness to domestic and international feedback.
- Citizens should distinguish between challenges to their ego and challenges to assumptions.

Building Intellectual Maturity

- Constructive criticism should be viewed as an opportunity for learning and improvement.
- Greater emphasis must be placed on listening before responding.

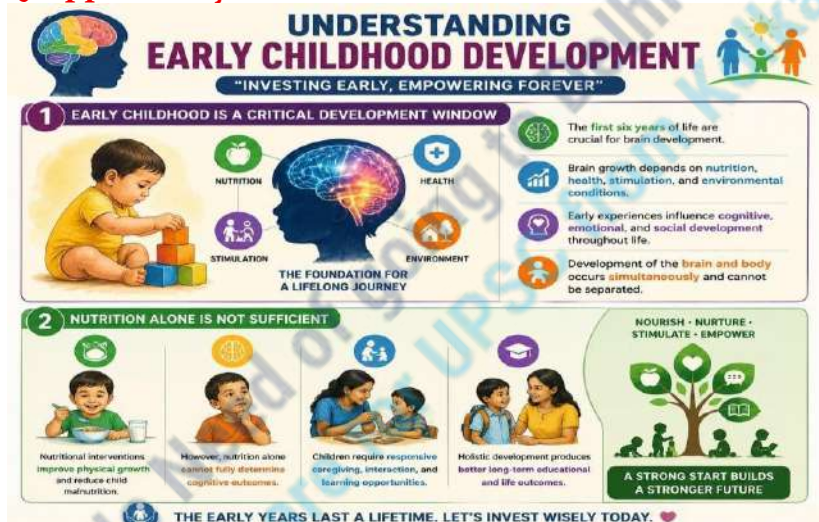


- Intellectual confidence should arise from reasoned analysis rather than constant defensiveness.
- A mature society values understanding as much as persuasion.

India's civilizational strength lies not merely in its ability to debate but also in its capacity to listen, learn, and evolve. Reviving the spirit of *samvad* can strengthen democratic discourse, improve policymaking, and enhance India's global engagement. In an age of polarization and information overload, the ability to listen thoughtfully may prove more valuable than the ability to win arguments.

The 'Seven-Point IQ Opportunity' for Indian Children

India has made significant progress in reducing child mortality, improving nutrition, and expanding early childhood services through the Anganwadi system. However, emerging evidence suggests that nutrition alone is insufficient for optimal cognitive development. Research indicates that combining nutrition, health care, sanitation, and early stimulation can substantially improve learning outcomes, creating a potential "seven-point IQ opportunity" for India's future generations.



Evidence Supporting Early Stimulation

Global Research Highlights Combined Interventions

- Studies from Jamaica showed stronger gains when stimulation complemented nutritional support.
- Children receiving both interventions demonstrated better cognitive development outcomes.
- International evidence links enriched environments with improved learning capacities.
- Early stimulation has long-lasting effects on intelligence and school performance.

Indian Evidence Supports Similar Findings

- Longitudinal studies in India found that early childhood disadvantages affect later cognition.
- Children recovering physically from early deprivation often show improved cognitive outcomes.
- Home environment significantly influences developmental achievements.
- Reading, playing, and emotional support contribute strongly to intellectual development.

Role of Preschool Education

- Structured preschool education improves language and cognitive skills.
- Children attending Anganwadi-based preschool programmes perform better in assessments.
- Early learning environments enhance school readiness and future academic performance.
- Play-based learning strengthens creativity, communication, and problem-solving abilities.

Role of Anganwadis in Cognitive Development

Anganwadis Can Deliver Holistic Early Childhood Care

- Anganwadis already provide nutrition, growth monitoring, and health services.
- They can become centres for integrated child development and early learning.
- Programmes like Aadhaarshila focus on play-based preschool education.
- Navchetana supports caregivers in promoting learning through everyday interactions.

Community and Parental Participation Is Essential

- Parents play a central role in shaping children's developmental outcomes.
- Everyday activities such as talking, reading, and playing support brain development.
- Community campaigns can increase awareness regarding early childhood stimulation.

**Educrat IAS Academy, 2nd Floor, North Block, Park Plaza Building, 71, Park Street,
Kolkata-700016. Phone: 9163228921, 9163218921**



- Reduced screen exposure can improve social and cognitive development.

Broader Developmental Benefits

Strengthening Human Capital

- Better cognitive development enhances educational achievement and productivity.
- Early investments generate long-term economic and social returns.
- Improved childhood development contributes to a skilled future workforce.
- Strong human capital supports national development goals.

Empowering Families and Communities

- Quality childcare enables greater participation of women in the workforce.
- Community-based childcare systems create employment opportunities.
- Stronger families contribute to healthier and more resilient communities.
- Holistic child development benefits society beyond individual households.

Way Forward

Integrating Nutrition with Early Learning

- Anganwadi services should combine nutrition, health, sanitation, and stimulation.
- Play-based learning must become a core component of early childhood programmes.
- Frontline workers should receive training in child development practices.
- Greater focus is needed on parental awareness and engagement.

Strengthening Policy Support

- Early childhood development should remain a priority in social sector investments.
- Monitoring systems should assess cognitive outcomes alongside nutritional indicators.
- Community-led initiatives should be expanded across rural and urban areas.
- Inter-sectoral coordination is necessary for holistic child development.

India's demographic future depends not only on ensuring children survive but also on helping them thrive. Evidence shows that combining nutrition with early stimulation, quality preschool education, and supportive caregiving can significantly improve cognitive outcomes. By transforming Anganwadis into centres of holistic early childhood development, India can unlock the immense potential of its young population and build stronger human capital for the future.

Five Solutions Indian Cities Need to Stop Fighting for Water Week After Week

Urban water scarcity has become a recurring crisis across Indian cities, with residents facing dry taps, tanker dependence, and declining groundwater levels every summer. Rapid urbanization, poor water management, shrinking water bodies, and inadequate infrastructure have transformed seasonal shortages into a structural challenge. Addressing this crisis requires a combination of demand management, supply augmentation, governance reforms, and wastewater reuse.

Why Are Indian Cities Facing Repeated Water Crises?

Unsustainable Urban Growth

- Cities have expanded faster than their water infrastructure and resource planning capacities.
- Lakes, ponds, and wetlands have been encroached upon or converted for urban development.
- Groundwater extraction often exceeds natural recharge rates in many regions.
- Increasing populations have placed enormous pressure on limited water resources.

Poor Water Management Practices

- Authorities frequently focus on finding new sources instead of fixing existing systems.
- Water losses through leakages remain significantly high in urban distribution networks.
- Weak enforcement of groundwater regulations encourages overexploitation.
- Inadequate wastewater treatment limits opportunities for water recycling.



Five Key Solutions for Water-Secure Cities

1. Develop Transparent Urban Water Emergency Plans

- Cities should establish clear emergency response mechanisms for water shortages.
- Vulnerable populations and critical facilities must receive priority during crises.
- Authorities should regularly communicate storage levels and supply conditions.
- Transparent information can reduce uncertainty, grievances, and panic among residents.

2. Reduce Water Losses Through Leak Detection and Repair

- Significant quantities of water are lost before reaching consumers.
- Cities should conduct regular leak audits in high-loss distribution zones.

- Modern monitoring technologies can identify hidden leaks quickly and efficiently.
- Reducing non-revenue water can substantially improve urban water availability.

3. Promote Demand Management and Water Conservation

- Large consumers should undertake periodic water audits and efficiency improvements.
- Resident welfare associations should monitor and regulate water consumption patterns.
- Peak-season restrictions on non-essential water use can reduce pressure on supplies.
- Public awareness campaigns should encourage responsible water consumption.

4. Protect Water Quality During Shortages

- Water scarcity often increases dependence on tanker supplies and unsafe storage practices.
- Regular water quality monitoring should accompany emergency supply measures.
- Authorities must ensure safe drinking water access in vulnerable neighbourhoods.
- Quick communication systems can help address contamination risks promptly.

5. Expand Wastewater Treatment and Reuse

- Treated wastewater can reduce dependence on freshwater sources.
- Cities should promote decentralized wastewater treatment systems where feasible.
- Recycled water can be used for industrial, landscaping, and non-potable purposes.
- Wastewater reuse improves long-term urban water sustainability.

Way Forward

Integrated Urban Water Governance

- Cities should adopt a holistic approach combining supply, demand, and reuse strategies.
- Protection and restoration of urban water bodies must become a policy priority.
- Stronger groundwater regulation and monitoring mechanisms are required.
- Data-driven planning can improve resilience against future water shortages.

India's urban water crisis is not merely a result of insufficient rainfall but of inadequate planning and management. Sustainable solutions lie in reducing losses, improving governance, conserving demand, protecting water quality, and maximizing wastewater reuse. By adopting these measures, Indian cities can move from recurring water emergencies towards long-term water security and resilience.

NFHS-6 Reveals Progress Amid Nutrition Challenges

The recently released **National Family Health Survey (NFHS-6)** presents a mixed picture of India's nutrition landscape. While improvements in stunting, institutional deliveries, vaccination coverage, and healthcare access indicate significant progress, persistent challenges in infant feeding practices, dietary diversity, maternal care burdens, and processed food consumption continue to hinder efforts to eliminate malnutrition. The findings highlight that better healthcare alone cannot solve India's nutrition crisis without stronger focus on feeding behaviour and dietary quality. **Positive Trends Highlighted by NFHS-6**

Improvement in Child Nutrition Indicators

- Stunting among children under five declined from **35.5% to 29.3%**, reflecting gradual progress.
- Improvements in housing, sanitation, drinking water, and maternal education supported nutritional outcomes.
- Better healthcare access contributed to reductions in several nutrition-related vulnerabilities.
- Severe forms of wasting showed limited improvement, indicating continuing nutritional concerns.

Strengthening Maternal and Child Healthcare

- Institutional deliveries increased to nearly **90%**, enhancing safe childbirth outcomes.
 - Public health facilities accounted for approximately **58%** of all institutional deliveries.
 - About **91%** of deliveries were assisted by skilled health personnel.
- Nearly **95%** of mothers received antenatal care from health professionals.

High Immunisation Coverage

- Around **87%** of children aged 12–23 months were fully immunised.
- Strong outreach by ASHAs, AWWs, and ANMs supported vaccination achievements.
- Public health systems demonstrated improved service delivery across most regions.
- Increased healthcare accessibility strengthened child survival and development outcomes.

Persistent Nutrition Challenges

Poor Infant and Young Child Feeding Practices

- Only about **50%** of newborns were breastfed within the first hour.
- Around **60%** of infants received complementary foods between six and eight months.
- Only **15%** of children aged six to twenty-three months received adequate diets.
- Delayed complementary feeding contributes significantly to undernutrition and growth faltering.

Maternal Time Poverty

- Many women balance childcare responsibilities with paid and unpaid work burdens.
- Lack of childcare support affects breastfeeding and complementary feeding practices.
- Informal employment often forces mothers to leave children under relatives' supervision.
- Maternal workload remains an under-recognised determinant of child nutrition outcomes.

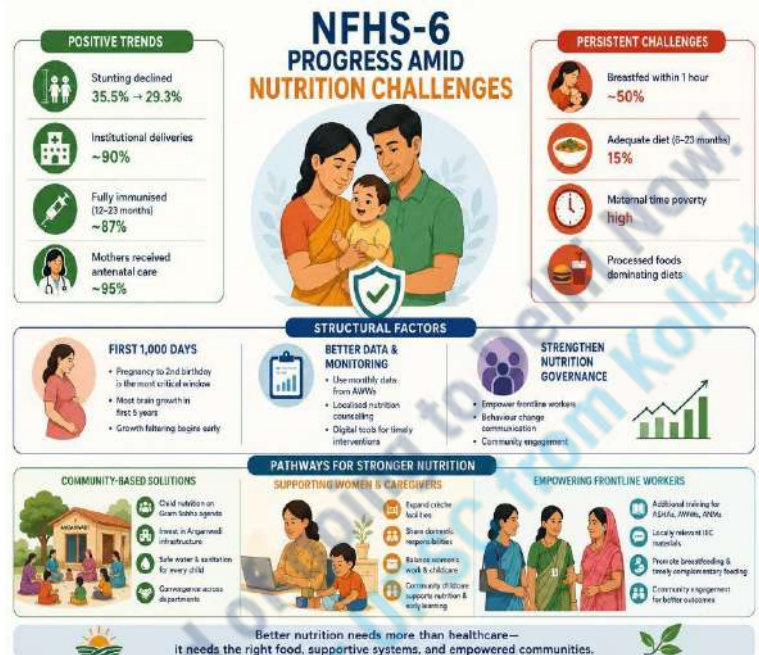
Inadequate Dietary Diversity

- Processed foods and beverages increasingly dominate household food expenditure patterns.
- Consumption of pulses, fruits, vegetables, nuts, and animal proteins remains inadequate.
- Dietary diversity often creates an illusion of nutrition without ensuring nutrient adequacy.
- Easy availability of processed foods undermines healthy dietary choices.

Structural Factors Affecting Child Nutrition

Importance of First 1,000 Days

- Pregnancy to a child's second birthday forms the most critical development window.
- Most brain growth occurs during the first five years of life.
- Growth faltering frequently begins much earlier than current interventions target.





- Preventive nutrition strategies must focus on this crucial developmental period.

Need for Better Data and Monitoring

- Monthly anthropometric data collected by AWWs requires improved analysis and utilisation.
- Localised nutrition counselling should be based on community-specific dietary realities.
- Digital tools can strengthen monitoring and improve service delivery effectiveness.
- Early identification of growth faltering allows timely corrective interventions.

Strengthening Nutrition

Governance Empowering

Frontline Workers

- Additional training can improve counselling quality among ASHAs, AWWs, and ANMs.
- Nutrition workers need locally relevant communication materials and practical guidance.
- Behaviour change campaigns should promote breastfeeding and timely complementary feeding.
- Community engagement remains essential for improving nutrition outcomes.

Promoting Community-Based Solutions

- Child nutrition should become a standing agenda in Gram Sabha discussions.
- Anganwadi infrastructure requires continuous investment and modernization.
- Safe water and sanitation facilities directly influence child growth outcomes.
- Greater convergence among departments can improve programme effectiveness.

Supporting Women and Caregivers

- Expanding crèche facilities can reduce maternal care burdens significantly.
- Shared domestic responsibilities can improve childcare and feeding practices.
- Women's economic participation should be balanced with childcare support mechanisms.
- Community-based childcare models can strengthen nutrition and early learning simultaneously.

NFHS-6 demonstrates that India has made important strides in improving healthcare access and reducing child stunting. However, persistent gaps in infant feeding practices, dietary quality, maternal support systems, and nutrition governance continue to impede faster progress. Achieving sustainable improvements in child nutrition requires moving beyond healthcare delivery toward a holistic approach that integrates nutrition-sensitive policies, empowered frontline workers, community participation, and stronger support for mothers and caregivers.



ENVIRONMENT AND DISASTER MANAGEMENT

Summer Air Pollution in Indian Cities: Beyond Winter Smog

Air pollution in India is often associated with winter smog, but cities increasingly face serious pollution episodes during summer as well. Despite stronger winds and higher temperatures that help disperse pollutants, many cities continue to record dangerous levels of PM₁₀ and ground-level ozone. Rising temperatures, dust storms, construction activities, vehicular emissions, and industrial pollution have made summer air quality a growing environmental and public health concern.

Why Are Cities Experiencing Summer Pollution?

- Many Indian cities continue recording high PM₁₀ and ozone levels during summer months.
- Pollution is no longer confined to Delhi and affects major cities nationwide.
- Vehicular emissions, construction activities, industrial pollution, and road dust remain significant contributors.
- Heatwaves and changing weather patterns are intensifying pollution episodes across urban areas.
- Summer pollution increasingly threatens public health despite seemingly favorable meteorological conditions.

How Is Summer Pollution Different From Winter Pollution?

- Winter pollution is mainly dominated by fine particulate matter known as PM_{2.5}.
- Summer pollution is largely driven by coarse PM₁₀ particles and ground-level ozone.
- Winter conditions trap pollutants near the surface because of low temperatures.
- Summer heat and sunlight promote chemical reactions that generate ozone pollution.
- Dust storms become major contributors to air pollution during summer months.

Why Does Ozone Increase During Summer?

- Ozone is not directly emitted from vehicles, industries, or other pollution sources.
- It forms when nitrogen oxides react with volatile organic compounds under sunlight.
- Vehicle exhaust, industrial emissions, paints, and solvents release ozone-forming pollutants.
- Higher temperatures and intense sunlight accelerate ozone formation during summer months.
- Elevated ozone levels can cause respiratory illnesses and worsen existing health conditions.

What Causes PM₁₀ Levels to Rise?

- Hot weather creates low-pressure systems that generate strong winds across regions.
- These winds transport dust from West Asia and the Thar Desert.
- Hot winds called "loo" often carry dust across northern parts of India.
- Localized dust storms known as "andhi" temporarily raise particulate matter concentrations.
- Dust particles remain suspended in the atmosphere and degrade air quality.

How Do Human Activities Worsen Summer Pollution?

- Construction and demolition activities release large amounts of dust into the atmosphere.
- Poor dust management practices significantly increase PM₁₀ concentrations in urban areas.
- Vehicles moving over damaged roads resuspend loose dust into surrounding air.
- Industrial emissions continuously add pollutants that contribute to ozone formation.
- Traffic congestion and vehicle idling increase emissions of ozone-forming gases.

Impacts of Summer Air Pollution

- Increased exposure to particulate matter causes respiratory and cardiovascular diseases.
- Ground-level ozone can irritate lungs and reduce overall respiratory function.
- Children, elderly citizens, and people with existing illnesses face greater risks.
- Frequent pollution episodes increase healthcare burdens and reduce quality of life.
- Poor air quality affects productivity, outdoor activities, and overall urban well-being.

Measures to Combat Summer Air Pollution

- Cities should strengthen air quality forecasting and early warning systems.
- Authorities should issue timely alerts regarding dust storms and ozone spikes.
- Construction sites must implement strict dust-control measures throughout the year.



- Road dust management should remain a priority beyond the winter season.
- Industrial and vehicular emissions of nitrogen oxides and volatile compounds must decline.
- Cleaner transport systems should be promoted to reduce pollution at source.
- Public campaigns encouraging reduced vehicle idling can help lower emissions.
- Municipal bodies should use technology-based monitoring systems for better enforcement.

Way Forward

- Every major city should develop a dedicated summer air pollution action plan.
- Forecasting, public health advisories, and dust management must be integrated effectively.
- Authorities should strengthen enforcement against uncontrolled construction-related emissions.
- Investments in cleaner fuels and sustainable urban transport should be accelerated.
- Air quality management should treat summer pollution with equal seriousness as winter smog.

Summer air pollution is emerging as a significant environmental challenge across Indian cities. While winter smog remains a major concern, rising ozone levels, dust storms, and construction-related emissions are creating a distinct summer pollution crisis. Addressing this challenge requires year-round planning, effective enforcement, technological monitoring, and sustained efforts to reduce emissions, ensuring cleaner and healthier urban environments throughout the year.

India's Heat Wave Crisis: A Growing Developmental Challenge

India is witnessing an unprecedented heat wave crisis, with temperatures frequently touching 45°C–48°C across large parts of the country. Rising daytime temperatures, coupled with steadily increasing night-time temperatures, are intensifying heat stress and reducing recovery time for both people and ecosystems. The crisis has emerged as a major challenge affecting public health, livelihoods, food security, economic growth, and environmental sustainability.

Economic and Livelihood Impacts

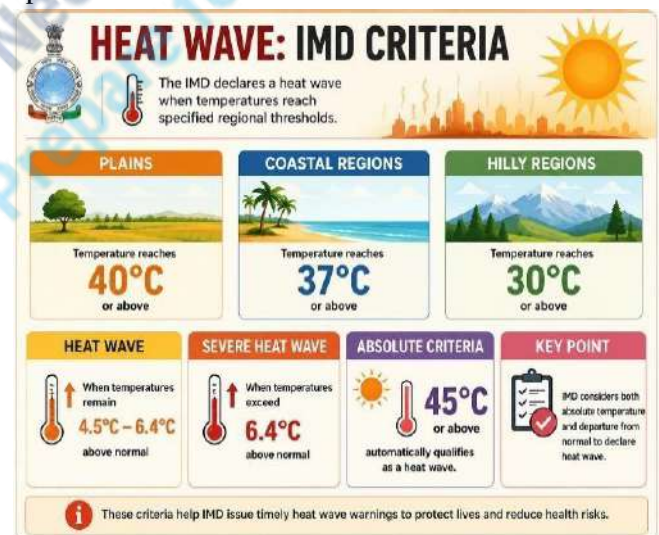
- Nearly 75% of India's workforce operates in sectors directly exposed to heat.
- Agriculture, construction, mining, and informal activities face severe productivity losses.
- Heat stress reduces working hours and lowers labour efficiency significantly.
- India may account for a major share of global heat-related job losses.
- Extreme heat threatens economic growth through reduced productivity and infrastructure stress.
- The World Bank warns that heat waves could significantly impact future GDP growth.

Food Security and Agricultural Impacts

- Extreme heat damages standing crops and reduces agricultural productivity.
- High temperatures disrupt grain filling and reduce overall crop yields.
- Farmers increasingly shift agricultural activities to night-time working hours.
- Livestock suffer from thermal stress, reducing milk production substantially.
- Poultry farms experience increased mortality rates during prolonged heat waves.
- Lower agricultural output can trigger food inflation and market instability.

Public Health and Social Impacts

- Poor households face greater vulnerability due to inadequate housing conditions.
- Water scarcity and power shortages worsen the effects of extreme heat.
- Hospitals report increasing cases of heatstroke, dehydration, and exhaustion.
- Rising night-time temperatures prevent adequate physical recovery and restful sleep.
- Chronic heat exposure increases cardiovascular and respiratory health risks.





- Outdoor workers face the highest risk of heat-related illnesses and fatalities.

Environmental and Ecological Impacts

- Urban Heat Islands make cities significantly hotter than nearby rural areas.
- Concrete structures and asphalt surfaces absorb and retain large amounts of heat.
- Reduced green cover limits natural cooling and temperature regulation mechanisms.
- Wildlife suffers from dehydration and shrinking availability of water sources.
- Plants experience stress, leading to reduced growth and carbon absorption.
- Ecosystem degradation further weakens resilience against future heat extremes.

Major Causes Behind the Crisis

Climate Change • Human-induced greenhouse gas emissions are increasing global and regional temperatures. • Climate change has increased the frequency and intensity of heat waves. Loss of Green Infrastructure • Rapid urbanization has reduced forests, parks, and natural vegetation cover. • Loss of trees removes important natural cooling mechanisms from urban areas.	Degradation of Water Bodies • Encroachment and pollution have damaged lakes, wetlands, and traditional water systems. • The disappearance of these water bodies has reduced local cooling effects. Governance Challenges • Heat Action Plans often focus on relief rather than long-term adaptation. • Hyper-local forecasting and vulnerability mapping remain inadequate in many regions.
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Way Forward

Strengthening Heat Action Plans

- Heat Action Plans should focus on ward-level and village-level vulnerability mapping.
- Dedicated funding and legal backing should support effective implementation.

Nature-Based Solutions

- Cities should promote urban forestry and large-scale plantation drives.
- Wetlands, lakes, and water bodies should be restored and protected.

Climate-Resilient Infrastructure

- Public buildings should adopt cool roofs and heat-reflective construction materials.
- Cooling centres should be established for vulnerable populations during heat waves.

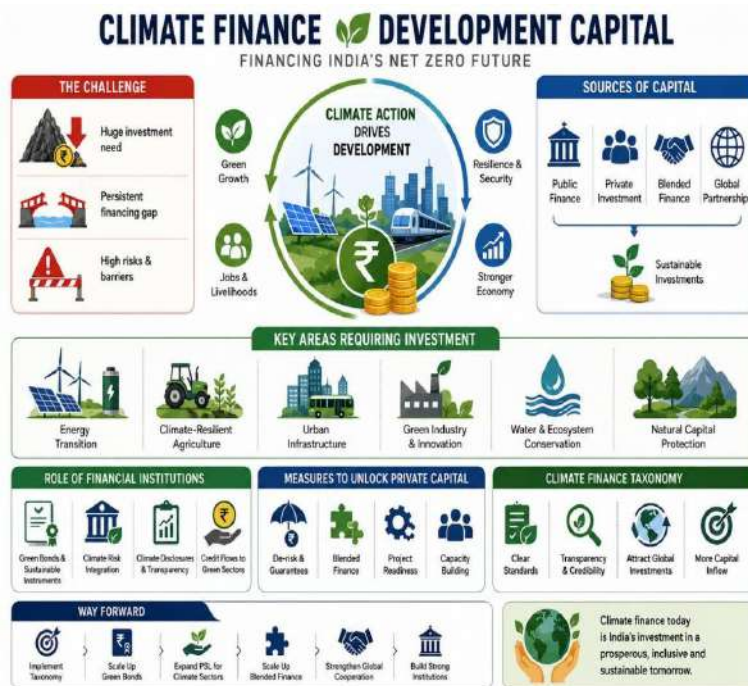
Labour and Social Protection

- Outdoor work should be restricted during peak afternoon heat hours.
- Direct income support should compensate workers affected by heat restrictions.
- Climate insurance should protect workers and farmers from heat-related losses.

India's heat wave crisis is no longer merely an environmental concern but a critical developmental challenge. Its impacts extend across public health, livelihoods, agriculture, economic growth, and ecological stability. Addressing this crisis requires a comprehensive approach that combines climate adaptation, resilient infrastructure, nature-based solutions, and social protection measures. Building a heat-resilient India must become a national priority in the coming decades.

Climate Finance and Development Capital

India's commitment to achieving Net Zero emissions by 2070 requires unprecedented financial investments. Simultaneously, the country must sustain economic growth, create employment opportunities, strengthen infrastructure, and reduce poverty. Therefore, the challenge is not merely mobilizing climate finance but creating institutions capable of directing capital towards projects that deliver both developmental and environmental benefits.



India's Climate Finance Challenge Massive Investment Requirements

- India requires nearly \$10.1 trillion to achieve its long-term climate commitments.
- Sectors such as energy, transport, steel, cement, and infrastructure require substantial investments.
- Public expenditure alone cannot finance the scale of climate transition required.
- Private sector participation has become essential for achieving sustainability goals.

Persistent Financing Gap

- Existing climate finance flows remain significantly below India's actual requirements.
- International climate finance commitments have not met developing countries' expectations.
- Climate projects often struggle because investors perceive them as high-risk ventures.

Climate and Development as Complementary Objectives

Multiple Benefits from Single Investments

- Climate investments often generate economic, social, and environmental benefits simultaneously.
- Renewable energy projects create jobs while reducing dependence on fossil fuels.
- Sustainable infrastructure improves resilience while supporting long-term economic productivity.
- Green investments should therefore be viewed as development investments.

Economic Opportunities

- Climate action can create millions of jobs across manufacturing and service sectors.
- Green industries can improve India's competitiveness in global export markets.
- Reduced energy imports can strengthen India's external economic stability.
- Sustainable growth can improve both environmental and developmental outcomes.

Role of Financial Institutions

Expanding Green Finance

- Sovereign Green Bonds are helping mobilize resources for sustainable projects.
- Sustainable finance instruments are attracting environmentally conscious investors.
- Financial institutions are gradually integrating climate-related risks into decision-making.
- Green finance frameworks are improving transparency within financial markets.

Role of RBI

- RBI has started incorporating climate risks into financial sector regulations.
- Banks are increasingly encouraged to support environmentally sustainable investments.
- Climate-related disclosures can strengthen resilience across the financial system.
- Priority Sector Lending can help channel credit towards climate-sensitive sectors.

Importance of Climate Finance Taxonomy

Creating Clear Standards

- A climate taxonomy clearly identifies activities that qualify as sustainable investments.
- It reduces uncertainty for domestic and international investors.
- Standardised definitions help prevent misleading environmental claims.
- Greater transparency can improve investor confidence and capital inflows.

Attracting Global Investments

- Taxonomy frameworks can attract pension funds and sovereign wealth funds.
- International investors prefer markets with clear sustainability standards.



- Improved credibility can reduce borrowing costs for green projects.
- Strong frameworks can accelerate climate finance mobilization significantly.

Key Areas Requiring Investment

Energy Transition

- Renewable energy expansion requires substantial investments in generation capacity.
- Green hydrogen development requires long-term financial and policy support.
- Battery storage infrastructure remains critical for clean energy adoption.
- Transmission networks need modernization to support renewable integration.

Climate-Resilient Agriculture

- Farmers require investments in irrigation and climate-resilient technologies.
- Sustainable agriculture can improve productivity while reducing environmental degradation.
- Better financing can strengthen rural resilience against climate shocks.
- Agricultural adaptation remains essential for food security.

Urban Infrastructure

- Cities require investments in sustainable transport and waste management systems.
- Green buildings can reduce energy consumption and emissions significantly.
- Urban resilience measures can reduce climate-related vulnerabilities.
- Sustainable urbanization is critical for India's future development.

Measures to Unlock Private

Capital Reducing Investment

Risks

- Blended finance models can reduce risks for private investors.
- Government guarantees can improve investor confidence in climate projects.
- Credit enhancement mechanisms can attract long-term institutional capital.
- Risk-sharing frameworks can encourage greater participation from private investors.

Improving Project Readiness

- Smaller projects should be aggregated into larger investment portfolios.
- Local institutions require greater technical capacity for project preparation.
- Investment-ready projects are more likely to attract private funding.
- Strong implementation frameworks improve project viability and outcomes.

Way Forward

- India should finalize and implement a comprehensive Climate Finance Taxonomy.
- Sovereign Green Bond issuances should be expanded to mobilize larger resources.
- Priority Sector Lending should include more climate-sensitive activities.
- Blended finance mechanisms should be scaled up across sectors.
- Greater international cooperation is required for technology transfer and financing.
- Institutional capacities must be strengthened at national and local levels.

India's climate transition is fundamentally a financing challenge as much as an environmental one. The country possesses the necessary economic potential, entrepreneurial capacity, and policy ambition, but these must be supported by robust financial institutions and innovative financing mechanisms. By integrating climate objectives with developmental priorities, India can transform climate action into a powerful driver of sustainable and inclusive growth.



Accelerating India's Solar Energy Transition

India has emerged as one of the world's fastest-growing renewable energy markets, with solar power accounting for nearly 30% of the country's installed electricity capacity. To accelerate the transition towards clean energy and enhance energy security, the government has launched flagship schemes such as **PM Surya Ghar Yojana** and **PM-KUSUM**. While these initiatives have achieved notable progress, several implementation challenges continue to limit their full potential.

India's Expanding Solar Ambitions Growing Importance of Solar Energy

- Solar power has become a central pillar of India's renewable energy strategy.
- India has added significant solar generation capacity over the last decade.
- Solar energy helps reduce dependence on imported fossil fuels.
- Expansion of solar power supports India's climate and energy security goals.

Need for Decentralised Energy Generation

- Decentralised solar systems can reduce pressure on conventional power infrastructure.
- Localised generation improves energy access in remote and underserved regions.
- Distributed solar power can strengthen resilience against supply disruptions.
- Rooftop solar systems enable consumers to become energy producers.





Major Challenges Facing Solar Adoption

High Upfront Installation Costs

- The initial cost of solar systems remains a major barrier.
- Many households struggle to mobilize funds despite available subsidies.
- Farmers often face difficulties arranging capital for solar investments.
- Financial constraints slow the pace of solar adoption significantly.

Uneven Regional Performance

- Solar adoption varies considerably across different states and regions.
- States with stronger institutional support generally perform better.
- Administrative inefficiencies often delay project implementation.
- Less developed regions continue to lag behind national leaders.

Awareness and Information Gaps

- Many potential beneficiaries remain unaware of available government schemes.
- Lack of technical knowledge discourages adoption among consumers.
- Rural households often face difficulties navigating application procedures.
- Greater awareness campaigns are necessary to improve participation.

Infrastructure Constraints

- Grid infrastructure is not uniformly prepared for large-scale solar integration.
- Distribution companies often face operational and financial challenges.
- Delays in approvals can discourage prospective solar consumers.
- Technical bottlenecks affect smooth implementation of solar projects.

Demand and Supply Implications

Meeting Rising Electricity

Demand

- India's electricity demand continues to rise due to economic growth.
- Solar power can help meet increasing energy requirements sustainably.
- Peak demand periods increasingly require additional clean energy capacity.
- Renewable energy reduces dependence on conventional power generation.

Supporting Energy Security

- Domestic solar generation reduces vulnerability to global fuel price shocks.
- Solar energy decreases dependence on imported fossil fuels.
- Diversified energy sources strengthen long-term energy security.
- Renewable expansion improves resilience against geopolitical disruptions.

Need for Better Incentive Design

Addressing Financial Barriers

- Innovative financing mechanisms can improve solar affordability.
- Low-interest loans can complement existing subsidy programmes.
- Flexible payment models can encourage wider consumer participation.
- Financial institutions should expand credit access for solar investments.

Improving Consumer Incentives

- Incentives should be designed to maximize long-term adoption rates.
- Timely subsidy disbursement can improve programme effectiveness.
- Simplified procedures can reduce administrative burdens on beneficiaries.
- Consumer confidence increases when benefits are delivered efficiently.

Way Forward

Strengthening Financial Support

- Affordable financing should be made available for households and farmers.
- Credit support mechanisms can accelerate rooftop solar installations.
- Innovative financial products should target smaller consumers.
- Public and private investment must complement government subsidies.



Improving Implementation

- States should streamline approval and installation procedures.
- Greater coordination between agencies can improve project delivery.
- Digital platforms should simplify scheme applications and monitoring.
- Capacity-building initiatives should strengthen local implementation systems.

Expanding Awareness

- Awareness campaigns should educate citizens about solar benefits.
- Local governments should actively promote available schemes.
- Technical support services should assist first-time solar adopters.
- Community participation can improve programme outreach and acceptance.
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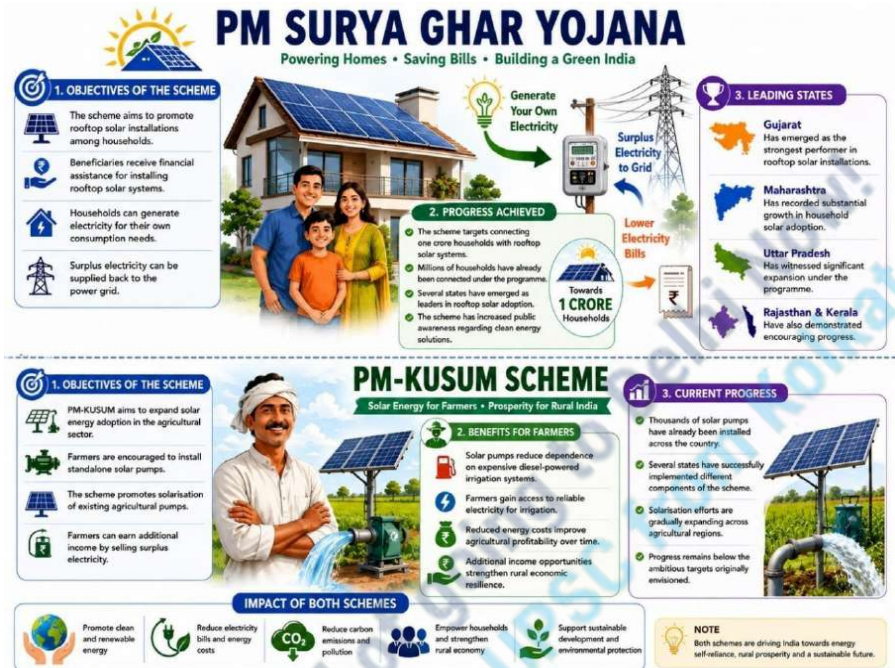
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India's solar energy transition is critical for achieving energy security, climate commitments, and sustainable economic growth. Schemes such as PM Surya Ghar Yojana and PM-KUSUM have laid a strong foundation for expanding decentralised solar generation across households and farms. However, challenges related to financing, awareness, infrastructure, and implementation continue to constrain progress. Addressing these bottlenecks through targeted reforms and stronger institutional support will be essential for unlocking the full potential of India's solar revolution.



Balancing ecological sustainability with economic development in Western Ghats

Why is Biodiversity Conservation is critical in the Western Ghats?

- Ecological Security:** Source of major peninsular rivers such as Godavari, Krishna + Supports water needs of nearly 245 million people + Regulates monsoon patterns and groundwater recharge.
- Repository of Rich Biodiversity:-** Over 7,400 flowering plant species + Around 50% amphibians and 67% fish species are endemic.
- Climate Resilience:-** Acts as a major carbon sink + Mitigates floods, droughts and landslides.
Eg. :- Recurrent Kerala floods and Wayanad landslides have highlighted the consequences of ecological degradation.
- Supports Livelihoods and Local Communities:-** Non-timber forest products + Medicinal plants + Ecotourism opportunities. Many districts in Karnataka and Kerala have quarrying-dependent local economies.
- Agricultural sustainability:-** Agricultural and Food Security + Conserves wild relatives of crops and genetic diversity.

Challenges in Balancing Conservation and Development in the Western Ghats

- Conservation–Livelihood Conflict:-** Restrictions may lead to loss of employment for many dependent on Western ghats for livelihood.
- Ecological Fragility vs Infrastructure Expansion:-** Landslides in ecologically sensitive areas have raised concerns regarding unregulated development.
- Confrontational federalism:-** Centre prioritizes biodiversity conservation while States emphasize economic growth and employment. This often creates friction in implementation.
- Scientific Recommendations vs Ground Realities:-** Gadgil and Kasturirangan Reports suggested strong protection of Western Ghats but difficulty lies in translating scientific prescriptions into socially acceptable policies.
- Short-Term Economic Gains vs Long-Term Ecological Security:-** Activities like mining, quarrying, etc generate immediate revenue but undermine inter-generational Equity
- Weak Community Participation:-** Local communities often perceive ESZ notifications as top-down decisions. Lack of consultation reduces legitimacy and compliance
- Natural Capital Accounting:-** Economic benefits of mining and infrastructure are visible. Ecosystem services like carbon sequestration and biodiversity conservation are often undervalued.



Balancing Conservation and Development in Western Ghats

1. **Zonation-Based Management:-** Instead of blanket restrictions; strict protection in highly sensitive areas. regulated development in moderately sensitive zones and sustainable livelihood promotion elsewhere.
2. **Strengthen Community-Led Conservation:-** by involve panchayats for community monitoring and enhancing benefit-sharing mechanisms.
3. **Promote Green Economy:-** as alternative to environmentally damaging activities. Eg. Ecotourism.
4. **Ecosystem Valuation:-** Development projects should account for forest loss, water services, etc.
5. **Strengthening precautionary principle:-** Stricter EIAs.
6. **Climate Resilient Infrastructure:-** Development projects must integrate climate-risk assessment
7. **Cooperative Federalism:-** Centre, States and local communities must jointly design conservation strategies in order to reduce policy conflicts and implementation delays

The future of the Western Ghats lies not in choosing between development and conservation, but in making development ecologically sustainable and socially inclusive

Urban Fire Safety and Disaster Resilient Infrastructure

The recent fire tragedies in Delhi's Malviya Nagar, Hyderabad and the coaching centre in Lucknow have once again exposed the persistent gaps in India's urban fire safety ecosystem. Despite a comprehensive legal framework, recurring incidents highlight that weak regulatory enforcement, unsafe building practices and inadequate preparedness remain major impediments to creating fire-resilient cities.

Major Fire Safety Gaps in India

Weak Enforcement of Fire Safety Regulations: Poor compliance with the National Building Code (NBC), 2016 and state fire safety laws, with many buildings operating without regular fire audits or occupancy certification.

1. **Non-Compliant Building Design:** Many buildings lack essential fire safety features such as multiple escape staircases, fire compartmentation, smoke ventilation and fire-resistant materials.
2. **Inadequate Fire Detection and Suppression Systems:** Limited installation and poor maintenance of smoke detectors, fire alarms, sprinklers and hydrants reduce early detection and response.
3. **Poor Urban Planning and Fire Accessibility:** Narrow roads, unauthorized constructions and encroachments restrict access for fire tenders, delaying emergency response. Fire services recommend a minimum 9-metre-wide access road for effective firefighting operations.
4. **Institutional and Capacity Constraints:** Many State Fire Services face shortages of personnel, modern equipment and specialised training, affecting emergency preparedness. The Standing Fire Advisory Council (SFAC) has repeatedly highlighted capacity gaps in state fire services.
5. **Weak Fire Safety Culture:** Irregular fire drills, low public awareness and poor maintenance of safety equipment lead to inadequate emergency preparedness.
6. **Illegal Change in Building Usage:** Residential buildings are frequently converted into commercial establishments, warehouses or coaching centres without upgrading fire safety infrastructure.

Fire Safety Legal Framework in India

1. **Constitutional Basis:** Fire services fall under the **State List** and the **12th Schedule**, making States and Municipalities responsible for fire prevention and safety enforcement.
2. **NBC 2016 (Part 4):** **National Building Code of India 2016 (Part 4)** serves as a central guideline covering fire prevention, building design, safe egress, and firefighting systems for buildings.
3. **State-level Fire Laws:** NBC is **recommendatory**; states and urban local bodies must adopt it through local bye-laws to make it enforceable.
4. **Model Building Bye-Laws, 2016:** Released by the Ministry of Housing & Urban Affairs, these guide States/UTs in uniformly updating building regulations with essential fire-safety norms.
5. **Scheme for Expansion and Modernisation of Fire Services (2023-26):** **Aims to strengthen State fire**



services through modern equipment, infrastructure upgrades, training, and digital systems.

Way Forward (NDMA Guidelines)

1. **Strengthen Enforcement of Fire Safety Regulations:** Ensure strict compliance with the **National Building Code (NBC), 2016**, mandatory Fire NOCs, periodic third-party fire audits and stringent penalties for violations.
2. **Promote Fire-Resilient Building Infrastructure:** Mandate **fire compartmentation, multiple escape staircases, smoke ventilation systems, fire-resistant materials and universal accessibility** in all high-rise and mixed-use buildings.
3. **Modernise Fire Services:** Capacity building and modernization State Fire Services with modern firefighting equipment, aerial platforms, GIS-based dispatch systems, drones and specialised training for firefighters.
4. **Integrate Fire Safety into Urban Planning:** Ensure adequate road width, dedicated fire lanes, hydrant networks and compliance with zoning regulations while planning cities under Smart Cities and AMRUT.
5. **Community-Based Disaster Risk Reduction (CBDRR):** Institutionalise regular mock drills, public awareness campaigns, fire wardens in high-rise buildings, schools and hospitals, and mandatory evacuation plans.
6. **Enhance Institutional Coordination: NDMA Recommendation:** Develop a **multi-agency emergency response mechanism involving** fire Services, urban local bodies, NDMA, Health Services, etc.

As emphasised by the NDMA, urban fire management must transition from a reactive firefighting model to a prevention-centric, technology-enabled and community-based disaster risk reduction framework. Such an approach will be critical for building safe, resilient and sustainable cities in line with the Sendai Framework and SDG 11.

Climate Change and the Rising Frequency of Extreme Weather Event

Recent attribution studies by the **World Weather Attribution (WWA)** have established that **anthropogenic climate change** significantly increased the likelihood and intensity of the unprecedented European heatwave.

Why are extreme weather events increasing?

1. **Anthropogenically Induced Climate Change:** The Intergovernmental Panel on Climate Change AR6 concludes that human influence has unequivocally warmed the atmosphere, oceans and land.
2. **Ocean-Atmosphere Coupling:** Higher sea surface temperatures provide more energy for cyclones, cloudbursts and extreme precipitation events. Eg: **India Meteorological Department** reports rising temperatures in the Arabian Sea, contributing to more intense cyclones.
3. **Urban Heat Island:** Concrete surfaces, reduced green cover and unplanned urban growth trap heat and intensify localized flooding due to inadequate drainage.
4. **Ecosystem Degradation:** Loss of forests, wetlands and mangroves reduces natural climate regulation and increases vulnerability to floods, landslides and storm surges. Eg: **Wetland encroachments have aggravated flooding in Chennai and Bengaluru.**
5. **Monsoon Variability:** Climate variability has made the Indian monsoon more erratic, characterised by fewer rainy days but more intense rainfall events.
6. **Adaptation Deficit:** Infrastructure and urban planning have not kept pace with increasing climate risks, leading to greater economic losses and casualties.

Impacts of Extreme Weather Events

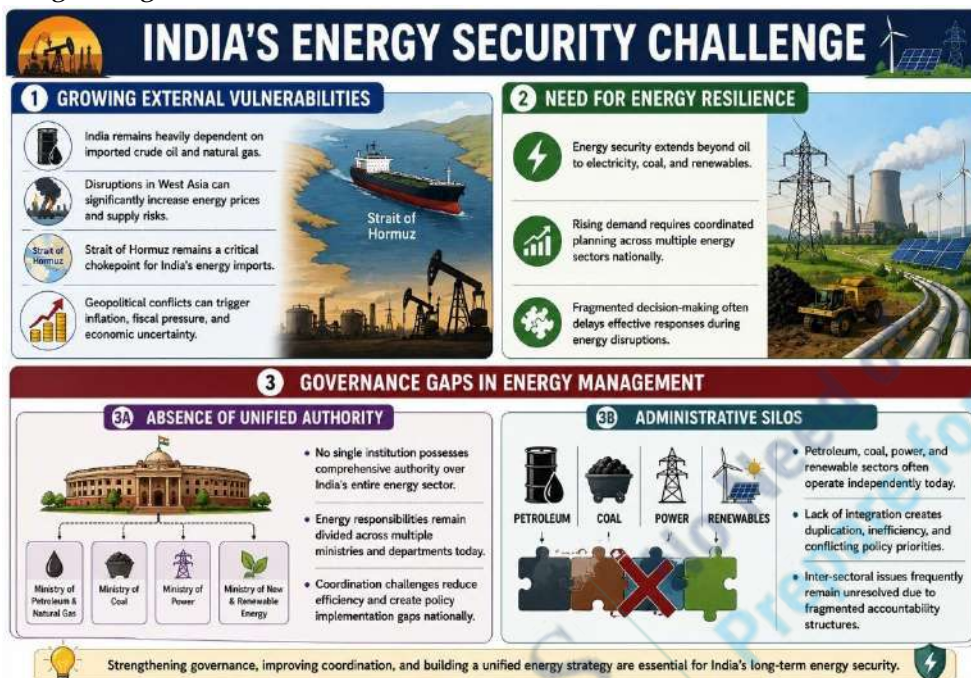
1. **Loss of Lives and Public Health:** Heatwaves, floods, cyclones and landslides cause fatalities, injuries and disease outbreaks, disproportionately affecting vulnerable populations. Eg: **India recorded 3,472 deaths due to extreme weather events in 2024, with over 4 million hectares of cropland affected.**
2. **Threat to Food and Nutritional Security:** The Economic Survey 2024-25 identifies climate variability as a major risk to agricultural growth and food security.
3. **Macroeconomic and Fiscal Losses:** Extreme events damage infrastructure, reduce productivity and increase government expenditure on relief, rehabilitation and reconstruction. Eg: **India lost nearly 2% of GDP annually due to climate-related disasters.**



SECURITY

Energy Security and Breaking Governance Silos in India

Rising geopolitical tensions, particularly around the Strait of Hormuz, have once again highlighted India's vulnerability to external energy shocks. Despite progress in diversifying energy sources, India still lacks a unified institutional mechanism for managing energy security across petroleum, coal, power, renewables, and strategic reserves. Ensuring long-term energy security therefore requires not only energy austerity but also integrated governance that breaks administrative silos.



Why an Integrated Energy Framework is Needed Whole-of-System Approach

- Energy planning should consider production, transmission, storage, and distribution together.
- Economic, environmental, and security objectives require integrated policy coordination nationally.
- Unified governance can improve resilience against future energy supply disruptions.

Reducing Economic Losses

- Poor coordination often results in stranded assets and inefficient investments nationally.
- Better planning can optimize resource allocation across energy value chains.
- Integrated decisions strengthen competitiveness and support long-term energy sustainability goals.

Proposed Institutional Reforms

Department of Energy Resources and Security (DERS)

- Establish a dedicated institution under the Prime Minister's Office nationally.
- Provide strategic oversight across all energy-related sectors and agencies today.
- Coordinate energy planning, monitoring, implementation, and crisis management nationally.

Key Functions of DERS

- Develop integrated national energy security and sustainability strategies nationally.
- Coordinate investments across production, transmission, storage, and distribution networks.
- Strengthen international partnerships for energy resources and technology access globally.
- Serve as a central communication platform for energy-related policymaking nationally.

Regulatory and Strategic Reforms

Energy Ombudsman

- Create a unified mechanism to address regulatory overlaps and disputes nationally.
- Improve accountability and streamline energy-sector governance across institutions nationally.

Strategic Energy Planning

- Strengthen management of strategic petroleum reserves and energy storage infrastructure.
- Improve coordination regarding battery technology and critical mineral requirements nationally.
- Establish robust data systems for evidence-based energy policymaking and forecasting.



Knowledge Sharing

- Develop forums for information exchange and best-practice dissemination nationally.
- Encourage collaboration among government agencies, industry, and research institutions nationally.

Energy Responsibility and

Sustainability Energy Responsibility

Framework

- Define responsibilities of governments, institutions, industries, and citizens clearly.
- Promote energy conservation alongside long-term sustainability objectives nationally today.
- Balance economic growth with environmental and energy security considerations nationally.

Citizen Participation

- Encourage responsible energy consumption and greater public awareness nationally today.
- Support behavioural changes that reduce energy wastage and improve efficiency.

India's energy security challenges cannot be addressed through isolated sectoral approaches. As global geopolitical uncertainties increase, the country requires a coordinated and integrated governance framework capable of managing the entire energy ecosystem. Breaking administrative silos, strengthening institutional coordination, and adopting a whole-of-system approach will be critical for ensuring reliable, affordable, and sustainable energy security for the future.

Northeast India: From Borderland to Strategic Resource Frontier

India's Northeast has traditionally been viewed through the lens of border security, insurgency, and connectivity challenges. However, the growing importance of critical minerals is transforming the region into a strategic resource frontier. Rich deposits of lithium, cobalt, graphite, nickel, and rare earth elements are bringing the Northeast into the centre of India's economic, technological, and geopolitical calculations. This shift presents significant opportunities but also raises important questions regarding land rights, local participation, and inclusive development.



India's Exploration Efforts in the Northeast Expansion of Mineral Surveys

- India has intensified exploration activities across several Northeastern States.
- Geological surveys have identified significant mineral deposits in the region.
- Exploration projects have expanded across Arunachal Pradesh, Meghalaya, and Assam.
- Nagaland and Manipur have also witnessed increasing exploration activities.

Recent Developments

- The Geological Survey of India has undertaken multiple critical mineral projects.

- Exploration efforts focus on lithium, graphite, nickel, cobalt, and rare earth elements.
- New mineral discoveries are strengthening the region's economic significance.
- Exploration activities are expected to increase further in coming years.



The Idea of a Strategic Frontier

Changing Policy Language

- The Northeast is increasingly described as a strategic resource frontier.
- Resource security is now discussed alongside connectivity and border management.
- Mineral wealth is shaping new perceptions about the region's future.
- Economic opportunities are becoming central to policy narratives.

Beyond Geography

- Frontiers are not merely geographical spaces but also political constructions.
- Strategic importance often reflects changing national priorities and interests.
- Resource-rich regions frequently become sites of competing developmental visions.
- Economic value can significantly alter perceptions of regional importance.

Land, Identity, and Local Communities

Deep Connection with Territory	Concerns Regarding Resource Extraction
• Land in the Northeast carries social, cultural, and historical significance. • Communities maintain strong relationships with customary land ownership systems. • Traditional institutions continue to influence local governance structures. • Resource projects often intersect with issues of identity and heritage.	• Local communities often worry about displacement and environmental degradation. • Questions regarding ownership and control frequently emerge during project implementation. • Resource extraction can affect traditional livelihoods and social structures. • Development projects require meaningful engagement with affected communities.

Challenges Associated with Resource

Development Environmental Concerns

- Mining activities can affect fragile ecosystems and biodiversity-rich landscapes.
- Resource extraction may increase pressure on forests and water resources.
- Environmental degradation can undermine long-term sustainability goals.
- Proper safeguards are essential for balancing development and conservation.

Governance Challenges

- Effective institutional frameworks are necessary for managing resource development.
- Weak governance can create conflicts regarding benefits and resource ownership.
- Regulatory mechanisms must ensure transparency and accountability.
- Development gains should be distributed fairly among local populations.

Social and Political Challenges

- Resource projects may generate tensions if communities feel excluded.
- Lack of consultation can undermine trust between governments and local populations.
- Historical grievances may influence public perceptions of development initiatives.
- Inclusive governance is essential for ensuring long-term stability.

Importance of Inclusion and

Participation Community-Centred

Development

- Local communities must become active stakeholders in resource development projects.
- Development initiatives should respect customary institutions and local traditions.
- Participation strengthens legitimacy and reduces the likelihood of conflicts.
- Inclusive growth can improve public acceptance of development projects.

Ensuring Equitable Benefits

- Resource wealth should generate employment and economic opportunities locally.
- Infrastructure development must directly benefit surrounding communities.
- Revenue-sharing mechanisms can strengthen local support for projects.
- Development outcomes should improve overall quality of life in the region.



Way Forward

Promoting Sustainable Mining

- Resource extraction should follow strict environmental and social safeguards.
- Scientific mining practices must minimize ecological damage.
- Continuous monitoring should ensure compliance with sustainability standards.
- Restoration measures should accompany extraction activities.

Strengthening Local Participation

- Communities should be consulted at every stage of project development.
- Traditional institutions should be integrated into decision-making processes.
- Transparent communication can build trust and reduce misunderstandings.
- Local voices should shape development priorities and implementation strategies.

Balancing Development and Rights

- Economic growth should not come at the cost of local rights.
- Land ownership concerns must be addressed through fair processes.
- Development policies should respect cultural identities and social realities.
- Resource development must remain people-centric and inclusive.

The emergence of the Northeast as a strategic resource frontier marks a significant shift in India's developmental and geopolitical thinking. While critical minerals offer immense opportunities for economic growth, technological advancement, and energy security, their extraction cannot be viewed solely through an economic lens. Sustainable success will depend upon balancing resource development with environmental protection, local participation, and respect for community rights. The true measure of this new frontier will not be the minerals extracted from the land, but whether the people living on that land become equal partners in the region's transformation.

India's Digital Sovereignty

In the digital age, **data has emerged as a strategic resource akin to oil**, while digital infrastructure constitutes the backbone of national power. As geopolitical competition increasingly extends into cyberspace, control over digital infrastructure has become central to **strategic autonomy, national security and economic resilience**.

Why Digital Sovereignty Matters for India?

1. **Threat to Data Sovereignty:** Dependence on foreign-controlled platforms may expose sensitive personal, commercial and governmental data to external jurisdictions.
2. **Cybersecurity and Strategic Risks:** Foreign-controlled digital infrastructure can become a potential vector for cyber espionage, surveillance and supply-chain attacks.
3. **Weaponization of Interdependence:** Power grids, banking networks, defence communications and transportation systems increasingly rely on digital networks. A disruption arising from geopolitical tensions could impair critical services. Eg: During the **Kargil War (1999)**, the United States reportedly restricted India's access to high-resolution GPS services.
4. **Information Warfare:** Foreign-owned social media platforms shape public discourse and electoral ecosystems.
5. **Reduced bargaining power:** India's foreign policy choices may become constrained by technological dependence impacting strategic autonomy.
6. **Digital Dependency Trap:** Foreign dominance discourages domestic innovation leading to weak R&D ecosystem and lack of zeal to be self-reliant.

Challenges in attaining Digital Sovereignty:

1. **Dependence on Foreign Digital Infrastructure:** India's digital ecosystem relies heavily on foreign-owned operating systems, app stores, etc.
2. **Supply Chain vulnerability of semiconductors:** Digital sovereignty begins with hardware sovereignty.
3. **Jurisdictional Complexity:** Digital ecosystems transcend national boundaries, thus difficult to regulate.
4. **Weak Indigenous Innovation Ecosystem**
5. **Financial Constraints:** Resource-intensive nature of digital self-reliance. Eg: Semiconductor fabs.



6. Skilled Human Resource Deficit

Road to achieve Digital Sovereignty:

1. **Build Sovereign Digital Infrastructure:** online of UPI, ONDC, etc.
2. **Achieve Semiconductor Sovereignty:** by develop full semiconductor value chains + strengthening chip design ecosystem + securing critical mineral supply chains. Eg: India Semiconductor Mission (ISM)
3. **Close the R&D Gap:** India spends 0.74 % of GDP on R&D against a global average of 2.07%.
4. **Move from Data Sovereignty to Infrastructure Sovereignty:** Data localisation alone is insufficient. India must build sovereign cloud infrastructure , domestic data centres, indigenous operating systems for critical sectors.
5. **Create Cyber Resilience:** Control without protection is meaningless. Eg. **CERT-In**
6. **Enhance Digital Skills and Human Capital:** by upskilling youth, industry academia linkages. Eg: Digital India Future Skills Programme
7. **Global Digital Governance:** Digital sovereignty cannot be achieved through isolation but through trusted interdependence. Eg. India's G20 Digital Public Infrastructure agenda.

Achieving digital sovereignty requires moving **from mere digital consumption to digital capability**, where a nation possesses meaningful control over its data, infrastructure, platforms, technologies and governance frameworks while remaining integrated with the global digital economy.

Myanmar Narcotics Crisis and India's Internal Security

Myanmar's prolonged political instability following the **2021 military coup** has weakened state institutions, allowing insurgent groups, drug cartels and organised criminal networks to flourish. Located in the **Golden Triangle**, Myanmar has emerged as a major hub of narcotics production, arms trafficking and cyber-enabled crime, posing multidimensional threats to India's internal security, particularly along its **1,643 km porous border**.

Why is Myanmar Emerging as a Narco-Hub?

1. **Political Instability and Civil Conflict:** The **2021 military coup** and prolonged civil war have weakened state institutions, creating ungoverned spaces that facilitate narcotics production and trafficking.
2. **Narco-Geography:** Myanmar lies at the heart of the **Golden Triangle (Myanmar–Laos–Thailand)**, one of the world's largest illicit drug-producing regions, making it a natural hub for narcotics production and transit. Eg: The United Nations Office on Drugs and Crime identifies the Golden Triangle as a major global source of methamphetamine and opium.
3. **Porous Borders:** Large parts of the India–Myanmar border remain unfenced and difficult to monitor enabling drug cartels to operate with minimal resistance.
4. **Synthetic Drug Economy:** Myanmar has shifted from traditional opium cultivation to large-scale production of **methamphetamine ("Yaba" and crystal meth)** due to higher profitability and easier transportation.
5. **Criminal Convergence:** Transnational criminal syndicates collaborate with local militias to manage production, trafficking, money laundering and cross-border logistics.

Implications for India's Internal Security

1. **Revival of Insurgency in the Northeast:** Political instability in Myanmar provides safe havens, training camps and logistical support to insurgent outfits operating in Northeast India.
2. **Narco-Terror Nexus:** Several ethnic armed groups and militias rely on the narcotics trade to finance insurgency, weapons procurement and territorial control.
3. **Erosion of Law and Order in the Northeast:** The proliferation of organised criminal networks fuels extortion, kidnapping, illegal taxation and parallel governance structures, weakening state authority.
4. **Rising Drug Addiction and Human Security Crisis:** Easy availability of heroin and methamphetamine has increased substance abuse, particularly among youth, affecting public health, productivity and social cohesion.
5. **Demographic and Ethnic Tensions:** Illegal migration and refugee inflows, coupled with trafficking networks, can aggravate ethnic tensions, competition over resources and local security challenges in border states.



PRELIMS BOOSTERS

POLITY AND GOVERNANCE

Doctrine of Promissory Estoppel

Context:

Supreme Court observed that promissory estoppel cannot be claimed for benefits never intended for a particular class under government policy.

About Doctrine of Promissory Estoppel

- Promissory Estoppel is a legal doctrine based on fairness and justice.
- It prevents a person from withdrawing a promise unfairly later.
- The doctrine protects individuals who relied upon a promise genuinely.
- It ensures that promises causing reliance cannot be casually ignored.

Conditions for Application

Clear Promise • There must be a clear and unambiguous promise made. • The promise may be oral or written in nature. Reliance by Promisee • The promisee must have relied upon the promise reasonably. • Actions should have been taken because of that promise.	Detriment or Loss • The promisee must suffer loss due to non-performance. • Some disadvantage or harm should result from reliance. Preventing Injustice • Enforcement must be necessary to avoid unfairness or injustice.
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Supreme Court Checklist (1981)

Chhaganlal Keshavalal Mehta Case

- First, there must be a clear and definite promise.
- Second, the promisee must reasonably rely upon that promise.
- Third, the promisee must suffer some loss or detriment.

Applicability Against Government

- The doctrine can sometimes apply against government authorities.
- However, it cannot override statutory provisions or public interest.
- It cannot be used for benefits never intended under policy.
- Government cannot be compelled to act contrary to law.

Right to be Forgotten (RTBF)

Context:

Delhi High Court recognized the Right to be Forgotten as part of Article 21.

About Right to be Forgotten

- Right to be Forgotten allows removal of personal information online.
- It enables individuals to erase outdated or irrelevant personal data.
- The right is based on informational self-determination principles.
- It helps individuals move beyond past events and mistakes.

Basis of the Right

- It is linked to the Right to Privacy under Article 21.
- It protects control over personal information in digital spaces.
- It recognizes that individuals should control their personal data.

Persons Eligible for Relief

Acquitted Individuals • Persons acquitted in criminal cases may seek protection. Matrimonial and Private Disputes • Parties involved in matrimonial disputes may receive relief. • Individuals in private civil disputes may also be protected.	Incidental References • Persons mentioned incidentally in records may seek protection. • Relief applies even when they were not case parties.
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Responsibility of Search Engines

- Search engines must comply with lawful removal orders.
- Automated algorithms cannot override fundamental privacy rights.
- IT Rules, 2021 require compliance with such directives.



Economic Advisory Council to the Prime Minister (EAC-PM)

Context:

Prime Minister recently chaired a meeting of the Economic Advisory Council to the Prime Minister.

About EAC-PM

What is it?

- EAC-PM is an independent advisory body on economic matters.
- It provides economic advice directly to the Prime Minister.
- It examines important economic and related policy issues.
- Its recommendations are advisory and not legally binding.

Terms of Reference

Economic Analysis • Analyses economic issues referred by the Prime Minister. • Provides recommendations based on detailed expert assessment. Macroeconomic Issues • Examines matters of national macroeconomic importance. • Presents its views and suggestions to the Prime Minister.	Suo Motu Recommendations • Can independently examine and raise important economic issues. • May offer suggestions without any formal reference. Special Assignments • Undertakes additional tasks assigned by the Prime Minister. • Provides support on emerging policy and economic concerns.
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Composition

Chairperson

- EAC-PM is headed by a Chairperson.

Members

- Consists of eminent economists as members.
- Members are selected based on expertise and experience.

Support Staff

- Supported by officials and administrative personnel.
- Assists in research, coordination, and policy analysis.

Membership Structure

- No fixed number of members is prescribed.
- Size may vary according to government requirements.
- NITI Aayog acts as the nodal agency.

Rajya Sabha Elections

Context:

The Election Commission closed nominations for Rajya Sabha elections across 27 seats.

About Rajya Sabha Elections

What is Rajya Sabha?

- Rajya Sabha is the Upper House of the Indian Parliament.
- It is a permanent legislative body that cannot be dissolved.
- Members of Rajya Sabha are elected for a term of six years.
- To ensure continuity, one-third of members retire every two years.

Retirement System

- One-third of the members retire after every two years.
- Vacant seats are filled through biennial elections.
- Newly elected members normally serve a full six-year term.
- Members elected through bye-elections serve only the remaining tenure.

Election Procedure

Indirect Election

- Rajya Sabha members are not elected directly by the people.
- Members of State Legislative Assemblies elect Rajya Sabha members.
- In Union Territories, a designated Electoral College elects members.
- At present, only Delhi and Puducherry elect Rajya Sabha members.

Voting System

- Elections are conducted through proportional representation.
- The system of Single Transferable Vote (STV) is used.



- MLAs rank candidates according to their order of preference.
- This system ensures proportional representation of political parties.
- Rajya Sabha elections are conducted through an open ballot system.

Winning Quota

- A candidate must secure a minimum quota of votes.
- The quota is calculated using a prescribed mathematical formula.
- Crossing the quota guarantees election to the Rajya Sabha.

Uncontested Elections

- Polling is held only when candidates exceed available seats.
- Candidates are declared elected unopposed if seats and candidates are equal.
- In such cases, no voting process is conducted.

The Election Symbols (Reservation and Allotment) Order, 1968

Context:

- The issue of election symbols gained attention after the satirical youth pressure group Cockroach Janta Party (CJP) held its first physical protest at Jantar Mantar, New Delhi.

About the Election Symbols (Reservation and Allotment) Order, 1968

What is it?

- It is a legal framework governing the allotment and regulation of election symbols in India.
- It empowers the Election Commission of India (ECI) to:
 - Specify election symbols.
 - Reserve symbols for political parties.
 - Allot symbols to candidates.
 - Regulate the use of election symbols.
- It serves as the rulebook for assigning visual identities to political parties and candidates during elections.

Legal Basis

Promulgation

- Issued by the Election Commission of India on **31 August 1968**.

Constitutional Basis

- Derived from **Article 324 of the Constitution of India**.
- Article 324 vests the superintendence, direction, and control of elections in the ECI.

Statutory Basis

- Read along with: Rule 5 of the Conduct of Elections Rules, 1961 and Rule 10 of the Conduct of Elections Rules, 1961.

Classification of Political Parties

Recognized Parties	Unrecognized Parties
• Political parties recognized by the Election Commission based on electoral performance. • Can be recognized as: National Parties & State Parties.	• Political parties that do not fulfill the criteria for recognition. • Do not receive a permanently reserved symbol.

Reserved Symbols

For Recognized Parties

- Each recognized National or State Party is allotted an exclusive symbol.
- The symbol is permanently reserved for that party.

Doctrine of Forum Non Conveniens

Context:

- The Supreme Court recently observed that when a constitutional remedy is sought under **Article 226(1)** of the Constitution, the doctrine of forum non conveniens may rarely be applicable.

About Doctrine of Forum Non Conveniens

What is it?

- The Doctrine of Forum Non Conveniens is a common law legal principle.
- It allows a court to decline or stay proceedings even when it has jurisdiction over a case.
- The court may do so if another forum (court/jurisdiction) is considered more appropriate for hearing the matter.

Meaning

- The term "**Forum Non Conveniens**" is a Latin expression.
- It means "**inconvenient forum**".

Origin Common Law Doctrine	Objective Ensuring Appropriate Forum
	• To ensure that cases are heard in the most suitable court.



- Originated in English common law.
 - Widely used in countries following the common law legal tradition.
- Area of Application**
- Commonly applied in **Private International Law (Conflict of Laws)**.
 - Particularly relevant in disputes involving multiple countries or jurisdictions.

- Promoting Justice**
- To avoid unnecessary inconvenience to parties and witnesses.
 - To ensure efficient administration of justice.
- Preventing Forum Shopping**
- Discourages litigants from choosing a court merely because it appears more favourable to their case.
 - This practice is known as **forum shopping**.

Position in India

Relevance under Article 226

Article 226

- Empowers High Courts to issue writs for: Enforcement of Fundamental Rights. And Any other legal right.

Recent Supreme Court Observation

- The Supreme Court stated that where a constitutional remedy is invoked under **Article 226(1)**, the doctrine of forum non conveniens may have limited application.
- Constitutional rights and remedies generally receive greater protection than ordinary civil disputes.

Disqualification of Rajya Sabha Candidature

Context:

- The Rajya Sabha nomination of senior Congress leader Meenakshi Natarajan was rejected by the Returning Officer during scrutiny of nomination papers.

Constitutional Provisions

Article 102 of the Constitution

Grounds of Disqualification

Office of Profit

- Holding an office of profit under the Government may lead to disqualification.
- Prevents conflict between executive influence and legislative independence.

Unsound Mind

- A person declared of unsound mind by a competent court is disqualified.

Undischarged Insolvent

- A person who has not cleared bankruptcy-related liabilities can be disqualified.

Loss of Citizenship

- A person who is not an Indian citizen or has voluntarily acquired foreign citizenship becomes ineligible.

Disqualification under Law Made by Parliament

- Parliament may prescribe additional disqualifications through legislation.

Statutory Basis

Representation of the People Act, 1951 (RPA)

- Provides detailed provisions relating to electoral disqualifications.
- Specifies conditions under which a person cannot contest elections or continue as a member.

Conduct of Elections Rules, 1961

Form 26 Affidavit

- Every candidate must submit a sworn affidavit containing: Criminal cases, Assets and liabilities, Educational qualifications, Income tax details, Financial interests.

Authority Responsible

Returning Officer (RO)

Powers

- Scrutinizes nomination papers.
- Verifies eligibility and required documents.
- Can reject nominations if: Forms are incomplete, Legal requirements are not fulfilled, Material information is concealed.

Grounds of Disqualification under the Representation of the People Act, 1951

Criminal Convictions (Section 8)

Section 8(1): Serious Offences

- Immediate disqualification upon conviction for offences such as:
 - Bribery, Corruption, Rape, Promoting communal hatred, Insulting the National Flag.

Section 8(2): Specific Economic and Social Offences

- Convictions involving:



- Hoarding, Profiteering, Food adulteration, Drug adulteration (Disqualification applies when imprisonment is six months or more)

Section 8(3): General Criminal Convictions

- Any conviction resulting in imprisonment of **two years or more** leads to:
 - Disqualification during imprisonment.
 - Continued disqualification for six years after release.

Corrupt Practices (Section 8A)

Examples

- Bribery, Booth capturing, Voter intimidation, Electoral manipulation.

Penalty

- Disqualification for up to six years.

Anti-Defection Law

- Added by **52nd Constitutional Amendment Act, 1985**.
- Inserted **Tenth Schedule** into Constitution.
- Based on recommendations of **Dinesh Goswami Committee** (reforms suggested later).
- To prevent political defections ("Aaya Ram Gaya Ram").
- **Decision on disqualification taken by:**
 - Speaker (Lok Sabha/Assembly)
 - Chairman (Rajya Sabha/Legislative Council)
- Judicial Review allowed - **Kihoto Hollohan Case (1992)**
- **91st Constitutional Amendment Act, 2003**
 - Deleted protection for one-third splits.
 - Allowed exemption only in case of merger by two-thirds members.
- **Grounds of Disqualification**
 - Voluntarily giving up party membership.
 - Voting against party whip.
 - Abstaining against party directions.

Right to Walk on Footpath

- Recently, courts reiterated that the **Right to Walk Safely on Public Roads and Footpaths** is an integral part of Article 21.
- Derived from **Article 21** (Right to Life and Personal Liberty).
- **Supreme Court has expanded Article 21 through judicial interpretation.**
- Safe and obstruction-free footpaths are part of a dignified life.
- Linked with:
 - a. Right to Mobility
 - b. Right to Accessibility
 - c. Right to Safe Public Spaces
- Particularly important for: Elderly + Children + Persons with Disabilities
- State has responsibility to maintain pedestrian infrastructure.
- Connected with **Article 19(1)(d)** (Freedom of Movement).

Telegram Ban & Section 69A of IT Act

- The Delhi High Court upheld the temporary blocking of Telegram during the NEET (UG) re-test controversy, considering it a proportionate measure leading to debate over the scope of **Section 69A of the Information Technology Act, 2000**.
- **Central Government may direct blocking of public access to information through any computer resource.**
- **Grounds for Blocking**
 - Sovereignty and Integrity of India
 - Defence of India
 - Security of State
 - Friendly Relations with Foreign States
 - Public Order
 - Preventing Incitement to Cognizable Offences



- **Procedure governed by:** Information Technology (Procedure and Safeguards for Blocking for Access of Information by Public) Rules, 2009
- **Anuradha Bhasin v. Union of India (2020):** Internet access is linked with **Article 19(1)(a)** and **Article 19(1)(g)** thus restrictions must satisfy: **necessity, proportionality, least restrictive measure test**
- **Misinformation and fake news are not grounds under which free speech can be restricted** under Article 19(2) and Section 69A.

Tungabhadra River Basin Dispute

- **Tungabhadra River:** Tunga & Bhadra originate from **Gangamoola (Varaha Parvatha)** in the Western Ghats (Karnataka).
- Major **right-bank tributary** of the Krishna River.
- Formed by the confluence of: **Tunga River & Bhadra River**
- Confluence at **Kudli (Shivamogga, Karnataka)**.
- Forms parts of Karnataka–Andhra Pradesh and Andhra Pradesh–Telangana boundaries.
- Joins the **Krishna River at Sangameswaram (Andhra Pradesh)**, ultimately drains into the **Bay of Bengal**.
- **Tungabhadra Dam:** Located near **Hosapete (Vijayanagara district, Karnataka)**.

Passport & Citizenship

- The Ministry of External Affairs (MEA) clarified that an **Indian passport is primarily a "travel document" meant to facilitate international transit, not a conclusive "citizenship document."**
- **Legal Status of a Passport:** While the Passport Manual notes a passport is "strong evidence" of nationality (supported by the *Maneka Gandhi v. Union of India, 1978* judgment), it is **not definitive proof in a citizenship dispute**.
- Under **Section 20 of the Passports Act 1967**, the Union Government can issue passports to **non-citizens in the public interest** (e.g., the **2023 Madras High Court ruling permitting a stateless Sri Lankan refugee to apply for a passport**).
- India does not have a single universal citizenship document. Citizenship is determined strictly under the Citizenship Act, 1955, and proven through contextual documents establishing birth, parentage, and nationality.
- In ***Sarbananda Sonowal v. Union of India (2005)***, the Supreme Court held that the burden of proving Indian citizenship lies on the person claiming it.
- Ordinary citizens who acquire citizenship by birth or descent do not receive a citizenship certificate. A formal citizenship certificate is **only issued when an individual acquires citizenship through registration or naturalisation**.

Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985

- Government proposes amendments to the **NDPS Act & Rules** based on the **Vision Document on Drug Control (2026–29)** to tackle emerging drug threats and legal loopholes.
- Enacted in **1985** to regulate **narcotic drugs & psychotropic substances**, prevent illicit trafficking and curb drug abuse.
- **Administered by:** Department of Revenue, Ministry of Finance.
- NDPS Act **prohibits illicit production, possession, transport, sale and trafficking**, but permits **medical and scientific use** under strict regulation.
- Medical & scientific use of narcotic drugs is permitted under strict regulation.
- India is a party to:
 - **Single Convention on Narcotic Drugs, 1961**
 - **Convention on Psychotropic Substances, 1971**
 - **UN Convention Against Illicit Traffic in Narcotic Drugs & Psychotropic Substances, 1988**



INTERNATIONAL AFFAIRS

Shangri-La Dialogue

Context:

Indian Defence Secretary recently participated in bilateral engagements during Shangri-La Dialogue 2026.

About Shangri-La Dialogue

- Shangri-La Dialogue is Asia's premier defence and security summit annually.
- It is also popularly known as the Asia Security Summit.
- The dialogue brings together defence ministers, military chiefs, and policymakers.
- Strategic experts from across the world participate in discussions regularly.

History

- The Shangri-La Dialogue was launched during the year 2002 officially.
- It has evolved into Asia-Pacific's most influential security dialogue platform.

Venue

- The summit is held annually at Singapore's Shangri-La Hotel.
- Singapore serves as the permanent host of this dialogue forum.

Organisers

- It is organized by International Institute for Strategic Studies, London.
- The summit is co-organized by Singapore's Ministry of Defence officially.

AUKUS

Context:

AUKUS members recently announced cooperation on advanced underwater drone systems.

About AUKUS

- AUKUS is a trilateral security partnership formed in 2021.
- It brings together Australia, United Kingdom, and United States.
- The partnership focuses on defence and advanced technology cooperation.
- It aims to strengthen security in the Indo-Pacific region.

Members

- Australia, United Kingdom (UK) and United States of America (USA)

India-Nepal Border Dispute

Context:

Nepal Prime Minister's remarks revived debate on India-Nepal border issues.

Cartographic Differences

Early Maps	Later Maps
• Survey of India maps showed Kali originating near Lipulekh. • These maps placed Kalapani region within Nepal territory.	• A 1879 survey shifted boundary towards watershed ridge. • This alignment placed Kalapani region on Indian side.

Nepal's Earlier Acceptance

- Surveys conducted during 1924-1927 supported revised alignment.
- Maps approved in 1928-29 reflected this boundary position.

Major Disputed Areas

Kalapani-Limpiyadhura-Lipulekh Region

- Located near India-Nepal-China tri-junction area.
- Covers approximately 35 square kilometers of strategic territory.
- India considers it part of Pithoragarh district, Uttarakhand.
- Nepal claims it as part of Darchula district.
- India has maintained an ITBP post since 1955.

Strategic Importance

- Provides important observation point near Indo-China border region.
- Holds military and geopolitical significance for both countries.

Susta Dispute

- Susta lies near Bihar along the Gandak River.
- River course changes created uncertainty over boundary alignment.
- More than 14,000 hectares became subject to dispute.
- Local farming and settlements intensified jurisdictional confusion.



Fixed Boundary Principle

- International boundaries generally remain fixed despite river movements.
- Rivers naturally shift their course over long periods.
- This creates practical disputes despite legal boundary stability.

Eurozone

Context:

Eurozone inflation rose to 3.2% in May due to higher energy and service prices.

About Eurozone

- Eurozone is the group of European Union countries using euro.
- It is officially known as the **Euro Area**.
- Member countries have adopted the euro (€) as currency.
- It forms a major economic and monetary union globally.

Members

- As of January 2026, Eurozone consists of 21 countries.
- Austria, Belgium, Bulgaria, Croatia, Cyprus, and Estonia.
- Finland, France, Germany, Greece, Ireland, and Italy.
- Latvia, Lithuania, Luxembourg, Malta, and Netherlands.
- Portugal, Slovakia, Slovenia, and Spain are members.

Latest Member

- Bulgaria became the newest Eurozone member in 2026.

Countries in EU but Outside Eurozone

- Not all European Union countries use the euro. Some nations retain independent national currencies and policies.

Non-Euro EU Countries

- Czech Republic, Denmark, Hungary, Poland, Romania and Sweden.

European Central Bank (ECB)

Role

- ECB is the central bank of the Eurozone. It determines monetary policy for all Eurozone members.
- It decides key interest rates across the currency bloc. It has sole authority over euro note issuance.
- It also authorizes minting of euro coins.

Structure

- Headed by a President and Executive Board.
- Includes heads of participating national central banks.

European Stability Mechanism (ESM)

- ESM provides financial support during economic crises.
- It offers rescue loans under specific conditions.
- Helps maintain financial stability in the Eurozone.

How Countries Join the Eurozone?

Maastricht Criteria

- Countries must satisfy convergence criteria before joining.
- These conditions were established under Maastricht Treaty, 1992.

Main Conditions

Price Stability • Inflation rates must remain under acceptable limits.	Exchange Rate Stability • Currency should remain stable before euro adoption.
Sound Public Finances • Government deficits and debt levels must be sustainable.	Durability of Convergence • Economic performance must demonstrate long-term stability.

Adoption Rules

- All EU members except Denmark must adopt euro eventually.
- Adoption occurs only after meeting required conditions.
- No fixed timetable exists for joining the Eurozone.
- Countries decide their own preparation strategy independently.

Who Decides Eligibility?

- European Commission evaluates candidate country's preparedness.
- ECB also assesses compliance with convergence criteria.
- Both institutions jointly approve euro adoption eligibility.



UN Mission in South Sudan (UNMISS)

Context:

565 Indian peacekeepers received the prestigious United Nations Medal of Honour.

About UNMISS

What is UNMISS?

- UNMISS is a United Nations peacekeeping mission in South Sudan.
- It deploys military, police, and civilian personnel for peacekeeping.
- Peacekeepers are popularly known as **Blue Helmets** worldwide.

Establishment

- Established on **9 July 2011** after South Sudan's independence.
- Created under **UN Security Council Resolution 1996**.
- Launched alongside the formation of South Sudan nation.

Key Features

Civilian Protection	Large Peacekeeping Mission	India's Contribution
• Protection of civilians is the mission's primary responsibility. • Peacekeepers conduct patrols in conflict-prone and vulnerable areas. • Uses early-warning systems to prevent violence outbreaks.	• UNMISS is among the world's largest peacekeeping operations. • Thousands of military and police personnel serve under mission.	• India is the second-largest troop contributor to UNMISS. • Only Nepal contributes more peacekeepers than India. • India deploys more than 4,200 uniformed personnel.

About United Nations Medal of Honour

What is It?

- It is a UN military decoration for peacekeepers.
- Awarded by the United Nations Secretary-General.
- Recognizes distinguished service in UN peacekeeping missions.

Eligibility

- Peacekeepers must complete required service period.
- Generally requires at least 90 days of service.
- Service must be under an active UN mission.

Features of the Medal

Design	Ribbon
• Medal is made of bronze material. • Displays the world map symbol of United Nations. • Bears the letters "UN" on the medal.	• Ribbon colors vary according to specific missions. • UNMISS ribbon reflects themes linked to South Sudan.

World Gold Council (WGC)

About:

- The World Gold Council (WGC) is a **non-profit organization** representing the global gold industry.
- It was established in **1987** by leading gold mining companies.
- **Headquarters:** London, United Kingdom.

Key Features

- Represents **29 major gold mining companies**.
- Covers markets accounting for nearly **three-fourths of global gold consumption**.
- Considered the global authority on gold market analysis.
- Publishes:
 - Gold Demand Trends Reports.
 - Gold Market Reports.
 - Central Bank Gold Reserves (CBGR) Survey.

Major Contributions

- Created the world's first **Gold Exchange-Traded Fund (Gold ETF)**.
- Supports research on new uses and applications of gold.

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- Promotes transparency, sustainability, and responsible mining practices.

Recent Development

- The **2026 Central Bank Gold Reserves (CBGR) Survey** indicated that central banks are likely to continue increasing their gold reserves in the coming years.

Operation Amistad

- India launched **Operation Amistad** to provide **Humanitarian Assistance and Disaster Relief (HADR)** to earthquake-hit **Venezuela**. **Amistad** is a **Spanish word meaning "Friendship"**.
- **BHISHM** stands for **Bharat Health Initiative for Sahyog, Hita & Maitri**.
- An **indigenously developed, portable and modular field hospital**, designed for rapid deployment during **Humanitarian Assistance & Disaster Relief (HADR)** operations.
- It is part of **Project Aarogya Maitri** and can provide emergency surgery, trauma care, ICU support and other critical medical services in disaster-hit areas.
- A flagship humanitarian initiative of the **Government of India** to provide **rapid medical assistance** during disasters and humanitarian crises abroad.

UNLCOS and Strait of Hormuz

- Iran has proposed **charging fees for ships using the Strait of Hormuz**, citing navigation and environmental protection.
- Connects the **Persian Gulf** with the **Gulf of Oman** and **Arabian Sea**.
- Lies between **Iran (north)** and **Oman (Musandam Peninsula) & UAE (south)**.

Zone	Distance from Baseline	Rights of Coastal State
Internal Waters	Landward of baseline	Complete sovereignty
Territorial Sea	Up to 12 NM	Full sovereignty; foreign ships enjoy Innocent Passage
Contiguous Zone	Up to 24 NM	Prevent customs, fiscal, immigration & sanitary violations
Exclusive Economic Zone (EEZ)	Up to 200 NM	Sovereign rights over living & non-living resources
Continental Shelf	Up to 200 NM (extendable to 350 NM)	Rights over seabed & subsoil resources only
High Seas	Beyond national jurisdiction	Freedom of navigation for all States

- **Bodies under UNCLOS: International Tribunal for the Law of the Sea (ITLOS) + International Seabed Authority (ISA) + Commission on the Limits of the Continental Shelf (CLCS)**
- **Article 17** → Right of **Innocent Passage** through the territorial sea.
- **Article 26** → **No charge can be levied merely for passage**; charges are allowed **only for specific services rendered**.
- **Article 37** → Applies **Transit Passage** regime to international straits.
- **Article 38** → Ships and aircraft enjoy **Right of Transit Passage**.
- **Article 44** → **Transit Passage cannot be suspended** by the coastal State.



SCIENCE TECHNOLOGY

5G Network Slicing

Context:

Airtel launched India's first consumer-focused 5G network slicing service recently.

About 5G Network Slicing

- 5G Network Slicing allows creation of multiple virtual networks simultaneously.
- These virtual networks operate on a single physical 5G infrastructure.
- Each slice functions as an independent end-to-end network separately.
- Every slice is customized according to specific service requirements effectively.

How It Works

- Traditional networks make all users share the same bandwidth pool.
- Network slicing creates dedicated virtual lanes for different users.
- It uses Software-Defined Networking (SDN) for intelligent network management.
- It also uses Network Functions Virtualization (NFV) technologies extensively.
- Software dynamically allocates bandwidth, latency, and computing resources efficiently.
- During congestion, premium users can receive dedicated network resources.
- This ensures stable connectivity even when network traffic increases significantly.

Key Features

Virtual Isolation

- Different slices share infrastructure but remain digitally isolated completely.
- Traffic surge in one slice does not affect another slice.

Dynamic Resource Allocation

- Resources can be increased or reduced according to demand instantly.
- Bandwidth and latency settings adjust automatically in real time.

Application and Content Agnostic

- The network slice treats all data packets equally during transmission.
- It does not distinguish between specific applications or websites.
- Netflix, YouTube, and other services receive identical treatment within slice.

Customizable Slices

- Operators can design slices for different use cases independently.
- One slice may prioritize ultra-low latency for critical applications.
- Another slice may support large-scale Internet of Things networks.
- Another slice may provide high-speed broadband for consumers consistently.

Applications

Industrial Automation

- Ultra-low latency slices support automated factories and industrial robotics.

Healthcare

- Specialized slices can assist remote surgeries and medical applications.

Internet of Things (IoT)

- Dedicated slices support massive numbers of connected smart devices.

Consumer Broadband

- Premium users can receive stable and congestion-free internet connectivity.

Solar Cycle

Context:

IIA researchers used 100 years of Kodaikanal Observatory data to study supergranulations during different solar cycle phases.

About Solar Cycle

What is it?

- Solar Cycle is an approximately 11-year cycle of solar activity.
- It is driven by changes in the Sun's magnetic field.
- The cycle is measured using sunspot numbers on the Sun.
- More sunspots indicate higher solar activity levels.

Magnetic Field Reversal

- The Sun's magnetic field reverses approximately every eleven years.
- The Sun's north and south magnetic poles switch positions.
- Another eleven years are required to restore original polarity.



- Thus, a complete magnetic cycle lasts about twenty-two years.

How Solar Cycle Works

- Solar activity depends upon changes in the Sun's magnetic field.
- Magnetic field changes influence activity on the Sun's surface.
- Sunspots are visible manifestations of intense magnetic activity.
- Scientists track solar cycles by counting sunspot numbers.

Impact of Solar Cycle on Earth

- Influences Earth through variations in solar radiation levels.
- Affects the flow of cosmic rays reaching Earth.
- Alters ozone distribution in the Earth's atmosphere.
- Can influence climatic and atmospheric conditions on Earth.

Autoimmune Blistering Diseases (AIBDs)

- **Context:**
 - A joint study by Punjabi University, Patiala, and PGIMER, Chandigarh has developed Artificial Intelligence (AI)-based methods to assist in the diagnosis of Autoimmune Blistering Diseases (AIBDs).
- **About Autoimmune Blistering Diseases (AIBDs)**
- **What are AIBDs?**
 - Autoimmune Blistering Diseases (AIBDs) are a group of rare skin disorders.
 - They are also known as **Autoimmune Bullous Disorders**.
 - They occur when the body's immune system mistakenly attacks healthy skin and mucous membranes.
 - This abnormal immune response leads to the formation of blisters and sores.
- **Cause**
- **Autoimmune Reaction**
 - The immune system attacks proteins that help bind skin cells together.
 - This weakens the connection between skin layers.
 - As a result, fluid-filled blisters develop on the skin or mucous membranes.
- **Symptoms**

Skin-related Symptoms	Mucosal Symptoms
• Fluid-filled blisters on the skin. • Painful sores after blisters rupture. • Itching and irritation. • Skin redness and discomfort.	• Blisters and ulcers inside the mouth. • Difficulty eating or swallowing. • Eye irritation and inflammation. • Lesions in the nose, throat, or genital region.

- **Treatment : Biologic Therapy: Rituximab** is an important biologic medicine used in treatment.
 - Targets specific immune cells responsible for the disease.

Pyroprocessing

- **Context:**
 - Pyroprocessing is being widely used across various industries around the world, including cement manufacturing, metallurgy, and the nuclear sector.
- **Key Features**

High-Temperature Process	Dry Process	Energy Intensive
• Involves heating materials to extremely high temperatures. • Causes chemical reactions or physical transformations in the material.	• Does not rely on water-based chemical reactions. • Uses heat as the primary processing medium.	• Requires significant energy input to achieve and maintain high temperatures.

- **Applications of Pyroprocessing**
- **Cement Manufacturing**
- **Metallurgy (Metal Extraction)**
- **Roasting**
- **Smelting**
- **Nuclear Industry**
- **Reprocessing of Spent Nuclear Fuel**
- **Salt Bath Composition**
- **Electrochemical Separation**



Dark Patterns

Context:

- Indian consumers are estimated to lose ₹25,000–₹28,000 crore annually due to deceptive online interface designs known as dark patterns.

What are Dark Patterns?

- Dark patterns are deceptive design techniques used on websites, apps, emails, and online platforms.
- They are intentionally designed to manipulate users into making decisions they may not otherwise choose.
- These decisions usually benefit the company rather than the consumer.
- They are also known as **deceptive patterns**.

Coined By

- The term "**Dark Patterns**" was coined by Harry Brignull in 2010.

How Do Dark Patterns Work?

Exploiting Cognitive Biases

- They take advantage of **cognitive biases** (natural shortcuts the human brain uses while making decisions).
- They influence user behaviour through psychological pressure and misleading design.

Manipulative Design

- Users are nudged toward actions that they may not fully understand or intend.
- Often encourage unnecessary purchases, subscriptions, or sharing of personal data.

Guidelines in India

Regulatory Framework

- The Central Consumer Protection Authority (CCPA) notified the **Guidelines for Prevention and Regulation of Dark Patterns, 2023**.

Purpose

- To protect consumers from deceptive online practices.
- To promote transparency and informed decision-making.

Jiangmen Underground Neutrino Observatory (JUNO)

Context:

The JUNO collaboration recently published its first scientific results on neutrino oscillations from nuclear reactors.

What is JUNO?

- The Jiangmen Underground Neutrino Observatory is a large underground neutrino research facility.
- It is one of the world's most advanced neutrino detection experiments.
- The observatory studies the properties and behaviour of neutrinos.
- It helps scientists understand fundamental questions in particle physics.

Location

- JUNO is located near Kaiping city in Guangdong Province, China.
- The facility is situated about 53 kilometres from nuclear power plants.
- It lies close to the Taishan and Yangjiang nuclear power stations.

International Collaboration

- JUNO is an international scientific collaboration involving 74 institutions.
- Researchers from Asia, Europe, and America participate in the project.
- The collaboration consists of nearly 700 scientists and researchers.

Lead Institution

- The project is led by the Chinese Academy of Sciences.
- The Institute of High Energy Physics manages the experiment.

Background

- JUNO is China's second major neutrino experiment.
- It follows the successful Daya Bay Reactor Neutrino Experiment.
- The project represents a major advancement in neutrino research.

What are Neutrinos?

- Neutrinos are extremely tiny subatomic particles with very small mass.
- They rarely interact with ordinary matter, making detection difficult.
- Trillions of neutrinos pass through our bodies every second.

Neutrino Oscillation

- Neutrinos can change from one type to another while travelling.
- This process is known as neutrino oscillation or flavour change.
- Studying oscillations helps scientists understand particle properties better.

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Tetanus

About:

- Tetanus (Lockjaw) is a serious bacterial disease affecting the nervous system.
- It is caused by the toxin of *Clostridium tetani*.
- It enters the body through contaminated wounds and is **not spread person-to-person**.

Symptoms

- **Lockjaw** (inability to open the mouth properly) – hallmark symptom.
- Difficulty swallowing; Muscle stiffness and spasms; Fever, sweating, headache.
- Changes in heart rate and blood pressure; Severe cases may cause breathing difficulties and death.

Treatment

- No specific cure exists. Treatment focuses on symptom management and preventing complications. Recovery does **not** provide lifelong immunity.

Prevention

- Completely preventable through vaccination. Protection generally lasts about **10 years**.
- Childhood schedule includes **5 doses** followed by booster doses.
- **Tdap vaccine** is recommended during pregnancy.

Memory Chips

About:

- Memory chips are integrated circuits that store and provide data to electronic devices.
- Unlike processors, they primarily **store and retrieve information** rather than perform computations.

Types of Memory Chips

DRAM (Dynamic Random Access Memory)

- Volatile memory; data is lost when power is off.
- Requires continuous refreshing of stored data.
- Used as the main memory in computers and servers.

NAND Flash Memory

- Non-volatile memory; retains data without power.
- Used in SSDs, pen drives, memory cards, and smartphones.

HBM (High Bandwidth Memory)

- Advanced memory technology with vertically stacked memory layers.
- Provides ultra-fast data transfer for AI and data centers.

LPDDR (Low-Power DDR)

- Energy-efficient memory used in smartphones and laptops.
- Optimized for low power consumption and high performance.

GRAPES-3 Telescope

About:

- **GRAPES-3 (Gamma Ray Astronomy PeV EnergieS – Phase 3)** is a cosmic ray observatory designed to study the origin, acceleration, and propagation of cosmic rays.
- It is operated by the **Tata Institute of Fundamental Research (TIFR)**.
- **Location:** Ooty, Tamil Nadu.

Key Features

- Studies **cosmic rays, gamma rays, solar activity, and thunderstorm phenomena**.
- Detects **Extensive Air Showers (EAS)** produced when high-energy cosmic rays enter Earth's atmosphere.
- Uses:
 - Plastic scintillator detector array.
 - Large-area muon detector based on proportional counters.
- Measures particles in the **tera-electronvolt (TeV) to peta-electronvolt (PeV)** energy range.

Recent Significance

- Researchers used GRAPES-3 to study how Earth's upper atmospheric temperature and Sun's magnetic field influence **muons** (subatomic particles produced by cosmic rays).

Cosmic Rays: Key Facts

- Discovered over **100 years ago**.
- Among the **most energetic particles** in the universe.
- Continuously bombard Earth from outer space.
- On entering the atmosphere, they generate particle showers containing: Electrons, Photons, Muons, Protons, Neutrons



- Energy range: 10^8 to 10^{20} eV.

Fixed Dose Combination Drugs

- Government periodically reviews irrational FDC drugs and has banned several combinations in public interest.
- FDCs refer to **products containing** two or more active pharmaceutical ingredients (APIs) In a fixed proportion (as per **Drugs & Cosmetics Rule 1945**).
- **Active Ingredient** is the biologically active component of a drug product (tablet, capsule, cream, injectable) that produces the intended effects.
- Governing Law: **Drugs and Cosmetics Act, 1940 & Drugs and Cosmetics Rules, 1945**
- Regulatory Authority: **Central Drugs Standard Control Organisation (CDSCO)**
- Head: **Drugs Controller General of India (DCGI)** under Ministry of Health & Family Welfare

Comet 3I/ATLAS & Carbon Isotopes

- Scientists studying **Comet 3I/ATLAS**, the third known interstellar object observed in our Solar System, used isotope analysis to estimate its age and origin.
- **3I = Third identified interstellar object.**
- **Discovered by the ATLAS (Asteroid Terrestrial-impact Last Alert System) survey.**
- **Originated outside the Solar System.**
- **Estimated age: ~12 billion years.**
- Formed when the **universe was only about 13% of its present age.**
- Likely originated in a **very cold environment** ($\sim -243^\circ\text{C}$).
- Observed using the **James Webb Space Telescope (JWST) and Hubble Space Telescope.**
- **Isotopes** are atoms of the same element having: same number of protons but different number of neutrons
- Scientists measure ratios of carbon isotopes to infer: age of objects, origin of matter, stellar formation history, composition of interstellar gas clouds, etc hence isotopes act as natural cosmic clocks.
- **C^{13} , a stable isotope of carbon is mainly used in scientific and astronomical studies along with C^{12} .**

Schedule 2 Drugs

- Government proposes expanding Schedule H2 from **selected medicines to entire therapeutic classes.**
- **Introduced in 2022-23** by the Government of India.
- To ensure **traceability and authenticity** of medicines throughout the supply chain.
- Specified drug packs must carry a **QR Code/Barcode.**
- Helps to detect **counterfeit medicines**, track **defective batches**, enable **rapid product recalls** and improve patient safety
- The **Central Government (Ministry of Health & Family Welfare)** notifies and amends the **Drugs & Cosmetics Rules, 1945** under the **Drugs & Cosmetics Act, 1940.**

Schedule	What does it deal with?
Schedule G	Drugs to be taken only under medical supervision. Label: " Caution: To be taken under medical supervision. "
Schedule H	Prescription drugs; cannot be sold without a Registered Medical Practitioner's (RMP) prescription.
Schedule H1	Selected high-risk drugs (certain antibiotics, anti-TB drugs, habit-forming medicines). Prescription mandatory + pharmacist must maintain sale records for 3 years.
Schedule H2	QR/Barcode-based traceability for specified medicines to verify authenticity and track defective/counterfeit batches.
Schedule X	Narcotic & Psychotropic drugs with high abuse potential. Special prescription, separate register, strict storage and record-keeping.

SAGIN

- **Full Form:** Space-Air-Ground Integrated Network.
- A **next-generation integrated communication architecture** combining **satellites, aerial platforms, and terrestrial networks** into a single seamless network.
- **Aim:** **Reliable, resilient, and uninterrupted communication**, especially during disasters and in remote areas.
- **Major Applications**
- Disaster management & emergency communication.
- Defence & border surveillance.
- Remote and rural connectivity.
- Maritime & aviation communication.



DEFENCE

BrahMos Missile

Context:

India has signed a major BrahMos missile export deal with Vietnam.

About BrahMos Missile

- BrahMos is a long-range supersonic cruise missile developed jointly.
- It can be launched from land, sea, air, and submarines.
- The missile follows the Fire and Forget operational principle.
- It maintains supersonic speed throughout its entire flight path.
- High speed makes interception extremely difficult for enemy defenses.

Developed By

- BrahMos Aerospace manufactures and develops the BrahMos missile system.
- It is a joint venture established during 1998 officially.
- Partners are DRDO of India and NPO Mashinostroyeniya of Russia.

Name Origin

- BrahMos combines names of Brahmaputra River and Moskva River.
- The name symbolizes India-Russia technological cooperation and partnership.

Key Features

Two-Stage Propulsion System • First stage uses a solid propellant booster for acceleration. • Second stage uses a liquid-fuel ramjet engine for cruising.	Warhead Capacity • The missile can carry conventional warheads up to 200 kilograms.
High Speed • BrahMos travels at nearly Mach 2.8 speed consistently. • It is among the world's fastest operational cruise missiles.	Flight Altitude • It can fly as high as 15 kilometres altitude. • It can descend to only 5 metres above sea level. • Sea-skimming flight helps evade enemy radar detection effectively.
High Destructive Power • It possesses significantly higher kinetic energy than subsonic missiles. • Greater speed increases impact force and target destruction capability.	Universal Launch Canister • Transport Launch Canister stores, transports, and launches missile safely. • Same internal missile configuration is used across all platforms.

International Buyers: Philippines, Vietnam and Indonesia

Project UDAYAK

Context:

BRO recently celebrated the 37th Raising Day of Project UDAYAK.

About Project UDAYAK

- Project UDAYAK is an important initiative of the Border Roads Organisation.
- The project supports strategic infrastructure development in India's far east.
- UDAYAK means "Rising Sun," reflecting its geographical significance.
- The first sunrise in India occurs within the project's area.

Organisation

- Project UDAYAK functions under the Border Roads Organisation (BRO).
- BRO develops and maintains strategic road infrastructure in border areas..

Area of Operation

- The project operates mainly in Arunachal Pradesh's eastern regions.
- It also covers strategically important areas of Assam.

RudraM-II Missile

Context:

DRDO and IAF successfully conducted flight tests of the indigenous RudraM-II missile.

About RudraM-II Missile

- RudraM-II is an advanced indigenous Air-to-Surface missile system.
- It is classified as an anti-radiation missile (ARM).
- The missile targets enemy radar and air defence systems.
- It can detect, track, and destroy radio-emitting targets.

Developed By

- Developed by Defence Research and Development Organisation (DRDO).

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- Research Centre Imarat (RCI), Hyderabad served as nodal laboratory.
- Developed through collaboration among multiple DRDO establishments.

What is SEAD?

- SEAD means Suppression of Enemy Air Defences capability.
- It involves destroying enemy radars and missile systems.
- It creates safer airspace for military aircraft operations.

Key Features

Anti-Radiation Capability

- Homes onto radio frequency emissions from enemy systems.
- Targets radar stations, communication networks, and missile sites.

Hypersonic Speed

- Capable of achieving speeds up to Mach 5.5.
- Extremely high speed reduces enemy reaction time significantly.

Long Stand-Off Range

- Has an operational strike range of approximately 300 kilometres.
- Allows aircraft to attack without entering enemy airspace.

Warhead

- Can carry a conventional warhead weighing up to 200 kilograms.
- Effective against hardened radar installations and command bunkers.

Flexible Launch Capability

- Can be launched from multiple operational altitudes.
- Launch altitude ranges from 3 km to 15 km.

Guidance System

- Uses Inertial Navigation System (INS) for navigation.
- Integrated with GPS for enhanced targeting accuracy.
- Equipped with Passive Homing Head (PHH) technology.

Passive Homing Head (PHH)

- Detects enemy radio frequency emissions automatically.
- Locks onto radar signals across a wide frequency range.
- Guides missile accurately towards emitting target sources.

Launch Platform

- Designed for launch from frontline fighter aircraft.
- Can be integrated with Su-30MKI fighter aircraft fleet.

Project 18 Programme

Context:

India's Project 18 Programme is being developed as one of the most powerful surface combatant projects of the Indian Navy.

About Project 18 Programme

What is Project 18?

- Project 18 is the Indian Navy's Next-Generation Destroyer (NGD) programme.
- The programme aims to develop advanced multi-role stealth destroyers.
- It is planned as the successor to the Visakhapatnam-class destroyers.
- The project will significantly enhance India's naval combat capabilities.

Organisations Involved

- The programme is overseen by the Indian Navy's Warship Design Bureau.
- Mazagon Dock Shipbuilders Limited participates in the project's development.
- Garden Reach Shipbuilders and Engineers also supports the programme.

Missile Capabilities

Vertical Launch Systems

- Each ship will carry 114 Vertical Launch System cells.
- These launchers can fire multiple types of indigenous missiles.

Missile Types

- The ships will be equipped with BrahMos supersonic cruise missiles.
- They will also carry BrahMos Next Generation missile variants.
- Long-Range Land Attack Cruise Missiles can be deployed effectively.
- Precision-Guided Long-Range Surface-to-Air Missiles will strengthen air defence.
- Short-Range Surface-to-Air Missiles will provide close-range protection.
- SMART missiles will enhance anti-submarine warfare capabilities.



Unmanned Systems

- The destroyers will carry unmanned underwater vehicles for surveillance missions.
- These vehicles will help detect underwater mines and threats.
- The ships will also deploy kamikaze drones during combat operations.
- Unmanned systems will improve situational awareness and strike capability.

Advanced Sensors

- The destroyers will feature highly advanced radar systems.
- These sensors will provide complete 360-degree battlefield awareness.
- Radar systems will detect threats at distances up to 500 kilometres.
- The ships will possess strong tracking and target engagement capabilities.

Night Vision Devices (NVDs)

Context:

- India is strengthening its night-combat capabilities through indigenous Night Vision Devices (NVDs).
- The Ministry of Defence has signed a ₹659.47 crore contract for **Netro NW 3000** night sights.
- Bharat Electronics Limited (BEL) has also commissioned a dedicated electro-optics facility in Andhra Pradesh.

About Night Vision Devices (NVDs)

What are NVDs?

- Night Vision Devices (NVDs) are advanced optoelectronic instruments.
- They help soldiers see in darkness and low-visibility conditions.
- They convert very low levels of light or heat signatures into visible images.
- They provide a significant operational advantage during night-time military operations.

India's Growing Night Vision Capabilities

Netro NW 3000 Night Sights Recent Procurement • Ministry of Defence has contracted MKU Ltd. and Medbit Technologies. Purpose • Supply 29,762 Netro NW 3000 Generation-III Night Sights. Deployment • To be fitted on SIG 716 assault rifles used by frontline troops. Armoured Vehicle Integration BMP-2M Infantry Combat Vehicles • Indigenous thermal sights are being integrated into BMP-2M vehicles. • Enhances combat effectiveness during night operations.	Aviation Night Vision Systems Netro NB-3100 Gen-III Goggles • Inducted by the Indian Air Force. Platforms • HAL Prachand (LCH Prachand) • HAL Light Utility Helicopter (LUH) Benefit • Improves pilot visibility and operational capability during night missions. BEL Electro-Optics Facility Location • Nimmaluru, Andhra Pradesh. Investment • ₹362 crore facility established by BEL. Products • Night Vision Devices, Missile infrared seekers. And Anti-drone systems.
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AN-32 Aircraft

Context:

An Indian Air Force AN-32 transport aircraft recently crashed at Jorhat Air Force Station in Assam.

About AN-32 Aircraft

What is AN-32?

- The AN-32 is a twin-engine turboprop military transport aircraft.
- It is designed for transport, logistics, and tactical airlift missions.
- The aircraft is known for operating in difficult terrains and climates.
- Its NATO reporting name is "**Cline**."

Key Features Twin-Engine Turboprop System • The aircraft is powered by two high-performance turboprop engines. • These engines provide excellent lifting capability and reliability. High-Altitude Operations	Roles and Functions Military Transport • The aircraft transports troops, equipment, and military supplies. • It supports logistics operations across different regions of India. Humanitarian Assistance
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- AN-32 is specially designed for high-altitude airfields.
- It can operate at airfields located up to 4,500 metres above sea level.
- This capability makes it suitable for Himalayan regions.

Hot Climate Performance

- The aircraft performs efficiently in hot tropical environments.
- It can operate effectively even under extreme temperature conditions.

Rugged Design

- The aircraft is built for operations from semi-prepared airstrips.
- It can function in remote and challenging operational areas.

- AN-32 aircraft are frequently used during disaster relief operations.
- They help deliver food, medicines, and emergency supplies.

Strategic Connectivity

- The aircraft maintains connectivity with remote border locations.
- It plays a vital role in supporting forward military deployments.

Air Maintenance Operations

- AN-32 aircraft supply essential materials to isolated military posts.
- They are especially important in mountainous and inaccessible regions.

Long Range Land Attack Cruise Missile (LRLACM)

About:

- LRLACM is an **indigenously developed subsonic cruise missile** designed for precision strikes against land targets at long ranges.
- Developed by DRDO, led by the **Aeronautical Development Establishment (ADE)**, Bengaluru.

Key Features

- **Range:** Nearly **1,000 km**.
- **Warhead:** Can carry a **450 kg conventional warhead**.
- **Launch Type:** Surface-launched cruise missile.
- **Flight Profile:** Low-altitude, **terrain-hugging flight** to avoid enemy radar detection.
- **Propulsion:** Uses **turbofan/turbojet engine** for sustained flight.

Guidance System

- **Inertial Navigation System (INS)**.
- Satellite-based navigation support.
- **Terrain Contour Matching (TERCOM)** and terminal seeker for high accuracy.

Significance

- Enables long-range precision strikes on:
 - Command and control centres.
 - Radar installations.
 - Logistics hubs.
 - Strategic military infrastructure.
 - Naval targets.
- Enhances India's indigenous stand-off strike capability.

Exercise Pitch Black

About:

- Exercise Pitch Black is a **biennial multinational air combat exercise** hosted by the **Royal Australian Air Force (RAAF)**.
- It is RAAF's **flagship international flying exercise**.
- The name "Pitch Black" reflects its original focus on **night-time flying operations**.

Key Points

- **Host Country:** Australia.
- **Conducted By:** Royal Australian Air Force (RAAF).
- **Frequency:** Every two years (Biennial).

Pitch Black 2026

- **Duration:** 20 July – 7 August 2026.
- **Locations:**
 - RAAF Base Darwin
 - RAAF Base Tindal (Northern Territory)
 - RAAF Base Amberley (Queensland)



- Participation of **19 countries**, over **100 aircraft**, and **4,400+ personnel**..

India's Participation

- India is participating through the **Indian Air Force (IAF)**.
- IAF has previously participated in:
 - **2018, 2022, 2024 and 2026**
- Provides exposure to advanced air warfare tactics alongside countries such as the **USA, UK, France, and Australia**.

INS Tarkash

About:

- INS Tarkash is a **stealth guided-missile frigate** of the Indian Navy.
- It is the **second ship of the Talwar-class** frigates.
- Built at **Yantar Shipyard, Kaliningrad, Russia**.
- Commissioned on **9 November 2012**.

Key Features

- **Class:** Talwar-class (modified Krivak III-class), **Displacement:** 3,850 tonnes, **Length:** 124.8 m, **Beam:** 15.2 m, **Draught:** 4.2 m.
- **Speed:** Over 30 knots, **Endurance:** 30 days, **Range:** 4,500 nautical miles, **Crew:** 253 personnel.

Weapon Systems

- **BrahMos supersonic cruise missiles**, Surface-to-air missiles (SAMs).
- 100 mm naval gun, Torpedoes, Rocket launchers, Close-range weapon systems.

Aviation Facilities

- Can operate:
 - **Ka-28 Helix-A** (Anti-Submarine Warfare Helicopter).
 - **Ka-31 Helix-B** (Airborne Early Warning Helicopter).



ECONOMY

RBI's Kill Switch Facility

Context:

RBI is exploring a universal Kill Switch and Switch On/Off facility.

About RBI's Kill Switch Facility

- Kill Switch is an emergency security mechanism for digital payments.
- It instantly freezes financial operations linked to user accounts.
- The facility can block fund transfers from banks or wallets.
- It is designed to stop fraud before money leaves accounts.

Key Features

Integrated Emergency Button

- Banks may provide a prominent one-tap emergency button feature.
- The button will be integrated into mobile banking applications.

Omnichannel Access

- Users can activate the facility through multiple channels easily.
- Activation options may include SMS, IVR, and internet banking.
- Alternative channels help when smartphones are compromised by scammers.

Switch On / Switch Off Facility

- Users can selectively disable specific payment channels independently.
- UPI transactions can be switched off whenever required temporarily.
- International transactions can be disabled for enhanced security protection.
- Other banking services may remain active as per user choice.
- Users can reactivate services whenever needed through secure methods.

Universal Coverage

- The facility covers the entire digital payments ecosystem comprehensively.
- It extends beyond debit and credit card transaction controls.
- UPI, IMPS, and NEFT transactions will also be covered.

Foreign Currency Non-Resident (Bank) [FCNR(B)]

Context:

- The Reserve Bank of India (RBI) has introduced a special dispensation allowing banks to mobilize fresh 3- to 5-year FCNR(B) deposits.

About FCNR(B)

What is FCNR(B)?

- FCNR(B) stands for **Foreign Currency Non-Resident (Bank) Deposit**.
- It is a fixed-term deposit account maintained in foreign currency with Indian banks.
- It is available to: Non-Resident Indians (NRIs), Overseas Citizens of India (OCIs), Persons of Indian Origin (PIOs)

Key Feature

- Deposits are maintained in foreign currency itself.
- Unlike many NRI accounts, funds are not converted into Indian Rupees.
- Depositors are protected from exchange rate fluctuations between the Rupee and foreign currencies.

Objectives

For Depositors	For Indian Banks	For the Economy
• Provides an investment avenue in India without currency conversion risk. • Offers tax benefits on interest income. • Enables savings to be held in internationally accepted currencies.	• Mobilizes stable foreign currency resources. • Provides access to overseas funding at relatively lower cost.	• Strengthens India's foreign exchange reserves. • Supports the capital account by attracting foreign currency inflows.

Eligible Currencies

Commonly Accepted Currencies: US Dollar (USD), Pound Sterling (GBP), Euro (EUR), Japanese Yen (JPY), Australian Dollar (AUD), Canadian Dollar (CAD)

Tenure

Deposit Period



- FCNR(B) deposits generally have a maturity period ranging from **1 year to 5 years**.
- Under the recent RBI dispensation, banks can raise fresh deposits with **3- to 5-year maturities**.

Key Features of FCNR(B)

Foreign Currency Deposit

- Maintained entirely in foreign currency.
- No exposure to Rupee depreciation.

Repatriability

- Both principal and interest are fully repatriable (can be transferred abroad).

Tax Benefits

- Interest earned is exempt from income tax in India.
- Benefit is available as long as the depositor retains non-resident status under Indian tax laws.

Fixed Returns

- Depositors earn interest at predetermined rates for a fixed period.

Regulatory Benefits for Banks CRR Exemption • Fresh FCNR(B) deposits mobilized under the special window are exempt from: Cash Reserve Ratio (CRR) requirements. SLR Exemption • Also exempt from: Statutory Liquidity Ratio (SLR) requirements. Significance • Enhances banks' lending capacity. • Improves profitability of FCNR(B) deposits.	Interest Rates Benchmark Linked • Interest rates are linked to international market conditions. Lower than Domestic Deposits • FCNR(B) rates are generally lower than domestic Rupee fixed deposits. Example • FCNR(B) rates: Around 3%-3.65%. • Domestic fixed deposits: Often above 6%. Competitive Pressure • Rising global interest rates may encourage Indian banks to offer higher FCNR(B) returns to attract overseas deposits.
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Comparison with Other NRI Accounts

Feature	FCNR(B)	NRE Account	NRO Account
Currency	Foreign Currency	Indian Rupees	Indian Rupees
Exchange Rate Risk	No	Yes	Yes
Repatriability	Fully Repatriable	Fully Repatriable	Restricted
Main Purpose	Foreign currency savings	Overseas earnings in India	Managing income earned in India

Zero Coupon Zero Principal (ZCZP) Instrument

Context:

MCA recently permitted CSR funds to be deployed through ZCZP instruments.

About Zero Coupon Zero Principal Instrument

- ZCZP is a unique financial instrument issued by non-profit organizations.
- It carries neither interest payments nor repayment of principal amount.
- Investors do not receive financial returns from these instruments.
- It functions as a philanthropic funding mechanism within market framework.

Key Features

No Interest Payment • These instruments do not provide any coupon or interest income. No Principal Repayment • Subscribers do not receive repayment of invested principal amount. Project-Based Funding • Funds are earmarked for specified projects or social activities. • Projects must be completed within timelines mentioned in fundraising documents.	Social Stock Exchange Listing • ZCZP instruments are listed on Social Stock Exchange platforms. • This improves transparency and accountability in social sector funding. Dematerialised Form • These instruments can be issued only in dematerialized electronic format. Non-Transferability • Instruments cannot be transferred by original holder during their tenure.
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Arbitrage Funds

About:

- Arbitrage Funds are **equity-oriented hybrid mutual funds** that earn returns from temporary price differences in markets.
- They use the strategy of **buying and selling the same asset simultaneously** to capture price spreads with low risk.

Key Points

- Exploit price differences between:
 - Spot and futures markets.
 - Different stock exchanges.
- Fund managers execute multiple trades to earn small but frequent profits.
- If arbitrage opportunities are unavailable, funds invest in **short-term debt and money market instruments**.
- As per SEBI, at least **65% of assets** must be invested in equities and equity-related instruments.

Benefits

- Low-risk, hedged investment strategy; Equity taxation benefits; High liquidity; Diversified portfolio.

Limitations

- Returns depend on market volatility and availability of arbitrage opportunities.
- Not ideal for long-term wealth creation.
- Generally offers moderate returns compared to pure equity funds.

Drop Shipping

About:

- Drop shipping is an **e-commerce business model** in which sellers do not keep products in stock.
- Products are purchased from a third-party supplier, who ships them directly to customers.
- The seller acts as a **middleman** between customers and suppliers.

How It Works

- Seller lists products online.
- Customer places an order.
- Seller forwards the order to the supplier.
- Supplier ships the product directly to the customer.
- Seller earns the difference between the selling price and supplier cost.

Liberalised Remittance Scheme (LRS)

RBI data showed that outward remittances under the **Liberalised Remittance Scheme (LRS)** declined by **11.9% in April 2026**, mainly due to lower overseas deposits and investments.

- Introduced by **RBI in 2004**.
- Allows **resident individuals only (including minors)** to remit money abroad.
- Governed under: **Foreign Exchange Management Act (FEMA), 1999**
- Annual remittance limit USD 2,50,000 per financial year per individual**
- Permissible Transactions under LRS**

Current Account Transactions	Capital Account Transactions
Private visits abroad	Purchase of property abroad
Education abroad	Opening foreign bank accounts
Medical treatment abroad	Investment in foreign stocks
Gift and donations	Investment in debt instruments
Maintenance of relatives abroad	

Index of Services Production (ISP)

- Index of Services Production (ISP)** is India's **first official high-frequency index** to measure the performance of the **services sector**.
- Released by: **MoSPI** monthly with **Base Year: 2024-25 = 100**.
- Time Lag:** Released with a **60-day lag**.
- First ISP (for **April 2026**) to be released on **14 July 2026**; thereafter on the **29th of every month** (or next working day).

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- ISP is the **services-sector counterpart of the Index of Industrial Production (IIP)**.
- Measures **short-term changes in services sector output**, just as IIP measures industrial output.
- It will track **key service segments** such as trade, transport, banking, insurance, hospitality, real estate, and professional services.
- It proposes to **exclude services provided by the informal sector** due to the paucity of data from the data sources under consideration.
- It also **proposes a temporary exclusion of the health and education sector, which accounts for 10% of the services GVA**, till results of the annual survey of incorporated service sector enterprises (ASISSE) become available.



SCHEMES

PM SVANidhi Scheme

Context:

PM SVANidhi has emerged as a major support scheme for street vendors.

About PM SVANidhi

- PM SVANidhi stands for Prime Minister Street Vendor's AtmaNirbhar Nidhi.
- The scheme was launched by Government of India during June 2020.
- It is a Central Sector Scheme for street vendors nationwide.
- The scheme supports vendors through affordable working capital assistance.
- It promotes financial inclusion and social protection of street vendors.

Implementation

- The scheme is implemented jointly by MoHUA and DFS.
- Ministry of Housing and Urban Affairs plays a leading role.
- Department of Financial Services supports financial implementation and monitoring.

Key Features

Working Capital Loans • Vendors receive collateral-free working capital loans under the scheme. • Loans are provided in three progressive tranches for growth. • First tranche loan amount is ₹15,000 for eligible vendors. • Second tranche loan amount is ₹25,000 for eligible vendors. • Third tranche loan amount is ₹50,000 for eligible vendors. • Interest subsidy and credit guarantee support are also provided.	UPI-linked RuPay Credit Card • Vendors repaying second tranche successfully become eligible for benefits. • They receive UPI-linked RuPay Credit Cards under the scheme. • Credit card limit can extend up to ₹30,000 for vendors. Digital Adoption Incentives • Cashback incentives encourage digital transactions among street vendors nationwide. • Vendors can receive cashback benefits up to ₹1,600 cumulatively. • Incentives promote digital payments and financial literacy effectively.
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Ayushman Bharat Digital Mission (ABDM)

Context:

ABDM has crossed the milestone of generating over 90 crore ABHAs.

About Ayushman Bharat Digital Mission (ABDM)

- ABDM is India's flagship digital health infrastructure initiative nationwide.
- It is implemented by the National Health Authority (NHA).
- The mission functions under Ministry of Health and Family Welfare.
- ABDM acts as a unified digital highway for healthcare services.
- It connects citizens, doctors, hospitals, pharmacies, and insurers seamlessly.

Launch

- The Ayushman Bharat Digital Mission was launched in September 2021.

Key Building Blocks of ABDM

Ayushman Bharat Health Account (ABHA) • ABHA is a unique 14-digit digital health identification number. • It serves as the master key for digital health records. • Citizens can securely link and share medical histories using ABHA. • It enables continuity of healthcare across different facilities nationwide. Healthcare Professionals Registry (HPR) • HPR is a verified national database of healthcare professionals. • It includes doctors, nurses, and paramedical professionals nationwide.	Health Information Exchange and Consent Manager (HIE-CM) • HIE-CM enables secure sharing of health information digitally. • Data sharing occurs only through patient consent mechanisms. • Consent is electronic, explicit, and can be revoked anytime. Unified Health Interface (UHI) • UHI is an open digital network for healthcare services. • It enables teleconsultation booking through compliant applications seamlessly.
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- Professionals from modern and traditional medicine systems are included.

Health Facility Registry (HFR)

- HFR is a comprehensive registry of healthcare facilities nationwide.
- It includes hospitals, clinics, pharmacies, and diagnostic centres.
- Both public and private healthcare establishments are registered.

- Patients can schedule diagnostic tests and access healthcare services.

National Health Claims Exchange (NHCX)

- NHCX standardizes digital processing of health insurance claims.
- It facilitates faster settlement between hospitals and insurers.
- The platform reduces delays and improves claim efficiency significantly.
- facilitates digital settlement of health insurance claims.

MAHA Water Mission

Context:

Government launched the ₹200-crore MAHA Water Mission to promote water innovation.

About MAHA Water Mission

- MAHA stands for Missions for Advancement in High-impact Areas.
- It is a high-priority national programme for water innovation.
- The mission bridges research and real-world water sector applications.
- It supports technology development, validation, and commercialization activities.

Organisations Involved

Anusandhan National Research Foundation (ANRF)

- ANRF is the primary body supporting research funding nationwide.

Ministry of Jal Shakti

- It is the nodal ministry for water resources management.
- It oversees river development and Ganga rejuvenation programmes.

Department of Space / ISRO

- ISRO provides satellite technology and geospatial data support.
- It assists in water mapping and resource assessment activities.

Financial Support

- Total mission outlay is ₹200 crore over five years.
- Selected consortia can receive grants up to ₹20 crore.

Participation

- Universities can participate in mission research and development.
- National laboratories are eligible for collaborative project proposals.
- Research organisations can contribute expertise and innovations.
- Startups and MSMEs are encouraged to participate actively.
- Industry partners can collaborate in commercialization and deployment.

Prime Minister Research Chair (PMRC) Scheme 2026

Context:

Ministry of Education opened applications for PMRC Scheme 2026.

About PMRC Scheme 2026

- PMRC is a prestigious national research and talent-repatriation programme.
- It attracts Indian-origin researchers working in leading global institutions.
- The scheme creates pathways for researchers to work in India.
- It strengthens India's research and innovation ecosystem significantly.

Ministry

- Administered by the Department of Higher Education.
- Functions under the Ministry of Education, Government of India.

Three Tiers of Engagement

Young Research Fellows	Senior Research Fellows	Research Chairs
• Designed for early-career scientists and postdoctoral researchers.	• Targets experienced mid-career researchers and industry experts.	• Reserved for globally recognized scientific and academic leaders.



- | | | |
|---|---|--|
| <ul style="list-style-type: none"> Encourages innovative and emerging research projects. | <ul style="list-style-type: none"> Brings specialized expertise into India's research ecosystem. | <ul style="list-style-type: none"> Includes eminent researchers, innovators, and technology pioneers. |
|---|---|--|

Priority Research Areas

- Computing and Technology
- Industrial and Infrastructure Sectors
- Sustainability and Biological Sciences

Institutional Eligibility

Eligible Institutions

- Government Higher Education Institutions meeting NIRF criteria.
- Institutions ranked among Top 100 in NIRF Overall category.
- Institutions ranked among Top 100 in NIRF Engineering category.
- Institutions ranked among Top 50 in NIRF Research category.
- Selected national laboratories under DST, DBT, ICMR, and CSIR.

Seven Lead Hubs

- IIT Delhi, IIT Bombay, IIT Madras, IIT Kanpur, IIT Hyderabad, IIT (ISM) Dhanbad, IISc Bengaluru.

Governance and Selection

- Selection managed by an independent Empowered Committee.
- Committee is chaired by the Principal Scientific Advisor (PSA).
- Ensures transparent and merit-based evaluation processes.

Navachar Mantra Initiative

Context:

Navachar Mantra launched to support grassroots innovators and rural entrepreneurs.

About Navachar Mantra Initiative

- Navachar Mantra is a national innovation and entrepreneurship initiative.
- It supports grassroots innovators, startups, and micro-entrepreneurs nationwide.
- Focuses on solving local problems through innovative solutions.
- Helps convert local ideas into scalable business enterprises.

Ministry and Implementation

Ministry

- Implemented under the Ministry of Skill Development and Entrepreneurship.
- It is a flagship entrepreneurship promotion initiative of MSDE.

Implementing Agency

- Implemented by the National Institute for Entrepreneurship and Small Business Development.
- NIESBUD provides mentoring, incubation, and entrepreneurship support.

Target Beneficiaries

- Indian citizens aged between 18 and 55 years.
- Focuses on aspirational districts and underserved regions.
- Targets Tier-2, Tier-3 cities and rural areas.
- Supports early-stage entrepreneurs and grassroots innovators.

Eligibility

- Applicants need not have a registered company.
- Fully developed products are not mandatory for participation.
- Ideas at validation or prototype stage are eligible.
- Encourages participation from first-time innovators and entrepreneurs.

Priority Sectors

Agriculture and Food

- AgriTech and food technology innovations receive priority support.

Health Sector

- Focuses on HealthTech and wellness-related solutions.

Education Sector

- Supports EdTech and vocational skilling innovations.

Environment Sector

- Encourages climate action and sustainability-focused solutions.

Rural Economy

- Promotes rural commerce and logistics innovations.

MSME Sector

- Supports MSMEs and technology for traditional artisans.

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Incubation Support

One-Year Programme

- Selected innovators undergo a structured one-year incubation programme.
- Includes mentorship and capacity-building support throughout journey.

Pradhan Mantri Kaushal Vikas Yojana

- PMKVY is the flagship executive intervention under the **Skill India Mission**. It is a **Central Sector Scheme implemented by the National Skill Development Corporation (NSDC) under the Ministry of Skill Development and Entrepreneurship (MSDE)**.
- As of 2026, the scheme has moved into its most advanced phase, PMKVY 4.0 (2022–2026), which is designed to be candidate-centric and industry-led.
- **Key Components of PMKVY 4.0**

Unlike previous versions which were target-driven, PMKVY 4.0 focuses on “On-the-Job Training” (OJT) and decentralized planning.

Component	Target Group	Purpose
Short-Term Training (STT)	School/College dropouts & Unemployed youth.	Providing 150–300 hours of training in NSQF-aligned job roles to ensure immediate employability.
Recognition of Prior Learning (RPL)	Workers in the informal/unregulated sector.	Assessing and certifying existing skills (e.g., masonry, tailoring) to provide formal recognition and better wages.
Special Projects	Marginalized groups, hard-to-reach areas, or niche roles.	Customized training for specific needs like prison inmates, tribal populations, or unique roles like "Drone Pilot."
Skill Hubs	Students in schools and colleges.	Integrating vocational training into the formal education system, in line with NEP 2020.

- Under PMKVY, training and assessment fees **are paid completely by the Government**.
- **Funding:** The scheme is being implemented at the Centre and the State level with a **50:50 allocation of funds** and targets with more enhanced involvement of **District Skill Committees (DSC)**.

National Food Security Act (NFSA), 2013

- The Union Food and Public Distribution Department under Ministry of Consumer Affairs, Food & Public Distribution published a draft of the proposed amendments to the National Food Security Act (NFSA), 2013.
- **Provides legal entitlement to subsidised foodgrains.**
- Implemented through the Targeted Public Distribution System (TPDS).
- Covers nearly 67% of India's population: 75% Rural population + 50% Urban population
- **Eligible households receive subsidized foodgrains based on;**
- Antyodaya Anna Yojana (AAY) households: These households constitute the poorest of the poor. AAY households are entitled to 35 kg of food grains per household per month.
- Priority Households (PHH): These households are entitled to 5 kg of food grains per person per month.
- Antyodaya Anna Yojana (AAY) Households: Chosen by States/UTs based on Central Government criteria, covering the poorest of the poor while Priority Households: Selected by State Governments/Union Territory Administrations as per their own criteria.
- A new provision In Section 3 of the National Food Security Act, 2013, proposes that every person belonging to households covered under the Antyodaya Anna Yojana (AAY) **shall be entitled to 7 kg of foodgrains every month to a maximum of 35 kg per household.**
- Earlier, it was 35 kg per AAY household, irrespective of the number of members in the household.
- For AAY cardholders, this allocation will be free of any charges.
- Rational behind the proposal: Rationalise foodgrain allocation by addressing the imbalance whereby smaller households receive disproportionately higher per-capita entitlements than larger households.



Anaemia Mukht Bharat (AMB)

- Revised operational guidelines released for **Anaemia Mukht Bharat (AMB)** by Mo. H&FW.
- Programme renamed from **Anaemia Mukht Bharat** to **Anaemia Mukht Bharat Abhiyaan**.
- **Anaemia Mukht Bharat (AMB)** was launched in 2018 as a flagship strategy under the **National Health Mission (NHM)**.
- Aimed to **reduce prevalence of anaemia** across vulnerable population groups through testing, treatment, nutrition and awareness.
- **Beneficiary Groups :-** Now 7 Beneficiary Groups with one new addition.
- Children 6–59 months
- Children 5–9 years
- Adolescents 10–19 years (boys & girls)
- Women of Reproductive Age (15–49 years)
- Pregnant Women
- Lactating Mothers
- **Low Birth Weight Babies (0–6 months)**
- Anaemia is a condition in which **haemoglobin (Hb) level is below normal**, reducing the blood's oxygen-carrying capacity.
- **Common causes include** Iron deficiency (most common) , Folate deficiency , Vitamin B12 deficiency , Chronic diseases & Parasitic infections (e.g. hookworm)



ENVIRONMENT & GEOGRAPHY

The Pavona clavus Colony (Potato Patch)

Context:

Researchers discovered a giant Pavona clavus coral colony near Kadmat Island.

About Pavona clavus Colony (Potato Patch)

- Potato Patch is a giant continuous hard coral colony.
- It belongs to the coral species **Pavona clavus**.
- Pavona clavus is commonly known as **Potato Coral**.
- The name comes from its potato-like underwater appearance.
- It forms dense columnar and club-shaped coral structures.

Location

- Located near Kadmat Island in the Lakshadweep archipelago.
- Found in southeastern coastal waters around the island.
- Lakshadweep is India's only atoll island chain.
- The colony begins at a depth of about 5.2 metres.
- It extends down to nearly 20 metres depth.

Formation

Coral Polyps

- Built by tiny coral polyps over several centuries.
- Polyps continuously deposit calcium carbonate skeletons.
- This process gradually forms large coral reef structures.

Age

- Estimated age ranges between 700 and 1,800 years.
- It has likely existed since the medieval period.
- Exact age requires detailed scientific core analysis.

Adaptation and Survival

Hydrodynamic Resilience

- Located on a steep slope exposed to strong waves.
- Developed thick and heavy calcareous columns over time.
- This structure helps resist ocean currents and cyclones.

Agasthyamalai Ecological Landscape

Context:

Supreme Court ordered removal of illegal encroachments in the Agasthyamalai landscape.

About Agasthyamalai Ecological Landscape

- Agasthyamalai is a globally significant and ecologically fragile forest landscape.
- It is centered around the Agasthyamalai Biosphere Reserve (ABR).
- The region is known for exceptional biodiversity and endemic species.

Establishment and Recognition

- Agasthyamalai Biosphere Reserve was established in 2001.
- It was created by the Government of India.
- UNESCO included it in the World Network of Biosphere Reserves.
- It received UNESCO recognition in March 2016.

Location

- Located at the southernmost end of the Western Ghats. It lies across the states of Kerala and Tamil Nadu. Total area covers about 3,500.36 square kilometres.

Area Distribution

Kerala Component	Tamil Nadu Component
• Covers approximately 1,828 square kilometres of the landscape. • Includes Pathanamthitta, Kollam, and Thiruvananthapuram districts.	• Covers approximately 1,672.36 square kilometres of the landscape. • Includes Tirunelveli, Tenkasi, Theni, and Kanyakumari districts.

Key Physical Features

Agasthyamala Peak

- Agasthyamala is the highest and most prominent peak.

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- The peak rises to about 1,868 metres elevation.
- Located within the Neyyar Wildlife Sanctuary region.

Diverse Forest Types

- Contains tropical wet evergreen forests in lower elevations.
- Includes moist deciduous forests across intermediate zones.
- Supports montane rainforests in higher altitude regions.
- Features Shola forests and grassland ecosystems.

Hydrological Importance

- Acts as a major watershed for southern India.
- Gives rise to several important river systems.
- Tambraparni River originates from this mountain landscape.
- Karamana River also originates from this ecological region.
- Provides drinking water and irrigation to nearby districts.

Biodiversity Significance

Medicinal Plants	Important Wildlife
• Hosts more than 2,000 medicinal plant species. • Many species are rare, endemic, and scientifically valuable.	• Supports endangered Bengal tiger populations within forests. • Provides habitat for Asian elephants and Nilgiri tahr. • Contributes significantly to Western Ghats biodiversity conservation.

Tribal Communities

Kanikaran (Kanikkar) Tribe

- Indigenous Kanikaran tribe inhabits the Agasthyamalai region.
- Known for traditional forest and medicinal plant knowledge.
- Their cultural heritage is closely linked with nature.

E85 Fuel

Context:

- Union Minister for Petroleum and Natural Gas launched E85 fuel at a retail outlet in New Delhi.

About E85 Fuel

What is it?

- E85 is a high-ethanol biofuel blend.
- It contains **80%–85% ethanol** and **14%–19% petrol**.
- It is a high-octane fuel (fuel with better combustion performance).
- It is designed for specially modified internal combustion engines (engines that burn fuel inside the engine).
- It is not meant for ordinary petrol vehicles.

Global Experience

- The E85 model draws inspiration from Brazil.
- More than 80% of Brazil's light vehicles use flexible high-ethanol fuel technology.
- Brazil has successfully used high-blend ethanol fuels for several decades.

India's Ethanol Journey

- India's ethanol blending level was **1.53% in 2014**.
- India achieved the **E20 standard** (20% ethanol and 80% petrol) nationwide in 2026.
- The target was achieved five years ahead of the original schedule.

Key Features of the E85 Ecosystem

Flex-Fuel Vehicle (FFV) Exclusivity	Phased Rollout Plan
• E85 can only be used in Flex-Fuel Vehicles (FFVs). • FFVs are vehicles designed to run on different ethanol-petrol mixtures. • These vehicles can operate on fuel blends ranging from E20 to E100. • E85 cannot be used in conventional petrol vehicles. • High ethanol content may damage standard engines because of its corrosive properties.	• Initial launch covers 48 public sector oil marketing retail outlets. • Expansion target is 500 outlets by December 2026. • Further expansion aims for 5,000 outlets by December 2027.
	Retail Safety Measures
	• Fuel dispensers will carry clear warning labels. • Labels will indicate that E85 is meant only for



Competitive Pricing

- E85 is priced around **₹20 per litre cheaper** than conventional petrol.
- Lower pricing aims to encourage consumer adoption.

E85-compatible vehicles.

- This will help prevent accidental misfueling.

Future Target

Ethanol Blending Goal 2030-31

- E85 rollout is part of India's long-term biofuel strategy.
- India aims to increase overall ethanol blending to nearly **26% by 2030-31**.
- The initiative supports cleaner energy transition and reduced fossil fuel dependence.

Aurora Borealis (Northern Lights)

Context:

Aurora Borealis (Northern Lights) was recently expected to be visible in India due to increased solar activity.

About Aurora Borealis

What is Aurora Borealis?

- Aurora Borealis is a natural light display visible in the night sky.
- It is popularly known as the **Northern Lights**.
- The phenomenon mainly occurs near Earth's North Pole region.
- It is concentrated around the northern magnetic pole of Earth.

Southern Hemisphere Counterpart

- Similar lights in the Southern Hemisphere are called Aurora Australis.
- Aurora Australis is popularly known as the **Southern Lights**.

Areas Where It Is Commonly Seen

- Aurora Borealis is frequently observed in Norway and Sweden.
- It is also commonly visible in Finland and Iceland.
- Canada, Alaska, and Greenland are major viewing locations.

Colours of Aurora

Green Colour

- Green auroras are produced when particles collide with oxygen atoms.
- This is the most commonly observed auroral colour.

Blue and Purple Colours

- Blue and purple shades are produced through interaction with nitrogen.
- Different atmospheric gases create different auroral colours.

Solar Activity and Auroras

Solar Flares

- Solar flares are sudden releases of energy from the Sun.
- They increase the intensity of charged particles reaching Earth.

Coronal Mass Ejections (CMEs)

- CMEs are massive eruptions of plasma and magnetic fields.
- They release huge quantities of charged particles into space.
- Strong CMEs significantly increase auroral activity on Earth.

Geomagnetic Storms

- Extremely strong solar winds can disturb Earth's magnetic field.
- Such disturbances are known as geomagnetic or magnetic storms.
- Geomagnetic storms can expand auroras to lower latitudes.
- During intense storms, auroras may become visible in unusual regions.

El Niño

Context:

The India Meteorological Department (IMD) has confirmed the return of El Niño conditions over the equatorial Pacific Ocean.

About El Niño

What is El Niño?

- El Niño is the warm phase of the El Niño Southern Oscillation.
- It is a major ocean-atmosphere phenomenon affecting global climate patterns.
- The term El Niño means "**The Boy Child**" in Spanish.



- It is associated with abnormal warming of Pacific Ocean waters.

ENSO Phases

- El Niño represents the warming phase of the ENSO cycle.
- La Niña represents the cooling phase of the ENSO cycle.
- Neutral conditions occur between El Niño and La Niña phases.

How El Niño Forms

Normal Conditions

- Strong trade winds normally blow from east to west across the Pacific.
- These winds push warm surface waters towards Indonesia and Australia.
- Cold nutrient-rich water rises near the South American coast.
- This process is known as oceanic upwelling.

During El Niño

Weakening of Trade Winds

- The easterly trade winds weaken or sometimes reverse direction.
- Warm surface water is no longer pushed strongly towards Asia.

Eastward Movement of Warm Water

- Warm water begins moving towards the central and eastern Pacific Ocean.
- Large amounts of warm water accumulate near South America.

Suppression of Upwelling

- The thermocline moves deeper in the eastern Pacific Ocean.
- Cold nutrient-rich water cannot rise to the surface effectively.
- Marine productivity declines significantly in affected regions.

Atmospheric Changes

- Rising air and rainfall shift towards the central Pacific Ocean.
- Global atmospheric circulation patterns become disturbed.
- Weather patterns change across different continents.

Impact on India

Monsoon Rainfall

- El Niño is generally associated with weaker Indian monsoon rainfall.
- It can increase the probability of drought-like conditions.
- Agricultural production may be adversely affected.

Temperature Rise

- India often experiences above-normal temperatures during El Niño years.
- Heatwave frequency and intensity may increase.

Water Resources

- Reduced rainfall can affect reservoirs and groundwater availability.
- Irrigation and drinking water supplies may face stress.

Global Impacts

South America

- Peru and Ecuador often receive heavy rainfall and flooding.
- Fisheries suffer due to reduced nutrient-rich upwelling.

Australia and Southeast Asia

- These regions may experience drought and forest fires.
- Agricultural productivity can decline significantly.

North America

- Weather patterns become altered across different regions.
- Some areas receive increased rainfall while others become drier.

Venus Flytrap

About:

- Venus Flytrap is a **carnivorous plant** belonging to the sundew family.
- Scientific Name: **Dionaea muscipula**.
- Native to **North Carolina and South Carolina (USA)**.

Key Points

- Grows in **nutrient-poor, acidic, and moist soils**.
- Obtains nutrients by capturing and digesting insects.
- Trap consists of **two hinged lobes** at the end of leaves.



- Uses sensitive trigger hairs called **trichomes**.

Mechanism of Snapping

- Trap closes when trigger hairs are touched **twice within a short interval**.
- Closure can occur in about **0.1 second**.
- This movement is called **Thigmonasty** (response to touch).
- After digestion, the trap reopens and leaves behind the insect's exoskeleton.

New Study Findings

- Touch stimulation softens outer cell walls by about **30–40%**.
- Softening releases stored internal stress.
- This causes rapid bending and closure of the trap.

Manas National Park

About:

- Manas National Park is located in the **foothills of the Himalayas in Assam**.
- It shares an international boundary with **Royal Manas National Park (Bhutan)**.
- Named after the **Manas River**, a major tributary of the Brahmaputra.

Key Features

- Elevation ranges from **60–1,500 m**, supporting diverse ecosystems.
- Home to indigenous communities, especially the **Bodo tribe**.
- One of the first Tiger Reserves under **Project Tiger (1973)**.

International Recognitions

- **UNESCO World Heritage Site, Tiger Reserve, Elephant Reserve, Biosphere Reserve and Important Bird Area (IBA)**

Vegetation

- Semi-evergreen forests, Mixed deciduous forests, Grasslands and Riparian vegetation.

Important Flora

- Hoolong (dominant species), Amari, Dewa Sam, Himolu, Garjan.

Important Fauna

- **Pygmy Hog** (flagship species), **Hispid Hare**, **Golden Langur**, **Indian Rhinoceros**, **Wild Water Buffalo** (Asiatic Buffalo), Bengal Tiger, Asian Elephant.

Mishmi Takin

About:

- Mishmi Takin is a **goat-antelope** belonging to the family **Bovidae**.
- Scientific Name: *Budorcas taxicolor*.
- It is one of the **four subspecies of Takin**.

Habitat & Distribution

- Found in the **Eastern Himalayas**:
 - Arunachal Pradesh (India)
 - Northern Myanmar
 - Southeastern Tibet
 - Parts of China
- Named after the **Mishmi Hills** of Arunachal Pradesh.
- Found from forested valleys to alpine regions up to **4,500 m** altitude.

Behaviour

- Lives in small family groups of about **20 individuals**.
- **Herbivorous (folivorous)**, feeding mainly on leaves and vegetation.

Conservation Status

- **IUCN Red List: Vulnerable**.

Recent News

- First-ever video footage of a herd of Mishmi Takins was recorded in **Tingda Reserve Forest, North Sikkim**.



Mombasa Declaration

About:

- The **Mombasa Declaration** was adopted by **15 countries** to strengthen global efforts against **Illegal, Unreported and Unregulated (IUU) Fishing**.
- It was adopted during the **11th Our Ocean Conference (OOC)** held in **Mombasa, Kenya (2026)**.

Key Features

- Calls for greater transparency in:
 - Fishing vessel registration; Vessel ownership records; Fishing licenses and authorizations.
- Promotes sharing of fisheries data among countries.
- Supports better monitoring and enforcement of fishing regulations.
- Builds support for the **Global Charter for Fisheries Transparency**.

Eco-Sensitive Zones

- They are ecologically fragile areas around protected areas acting as shock absorbers or transition zones, **generally within 10 km around PAs**.
- Notified by Central Government under Section 3 of the Environment Protection Act, 1986.**
- The Supreme Court of India ruled that Eco-Sensitive Zones (ESZs) cannot be uniform across the country. It modified its 2022 mandate that required a strict minimum 1-kilometer buffer around all national parks and wildlife sanctuaries, **exempting areas that already have draft or final ESZ notifications**.
- Activities Classification in ESZs**

Prohibited	Regulated	Permitted
Commercial mining	Felling of trees	Rainwater harvesting
Stone Quarrying	Establishment of hotels and resorts	Adoption of green technology
Major Polluting Industries	Introduction of Exotic species	Organic farming & horticulture
Hazardous Waste Handling	Widening of roads	Traditional agriculture

Seismic Doublet: Earthquake in Venezuela

- The twin earthquakes in and around Venezuela's capital Caracas, feared to have killed tens of thousands. The US Geological Survey (USGS) described the disaster as a "seismic doublet".
- Two independent earthquakes of similar magnitude** originating from **distinct** but closely related ruptures, occurring in quick succession within seconds, minutes, or a few hours, and in close geographic proximity.
- Doublet vs. Aftershock Sequence:** In a typical sequence, one larger earthquake is followed by progressively smaller aftershocks. A doublet differs both events are roughly equal in magnitude and are independent of each other.
- Venezuela lies along the boundary between the **Caribbean Plate** and the **South American Plate**, one of the most seismically active zones in northern South America.
- The two plates move horizontally past each other along fault lines, a phenomenon known as a **strike-slip fault**. Strike-slip faults are a major cause of shallow, high-intensity earthquakes in this region.
- A **fault** is a fracture in the Earth's crust along which rocks move, releasing energy as earthquakes.
- Types of Faults**
 - Normal Fault** → Tensional force; hanging wall moves **down**.
 - Reverse (Thrust) Fault** → Compressional force; hanging wall moves **up**.
 - Strike-slip Fault** → Horizontal movement; blocks slide past each other.

White-rumped Vulture (*Gyps bengalensis*)

- A **captive-bred, radio-tagged White-rumped Vulture** was **electrocuted** after coming in contact with a power line near **Mudumalai Tiger Reserve (Tamil Nadu)**.
- It was the **first attempted reintroduction of a captive-bred White-rumped Vulture** into the wild landscape of South India.
- Old World Vulture native to **Indian Subcontinent & Southeast Asia**
- One of India's **nine vulture species** and among the **three Critically Endangered (IUCN) Gyps vultures** (White-rumped, Indian, Slender-billed).
- CITES: Appendix II + Wild Life (Protection) Act, 1972: Schedule I**
- Population crashed by **>95%** mainly due to **veterinary Diclofenac poisoning**.
- Meloxicam** is the recommended vulture-safe alternative to Diclofenac.



INDIAN SOCIETY & SOCIAL ISSUES

Anusandhan National Research Foundation (ANRF)

Context:

Union Science and Technology Minister announced ANRF-supported digital portal for patent filing and research writing support.

About ANRF

Establishment

- ANRF was established through the ANRF Act, 2023.
- It functions under the Department of Science and Technology.
- Science and Engineering Research Board was merged into ANRF.

Key Functions

Research Promotion	Innovation Ecosystem	Capacity Building
• Supports research projects across diverse scientific disciplines. • Encourages high-quality and impactful scientific investigations. • Strengthens India's indigenous research capabilities and infrastructure.	• Promotes innovation culture among students and researchers. • Supports translation of research into practical applications. • Encourages startup and industry-oriented research initiatives.	• Provides training for patent filing and intellectual property. • Assists researchers in scientific paper writing and publication. • Enhances research skills among students and innovators nationwide.

Funding Target

- Aims to mobilise ₹50,000 crore during 2023–2028 period.
- Funding will come through multiple dedicated research funds.

Sources of Funding

- ANRF Fund.
- Innovation Fund.
- Science and Engineering Research Fund.
- Special Purpose Funds.

Doctrine of Forum Non Conveniens

Context:

- The Supreme Court recently observed that when a constitutional remedy is sought under **Article 226(1)** of the Constitution, the doctrine of forum non conveniens may rarely be applicable.

About Doctrine of Forum Non Conveniens

What is it?

- The Doctrine of Forum Non Conveniens is a common law legal principle.
- It allows a court to decline or stay proceedings even when it has jurisdiction over a case.
- The court may do so if another forum (court/jurisdiction) is considered more appropriate for hearing the matter.

Meaning

- The term "Forum Non Conveniens" is a Latin expression.
- It means "inconvenient forum".

Origin	Objective
Common Law Doctrine • Originated in English common law. • Widely used in countries following the common law legal tradition.	Ensuring Appropriate Forum • To ensure that cases are heard in the most suitable court.
Area of Application • Commonly applied in Private International Law (Conflict of Laws). • Particularly relevant in disputes involving multiple countries or jurisdictions.	Promoting Justice • To avoid unnecessary inconvenience to parties and witnesses. • To ensure efficient administration of justice.
	Preventing Forum Shopping • Discourages litigants from choosing a court merely because it appears more favourable to their case. • This practice is known as forum shopping.

- **Relevance under Article 226**
- **Article 226**



- Empowers High Courts to issue writs for: Enforcement of Fundamental Rights. And Any other legal right.
- **Recent Supreme Court Observation**
- The Supreme Court stated that where a constitutional remedy is invoked under **Article 226(1)**, the doctrine of forum non conveniens may have limited application.
- Constitutional rights and remedies generally receive greater protection than ordinary civil disputes.

Atal Innovation Mission (AIM)

About:

- Atal Innovation Mission (AIM) is the Government of India's flagship initiative to promote **innovation and entrepreneurship**.
- It was launched in **2016** under NITI Aayog.

Objectives

- Promote a culture of innovation and entrepreneurship. Encourage creativity and problem-solving.
- Foster collaboration among academia, industry, startups, and government.
- Strengthen India's innovation ecosystem.

Key Initiatives

1. Atal Tinkering Laboratories (ATL)

- Established in schools to promote innovation among students.
- Focuses on **STEM education** (Science, Technology, Engineering, Mathematics).
- Provides access to emerging technologies and innovation tools.

2. Atal Incubation Centres (AIC)

- Supports startups and entrepreneurs.
- Provides mentorship, infrastructure, networking, and funding support.
- Promotes scalable and sustainable business ventures.

3. Atal Research and Innovation for Small Enterprises (ARISE)

- Supports innovation-driven solutions by startups and MSMEs.
- Encourages research and technology development.
- Government ministries act as potential first customers.

Recent Development

- AIM, NITI Aayog, and **La Fondation Dassault Systèmes** launched the **India-France ATL Bridge**.
- It aims to strengthen innovation cooperation between India and France through collaboration among students and innovators.

Tasgaon Lift Irrigation Scheme

About:

- Tasgaon Lift Irrigation Scheme is a major irrigation project in **Maharashtra**.
- Implemented under the **Maharashtra Krishna Valley Development Corporation (MKVDC)**, Pune.
- It aims to improve irrigation and water availability in **Satara district**.

Key Points

- Covers a command area of **2,277 hectares**.
- Benefits **six villages**: Tasgaon, Varne, Karandwadi, Devkarwadi, Degaon, Nigadi
- Supports agricultural productivity and rural development.

What is Lift Irrigation?

- Water is **lifted using pumps** from a water source to higher elevations.
- Unlike gravity-based canal systems, it depends on **electrically powered pumping infrastructure**.

Components of the Scheme

- Head works, Pump houses, Switch yards, Rising mains, Delivery chambers and Closed-pipe water distribution network.



PLACES IN NEWS

Democratic Republic of the Congo (DRC)

Context:

WHO Director-General visited DRC amid the ongoing Ebola outbreak response.

About Democratic Republic of the Congo (DRC)

- DRC is the second-largest country in Africa by land area.
- It was formerly known as Zaire before adopting present name.
- DRC is a unitary multiparty republic located in Central Africa.
- The country possesses vast reserves of strategic mineral resources.
- Major resources include cobalt, copper, diamonds, and rainforest wealth.

Location

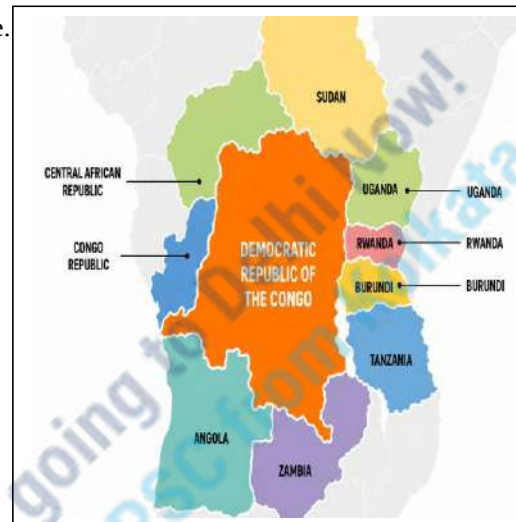
- DRC is located in Central Africa and straddles Equator.
- The Equator passes through the country's central region.

Capital

- Kinshasa is the capital and administrative centre of DRC.
- It is the largest city in Central Africa region.
- Kinshasa lies on the banks of Congo River strategically.

Borders

DRC shares borders with **nine countries**:



India Launches UPI Payments in Cambodia

Context:

NPCI partnered with ACLEDA Bank to enable UPI payments in Cambodia.

About Cambodia

Location

- Cambodia is a country located in mainland Southeast Asia.
- It possesses a rich cultural and historical heritage.
- Civilization developed through influences from India and China.

Capital

- Capital city of Cambodia is **Phnom Penh**.

Countries Using UPI

- United Arab Emirates (UAE), Singapore, Bhutan, Cambodia, Nepal, Sri Lanka, France, Mauritius, Qatar and Comorbodia.



Sea of Azov

Context:

Ukraine claimed it struck five ships carrying illegal cargo in the Sea of Azov.

About Sea of Azov

Location

- Sea of Azov lies between Ukraine and Russia.
- Ukraine borders it in the northwest region.
- Russia borders it in the southeastern region.
- It is among the world's shallowest seas.

Connection with Other Seas

- Connected to the Black Sea through Kerch Strait.
- Kerch Strait links Sea of Azov and Black Sea.
- Strait lies between Crimea and Taman Peninsulas.
- Ultimately connected to the Atlantic Ocean through multiple seas.

Connection Route

- Sea of Azov → Black Sea → Sea of Marmara.
- Then through Aegean Sea and Mediterranean Sea.
- Finally reaches the Atlantic Ocean via Gibraltar.

Important Peninsulas

Crimean Peninsula





- Located on the western side of Kerch Strait.
- Strategically important region in Black Sea geopolitics.

Taman Peninsula

- Located on the eastern side of Kerch Strait.
- Forms part of Russia's southern coastal region.

Major Rivers

Don River

- One of the main rivers draining into sea.
- Supplies large quantities of freshwater and nutrients.

Kuban River

- Another major river flowing into Sea of Azov.
- Contributes significantly to freshwater inflow.

Major Ports

Russia

- Taganrog is an important Russian port city.

Ukraine

- Mariupol is a major Ukrainian port.
- Berdyansk is another significant Ukrainian port.

Coastal Features

- Coastline is generally low, flat, and heavily vegetated.
- Contains extensive lagoons and marshy coastal areas.

Important Lagoons

- Syvash Lagoon is a notable coastal lagoon system.

Sand Spits

- Arabat Spit is one of the world's longest spits.
- Fedotov Spit extends along the coastline.
- Berdyansk Spit is another prominent coastal feature.

Barren Island

Context:

- Barren Island, located in the Andaman Sea, remains the only confirmed active volcano in South Asia and the only active volcano in India.
- It is the only active volcano in India.
- It is also the only active volcano in South Asia.

Geographical Position

- Located in the Andaman Sea.
- Lies about **138 km northeast of Port Blair**, the capital of the Andaman and Nicobar Islands.
- Situated in the eastern part of the Andaman archipelago.

Tectonic Setting

- Located above the subduction zone between the Indian Plate and the Burmese Plate.
- A subduction zone is an area where one tectonic plate moves beneath another.
- Such zones are commonly associated with earthquakes and volcanic activity.





Zojila Tunnel

- **Context:**
 - The Zojila Tunnel recently achieved its final breakthrough with the excavation of the last five metres, marking a major milestone in the project.
- **Strategic Position**
 - Located under the Zoji La Pass in the Himalayas.
 - Connects: Ganderbal district of Jammu & Kashmir and Kargil district of Ladakh.
- **Importance of Zoji La Pass**
 - Zoji La is one of the most important mountain passes linking Kashmir with Ladakh.
 - Heavy snowfall often blocks the pass during winter, disrupting connectivity.



Jordan

Context:

- Iran's Islamic Revolutionary Guard Corps (IRGC) reportedly launched ballistic missiles targeting the Al-Azraq Air Base in Jordan, bringing attention to Jordan's strategic location in West Asia.

About Jordan

What is it?

- Jordan is an independent Arab country located in Southwest Asia (West Asia).
- Officially known as the **Hashemite Kingdom of Jordan**.
- It is a constitutional monarchy ruled by the Hashemite dynasty.
- Jordan is known for its relatively stable political system and active diplomatic role in the Middle East.



Armenia

About:

- Armenia is a **landlocked country** located in the **South Caucasus** region.
- Capital: **Yerevan**

Key Points

- Bordered by: **Georgia** (North), **Azerbaijan** (East), **Iran** (Southeast), **Turkey** (West)
- Climate: **Highland continental** (hot summers, cold winters).
- Dominated by the **Lesser Caucasus Mountains**.
- Soil is rich in **nitrogen, potash, and phosphates** due to volcanic origins.

Physical Features

- **Highest Peak:** Mount Aragats (4,090 m) – extinct volcano.
- **Major Rivers:** Aras, Hrazdan, Arpa, Vorotan.
- **Largest Lake:** Lake Sevan.

Natural Resources

- Gold, Copper, Molybdenum, Zinc and Bauxite

Euphrates River

Context:

Scientists recently explained the geological formation of the Euphrates River using seismic imaging and geological evidence.

What is the Euphrates River?

- The Euphrates is the longest river in Southwest Asia.
- It is one of the most historically important rivers in the world.





- Together with the Tigris River, it forms ancient Mesopotamia.
- Mesopotamia is widely regarded as a cradle of human civilization.

Origin

- The Euphrates originates in the Taurus Mountains of eastern Turkey.
- It is formed by the confluence of the Karasu and Murat rivers.
- These two rivers act as the main headwaters of the Euphrates.

San Andreas Fault

About:

- The San Andreas Fault is a major **transform (strike-slip) fault** in western North America.
- It marks the boundary between the **Pacific Plate** and the **North American Plate**.
- It began forming about **30 million years ago**.

Key Points

- Extends for about **1,300 km** through California.
- Runs from the **Gulf of California** to the Pacific Ocean near **San Francisco**.
- One of the world's most studied fault systems.
- Movement along the fault contributed to the formation of the **Baja California Peninsula**.

Plate Movement

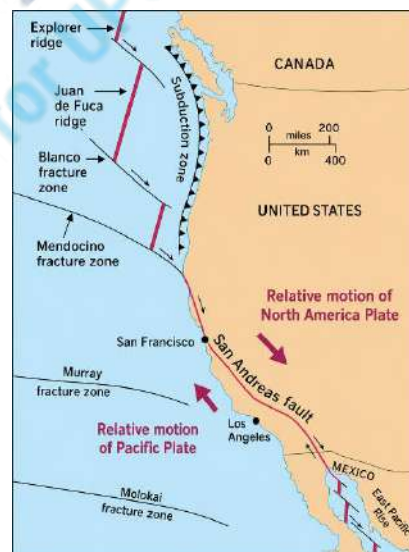
- **Pacific Plate** moves northwest relative to the **North American Plate**.
- Movement is mainly **horizontal (lateral)** rather than vertical.

What is a Strike-Slip Fault?

- A fault where two tectonic plates slide **horizontally past each other**.
- Little or no vertical movement occurs.
- Often associated with powerful earthquakes.

Strait of Hormuz

- It is a **narrow maritime chokepoint** (55-95 km wide) between **Iran** and the **Arabian Peninsula**, linking the **Persian Gulf** with **Gulf of Oman** and the **Arabian Sea** (only sea passage from the Persian Gulf to the open ocean).
- It functions as a **critical corridor** for global shipments of **oil** and **LPG** from Persian Gulf nations.



Kirthai-II Hydroelectric Project

- The **Kirthai-II HEP** is a **930 MW run-of-river hydroelectric project** planned on the **Chenab River** in **Kishtwar district, Jammu & Kashmir**.
- The project was **first conceived in 1984** and remained **stalled for decades** due to **Pakistan's objections** under the **Indus Water treaty (IWT)** at the **Permanent Indus Commission**.
- The **Chenab** is one of the **three Western Rivers** under the **Indus Water Treaty (IWT) 1960** — the others being **Indus** and **Jhelum**.
- **Origin:** Formed by the **confluence of Chandra and Bhaga rivers** in **Himachal Pradesh**; flows through **Jammu & Kashmir** before entering **Pakistan**.
- **Treaty Status:** **Pakistan receives unrestricted use** of Chenab waters; India can use them only for **domestic use, non-consumptive use, limited agricultural use, and hydro-electric power generation**.
- **India's existing projects on Chenab:** **Salal (690 MW), Dulhasti (390 MW), Baglihar (900 MW), and under-construction Pakal Dul (1000 MW)**.



ART & CULTURE

Maulana Barkatullah Bhopali

Context:

- The Executive Council of Barkatullah University, Bhopal, has passed a proposal to rename the institution as Vagdevi Bhojpal University.

About Maulana Barkatullah Bhopali

- Maulana Barkatullah Bhopali (1854–1927) was a prominent freedom fighter, revolutionary, scholar, and journalist.
- He dedicated his life to India's struggle against British colonial rule.
- He served as the **Prime Minister of India's first Provisional Government in Exile** established in Kabul in 1915.
- He spent most of his adult life abroad building international support for India's independence.

Major Contributions to the Freedom Movement

Provisional Government of India in Kabul (1915)

- Co-founded the **Provisional Government of India** in Kabul on **1 December 1915**.
- It was the first Indian government established outside British control.

Key Members

- Raja Mahendra Pratap – President.
- Maulana Barkatullah Bhopali – Prime Minister.
- Maulana Ubaidullah Sindhi – Home Minister.

Role in the Ghadar Party

- Became an important leader of the Ghadar Party.
- Supported armed revolution against British rule.
- Rejected constitutional and gradual methods of achieving independence.
- Worked to inspire revolt within the British Indian Army.

Activities During World War I

- Collaborated with Germany during World War I.
- Considered Britain's enemies as potential allies in India's freedom struggle.
- Visited Indian prisoner-of-war camps in Europe.
- Encouraged captured Indian soldiers to join the anti-British revolutionary movement.

Meeting with Lenin

- Met Vladimir Lenin in Moscow in 1919.
- Sought international support for India's independence movement.

Last Years

Continued Revolutionary Activities

- Remained active in anti-colonial efforts despite health problems.
- Continued working against British rule while living abroad.

Death

- Died in September 1927 in San Francisco.
- Passed away while attending a gathering of the Ghadar Party.
- Was buried in California, United States.

Gallantry Awards

Context:

President Droupadi Murmu presented 51 Gallantry Awards during the Defence Investiture Ceremony 2026.

About Gallantry Awards

What are Gallantry Awards?

- Gallantry Awards are the highest military and civilian bravery decorations of India.
- These awards recognize extraordinary courage, bravery, and supreme sacrifice in duty.
- They are awarded to personnel of the Armed Forces, CAPFs, and Police Forces.
- The President of India confers these awards on behalf of the nation.

Categories of Gallantry Awards

Wartime Gallantry Awards

Param Vir Chakra (PVC)

- Param Vir Chakra is the highest wartime gallantry award in India.
- It is awarded for the most conspicuous bravery in the presence of the enemy.

Maha Vir Chakra (MVC)

- Maha Vir Chakra is the second-highest wartime gallantry award.
- It is awarded for acts of exceptional courage against enemy forces.

Vir Chakra (VrC)

Peacetime Gallantry Awards

Ashoka Chakra

- Ashoka Chakra is the highest peacetime gallantry award in India.
- It is awarded for the most exceptional courage away from battlefields.

Kirti Chakra

- Kirti Chakra is the second-highest peacetime gallantry award.
- It is awarded for remarkable bravery and self-sacrifice in non-combat situations.

Shaurya Chakra

Educrat IAS Academy, 2nd Floor, North Block, Park Plaza Building, 71, Park Street, Kolkata-700016.

Phone: 9163228921, 9163218921



- | | |
|---|---|
| <ul style="list-style-type: none"> • Vir Chakra is the third-highest wartime gallantry award. • It is awarded for gallant actions performed during military operations. | <ul style="list-style-type: none"> • Shaurya Chakra is the third-highest peacetime gallantry award. • It is awarded for acts of courage and devotion to duty. |
|---|---|

Important Design Features

Param Vir Chakra

- The Param Vir Chakra is a circular bronze medal.
- The medal displays four replicas of Indra's Vajra around the National Emblem.

Ashoka Chakra

- The Ashoka Chakra is a circular gold-gilt medal.
- The medal features the Ashoka Chakra enclosed within a lotus-leaf border.

Maha Vir Chakra

- The Maha Vir Chakra is made of silver.
- The medal contains a five-pointed star with a central emblem.

Kirti Chakra

- The Kirti Chakra is a circular silver medal.
- The medal features the Ashoka Chakra within an ornamental design.
- The ribbon is green in colour with three saffron stripes.

Vir Chakra

- The Vir Chakra is a circular silver medal.
- The medal contains a five-pointed star and a central chakra.

Shaurya Chakra

- The Shaurya Chakra is a circular bronze medal.
- The ribbon is brown in colour with three vertical stripes.

Konkan Petroglyphs

- Maharashtra Government to use **Artificial Intelligence (AI)** for **scientific analysis, classification and digital documentation** of Konkan petroglyphs.
- **IIT Pravartak (IIT Madras)** appointed for digital assessment and documentation.
- Strengthen India's bid for **UNESCO World Heritage Site** status.
- In **2025**, Konkan Petroglyphs were included in **UNESCO's Tentative List**.
- **Petroglyphs** are **rock carvings** created by chiselling, pecking or engraving directly on natural rock surfaces.
- Different from **Pictographs**, which are **paintings** made using pigments on rock surfaces.
- **Examples of petroglyphs in India:**
- **Konkan Petroglyphs** – Maharashtra
- **Edakkal Caves** – Kerala
- **Kupgallu Petroglyphs** – Karnataka
- **Rock engravings of Ladakh**
- **Maski region** – Karnataka



EDU-SAMIKSHA CA MCQ

Q1. With reference to the RBI's proposed Kill Switch Facility, consider the following statements:

1. It is an emergency security mechanism for digital payments.
2. It can instantly block outward financial transactions.
3. It is designed mainly to recover money already lost in fraud.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Q2. Which of the following applications can benefit from 5G Network Slicing?

1. Industrial automation
2. Remote surgery
3. Internet of Things (IoT)
4. Premium broadband services

Select the correct answer:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q3. With reference to Corporate Social Responsibility (CSR), consider the following statements:

1. CSR provisions are governed by Section 135 of the Companies Act, 2013.
2. Eligible companies must spend at least 2% of their average net profits on CSR activities.
3. The calculation is based on profits of the previous five years.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q4. With reference to PM SVANidhi Scheme, consider the following statements:

1. PM SVANidhi stands for Prime Minister Street Vendor's AtmaNirbhar Nidhi.
2. It is a Central Sector Scheme.
3. It was launched in 2020.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q5. With reference to the Shangri-La Dialogue, consider the following statements:

1. It is Asia's premier defence and security summit.
2. It is also known as the Asia Security Summit.
3. It is organized by the United Nations.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Q6. With reference to the Democratic Republic of the Congo (DRC), consider the following statements:

1. It is the largest country in Africa by land area.
2. It was formerly known as Zaire.
3. The Equator passes through the country.

Which of the statements given above is/are correct?

- (a) 2 and 3 only
- (b) 1 and 2 only
- (c) 3 only
- (d) 1, 2 and 3

Q7. With reference to the BrahMos missile, consider the following statements:

1. It is a supersonic cruise missile.
2. It can be launched from land, sea, air and submarines.
3. It is developed solely by India.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only

- (c) 1 only
(d) 1, 2 and 3

Q8. Which one of the following best describes the On-Screen Marking (OSM) System?

- (a) An online examination system
(b) A digital system for evaluating scanned handwritten answer scripts
(c) A system for conducting computer-based tests
(d) An AI-based automatic answer writing software

Q9. Assertion (A) and Reason (R)

Assertion (A):

Promissory Estoppel may apply even in the absence of a formal contract.

Reason (R):

The doctrine is based on reliance and fairness rather than solely on contractual obligations.

Codes:

- (a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not the correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Q10. The Unified Health Interface (UHI) enables:

1. Teleconsultation booking.
2. Access to healthcare services.
3. Scheduling of diagnostic tests.
4. Insurance claim settlement.

Select the correct answer:

- (a) 1 and 2 only
(b) 1, 2 and 3 only
(c) 2, 3 and 4 only
(d) 1, 2, 3 and 4

Q11. Which of the following best describes the Right to be Forgotten (RTBF)?

- (a) Right to remove all judicial records from public domain
(b) Right to erase all government records permanently
(c) Right to seek removal or de-indexing of outdated or irrelevant personal information
(d) Right to prevent publication of all personal information

Q12. Consider the following statements:

1. The Treaty of Sugauli (1816) forms the historical basis of the India-Nepal boundary.
2. The Kalapani dispute is linked to differing interpretations regarding the source of the Kali River.
3. Susta is a riverine dispute caused largely by changes in the Gandak River's course.
4. Nepal adopted a new political map including Kalapani, Limpiyadhura and Lipulekh in 2020.

Which of the statements given above are correct?

- (a) 1 and 2 only
(b) 2, 3 and 4 only
(c) 1, 3 and 4 only
(d) 1, 2, 3 and 4

Q13. With reference to the MAHA Water Mission, consider the following statements:

1. MAHA stands for Missions for Advancement in High-impact Areas.
2. It is a national programme focused on water innovation.
3. It is implemented exclusively by the Ministry of Jal Shakti.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 only
(d) 1, 2 and 3

Q14. Which one of the following organizations is responsible for Project UDAYAK?

- (a) National Highways Authority of India
(b) Central Public Works Department
(c) Border Roads Organisation
(d) National Disaster Management Authority

Q15. Which of the following countries are members of AUKUS?

1. Australia
2. United Kingdom
3. United States
4. Canada

Select the correct answer:

- (a) 1 and 2 only
(b) 1, 2 and 3 only
(c) 2, 3 and 4 only

(d) 1, 2, 3 and 4

Q16. With reference to the RudraM-II missile, consider the following statements:

1. It is an indigenous Air-to-Surface missile.
2. It is an Anti-Radiation Missile (ARM).
3. It is designed to target enemy radars and air defence systems.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q17. Agasthyamalai Ecological Landscape is located in:

- (a) Eastern Ghats
- (b) Aravalli Hills
- (c) Southern Western Ghats
- (d) Satpura Range

Q18. Consider the following statements regarding the Potato Patch coral colony:

1. It belongs to the species Pavona clavus.
2. It is located near Kadmat Island.
3. It is found in the Lakshadweep archipelago.

Which of the statements given above are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q19. Which of the following is NOT an objective of the Prime Minister Research Chair (PMRC) Scheme?

- (a) Talent repatriation
- (b) Strengthening scientific capabilities
- (c) Promoting international research collaboration
- (d) Providing universal scholarships to all Indian students abroad

Q20. Consider the following statements regarding the Eurozone:

1. Eurozone is officially known as the Euro Area.
2. It consists of European Union countries that use the euro as their currency.
3. All European Union members are part of the Eurozone.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q21. Consider the following statements regarding Cambodia:

1. Cambodia is located in mainland Southeast Asia.
2. Cambodia shares borders with Thailand, Laos and Vietnam.
3. Cambodia's southwestern coast borders the South China Sea.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q22. Consider the following statements regarding the revised Wholesale Price Index (WPI):

1. The base year has been revised from 2011–12 to 2022–23.
2. The revision aims to improve the accuracy of inflation measurement.
3. The revision seeks to gradually transition towards a Producer Price Index (PPI).

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q23. Consider the following statements regarding the June 3rd Declaration of 1947:

1. It is also known as the Mountbatten Plan.
2. It provided the framework for the partition of British India.
3. It was announced by Clement Attlee.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q24. Assertion (A):

Navachar Mantra promotes inclusive innovation.

Reason (R):

The initiative extends innovation support to rural areas, aspirational districts, and smaller towns.

Codes:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not the correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

Q25. Consider the following statements regarding UNMISS:

- 1. UNMISS is a United Nations peacekeeping mission in South Sudan.
- 2. It was established after the independence of South Sudan.
- 3. It was created under a resolution of the UN General Assembly.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q26. Consider the following statements regarding the Economic Advisory Council to the Prime Minister (EAC-PM):

- 1. It is an independent advisory body on economic matters.
- 2. Its recommendations are legally binding on the Government.
- 3. It provides economic advice directly to the Prime Minister.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q27. Consider the following statements regarding the Sea of Azov:

- 1. It lies between Ukraine and Russia.
- 2. It is connected to the Black Sea through the Kerch Strait.
- 3. It is among the deepest seas in the world.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Q28. Which one of the following best describes ANRF?

- (a) A regulatory authority for universities
- (b) An apex research promotion body established by statute
- (c) A venture capital fund for startups
- (d) A tribunal for intellectual property disputes

Q29. Consider the following statements regarding the Solar Cycle:

- 1. Solar Cycle is an approximately 11-year cycle of solar activity.
- 2. It is measured primarily using sunspot numbers.
- 3. A higher number of sunspots indicates lower solar activity.

Which of the statements given above is/are incorrect?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

Q30. With reference to the Jai Prakash Narayan Bird Sanctuary, consider the following statements:

- 1. It is located in Uttar Pradesh.
- 2. It is centered around Surha Tal.
- 3. It became India's 100th Ramsar Site in 2026.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q31. With reference to E85 fuel, consider the following statements:

- 1. E85 is a high-ethanol biofuel blend.
- 2. It generally contains 80–85% ethanol.
- 3. It can be used in all conventional petrol vehicles without modification.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3



Q32. Consider the following statements:

1. Maulana Barkatullah died in San Francisco.
2. He died while attending a gathering of the Ghadar Party.
3. He was buried in California.

Which of the above are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q33. Which of the following are characteristics of pyroprocessing?

1. High-temperature operations
2. Dry processing
3. Dependence on water-based reactions
4. Significant energy consumption

Select the correct answer:

- (a) 1 and 2 only
- (b) 1, 2 and 4 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q34. Consider the following statements regarding Autoimmune Blistering Diseases (AIBDs):

1. They are a group of rare skin disorders.
2. They occur when the immune system attacks healthy skin and mucous membranes.
3. They are caused by bacterial infection of the skin.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q35. Consider the following statements regarding Barren Island:

1. It is the only active volcano in India.
2. It is located in the Arabian Sea.
3. It forms part of the Andaman and Nicobar Islands.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q36. With reference to Aurora Borealis, consider the following statements:

1. It is a natural light display visible in the night sky.
2. It occurs mainly near Earth's North Pole.
3. It is caused by the reflection of sunlight from polar ice.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q37. With reference to Project 18 Programme, consider the following statements:

1. It is the Indian Navy's Next-Generation Destroyer (NGD) programme.
2. It is planned as the successor to the Visakhapatnam-class destroyers.
3. It is intended to develop India's first nuclear-powered destroyers.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q38. Rajya Sabha elections are:

- (a) Direct elections based on adult franchise
- (b) Indirect elections through elected MLAs
- (c) Nominated by the President
- (d) Conducted through electoral colleges in every state

Q39. With reference to Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), consider the following statements:

1. It is a flagship maternal healthcare programme of India.
2. It provides free antenatal care to pregnant women.
3. It is implemented by the Ministry of Women and Child Development.

Which of the statements given above is/are incorrect?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

Q40. With reference to Gallantry Awards in India, consider the following statements:

1. They recognize acts of courage, bravery, and sacrifice.
2. They are awarded only to Armed Forces personnel.
3. They are conferred by the President of India.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q41. With reference to Night Vision Devices (NVDs), consider the following statements:

1. They help users see in darkness and low-visibility conditions.
2. They convert very low levels of light or heat signatures into visible images.
3. They function only through thermal imaging technology.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q42. Which of the following are objectives of LPMS-Vinimay?

1. Streamlining border trade.
2. Reducing paperwork.
3. Enhancing border security.
4. Facilitating Viksit Bharat 2047 goals.

Select the correct answer:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4

Q43. Which one of the following statements is NOT correct regarding the Election Symbols Order, 1968?

- (a) It was issued by the Election Commission of India.
- (b) It derives authority from Article 324.
- (c) It provides permanent reserved symbols to all registered political parties.
- (d) It regulates the allotment of election symbols.

Q44. Rogue Malware as a dark pattern refers to:

- (a) Hidden charges during payment
- (b) Software that deceives users or manipulates devices
- (c) Forced account creation
- (d) Repeated pop-up advertisements

Q45. Consider the following statements:

1. Zojila Tunnel lies in the Himalayan region.
2. The tunnel will connect the Union Territory of Ladakh with Jammu & Kashmir.
3. Upon completion, it is expected to be the world's longest single-tube bi-directional road tunnel at such altitude.
4. It is being constructed using the New Austrian Tunnelling Method.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4

Q46. With reference to Foreign Currency Non-Resident (Bank) [FCNR(B)] deposits, consider the following statements:

1. FCNR(B) deposits are maintained in foreign currency.
2. They are available only to Resident Indians.
3. Depositors are protected from Rupee exchange rate fluctuations.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q47. Consider the following statements:

1. Article 102 lays down grounds for disqualification of Members of Parliament.
2. Parliament can prescribe additional disqualifications through legislation.
3. Representation of the People Act, 1951 provides such additional disqualifications.
4. A person declared of unsound mind by a competent court can be disqualified.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4



Q48. With reference to RISA – Timeless Tribal, consider the following statements:

1. It is a premium brand for tribal textiles, embroidery, and handicrafts.
2. It has been launched by the Ministry of Tribal Affairs.
3. It is implemented through TRIFED.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q49. Article 226 of the Constitution empowers High Courts to:

1. Enforce Fundamental Rights.
2. Enforce other legal rights.
3. Issue writs.

Select the correct answer:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q50. Which one of the following does NOT share a border with Jordan?

- (a) Syria
- (b) Lebanon
- (c) Iraq
- (d) Saudi Arabia

Q51. With reference to the National Pharmaceutical Pricing Authority (NPPA), consider the following statements:

1. NPPA is India's drug price regulator.
2. It functions under the Ministry of Health and Family Welfare.
3. It regulates prices of pharmaceutical products.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q52. With reference to the Jiangmen Underground Neutrino Observatory (JUNO), consider the following statements:

1. It is located in China.

2. Its primary objective is to determine the neutrino mass ordering.
3. It is situated near major nuclear power plants.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q53. The Euphrates River flows through which of the following countries?

1. Turkey
2. Syria
3. Iraq
4. Iran

Select the correct answer using the code below:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q54. Consider the following phenomena during a typical El Niño event:

1. Weakening of trade winds.
2. Eastward movement of warm Pacific waters.
3. Strengthening of upwelling off the coast of Peru.

Which of the above occur during El Niño?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q55. With reference to the AN-32 aircraft, consider the following statements:

1. It is a twin-engine turboprop military transport aircraft.
2. It was designed by the Antonov Design Bureau.
3. Its NATO reporting name is "Cline".

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q56. With reference to memory chips, consider the following statements:

1. Memory chips are integrated circuits used for storing and retrieving data.
2. Memory chips primarily perform complex computational tasks.
3. Processors and memory chips perform identical functions.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q57. Which of the following statements about Arbitrage Funds is/are correct?

1. They combine debt-like stability with equity taxation benefits.
2. They are particularly attractive for short-term parking of surplus funds.
3. They generally outperform diversified equity funds over long periods.

Select the correct answer:

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q58. Consider the following statements regarding Armenia:

1. It is a landlocked country in the South Caucasus.
2. The country is dominated by the Lesser Caucasus Mountains.
3. Lake Sevan is its largest lake.
4. Its soils are largely volcanic in origin and rich in minerals.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q59. Assertion (A): Atal Innovation Mission seeks to strengthen India's innovation ecosystem.

Reason (R): It promotes innovation through interventions at school, startup, and enterprise levels while encouraging collaboration among multiple stakeholders.

(a) Both A and R are true, and R is the correct explanation of A.

(b) Both A and R are true, but R is not the correct explanation of A.

(c) A is true, but R is false.

(d) A is false, but R is true.

Q60. Consider the following statements regarding tetanus:

1. It is caused by a toxin-producing bacterium.
2. It is transmitted through respiratory droplets.
3. Lockjaw is a characteristic symptom.
4. Recovery from infection does not provide lifelong immunity.

Which of the statements given above are correct?

- (a) 1 and 3 only
- (b) 1, 3 and 4 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

Q61. Exercise Pitch Black is:

- (a) A multinational naval exercise hosted by Australia
- (b) A biennial multinational air combat exercise hosted by Australia
- (c) A joint army exercise conducted by ASEAN countries
- (d) A space warfare exercise conducted by QUAD countries

Q62. Consider the following statements regarding Long Range Land Attack Cruise Missile (LRLACM):

1. It is an indigenously developed cruise missile.
2. It is designed primarily for precision strikes against land targets.
3. It is a ballistic missile.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q63. The San Andreas Fault marks the boundary between which of the following tectonic plates?

- (a) Pacific Plate and Eurasian Plate
- (b) Pacific Plate and North American Plate
- (c) Nazca Plate and South American Plate
- (d) Indo-Australian Plate and Eurasian Plate

Q64. Drop Shipping is best described as:

- (a) A manufacturing process where goods are delivered directly from factory to consumer
- (b) An e-commerce model where sellers do not maintain inventory and suppliers ship products directly to customers
- (c) A government-supported export promotion scheme
- (d) A logistics model used only by multinational companies

Q65. Venus Flytrap typically grows in:

- 1. Nutrient-poor soils
- 2. Acidic soils
- 3. Moist habitats

Select the correct answer:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q66. Consider the following statements regarding GRAPES-3:

- 1. It studies cosmic rays and gamma rays.
- 2. It investigates solar activity and thunderstorm phenomena.
- 3. It is located in the Himalayas.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q67. The Tasgaon Lift Irrigation Scheme is being implemented under:

- (a) National Water Development Agency (NWDA)
- (b) Maharashtra Krishna Valley Development Corporation (MKVDC)
- (c) Central Water Commission (CWC)
- (d) Water and Power Consultancy Services (WAPCOS)

Q68. The Joint Crediting Mechanism (JCM) functions within the framework of:

- (a) Montreal Protocol
- (b) Convention on Biological Diversity (CBD)
- (c) United Nations Framework Convention on Climate Change (UNFCCC)
- (d) Kyoto Protocol only

Q69. Consider the following statements regarding Manas National Park:

- 1. It is located in the foothills of the Himalayas.
- 2. It was among the first Tiger Reserves under Project Tiger.
- 3. It shares a boundary with Royal Manas National Park.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q70. INS Tarkash is a:

- (a) Aircraft Carrier
- (b) Nuclear-powered Submarine
- (c) Stealth Guided-Missile Frigate
- (d) Amphibious Assault Ship

Q71. Consider the following statements regarding the National Statistical Commission (NSC):

- 1. It is the apex body for guiding India's statistical system.
- 2. It was established in 2005.
- 3. It was constituted on the recommendation of the Rangarajan Commission.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q72. The Mombasa Declaration is primarily related to:

- (a) Climate finance for developing countries
- (b) Regulation of deep-sea mining
- (c) Combating Illegal, Unreported and Unregulated (IUU) Fishing
- (d) Conservation of coral reefs only

Q73. With reference to the Mishmi Takin, consider the following statements:

- 1. It is a goat-antelope belonging to the family Bovidae.
- 2. Both males and females possess horns.
- 3. It is found in the Eastern Himalayas.
- 4. It is listed as Vulnerable by the IUCN.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4

Q74. With reference to the REWARD Programme, consider the following statements:

- 1. It is implemented by the Department of Land Resources.
- 2. It receives assistance from the World Bank.
- 3. It uses the Program for Results (PforR) financing model.
- 4. It focuses on strengthening watershed management and climate resilience.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q75. Consider the following statements regarding the World Gold Council (WGC):

- 1. It is a non-profit organization representing the global gold industry.
- 2. It was established in 1987 by leading gold mining companies.
- 3. Its headquarters is located in Geneva, Switzerland.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q76. Consider the following statements regarding PM Kaushal Vikas Yojana:

- 1. It is a flagship Centrally sponsored scheme of the Ministry of Skill Development and Entrepreneurship.
- 2. It is implemented by the National Skill Development Corporation (NSDC).
- 3. PMKVY 4.0 promotes district-level skill planning.

Which of the above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q77. With reference to the Strait of Hormuz, consider the following statements:

- 1. It connects the Persian Gulf with the Gulf of Oman.
- 2. It lies between Iran and Oman.
- 3. It connects directly to the Red Sea.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q78. Consider the following statements:

- 1. Every National Park must necessarily have an Eco-Sensitive Zone of exactly 10 km.
- 2. The extent of an ESZ may vary depending upon ecological significance.
- 3. Eco-Sensitive Zones can be notified around Wildlife Sanctuaries.

Which of the statements given above is/are correct?

- (a) 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q79. Consider the following statements:

- 1. Eco-Sensitive Zones are notified by the Central Government under Wildlife Protection Act.
- 2. Their purpose is to minimize negative impacts of human activities on Protected Areas.
- 3. Conservation Reserves automatically receive ESZ status upon notification.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1, 2 and 3

Q80. Consider the following statements regarding Skill India Mission:

- 1. It was launched in 2015.
- 2. It aims to converge all skill development initiatives under one umbrella.
- 3. It is implemented by the Ministry of Labour and Employment.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q81. With reference to the Right to Walk in India, consider the following statements:

1. The Constitution explicitly recognizes the Right to Walk as a Fundamental Right under Article 21.
2. The Right to Walk has been judicially derived from the Right to Life and Personal Liberty.
3. The Right to Walk may also be linked to the freedom of movement guaranteed under Article 19(1)(d).

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

Q82. Consider the following statements regarding the Anti-Defection Law:

1. It was introduced through the 52nd Constitutional Amendment Act.
2. It is contained in the Ninth Schedule of the Constitution.
3. An independent member elected to a House becomes liable for disqualification if he joins a political party after election.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Q83. Under the Tenth Schedule of the Constitution, which of the following situations may attract disqualification?

1. A nominated member joins a political party after six months from the date of nomination.
2. A member voluntarily gives up membership of his political party.
3. A member votes contrary to party whip but subsequently receives condonation from the party within the prescribed period.

Select the correct answer using the code below:

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q84. With reference to Fixed Dose Combination (FDC) drugs, consider the following statements:

1. An FDC contains two or more active pharmaceutical ingredients in a fixed ratio.
2. All FDC drugs are prohibited in India due to concerns over antimicrobial resistance.
3. CDSCO is the national regulatory authority for approval and regulation of drugs in India.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q85. Consider the following with regard to Article 21 of the Indian Constitution:

1. Right to Walk Safely
2. Right to Legal Aid
3. Right to Speedy Trial
4. Right to Form Associations
5. Right to Health

How many of the above are recognized as facets of Article 21?

- (a) Only two
- (b) Only three
- (c) Only four
- (d) All five

Q86. Consider the following statements regarding the Liberalised Remittance Scheme (LRS):

1. It is administered by the Reserve Bank of India.
2. It permits resident individuals to invest in foreign equity shares.
3. It is governed by the Foreign Exchange Management Act, 1999.
4. Hindu Undivided Families (HUFs) can avail remittance limits under LRS.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Q87. With reference to Section 69A of the Information Technology Act, consider the following:

1. It empowers the Central Government to block public access to information.
2. It was struck down by the Supreme Court in the Shreya Singhal case.
3. Blocking directions may be issued on grounds of public order.
4. The provision is implemented through rules framed in 2009.

Select the correct answer using the code below:

- (a) 1 and 2 only
- (b) 1, 3 and 4 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q88. Consider the following statements:

1. All radioactive isotopes are unstable.
2. All unstable isotopes are radioactive.
3. Carbon-14 and Tritium are radioactive isotopes.
4. Deuterium and Carbon-13 are stable isotopes.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 3 and 4 only
- (c) 1, 2, 3 and 4
- (d) 2 and 3 only

Q89. Consider the following statements regarding 3I/ATLAS:

1. It is the third confirmed interstellar object observed passing through the Solar System.
2. It is estimated to be older than the Solar System.
3. Scientists use isotopic signatures, including those of carbon and hydrogen, to infer its origin and age.
4. Carbon-14 is the primary isotope used to estimate the age of such interstellar objects.

Which of the statements given above are correct?

- (a) 1, 2 and 3 only
- (b) 1 and 2 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Q90. Consider the following grounds:

1. Sovereignty and Integrity of India
2. Security of the State

3. Public Order
4. Decency or Morality
5. Friendly Relations with Foreign States
6. Prevention of incitement to the commission of any cognizable offence

How many of the above are grounds on which the Central Government may block access to information under Section 69A of the Information Technology Act, 2000?

- (a) Only three
- (b) Only four
- (c) Only five
- (d) All six

Q91. Consider the following statements regarding El Niño:

1. It is characterised by abnormal warming of the central and eastern equatorial Pacific Ocean.
2. During an El Niño event, the easterly trade winds weaken.
3. El Niño invariably results in drought conditions over India.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Q92. With reference to the recently introduced Index of Services Production (ISP), consider the following statements:

1. It is released by the Ministry of Statistics and Programme Implementation.
2. It measures short-term changes in the output of the services sector.
3. It has replaced the Index of Industrial Production (IIP).

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q93. Consider the following pairs:

Project	Correctly Matched
1. Kirthai-II Hydroelectric Project	Chenab River
2. Ratle Hydroelectric Project	Jhelum River

3. Pakal Dul Hydroelectric Project	Marusudar River
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How many pairs given above are correctly matched?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q94. With reference to the Indus Waters Treaty, 1960, consider the following statements:

1. Under the Treaty, India has unrestricted rights over the waters of Ravi, Beas and Sutlej.
2. Pakistan has unrestricted rights over the waters of Indus, Jhelum and Chenab.
3. India is permitted to develop run-of-the-river hydroelectric projects on the western rivers, subject to the Treaty provisions.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q95. Consider the following statements:

Statement I: During an El Niño event, the Indian summer monsoon often tends to weaken.

Statement II: El Niño is associated with an abnormal warming of the central and eastern equatorial Pacific Ocean, which weakens the Walker Circulation.

Statement III: A negative Indian Ocean Dipole (IOD) can sometimes reduce the adverse impact of El Niño on the Indian summer monsoon.

Which one of the following is correct in respect of the above statements?

- A. Both Statement II and Statement III are correct and both of them explain Statement I.
- B. Both Statement II and Statement III are correct but only one of them explains Statement I.
- C. Only one of the Statements II and III is correct and that explains Statement I.
- D. Neither Statement II nor Statement III is correct.

Q96. Consider the following statements with respect to seismic doublets:

Statement I: A seismic doublet consists of two earthquakes of nearly equal magnitude occurring close in time and location.

Statement II: Unlike an aftershock sequence, both earthquakes in a seismic doublet arise from independent but closely related ruptures.

Which one of the following is correct?

- A. Both Statement I and Statement II are correct, and Statement II correctly explains Statement I.
- B. Both Statement I and Statement II are correct, but Statement II does not explain Statement I.
- C. Statement I is correct, but Statement II is incorrect.
- D. Statement I is incorrect, but Statement II is correct.

Q97. Consider the following statements with respect to Tungabhadra river:

With reference to the Tungabhadra River, consider the following statements:

1. It is a right-bank tributary of the Krishna River.
2. It is formed by the confluence of the Tunga and Bhadra rivers at Kudli.
3. It originates in the Eastern Ghats.
4. It finally joins the Krishna River at Sangameswaram.

How many of the above statements are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All four

Q98. Consider the following statements: (Passport & Citizenship)

1. Every Indian citizen is issued a formal Citizenship Certificate by the Government of India.
2. Under the Passports Act, 1967, the Central Government may issue a passport to a non-citizen in certain exceptional circumstances.
3. In a citizenship dispute, the burden of proving citizenship always lies upon the State.

Which of the statements given above is/are correct?

- A. 2 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Q99. With respect to citizenship rules of India consider the following:

Assertion (A):

An Indian Passport by itself cannot be treated as conclusive proof of Indian citizenship.

Reason (R):

Citizenship in India is determined under the Constitution and the Citizenship Act, 1955, and depends upon legal entitlement rather than possession of any single document.

Choose the correct answer:

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true but R is not the correct explanation.
- C. A is true but R is false.
- D. A is false but R is true.

Q100. With reference to faults associated with earthquakes, consider the following pairs:

Fault Type	Dominant Stress
1. Normal Fault	Tensional Stress
2. Reverse Fault	Compressional Stress
3. Strike-slip Fault	Shearing Stress

How many of the above pairs are correctly matched?

- A. Only one
- B. Only two
- C. All three
- D. None

Q101. Consider the following statements regarding the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985:

1. It is administered by the Department of Revenue under the Ministry of Finance.
2. The Act completely prohibits the medical use of narcotic drugs.
3. India is a party to the Single Convention on Narcotic Drugs, 1961.
4. The Act regulates both narcotic drugs and psychotropic substances.

Which of the statements given above are correct?

- A. 1, 3 and 4 only
- B. 1 and 3 only
- C. 2, 3 and 4 only
- D. 1, 2, 3 and 4

Q102. Consider the following statement with respect to National Food Security Act, 2013:

Assertion (A):

The proposed amendment to the National Food Security Act seeks to shift Antyodaya Anna Yojana

(AAY) entitlements from a purely household-based allocation to a person-based allocation.

Reason (R):

The amendment aims to reduce inequities arising from differences in household size while retaining an upper ceiling on monthly foodgrain allocation.

Choose the correct answer using the code below:

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true but R is not the correct explanation of A.
- C. A is true but R is false.
- D. A is false but R is true.

Q103. Which one of the following statements best describes the objective of the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985?

- A. To prohibit all manufacture, possession and use of narcotic drugs and psychotropic substances without exception.
- B. To regulate narcotic drugs and psychotropic substances by permitting their medical and scientific use while preventing illicit production and trafficking.
- C. To regulate only the international trade of narcotic drugs and psychotropic substances.
- D. To establish a single national authority for licensing all pharmaceutical products.

Q104. Consider the following statements:

1. Priority Households (PHH) under the National Food Security Act are identified by the Central Government.
2. Antyodaya Anna Yojana (AAY) covers the poorest households.
3. The National Food Security Act is implemented through the Targeted Public Distribution System (TPDS).
4. The proposed amendment retains a maximum monthly entitlement of 35 kg for an AAY household.

How many of the above statements are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All four

Q105. With reference to India's humanitarian assistance initiatives, consider the following statements:

1. BHISHM is an indigenously developed modular field hospital designed for disaster response.
 2. Project Aarogya Maitri is aimed at providing rapid medical assistance during humanitarian crises abroad.
 3. Operation Amistad was launched to provide humanitarian assistance to earthquake-affected Venezuela.
 4. The term "Amistad" means "Peace" in Spanish.
- Which of the statements given above are correct?
- A. 1, 2 and 3 only
 B. 1 and 4 only
 C. 2, 3 and 4 only
 D. 1, 2, 3 and 4

Q106. With reference to the Anaemia Mukh Bharat (AMB) Abhiyaan, consider the following statements:

1. It is implemented under the National Health Mission (NHM).
2. The revised guidelines have included Low Birth Weight Babies (0-6 months) as a new beneficiary group.
3. The programme is implemented by the Ministry of Women & Child Development.

Which of the statements given above is/are correct?

- A. 1 and 2 only
 B. 2 and 3 only
 C. 1 and 3 only
 D. 1, 2 and 3

Q107. Consider the following with respect to Schedule H2 drugs:

Assertion (A): The Government has proposed expanding Schedule H2 from selected medicines to entire therapeutic classes.

Reason (R): Schedule H2 seeks to improve drug traceability through QR/Barcode-based authentication and facilitate tracking of counterfeit or defective medicines.

Choose the correct answer:

- A. Both A and R are true, and R is the correct explanation of A.
 B. Both A and R are true, but R is not the correct explanation of A.
 C. A is true, but R is false.
 D. A is false, but R is true.

Q108. With reference to the Space-Air-Ground Integrated Network (SAGIN), consider the following statements:

1. It integrates satellites, aerial platforms and terrestrial communication networks.
2. It is designed to provide resilient communication during disasters.
3. It can support defence, maritime and remote-area communication.

How many of the above statements are correct?

- A. Only one
 B. Only two
 C. All three
 D. None

Q109. Which of the following may constitute the Space-Air-Ground Integrated Network (SAGIN)?

1. Communication Satellites
2. High Altitude Platform Stations (HAPS)
3. Mobile Base Stations
4. Optical Fibre Communication Networks

Select the correct answer using the code below:

- A. 1 and 2 only
 B. 1, 2 and 3 only
 C. 2, 3 and 4 only
 D. 1, 2, 3 and 4

Q110. Match List-I with List-II:

List-I	List-II
A. Schedule G	1. QR code-based traceability
B. Schedule H1	2. Medical supervision
C. Schedule H2	3. Sale records to be maintained for 3 years
D. Schedule X	4. Narcotic and psychotropic drugs under strict control

Select the correct answer using the code below:

- A. A-2, B-3, C-1, D-4
 B. A-3, B-2, C-1, D-4
 C. A-2, B-1, C-4, D-3
 D. A-1, B-3, C-2, D-4

Q111. Consider the following statements:

Statement I: The Strait of Hormuz is an international strait connecting the Persian Gulf with the Gulf of Oman.

Statement II: Under UNCLOS, ships and aircraft enjoy the right of Transit Passage

through international straits, which can be suspended by the coastal State.

Statement III: A coastal State may impose transit fees on all foreign ships merely for using an international strait.

Which one of the following is correct?

- A. Both Statement II and Statement III are correct, and both explain Statement I.
- B. Both Statement II and Statement III are correct, but only one explains Statement I.
- C. Only one of Statements II and III is correct, and that explains Statement I.
- D. Neither Statement II nor Statement III is correct.

Q112. With reference to the White-rumped Vulture (*Gyps bengalensis*), consider the following statements:

1. It is an Old World Vulture belonging to the family Accipitridae.
2. It is listed as Critically Endangered by the IUCN and in Appendix I of CITES.
3. The widespread decline in its population in India has been primarily attributed to the use of Meloxicam in livestock.
4. It is protected under Schedule I of the Wild Life (Protection) Act, 1972.

Which of the statements given above are correct?

- A. 1, 2 and 4 only
- B. 1 and 4 only
- C. 2, 3 and 4 only
- D. 1, 2, 3 and 4

Q113. With reference to the provisions of the United Nations Convention on the Law of the Sea (UNCLOS), consider the following statements:

1. A coastal State cannot levy charges on foreign ships merely for exercising the right of Transit Passage through an international strait.
2. A coastal State may levy charges on foreign ships only for specific services rendered.
3. The right of Transit Passage through an international strait may be suspended by the coastal State in the interest of national security.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Q114. Match the Following | Rock
Match List-I with List-II:

List-I	List-II
A. Petroglyph	1. Large designs created on the ground
B. Pictograph	2. Rock carving by pecking or engraving
C. Geoglyph	3. Rock painting using pigments

Select the correct answer using the code below:

- A. A-2, B-3, C-1
- B. A-3, B-2, C-1
- C. A-2, B-1, C-3
- D. A-1, B-3, C-2

Q115. With reference to the United Nations Convention on the Law of the Sea (UNCLOS), consider the following statements:

1. A coastal State enjoys sovereign rights over the exploration and exploitation of natural resources in its Exclusive Economic Zone.
2. The water column forms part of the Continental Shelf over which the coastal State enjoys sovereign rights.
3. All States, including landlocked States, enjoy freedom of navigation on the High Seas.

Which of the statements given above are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 and 2 only
- D. 1, 2 and 3



ANSWERS:

1. Answer: (a)
2. Answer: (d)
3. Answer: (a)
4. Answer: (d)
5. Answer: (a)
6. Answer: (a)
7. Answer: (a)
8. Answer: (b)
9. Answer: (a)
10. Answer: (b)
11. Answer: (c)
12. Answer: (d)
13. Answer: (a)
14. Answer: (c)
15. Answer: (b)
16. Answer: (d)
17. Answer: (c)
18. Answer: (d)
19. Answer: (d)
20. Answer: (a)
21. Answer: (a)
22. Answer: (d)
23. Answer: (a)
24. Answer: (a)
25. Answer: (a)
26. Answer: (b)
27. Answer: (a)
28. Answer: (b)
29. Answer: (c)
30. Answer: (d)
31. Answer: (a)
32. Answer: (d)
33. Answer: (b)
34. Answer: (a)
35. Answer: (b)
36. Answer: (a)
37. Answer: (a)
38. Answer: (b)
39. Answer: (c)
40. Answer: (b)
41. Answer: (a)
42. Answer: (d)
43. Answer: (c)
44. Answer: (b)
45. Answer: (d)
46. Answer: (c)
47. Answer: (d)
48. Answer: (d)
49. Answer: (d)
50. Answer: (b)
51. Answer: (b)
52. Answer: (d)
53. Answer: (b)
54. Answer: (a)
55. Answer: (d)
56. Answer: (a)
57. Answer: (b)
58. Answer: (d)
59. Answer: (a)
60. Answer: (b)
61. Answer: (b)
62. Answer: (a)
63. Answer: (b)
64. Answer: (b)
65. Answer: (d)
66. Answer: (a)
67. Answer: (b)
68. Answer: (c)
69. Answer: (d)
70. Answer: (c)
71. Answer: (d)
72. Answer: (c)
73. Answer: (d)
74. Answer: (d)
75. Answer: (a)
76. Answer: (b)
77. Answer: (a)
78. Answer: (b)
79. Answer: (c)
80. Answer: (a)
81. Answer: (b)
82. Answer: (a)
83. Answer: (a)
84. Answer: (c)
85. Answer: (c)
86. Answer: (c)
87. Answer: (b)
88. Answer: (c)
89. Answer: (a)
90. Answer: (c)
91. Answer: (a)
92. Answer: (b)
93. Answer: (b)
94. Answer: (b)
95. Answer: (c)
96. Answer: (a)
97. Answer: (c)
98. Answer: (a)
99. Answer: (a)
100. Answer: (c)
101. Answer: (a)
102. Answer: (a)
103. Answer: (b)
104. Answer: (c)
105. Answer: (a)
106. Answer: (a)
107. Answer: (a)
108. Answer: (c)
109. Answer: (d)
110. Answer: (a)
111. Answer: (d)
112. Answer: (b)
113. Answer: (a)
114. Answer: (a)
115. Answer: (a)