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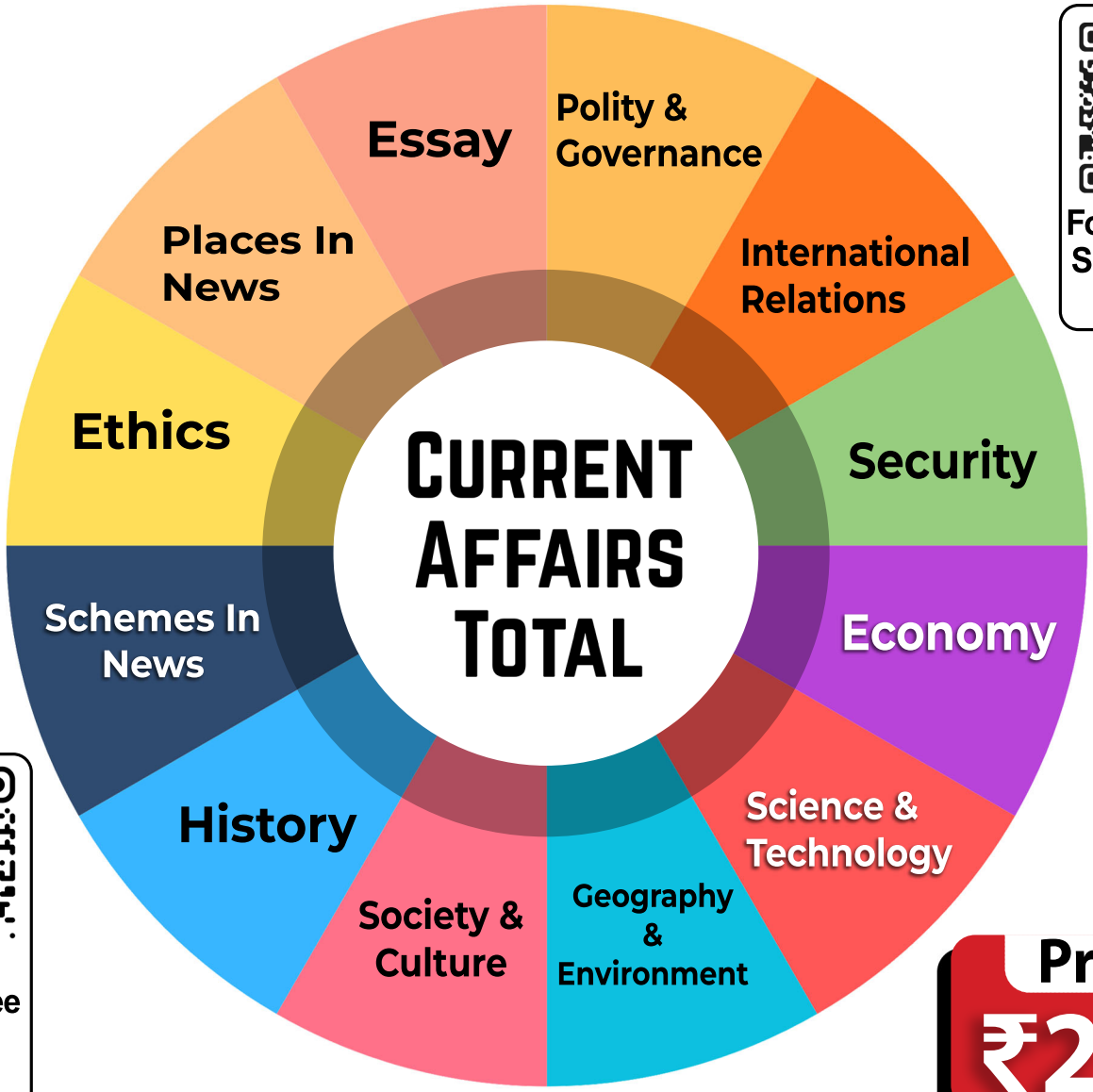

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POLITY & GOVERNANCE

1. Article 142 and Complete Justice

Context

The Supreme Court recently invoked Article 142 in **In Re: Phalodi Accident vs. NHAI and Others (2025)** after taking suo motu cognisance of two fatal road accidents in November 2025. Recognising safe travel on National Highways as part of Article 21, the Court issued several directions to strengthen road safety measures. The judgment has revived debate regarding the scope and limits of Article 142.

Road Safety and Judicial Intervention

1. National Highways constitute nearly 2% of India's road network but account for around 30% of road fatalities.
2. Approximately 26,770 deaths were reported on National Highways during the first half of 2025.
3. India aims to reduce road accidents by 50% by 2030 through the "4E approach":
   a. Education
   b. Engineering
   c. Enforcement
   d. Emergency Medical Services

The Court viewed recurring road fatalities as a serious challenge to the constitutional right to life and safety.

Article 142: Meaning and Nature

Article 142 empowers the Supreme Court to pass any order necessary for doing "complete justice" in matters before it.

It is an extraordinary constitutional power invoked when:

1. existing laws are inadequate,
2. procedural limitations hinder justice, or
3. exceptional circumstances require judicial intervention.

The provision acts as a constitutional safeguard to ensure that technicalities do not defeat substantive justice.

Key Features

1. It is residuary and discretionary in nature.
2. The power flows directly from the Constitution and not from statutory law.
3. It enables the Court to protect constitutional values and prevent miscarriage of justice.
4. The provision is generally exercised in exceptional situations where ordinary remedies are insufficient.

Judicial Interpretation of Article 142

1. **Delhi Judicial Service Association vs. State of Gujarat (1991):** The Supreme Court held that powers under Article 142 are constitutional in nature and cannot be curtailed by ordinary statutory provisions.
2. **Canara Bank vs. Debasis Das (2003):** The Court emphasised that substantive justice and principles of natural justice must prevail where rigid procedural rules fail.
3. **Hitesh Bhatnagar vs. Deepa Bhatnagar (2011):** The judgment highlighted that Article 142 is an exceptional power that must be exercised with caution and restraint.

Need for the Doctrine of Complete Justice

Laws may not always keep pace with changing social, technological, and constitutional realities. In such situations, strict adherence to procedural law may hinder justice.

Article 142 enables the Supreme Court to:

1. bridge gaps in law,
2. uphold constitutional morality,
3. protect fundamental rights, and
4. ensure effective delivery of justice.

Thus, the provision strengthens the judiciary's role as the guardian of the Constitution.

Powers of High Courts

1. In **Anil Kumar Jain vs. Maya Jain (2009)**, the Supreme Court clarified that High Courts do not possess powers equivalent to Article 142.
2. However, High Courts can still grant equitable relief under Article 226 within their constitutional jurisdiction.

Challenges and Way Forward

Challenges	Way Forward
Possibility of judicial overreach	Exercise Article 142 with restraint and only in exceptional cases

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Lack of clearly defined limits	Develop consistent constitutional principles through judicial precedents
Risk of subjective interpretation	Ensure transparency and reasoned judicial decisions
Concerns regarding separation of powers	Promote institutional balance and cooperative constitutionalism
Increasing dependence on judiciary	Strengthen legislative responsiveness and administrative efficiency

Conclusion

Article 142 is a unique constitutional provision that empowers the Supreme Court to deliver complete justice where ordinary legal mechanisms prove inadequate. However, its legitimacy depends upon careful and restrained use that balances judicial activism with constitutional accountability and institutional harmony.

2. Supreme Court Strength and Presidential Ordinances

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Context

Recently, the President of India promulgated the Supreme Court (Number of Judges) Amendment Ordinance, 2026 under Article 123 of the Constitution to increase the sanctioned strength of Supreme Court judges from 33 to 37, excluding the Chief Justice of India.

Ordinance-Making Power in India

1. **Article 123 of the Constitution** empowers the President to promulgate ordinances when Parliament is not in session and immediate legislative action becomes necessary.
2. Since ordinances are issued by the executive, Parliament itself cannot promulgate an ordinance.
3. An ordinance carries the same force and effect as a law enacted by Parliament.
4. However, it is a temporary law and must receive Parliamentary approval within six weeks of the reassembly of Parliament.
5. If the two Houses of Parliament reconvene on different dates, the later date is considered for calculating the six-week period.
6. An ordinance can remain in force for a maximum period of six months and six weeks if Parliament does not meet earlier.
7. **Article 213 grants similar ordinance-making powers to the Governor** when the State Legislature is not in session.

Enactment Process

1. The Union Cabinet plays the central role in the promulgation of an ordinance, as the President acts on the aid and advice of the Council of Ministers.
2. The President may return the proposal for reconsideration, but must promulgate the ordinance if the Cabinet sends it again.
3. An ordinance may also have retrospective effect and can amend or repeal an existing Parliamentary law or another ordinance.

Withdrawal and Limitations

1. The President may withdraw an ordinance at any time.
2. Parliament can also disapprove an ordinance through resolutions passed by both Houses.
3. Rejection of an ordinance may indicate that the government has lost majority support in Parliament.
4. Any ordinance issued on a subject outside Parliament's legislative competence becomes void.

Re-promulgation of Ordinances

1. The government may re-promulgate an ordinance if it lapses before Parliamentary approval.
2. However, the Supreme Court in **Krishna Kumar Singh v. State of Bihar (2017)** held that repeated re-promulgation without legislative approval is unconstitutional.
3. The Court emphasised that ordinance-making power is an emergency provision and cannot be used to bypass the legislature.

Ordinance-Making Power: Advantages and Concerns

Advantages	Concerns
Ordinances enable the government to take immediate action during urgent situations when Parliament is not in session.	Frequent use of ordinances bypasses the normal legislative process and weakens parliamentary scrutiny.
They help the executive respond quickly to emergencies, economic issues or unforeseen developments.	Excessive reliance on ordinances can disturb the balance between the executive and legislature.

Ordinances provide temporary legal backing in situations requiring immediate policy intervention.	Since ordinances are temporary, they may create uncertainty in law and governance.
They ensure continuity in governance when immediate legislation becomes necessary.	Governments may misuse ordinance powers to avoid debate, opposition or public discussion in Parliament.
Ordinances can address legal gaps until Parliament formally considers the matter.	Repeated re-promulgation undermines democratic accountability and constitutional morality.

Important Judicial Pronouncements on Ordinances

1. **R.C. Cooper v. Union of India (1970)**
   a. The case arose from the Banking Companies (Acquisition and Transfer of Undertakings) Ordinance, 1969, through which the government nationalised 14 major banks.
   b. The Supreme Court ruled that the President's satisfaction in issuing an ordinance is not beyond judicial scrutiny.
   c. The Court also held that ordinances must comply with constitutional provisions and cannot infringe Fundamental Rights.
2. **A.K. Roy v. Union of India (1982)**
   a. The case examined the constitutional validity of the National Security Ordinance, 1980, related to preventive detention.
   b. The Supreme Court upheld the ordinance but introduced safeguards such as review by an advisory board and communication of detention grounds to the detainee.
   c. The Court observed that ordinance-making power should be exercised only in urgent and exceptional situations, not as a routine legislative tool.
3. **D.C. Wadhwa v. State of Bihar (1987)**
   a. The case challenged the Bihar government's repeated re-promulgation of ordinances without legislative approval.
   b. The Supreme Court declared the practice unconstitutional and termed it a misuse of constitutional authority.
   c. The Court clarified that an ordinance automatically ceases to operate if the legislature does not approve it within six weeks of reassembly and cannot continue through repeated re-promulgation.

Need to Increase the Strength of the Supreme Court

1. Rising pendency of cases has placed severe pressure on the Supreme Court, with pending cases crossing 93,000.
2. The post-pandemic rise in e-filing, increasing Special Leave Petitions (SLPs), constitutional disputes, PILs and commercial litigation have further increased the workload.
3. Judicial delays weaken the rule of law, reduce public confidence and affect effective enforcement of Fundamental Rights.
4. Increasing the number of judges is expected to improve disposal rates, reduce delays and enable the formation of more Constitution and specialised benches.
5. Expanding responsibilities of the Court in areas such as federal disputes, electoral matters, digital privacy, environmental litigation and economic regulation have also necessitated institutional strengthening.

Wider Judicial Reforms Required

1. Increasing the number of Supreme Court judges alone cannot resolve the structural problems of the judiciary unless High Courts and subordinate courts are also strengthened.
2. Large vacancies in the judiciary require timely appointments through better coordination between the collegium and the government.
3. Establishing an All India Judicial Service under Article 312 can improve recruitment standards and bring greater uniformity in the lower judiciary.
4. The Supreme Court should focus more on constitutional and nationally significant matters instead of functioning primarily as a regular appellate court.
5. Greater emphasis on mediation, arbitration and Lok Adalats can reduce litigation burden through Alternative Dispute Resolution (ADR) mechanisms.
6. Judicial infrastructure requires expansion through additional courtrooms, trained staff, digital systems and research support.
7. Wider use of technology such as e-courts, AI-assisted case management, virtual hearings and scientific case allocation systems can improve efficiency.
8. Permanent Constitution Benches may help in faster disposal of important constitutional cases.

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Conclusion

The increase in the sanctioned strength of the Supreme Court represents an important step towards addressing mounting judicial pendency and improving access to timely justice. However, long-term improvement in judicial efficiency requires comprehensive reforms across all levels of the justice delivery system, including infrastructure expansion, technological integration and strengthening of subordinate

3. Governor's Discretion and Floor Tests

Context

The Governor's role in government formation has come under renewed debate after the 2026 Tamil Nadu Assembly elections, where the Governor delayed inviting the single largest party to form the government and sought written proof of majority support before administering the oath of office.

The controversy has revived discussions on constitutional conventions, discretionary powers of Governors and the role of floor tests in parliamentary democracy.

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Constitutional Position of the Governor

1. Under **Article 164**, the Governor appoints the Chief Minister. However, the Constitution does not prescribe a fixed procedure for government formation when no party secures a clear majority in the Legislative Assembly.
2. In such situations, the Governor is expected to act as a neutral constitutional authority and ensure the formation of a stable government while upholding democratic legitimacy and constitutional morality.

Government Formation in a Hung Assembly

1. When no party obtains a majority, the Governor must explore all reasonable possibilities for forming a government by consulting political parties, alliances and independent legislators.
2. The **Sarkaria Commission** recommended the following order of preference:
   a. Pre-poll alliance with majority support
   b. Single largest party capable of securing majority support
   c. Post-poll alliance commanding majority in the House
3. The Supreme Court has recognised that post-poll coalitions are constitutionally valid if they enjoy the confidence of the Legislative Assembly.
4. Although parties may be given reasonable time to demonstrate support, unnecessary delays can create political uncertainty and encourage defections and horse-trading.
5. If no stable government can be formed, the Governor may:
   a. recommend dissolution of the Assembly under **Article 174(2)(b)**, or
   b. advise imposition of **President's Rule under Article 356** as a constitutional last resort.

Floor Test and Judicial Position

1. The Supreme Court has consistently treated the floor test as the most objective and transparent method for determining majority support in the Assembly.
2. The Court has repeatedly held that majority support must be tested on the floor of the House rather than through the Governor's personal assessment.
3. Important judicial interventions related to government formation and floor tests are:
   a. S. R. Bommai Case (1994): The Court held that majority support should ordinarily be tested on the Assembly floor.
   b. Rameshwar Prasad Case (2006): The Court ruled that Assembly dissolution cannot be based on speculative political assumptions.
   c. Goa Political Crisis (2017): The Supreme Court ordered an immediate floor test to establish majority support quickly.
   d. Karnataka Political Crisis (2018): The Court reduced the time for proving majority and directed a transparent floor test.

Concerns Regarding Governor's Discretion

1. Delay in inviting parties to form the government can create political uncertainty and weaken the electoral mandate.
2. Excessive dependence on the Governor's personal judgment may lead to arbitrary exercise of discretionary powers.
3. Partisan conduct by Governors can undermine constitutional neutrality and cooperative federalism.
4. Delay in conducting floor tests may encourage defections and political manipulation.
5. Misuse of Article 356 can disturb Centre–State relations and democratic governance.

Way Forward

1. Governors should adhere strictly to constitutional conventions and political neutrality.

2. Majority claims should be verified through an early floor test within a fixed timeframe.
3. Recommendations of the Sarkaria and Punchhi Commissions should be implemented effectively.
4. Clear guidelines should be evolved for government formation in hung Assemblies.

Conclusion

The Governor occupies an important constitutional position in ensuring stable government formation in States. However, discretionary powers must function within the framework of constitutional morality, democratic accountability and cooperative federalism.

The Supreme Court's emphasis on floor tests reinforces the principle that democratic legitimacy ultimately rests on the confidence of the Legislative Assembly.

4. Legal Fiction and Constitutional Limits

Context

The March 2026 judgment of the Supreme Court of India in *Registrar Cane* Cooperative Societies vs Gurdeep Singh Narval has revived debate on the constitutional scope of **legal fiction** and the interpretation of merger provisions under the anti-defection law.

The controversy gained importance after disputes relating to legislative party mergers raised questions about whether a deeming provision can itself create a merger or merely recognise a merger already undertaken by the original political party.

Understanding Legal Fiction

1. Legal fiction is a legal device through which the law assumes something to be true, even if it may not be factually accurate, for the purpose of applying a legal rule. Examples are-
   a. treating an adopted child as the natural child of adoptive parents, and
   b. recognising a company as a legal person capable of suing and being sued.
2. Legal scholar Sir Henry Maine viewed legal fiction as an important instrument through which legal systems adapt to changing social realities.
3. However, jurist Lon Fuller cautioned that such fictions remain valid only when they are restricted to their intended objective and not treated as independent facts.

Bengal Immunity Doctrine

1. The leading Indian precedent on legal fiction is *Bengal Immunity Co. Ltd. vs State of Bihar* (1955), decided by a seven-judge Constitution Bench.
2. The case concerned Bihar's attempt to tax inter-state sales through a provision that treated sales as occurring at the place of delivery.
3. The Supreme Court rejected this interpretation and held that:
   a. a legal fiction is created for a specific objective,
   b. its operation must remain limited to that objective, and
   c. it cannot be expanded beyond legislative intent.
4. This principle was later reaffirmed in:
   a. East End Dwellings Co. Ltd. vs Finsbury Borough Council (1952), and
   b. J.K. Cotton Spinning and Weaving Mills Ltd. vs Union of India (1987).

Supreme Court's March 2026 Judgment

1. In Registrar Cane Cooperative Societies vs Gurdeep Singh Narval (2026), the Supreme Court interpreted Section 103 of the Multi-State Cooperative Societies Act, 2002.
2. The dispute emerged after the creation of Uttarakhand, when certain cooperative societies became geographically divided between Uttar Pradesh and Uttarakhand.
3. A member claimed that the society had automatically become a multi-state cooperative society under Section 103.
4. The Court rejected the claim and clarified that the provision applied only to societies whose objectives genuinely extended across more than one state. It could not be used to alter completed organisational arrangements.
5. The judgment reaffirmed that legal fictions must remain confined to the purpose for which they are enacted.

Implications for the Anti-Defection Law

1. The doctrine has important implications **of the Tenth Schedule**, which grants protection from disqualification in cases of party merger. Under the provision:
   a. the original political party must merge with another political party, and
   b. at least two-thirds of the legislators must support the merger.
2. The constitutional question is whether the support of

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two-thirds legislators itself constitutes the merger or merely confirms a merger already undertaken by the parent political party.

3. Applying the Bengal Immunity principle, legal experts argue that the numerical requirement only validates an existing merger and does not independently empower legislators to create one.

Judicial Position on Party Mergers

1. In *Rajendra Singh Rana vs Swami Prasad Maurya* (2007), the Supreme Court held that numerical support within the legislature party alone cannot constitute a valid merger unless the original political party itself merges.
2. Similarly, in *Speaker, Haryana Vidhan Sabha vs Kuldeep Bishnoi* (2011), the Punjab and Haryana High Court ruled that legislators cannot independently effect a merger without approval of the parent political party.
3. These judgments limit the discretionary powers of presiding officers under the Tenth Schedule.

Constitutional Concerns

1. Recent controversies surrounding recognition of legislative mergers have revived concerns regarding misuse of merger provisions.
2. Critics argue that if numerical strength alone is treated as sufficient for merger, legislators may acquire powers not contemplated under the Constitution.
3. Such interpretations may:
   a. weaken the anti-defection framework,
   b. encourage political instability, and
   c. undermine party-based parliamentary democracy.

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Conclusion

Legal fiction remains an important tool of legal interpretation, but courts have consistently maintained that it must remain confined to its statutory objective.

The recent Supreme Court ruling reinforces the principle that constitutional interpretation under the Tenth Schedule should preserve legislative stability while preventing misuse of merger provisions.

5. National Panchayat Awards 2025

Context

The winners of the National Panchayat Awards 2025 (NPA-2025), which recognise the best-performing Panchayats in the country for their work in local governance and development.

About National Panchayat Awards

1. The National Panchayat Awards are given every year by the **Ministry of Panchayati Raj** to identify and encourage Panchayats that show strong performance in local governance and development work.
2. These awards operate under the **Incentivization of Panchayats (IoP) scheme**, which is a part of the centrally sponsored **Rashtriya Gram Swaraj Abhiyan (RGSA)**.

Purpose and Background

1. The awards were redesigned and relaunched in **2022** to better align with development priorities linked to the **Localisation of Sustainable Development Goals (LSDGs)**.
2. This framework connects Panchayat performance with **17 Sustainable Development Goals (SDGs)** through **9 thematic areas of LSDGs**.
3. The main aim is to assess how effectively Panchayats are contributing to SDG achievement while encouraging healthy competition among them.
4. It also supports the larger goal of achieving **LSDGs by 2030 through Panchayati Raj Institutions**.

Thematic Areas for Evaluation

1. Panchayats are ranked based on performance across nine development themes, including **poverty reduction and livelihood improvement, healthcare, and child welfare**.
2. Other key themes include **water security, clean and green environment, and development of self-sufficient infrastructure** at the local level.
3. Social dimensions are also assessed through **social justice, social security, and women-friendly governance indicators**.
4. Effective **good governance practices** form an important part of the overall evaluation framework.

Categories of Awards

1. One major category is the **Deen Dayal Upadhyay Panchayat Satat Vikas Puraskar (DDUPSVP)**, which recognises Gram Panchayats performing well across all nine LSDG themes.
2. Another category is the **Nanaji Deshmukh Sarvottam Panchayat Satat Vikas Puraskar (NDSPSVP)**, which is awarded to the best-performing Panchayats at the district, block, and Gram Panchayat levels based on overall performance.

6. One Case One Data Initiative

Context

The Supreme Court of India recently launched the "One

Case One Data" initiative along with "Su Sahay", an Artificial Intelligence-based chatbot, to improve digital access and case management in the judicial system.

About One Case One Data

1. The platform is designed to connect case records from the Supreme Court, High Courts, district courts and taluka courts into a common digital framework.
2. It seeks to simplify judicial administration by enabling integrated access to court-related information across different levels of courts.
3. Under the system, every case will receive a unique **digital identification number** linking all related documents and records together.
4. The initiative will support automatic retrieval of data from court databases and facilitate quicker online verification of case details.
5. When a matter is transferred from a lower court to a higher court, earlier records will be digitally integrated and updated instead of being recreated.
6. The system is expected to reduce procedural delays caused by manual verification and scattered judicial records.
7. It will also improve coordination among courts and allow relevant case information to be shared with High Courts and government departments when required.

About 'Su Sahay'

1. "Su Sahay" is an Artificial Intelligence-based chatbot available on the Supreme Court website.
2. It has been developed jointly by the National Informatics Centre and the Supreme Court Registry.
3. The chatbot is intended to make court-related services more accessible for litigants and the public.
4. It assists users by providing guidance on filing procedures, access to services and other general court-related queries.

7. National Company Law Tribunal

Context

In a recent development concerning insolvency proceedings in India, the Supreme Court has taken suo motu cognisance of delays by various National Company Law Tribunal (NCLT) benches in approving resolution plans under the Insolvency and Bankruptcy Code (IBC).

About National Company Law Tribunal (NCLT)

1. The National Company Law Tribunal (NCLT) is a quasi-judicial body set up to resolve disputes related to companies, mainly those falling under the Companies Act, 2013.
2. It was formally established on 1 June 2016 as part of India's corporate legal framework.
3. The idea for creating such a tribunal was based on recommendations of the **Balakrishna Eradi Committee**, which focused on improving insolvency and company winding-up processes.

Structure and Composition

1. The tribunal is headed by a President.
2. It includes both Judicial Members (with legal background) and Technical Members (with expertise in finance, accounts, or related fields).
3. The number of members is not fixed and can be adjusted as needed.

Appeals Process

1. Decisions of the NCLT can be challenged before the National Company Law Appellate Tribunal (NCLAT).
2. Further appeal against NCLAT rulings can be made to the Supreme Court, but only on legal questions.

Functions and Authority

1. The tribunal follows the **principles of natural justice** while deciding cases.
2. It has the authority to pass orders and ensure their execution, similar to a civil court.
3. It can review and correct its own decisions when required.
4. The NCLT also manages its internal procedures for handling cases.
5. It serves as the main authority for handling insolvency cases involving companies and limited liability partnerships under the Insolvency and Bankruptcy Code, 2016.

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8. Judicial Remarks and Institutional Limits

Context

Recent remarks made by the Chief Justice of India during court proceedings have revived debate on judicial restraint, courtroom conduct and the constitutional limits of oral observations by judges.

Judicial Oral Remarks

Judicial oral remarks are comments or questions made by judges during hearings to:

1. Test legal arguments,
2. Clarify constitutional and legal issues,
3. Examine implications of competing claims, and

4. Facilitate interaction between the Bench and lawyers.

Such remarks are not legally binding. The official position of a court is reflected only through written judgments and formal orders.

Supreme Court's Position

The Supreme Court clarified this distinction in **Chief Election Commissioner vs M.R. Vijayabhaskar (2021).**

1. During the COVID-19 pandemic, the Madras High Court orally criticised the Election Commission for permitting political rallies.
2. The Election Commission sought restrictions on media reporting of such remarks.
3. The Supreme Court rejected the plea and upheld the principle of open courts.

The Court further observed that:

1. Courts speak through judgments and orders, not oral comments.
2. Judges should avoid harsh or inappropriate language that may undermine institutional dignity.

The judgment also distinguished between:

1. Questions intended to test legal arguments; and
2. Remarks that may unnecessarily harm individuals or institutions.

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Significance of Bench Questions

1. Courts often use probing or hypothetical questions to assess legal arguments. Such comments do not necessarily indicate the final opinion of the court.
2. For instance, during hearings in **Supriyo vs Union of India (2023)** on same-sex marriage, certain observations appeared progressive, while the final judgment adopted a different legal position.
3. This shows that courtroom questioning is primarily a tool of judicial examination rather than judicial endorsement.

Institutional Limits on Judicial Speech

Judicial independence is accompanied by ethical responsibility and institutional discipline. Judges are expected to maintain neutrality, restraint and constitutional propriety.

The **Restatement of Values of Judicial Life (1997)** advises judges to avoid expressions that may weaken public confidence in judicial impartiality.

Concerns arise when remarks appear:

1. Politically sensitive,
2. Personally offensive,
3. Emotionally excessive, or
4. Inconsistent with judicial decorum.

As judicial legitimacy depends on public trust, courtroom language must remain measured and responsible.

Recent Controversy

The recent controversy arose during hearings related to senior advocate designations, where strong expressions were reportedly used by the Chief Justice against certain individuals. A subsequent clarification restricted the criticism to fake-degree holders.

The episode nevertheless revived concerns regarding:

1. Institutional credibility,
2. Instant media amplification of courtroom comments, and
3. The balance between free judicial dialogue and judicial restraint.

Challenges and Way Forward

Challenges	Way Forward
Courtroom remarks may be perceived as final judicial opinions.	Greater awareness should be created regarding the distinction between oral observations and written judgments.
Harsh comments may erode public confidence in the judiciary.	Judges should maintain restraint and uphold judicial decorum.
Social media may amplify or distort courtroom observations.	Official transcripts and orders should be released promptly.
Politically sensitive remarks may create perceptions of bias.	Judicial conduct should remain constitutionally guided and institutionally neutral.
Lack of uniform standards may lead to inconsistency	Judicial ethics training and institutional guidelines should be strengthened.

Conclusion

Oral observations are an essential part of judicial functioning and help courts examine legal issues comprehensively. However, judicial freedom in court must be balanced with restraint, constitutional morality and institutional discipline to preserve the credibility and dignity of the judiciary.

9. Grievance Redressal Assessment and Index (GRAI) & CPGRAMS:

Context

The Insurance Division under the Department of Financial Services ranked first in the Group A category

of the Grievance Redressal Assessment and Index (GRAI) for March 2026, as released by the Department of Administrative Reforms and Public Grievances (DARPG).

About Grievance Redressal Assessment and Index (GRAI)

1. The **Grievance Redressal Assessment and Index (GRAI)** was developed by the **Department of Administrative Reforms and Public Grievances (DARPG)** to evaluate how efficiently government ministries and departments respond to public grievances.
2. It was first introduced through **GRAI 2022**, which was released on **21 June 2023**, marking the beginning of a structured ranking system for grievance redressal performance.
3. The index assesses performance based on **11 indicators**, which are grouped under four broad dimensions—**Efficiency, Feedback, Domain, and Organisational Commitment**.
4. By analyzing these parameters, the index encourages departments to improve accountability, strengthen citizen-centric service delivery, and ensure quicker resolution of complaints.
5. A key focus of GRAI is to improve the effectiveness of grievance handling through the **Centralized Public Grievance Redress and Monitoring System (CPGRAMS)**.

Centralized Public Grievance Redress and Monitoring System (CPGRAMS)

1. A single integrated portal connects all ministries and departments of the Government of India as well as State governments, enabling a unified grievance handling system.
2. Through this platform, citizens can file complaints related to public service delivery at any time, as it remains operational on a 24×7 basis.
3. After submission of a grievance, the system generates **a unique registration ID**, which allows users to track the status and progress of their complaint online.
4. The system has been developed and is monitored by the Department of Administrative Reforms and Public Grievances under the Ministry of Personnel, Public Grievances and Pensions.
5. Designed to ensure efficiency in governance, grievances registered on CPGRAMS are expected to be resolved in a time-bound manner, generally **within 21 days** of receipt.
6. Overall, the platform strengthens grievance redressal by improving transparency, accessibility, and responsiveness in public service delivery.

10. BCCI, RTI and Sports Governance

Context

The Central Information Commission recently held that the Board of Control for Cricket in India is **not a "public authority"** under the Right to Information (RTI) Act, 2005. The ruling has revived debate over institutional transparency and accountability in sports governance.

Legal and Constitutional Dimensions

Section 2(h) of the RTI Act defines a public authority as a body:

1. Established under the Constitution, parliamentary or state legislation, or government notification;
2. Owned, controlled, or substantially financed by the government;
3. Including non-governmental organisations substantially funded through public money.

The BCCI argued that:

1. It is an autonomous private body registered under the Tamil Nadu Societies Registration Act, 1975;
2. It was neither created by statute nor substantially financed by the government;
3. Government involvement in its functioning is limited.

The dispute is also linked to **Article 12 of the Constitution**, which defines the term "State." While courts have expanded its scope in certain cases involving bodies discharging public responsibilities, the BCCI maintained that it does not qualify as "State" due to the absence of deep and pervasive governmental control.

Recommendations and Earlier Developments

1. The **Justice Lodha Committee** criticised the opaque functioning of the BCCI and recommended bringing it under the RTI framework to improve institutional openness and administrative oversight.
2. Similarly, the **275th Report of the Law Commission of India** observed that sports bodies exercising regulatory influence should be subjected to RTI obligations.
3. In 2018, the CIC had declared the BCCI a public authority and directed it to appoint Public Information Officers and establish RTI compliance mechanisms. However, the matter was reconsidered following intervention by the Madras High Court.

Key Observations of the CIC

The CIC clarified that registration under a statute does not

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automatically make an organisation a statutory authority. It observed that the BCCI merely derives legal recognition from the registration law and was not established through legislation or government notification.

The Commission further held that:

1. Regulatory supervision alone does not amount to deep and pervasive governmental control;
2. Office-bearers are elected internally without government nominees;
3. Government approval is not required for administrative decisions.

On financing, the CIC noted that the BCCI generates substantial independent revenue through broadcasting rights, sponsorships, media contracts, and ticket sales. Therefore, tax concessions or use of public infrastructure cannot be treated as "substantial financing" under the RTI Act.

Important Judicial Pronouncements

1. **Zee Telefilms Ltd. v. Union of India (2005):** The Supreme Court of India held that the BCCI is not "State" under Article 12 because:
   a. There is no government ownership or shareholding;
   b. Financial assistance from the government is absent;
   c. Government control is not deep and pervasive.
2. **BCCI v. Cricket Association of Bihar (2016):** Following the IPL spot-fixing controversy, the Supreme Court introduced governance reforms based on the Lodha Committee recommendations, including:
   a. One-state-one-vote principle;
   b. Tenure limits;
   c. Conflict-of-interest regulations.
3. The Court also clarified that even if the BCCI is not "State" under Article 12, its actions remain subject to judicial review under Article 226 because of its regulatory role in cricket administration.

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National Sports Governance Act, 2025

Section 14(2) of the Act provides that sports bodies will be treated as public authorities only in matters relating to utilisation of government grants or financial assistance. Since the BCCI does not receive such grants, it remains outside the RTI framework.

Implications of the Ruling

The ruling highlights the distinction between "public function" and "public authority." Although the BCCI exercises significant influence over cricket administration in India, the absence of substantial government control or financing prevents its inclusion under the RTI Act.

The decision has also raised concerns regarding:

1. Limited institutional transparency in sports governance;
2. Restricted public access to information relating to administration and team selection;
3. Accountability gaps in autonomous sports bodies with significant public influence.

Challenges and Way Forward

Challenges	Way Forward
Limited transparency in sports administration	Introduce institutional disclosure norms and transparency mechanisms
Absence of RTI obligations despite regulatory influence	Create a separate accountability framework for autonomous sports bodies
Weak oversight of financial and governance practices	Strengthen independent audits and regulatory supervision
Ambiguity regarding "public authority" under RTI	Clarify legal standards through legislative reforms
Concerns over conflict of interest and opaque decision-making	Ensure effective implementation of governance reforms recommended by expert committees

Conclusion

While the ruling upholds the legal distinction between private autonomy and public authority under the RTI Act, it also underscores the need for greater institutional transparency in sports bodies with significant public influence.

11. Samarth Panchayat Portal

Context

The central government is expanding the rollout of the Samarth Panchayat portal to states such as Assam, Uttar Pradesh, and Maharashtra to strengthen digital governance and improve the functioning of local self-government institutions.

About Samarth Panchayat Portal

1. Samarth Panchayat is an integrated **digital platform** developed to support Panchayati Raj Institutions (PRIs) in carrying out governance and administrative functions more effectively.

2. The platform has been introduced by the Ministry of Panchayati Raj.
3. It helps panchayats improve the collection, tracking, and management of revenue generated through their own sources under the **Own Source Revenue (OSR)** framework.
4. By simplifying administrative procedures, the portal enables smoother delivery of public services for both citizens and local government officials.
5. The initiative also promotes greater transparency and accountability in the functioning of gram panchayats.
6. A major objective of the portal is to improve the financial capacity of panchayats so that they can independently support local development activities.

Own Source Revenue (OSR)

1. Own Source Revenue refers to the income earned **directly by gram panchayats** through local sources such as taxes, user charges, rental income, licence fees, and lease payments.
2. Stronger OSR generation can reduce dependence on external grants and provide panchayats with greater financial autonomy.
3. Improved local revenue enables village administrations to invest in infrastructure, sanitation, water supply, public amenities, and other grassroots development projects.
4. The portal is expected to support better planning and monitoring of local finances, ultimately contributing to an improved quality of life in rural areas.

12. Sedition Proceedings and Supreme Court

Context

The Supreme Court has clarified that proceedings under Section 124A of the Indian Penal Code (IPC) may continue where the accused does not object to the continuation of the trial or appeal. The clarification creates a limited exception to the Court's 2022 interim order that had suspended sedition proceedings across the country.

Sedition Law in India

1. **Section 124A** of the IPC was introduced by the British colonial administration in 1890 to suppress political opposition and nationalist activities. The provision criminalised expressions considered disloyal or hostile towards the government established by law.
2. The law became an important colonial instrument to curb dissent during the freedom struggle and was invoked against leaders such as Mahatma Gandhi and Bal Gangadhar Tilak.

Judicial Interpretation of Sedition

1. After independence, the constitutional validity of Section 124A was challenged for violating freedom of speech and expression under Article 19(1)(a).
2. In **Kedar Nath Singh v. State of Bihar**, the Supreme Court upheld the provision but significantly narrowed its scope. The Court held that sedition would apply only where speech or expression:
   a. Incites violence, or
   b. Has the tendency to create public disorder.
3. The judgment distinguished legitimate criticism of the government from activities threatening public order, thereby balancing free expression with concerns of state security.

Concerns over Misuse

1. Despite judicial safeguards, Section 124A continued to face criticism due to its vague and broad wording. Critics argued that the law was frequently invoked against journalists, activists, students, and political dissenters for speech or actions lacking any direct link to violence.
2. The provision was criticised for:
   a. Discouraging democratic dissent,
   b. Creating a chilling effect on free expression,
   c. Enabling excessive executive discretion.

These concerns led to increasing demands for reconsideration of the sedition framework.

Supreme Court's 2022 Interim Order

In May 2022, after the Union Government informed the Court that it intended to re-examine the sedition law, the Supreme Court passed an interim order keeping the operation of Section 124A in abeyance.

The Court directed that:

1. No fresh FIRs should be registered under Section 124A,
2. Pending investigations and trials should remain suspended,
3. Persons already arrested under the provision could seek appropriate judicial relief.

The order was intended to safeguard civil liberties while the constitutional validity and necessity of the provision remained under review.

Sedition under the Bharatiya Nyaya Sanhita (BNS)

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1. With the replacement of the IPC by the **Bharatiya Nyaya Sanhita (BNS),** Section 152 introduced an offence relating to acts endangering the sovereignty, unity, and integrity of India.
2. Petitioners before the Supreme Court have argued that Section 152 substantially resembles the earlier sedition law and may reproduce similar constitutional concerns. This has revived the debate on whether the new provision differs meaningfully from the earlier framework of Section 124A.
3. The constitutional validity of Section 152 is presently under judicial scrutiny.

Supreme Court's Recent Clarification

1. Against this backdrop, the Supreme Court recently clarified that the 2022 interim order does not prevent courts from proceeding with sedition cases where the accused voluntarily seeks continuation of proceedings.
2. The clarification was issued while hearing a plea involving a long-pending sedition appeal. The Court observed that where an accused has no objection to the continuation of proceedings under Section 124A, courts may decide such matters on merits and in accordance with law.
3. Accordingly, the Court directed the concerned High Court to hear the pending appeal expeditiously.

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Significance of the Clarification

The clarification introduces procedural flexibility into the 2022 interim arrangement by ensuring that accused persons seeking timely adjudication are not compelled to remain under indefinite suspension of proceedings.

The development is significant because it:

1. Strengthens procedural fairness and access to justice,
2. Preserves safeguards against arbitrary use of sedition law,
3. Reflects judicial pragmatism pending final constitutional determination.

At the same time, the broader suspension on fresh sedition prosecutions continues, while the constitutional validity of sedition-related provisions under both the IPC and BNS remains unresolved.

Conclusion

The Supreme Court's clarification reflects an attempt to balance civil liberties with legitimate state interests while retaining safeguards against misuse of sedition law. The final judicial determination on sedition-related provisions under the IPC and BNS is likely to shape the future contours of free speech, democratic dissent, and constitutional governance in India.

13. Acid Attack Survivors and Disability Rights

Context

The Supreme Court of India has expanded the scope of protection available to acid attack survivors under the Rights of Persons with Disabilities (RPwD) Act, 2016. The Court ruled that survivors forced to consume acid and suffering serious internal injuries would also qualify as acid attack victims, even in the absence of visible external disfigurement. The judgment seeks to address gaps in legal recognition, rehabilitation and welfare support available to survivors of acid violence.

Legal Gap in the RPwD Act

1. The RPwD Act recognises acid attack survivors as persons with disabilities.
2. However, the earlier interpretation largely focused on victims with visible external disfigurement.
3. Consequently, survivors subjected to acid ingestion were often excluded from the scope of disability protection despite suffering severe and permanent injuries.
4. This created an artificial distinction based on the manner of attack rather than the nature of harm caused.

Impact of Acid Ingestion

1. Ingestion of acid can severely damage internal organs, including the mouth, throat, oesophagus and stomach.
2. Such injuries may lead to permanent medical complications, repeated surgical procedures and long-term nutritional disorders.
3. Survivors often face prolonged physical, psychological and economic hardship requiring sustained medical care and rehabilitation.

Constitutional and Legal Issues

Equality Before Law

1. The exclusion of acid ingestion survivors created an arbitrary classification between:
   a. victims on whom acid was thrown, and
   b. victims forced to consume acid.
2. The Court observed that both categories constitute a single class of acid violence survivors as the resulting disability and trauma are substantially similar.
3. The distinction was therefore inconsistent with **Article 14 of the Constitution.**

Inconsistency in the Legal Framework

1. Section 124 of the Bharatiya Nyaya Sanhita (BNS), 2024 treats throwing acid and administering acid as the same offence carrying identical punishment.
2. Denial of similar welfare protection under the RPwD Act created inconsistency between criminal law and disability welfare legislation.

Right to Dignity

1. Absence of disability recognition restricted access to compensation, rehabilitation schemes, medical assistance and other welfare measures.
2. This adversely affected the right to live with dignity guaranteed under Article 21 of the Constitution.

Concerns in Disability Assessment

1. Existing disability assessment guidelines primarily emphasise visible disfigurement and locomotor impairment.
2. Serious internal injuries caused by acid ingestion often remain inadequately assessed within the present framework.
3. The judgment highlights the need for a more inclusive and medically comprehensive disability assessment mechanism.

Judicial Concerns over Acid Attack Cases

1. The Supreme Court has also expressed concern regarding the increasing incidence of acid attacks and delays in trial proceedings.
2. It observed that prolonged pendency weakens deterrence and undermines effective justice delivery.
3. Several states continue to report substantial backlogs of acid attack cases, reflecting deficiencies in investigation and prosecution.

Judicial Observations and Suggestions

1. The Court noted that existing punishments alone have not proved sufficiently effective in preventing acid attacks.
2. It suggested consideration of stronger legal measures, including:
   a. shifting the burden of proof in appropriate cases, and
   b. fixing accountability on illegal acid sellers by treating them as co-accused.
3. The observations form part of a broader effort to strengthen victim protection and institutional accountability.

Conclusion

The Supreme Court's ruling marks an important step towards ensuring substantive equality and dignity for survivors of acid violence. By recognising internal injuries caused through acid ingestion within the ambit of disability rights, the judgment closes a significant gap in the RPwD framework. The decision also underlines the need for stronger regulation of acid sales, faster trials and a more responsive rehabilitation system to ensure effective protection and support for survivors.

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INTERNATIONAL RELATIONS

1. UAE Exit from OPEC

Context:

The reported decision of the United Arab Emirates (UAE) to exit OPEC and the OPEC+ grouping marks a significant shift in global energy governance. The move comes at a time of geopolitical tensions in West Asia and evolving economic priorities of Gulf countries. It has important implications for global oil supply stability, price dynamics, and the future relevance of producer alliances.

OPEC and OPEC+

1. The Organization of the Petroleum Exporting Countries (OPEC) was established in 1960 to coordinate petroleum policies among oil-producing nations and ensure stable revenues. It works by regulating production levels among members to influence global oil prices.
2. Later, in 2016, OPEC+ was formed by including major non-OPEC producers such as Russia. Together, the grouping accounts for a significant share of global oil output and plays a key role in stabilising crude oil markets through coordinated production decisions.
3. The UAE joined OPEC in 1967 and has since been an important contributor due to its large oil reserves and production capacity.

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Reasons Behind UAE's Exit

1. The decision reflects a combination of geopolitical and economic considerations:
2. Increasing tensions in West Asia, especially linked to the US-Iran conflict, have raised security risks for Gulf energy trade routes.
3. The UAE seeks greater flexibility in managing its oil production outside quota restrictions.
4. The country is pursuing long-term economic diversification beyond hydrocarbons, requiring higher short-term oil revenues.
5. Constraints under OPEC's consensus-based system limit independent decision-making on production levels.

Challenges and Way Forward

Challenges	Way Forward
Weakening of coordinated production control under OPEC and OPEC+ may reduce global price stability.	Strengthening multilateral energy dialogue platforms to manage supply coordination among producers.
Rising competition among oil-producing countries may increase price volatility in global markets.	Developing transparent global oil market mechanisms to improve predictability and reduce shocks.
Geopolitical tensions in West Asia increase risks to key oil supply routes like the Strait of Hormuz.	Enhancing regional security cooperation and maritime protection frameworks to safeguard energy trade routes.
Potential fragmentation of producer alliances may disrupt long-standing supply management systems.	Encouraging institutional reforms within producer groups to make them more flexible and inclusive.
Over-reliance of Gulf economies on oil revenues creates instability during market fluctuations.	Accelerating economic diversification strategies in oil-producing countries to reduce dependency on hydrocarbons.
Short-term price decline may lead to long-term supply uncertainty for import-dependent countries.	For importers like India, strengthening strategic petroleum reserves and supply diversification.

Conclusion:

The UAE's exit from OPEC reflects a broader transformation in global energy politics, where national economic priorities and geopolitical realities are reshaping traditional producer alliances. While it may bring short-term benefits in terms of lower prices, it also introduces greater uncertainty in global oil markets. A stable and cooperative global energy framework remains essential to balance producer interests with consumer energy security.

2. Russia–China Partnership and Global Power Shifts

Context

Russian President Vladimir Putin recently visited Beijing amid renewed diplomatic engagement between China and the United States. The visit reflects deepening Russia–China strategic convergence in an increasingly multipolar world order. As major centres of global power, the evolving relationship among Russia, China, and the United States will significantly influence international stability, global

governance, and regional security dynamics.

Evolution of Russia–China Relations

1. Relations strengthened after the Communist Revolution in China and the signing of the 1950 Treaty of Friendship between the Soviet Union and China.
2. However, ideological differences and strategic rivalry later led to the Sino-Soviet split and border clashes in 1969.
3. The weakening of Soviet–China relations subsequently enabled closer engagement between the United States and China during the Cold War period.
4. Following the collapse of the Soviet Union, Russia and China gradually rebuilt ties through strategic cooperation agreements beginning in the 1990s.
5. Relations entered a new phase under Vladimir Putin and Xi Jinping, culminating in the declaration of a "no-limits" partnership in 2022.

In recent years, geopolitical tensions and Western sanctions on Russia have accelerated strategic convergence between the two countries.

Factors Driving Russia–China Strategic Convergence

Economic Complementarity

The partnership is supported by complementary economic interests:

1. China provides markets, technology, investment, and industrial goods.
2. Russia supplies energy resources, defence equipment, and strategic raw materials.

Impact of Western Sanctions

Sanctions imposed on Russia after the Ukraine conflict significantly increased Moscow's dependence on Beijing. Chinese firms replaced several Western companies in sectors such as:

1. Telecommunications,
2. Automobiles,
3. Electronics.

Consequently, the partnership is increasingly marked by asymmetry, with Russia becoming more economically dependent on China.

Expanding Energy Cooperation

Energy cooperation has become a major pillar of bilateral relations through:

1. Oil and gas trade,
2. Power of Siberia pipeline projects,
3. Long-term energy agreements.

Strategic and Financial Coordination

Both countries have expanded trade in national currencies such as the Yuan and Ruble to reduce dependence on the US dollar. Frequent leadership interactions also indicate growing geopolitical coordination against perceived Western dominance.

Strategic Outcomes of the Putin–Xi Summit

The recent summit between Vladimir Putin and Xi Jinping resulted in agreements relating to:

1. Energy,
2. Technology,
3. Investment,
4. Economic cooperation.

Shared Strategic Objectives

Both countries emphasised:

1. Strengthening bilateral resilience amid geopolitical uncertainty,
2. Expanding cooperation in response to external strategic pressures.

Common Geopolitical Position

The joint statement reflected support for:

1. A multipolar international order,
2. Reform of global governance institutions,
3. Opposition to unilateral and hegemonic policies.

However, no final agreement was reached regarding the proposed Power of Siberia-2 pipeline project.

Limits to a Formal Russia–China Alliance

Russia and China are moving closer strategically because both increasingly perceive the United States as a major geopolitical competitor. However, the relationship still falls short of a formal military alliance.

A military alliance requires binding defence commitments and mutual security obligations, and both countries remain cautious about such arrangements.

1. China seeks to avoid direct involvement in Russia's confrontation with the West over Ukraine.
2. Russia is reluctant to become entangled in China's tensions with the United States regarding Taiwan.

Consequently, both countries currently prefer strategic coordination without treaty-bound military commitments. Although defence cooperation is expected to deepen further, a formal alliance remains unlikely in the near future.

Recent diplomatic engagement between the United States

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and China has also reduced the immediate possibility of an overt Russia–China military bloc.

Implications for India

The growing Russia–China proximity presents important strategic challenges for India.

Shrinking Strategic Space

India has traditionally balanced:

1. Strong defence ties with Russia,
2. Expanding strategic cooperation with the United States.

However, evolving geopolitical realities are reducing India's room for strategic balancing among major powers.

Key Strategic Concerns

1. Increasing Russian dependence on China could reduce India's influence over Moscow.
2. Closer Russia–China coordination may strengthen China's strategic position against India.
3. India may face greater geopolitical pressure in Eurasia and the Indo-Pacific.
4. External balancing options may become less reliable amid intensifying great-power competition.

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Policy Imperatives for India

India may need to:

1. Preserve strategic autonomy,
2. Diversify defence and technology partnerships,
3. Accelerate indigenous defence capabilities,
4. Continue a flexible multi-alignment strategy,
5. Strengthen regional and global diplomatic engagement.

Conclusion

The deepening Russia–China partnership reflects broader shifts towards an increasingly multipolar but competitive international order. While strategic and economic cooperation between the two countries is expected to intensify, structural and geopolitical constraints make a formal military alliance unlikely in the near future. For India, navigating these evolving power equations will require calibrated diplomacy, sustained strategic autonomy, and greater self-reliance in security and economic capabilities.

3. India–Vietnam Strategic Partnership

Context

India and Vietnam have elevated their relationship to an "Enhanced Comprehensive Strategic Partnership" during the visit of Vietnamese President To Lam to India. Both countries also set a target of achieving bilateral trade worth 25 billion dollars by 2030, reflecting growing convergence in strategic, economic and Indo-Pacific priorities.

Evolution of Bilateral Relations

1. India and Vietnam established diplomatic relations in 1972, though their ties originated during the anti-colonial period.
2. Prime Minister Jawaharlal Nehru was the first foreign leader to visit Vietnam after the liberation of Hanoi in 1954.
3. India supported Vietnam's sovereignty during the Vietnam War and recognised unified Vietnam soon after reunification in 1975.
4. Bilateral ties were upgraded to:
   a. Strategic Partnership in 2007, and
   b. Comprehensive Strategic Partnership in 2016.
5. Vietnam was also the first ASEAN country with which India established a Strategic Partnership.

Major Areas of Cooperation

Economic and Technological Cooperation

1. Bilateral trade has crossed 16 billion dollars, with both countries aiming to raise it to 25 billion dollars by 2030.
2. Vietnam has emerged as an important economic partner for India in Southeast Asia and a key participant in regional supply chains.
3. Cooperation is expanding in sectors such as:
   a. pharmaceuticals,
   b. agriculture and fisheries,
   c. electronics and manufacturing,
   d. renewable energy,
   e. digital economy, and
   f. critical minerals.
4. Agreements signed during the recent visit covered areas including:
   a. digital payments,
   b. artificial intelligence,
   c. 6G technology,
   d. space cooperation, and
   e. digital public infrastructure.
5. Vietnam's participation in ASEAN and the Regional Comprehensive Economic Partnership (RCEP) enhances its significance for India's economic engagement with East and Southeast Asia.

Defence and Maritime Cooperation

1. Defence cooperation has become a central pillar of bilateral relations.
2. Both countries share common concerns regarding:
   a. maritime security,
   b. freedom of navigation,
   c. adherence to international law, and
   d. stability in the Indo-Pacific region.
3. Cooperation has expanded through:
   a. defence lines of credit,
   b. military training,
   c. naval exchanges,
   d. joint exercises, and
   e. defence industrial collaboration.
4. Maritime cooperation assumes particular importance in the context of tensions in the South China Sea.
5. India and Vietnam have reiterated support for peaceful resolution of disputes in accordance with UNCLOS and opposed militarisation in the region.
6. Vietnam's participation in the Indo-Pacific Oceans Initiative (IPOI) reflects increasing strategic convergence between the two countries.

Cultural and Development Partnership

1. India and Vietnam share long-standing civilisational ties rooted in Buddhism and the historical influence of Indian culture on the Cham civilisation.
2. Heritage sites such as the My Son sanctuary reflect these historical linkages.
3. Cultural exchanges, academic cooperation, tourism and scholarship programmes continue to strengthen people-to-people relations.
4. India has also implemented several Quick Impact Projects in Vietnam focusing on education, healthcare and community infrastructure.

Significance for India

1. Vietnam occupies an important position in India's Act East Policy and Indo-Pacific strategy.
2. Stronger engagement with Vietnam enhances India's outreach to ASEAN and supports efforts to promote a free, open and rules-based Indo-Pacific order.
3. The partnership contributes to:
   a. diversification of supply chains,
   b. strengthening maritime security cooperation,
   c. expansion of India's economic presence in Southeast Asia, and
   d. balancing strategic challenges in the region.
4. Growing cooperation in critical technologies, connectivity and defence also reflects efforts to build resilient strategic partnerships in the Indo-Pacific.

Conclusion

India–Vietnam relations have evolved into a multidimensional strategic partnership driven by shared geopolitical interests, economic cooperation and historical linkages. The elevation of ties to an Enhanced Comprehensive Strategic Partnership reflects increasing convergence on regional security, economic resilience and Indo-Pacific stability. Strengthening this partnership will remain important for advancing India's strategic interests in Southeast Asia and reinforcing a rules-based regional order.

4 MERCOSUR and India's Trade Relations

Context

India and Brazil have recently decided to expand the existing trade agreement between India and the MERCOSUR bloc to enhance bilateral trade and economic cooperation.

About MERCOSUR

1. MERCOSUR, officially known as the **Southern Common Market**, is a major **regional economic bloc in South America** formed to promote economic integration among member countries.
2. The organisation was established in **1991 through the Treaty of Asunción**, and later evolved into a **customs union in January 1995** with the objective of facilitating the **free movement of goods, services, capital, and people**.
3. It is regarded as one of the world's largest integrated trading blocs, after the **European Union (EU), NAFTA, and ASEAN**.
4. The headquarters of MERCOSUR is located in **Montevideo, Uruguay**, and its official working languages are **Spanish and Portuguese**.
5. The bloc originally consisted of **Argentina, Brazil, Paraguay, and Uruguay** as founding members. Later, **Bolivia and Venezuela** joined the grouping, although **Venezuela has remained suspended since December 2016**.
6. In addition to full members, MERCOSUR has several **associate members**, including **Chile, Colombia, Ecuador, Guyana, Peru, and Suriname**.
7. The highest decision-making body of the organisation is the **Common Market Council**, which coordinates

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major foreign and economic policy decisions among member states.

8. The Council comprises the **foreign and economic ministers of member countries**, and all major decisions are taken through **consensus**.
9. The presidency of the bloc rotates among full member countries every **six months**, ensuring shared leadership within the organisation.
10. India and MERCOSUR signed a **Preferential Trade Agreement (PTA) in 2004** to expand bilateral trade and strengthen economic cooperation between India and the South American bloc.

5. India–Netherlands Ties and Heritage Return

Context

During Prime Minister Narendra Modi's recent visit to the Netherlands, the Dutch government returned 11th-century Chola-era copper plates to India after nearly fourteen years of diplomatic efforts.

About the Copper Plates

1. The artefacts belong to the reign of Rajaraja Chola I.
2. One object consists of 21 copper plates weighing around 30 kilograms, containing inscriptions in Sanskrit and Tamil.
3. Another set includes three copper plates with Tamil inscriptions.
4. The plates are bound together by bronze rings bearing the royal seal of the Chola dynasty.

Historical Importance

The inscriptions provide valuable information regarding:

1. Land grants
2. Administrative systems
3. Taxation practices
4. Socio-economic conditions of medieval South India

Such records are considered important primary sources for understanding the governance structure of the Chola Empire.

Significance of Repatriation

1. The artefacts were reportedly taken to the Netherlands during Dutch control over Nagapattinam in the early 18th century.
2. Their return highlights India's increasing success in recovering cultural artefacts from abroad.
3. It also reflects growing international recognition of the need to preserve and restore civilisational heritage.
4. Similar repatriation efforts in recent years have involved countries such as the United States, Australia and several European nations.

India–Netherlands Relations

India and the Netherlands share a broad and evolving partnership rooted in trade, technology, investment and cultural exchanges. In recent years, cooperation has expanded into strategic sectors such as climate adaptation, renewable energy, semiconductors and sustainable infrastructure.

Historical Background

1. Bilateral contact began in the 17th century through the Dutch East India Company's trade activities in India.
2. Diplomatic relations were formally established after India's independence in 1947.
3. Over time, engagement moved beyond commerce to include agriculture, scientific research, environmental management and technological collaboration.

Major Areas of Cooperation

1. **Strategic and Technological Cooperation:** Both countries maintain regular political engagement through ministerial visits and institutional dialogue.

Key Areas

a. Water management and flood-control systems
b. River rejuvenation and climate resilience
c. Renewable energy and green hydrogen
d. Semiconductor and high-technology sectors
e. Agricultural innovation and food processing
f. Port development and logistics modernisation

1. **Economic Relations:** Economic cooperation remains the foundation of bilateral ties.**Important Features**

a. The Netherlands is one of India's major trading partners in Europe.
b. Bilateral trade crossed USD 27 billion in 2023–24.
c. India's exports mainly include petroleum products, pharmaceuticals, textiles, machinery and chemicals.
d. Imports from the Netherlands consist largely of advanced machinery, medical equipment and technology-based products.
e. Dutch investments in India are concentrated in renewable energy, manufacturing, logistics and technology sectors.

2. **Cultural and Educational Links:** People-to-people interaction has strengthened bilateral goodwill.
    a. The Netherlands hosts the largest Indian-origin community in mainland Europe.
    b. Indian students increasingly prefer Dutch universities for higher education, especially in science and technology disciplines.
    c. Cultural exchanges and diaspora engagement continue to deepen social ties between the two countries.
3. Cooperation in Global Forums: India and the Netherlands work together on several international issues, including:
    a. Climate change and sustainable development
    b. Maritime security and free trade routes
    c. Promotion of a rules-based international order
    d. The Netherlands has also supported closer India–European Union engagement in trade and technology.

Conclusion

India–Netherlands relations have developed into a multidimensional partnership driven by economic cooperation, technological collaboration and shared global interests. The return of the Chola-era copper plates has added a significant cultural dimension to bilateral ties while reinforcing the importance of protecting historical heritage.

6. India–Africa Forum Summit

Context

The India–Africa Forum Summit-IV has been postponed due to concerns arising from the Ebola virus outbreak, highlighting the importance of health security and continued India–Africa engagement in the evolving global environment.

About India–Africa Forum Summit (IAFS)

1. The India–Africa Forum Summit (IAFS) is the premier institutional platform for cooperation and dialogue between India and African countries.
2. It was launched in **2008** to strengthen political, economic, and developmental partnership between India and Africa.
3. The Summit reflects the shared commitment of India and African nations towards South–South cooperation, multilateralism, inclusive growth, and sustainable development.
4. It also serves as an important pillar of India's engagement with the Global South and Africa's development priorities.

Objectives of IAFS

1. Strengthen diplomatic and strategic relations between India and African countries.
2. Expand bilateral trade, investment, technology transfer, and economic cooperation.
3. Promote industrialisation, innovation, and capacity building.
4. Support sustainable development and regional integration in Africa.
5. Enhance cooperation in multilateral forums and global governance reforms.
6. Encourage youth empowerment, entrepreneurship, and skill development.

Key Areas of Cooperation

1. Trade, investment, and economic partnership
2. Health, education, agriculture, infrastructure, and capacity building
3. Technology, digital connectivity, and innovation
4. Maritime security, peace, counter-terrorism, and blue economy cooperation
5. Skill development and people-to-people relations

Editions of the Summit

1. IAFS-I (2008) – New Delhi
2. IAFS-II (2011) – Addis Ababa
3. IAFS-III (2015) – New Delhi
4. The third summit witnessed participation from all 54 African countries, making it one of India's major diplomatic outreach initiatives in Africa.

7. CARICOM

Context

The External Affairs Minister has reached Kingston, Jamaica, marking the beginning of a nine-day official visit to countries in the Caribbean belonging to the CARICOM group.

About CARICOM

1. CARICOM is considered the oldest continuing integration movement among developing countries, focusing on regional cooperation in the Caribbean.
2. It was formally created in 1973 through the **Treaty of Chaguaramas,** replacing the earlier Caribbean Free Trade Association (CARIFTA), which had operated since 1968.

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Key Objectives

1. A major goal of CARICOM is to deepen economic integration and promote cooperation among member states.
2. It works to ensure that the benefits of regional integration are shared fairly among all members.
3. Another important function is coordination of foreign policy so member countries can present a unified position globally.

Institutional Development

1. Over time, the treaty led to the creation of supporting institutions such as the Caribbean Development Bank and the Organisation of Eastern Caribbean States, both aimed at boosting economic cooperation and growth.
2. In 2001, the Treaty of Chaguaramas was revised to introduce the CARICOM Single Market and Economy (CSME), designed to harmonise economic policies and move toward a unified economic space, including the idea of a single currency.
3. The Caribbean Court of Justice (CCJ) was established in 2007, serving as the final court of appeal for some member states and also handling regional trade disputes.

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Membership and Structure

1. The community has 15 member states, including Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.
2. All members are independent countries except Montserrat, which is not a sovereign state.
3. There are also associate members such as Anguilla, Bermuda, British Virgin Islands, Cayman Islands, and Turks & Caicos Islands.

Administration and Headquarters

1. The chairmanship of CARICOM rotates among member states every six months, ensuring shared leadership.
2. The organisation's permanent secretariat is based **in Georgetown, Guyana**, which manages its day-to-day operations

8. FAO Agricola Medal

Context

Recently, the Prime Minister of India was awarded the Agricola Medal, the highest honour conferred by the Food and Agriculture Organization (FAO) of the United Nations, in recognition of his contribution towards food security, nutrition and agricultural development.

About Agricola Medal

It is conferred on individuals who have made exceptional contributions towards global food security, improved nutrition and sustainable agricultural development.

Food and Agriculture Organization (FAO)

1. The Food and Agriculture Organization (FAO) is a specialised agency of the United Nations that leads international efforts to eliminate hunger and improve food security.
2. FAO was established on October 16, 1945, in Quebec City, Canada, and is regarded as the oldest permanent specialised agency of the United Nations.
3. The headquarters of FAO is located in **Rome, Italy.**
4. India is a founding member of the organisation. At present, FAO has 195 members, including 194 countries and the European Union.

Objectives and Functions

1. FAO aims to improve nutrition, increase agricultural productivity and enhance the living standards of rural populations.
2. It works to ensure that people across the world have regular access to sufficient, safe and nutritious food.
3. The organisation coordinates international programmes related to agriculture, fisheries, forestry, land resources and water management.
4. It also provides technical expertise, policy guidance and research support to member countries for sustainable agricultural and rural development.
5. FAO serves as a platform for cooperation and policy dialogue between developed and developing countries on food and agricultural issues.
6. In collaboration with the United Nations, FAO helped establish the World Food Programme (WFP) to provide food assistance to vulnerable populations.

Governance and Funding

1. FAO is governed by the biennial FAO Conference in which all member countries and the European Union are represented.
2. The Conference elects a 49-member Council that functions as the executive body of the organisation.
3. The organisation receives financial contributions from its member countries.

Reports and Observances

1. Major publications released by FAO include:

a. The State of the World's Forests (SOFO)
b. The State of World Fisheries and Aquaculture (SOFIA)
c. The State of Agricultural Commodity Markets (SOCO)
d. The State of Food Security and Nutrition in the World (SOFI)

2. World Food Day is observed every year on October 16 to commemorate the establishment of FAO in 1945.

9. Asian Productivity Organization (APO)

Context

Recently, India hosted the 68th Session of the Governing Body of the Asian Productivity Organization (APO) in New Delhi, bringing together member economies to discuss issues related to productivity, innovation and sustainable economic development.

About Asian Productivity Organization (APO)

1. The Asian Productivity Organization (APO) is an intergovernmental organisation established in **1961** to promote productivity and sustainable socioeconomic development in the Asia-Pacific region.
2. The organisation encourages cooperation, capacity building and knowledge sharing among member economies.
3. Its headquarters is located in **Tokyo, Japan**.

Membership

1. APO membership is open to countries in Asia and the Pacific that are members of the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP).
2. The organisation currently comprises 21 member economies, including **India, which is a founding member**.
3. Member economies coordinate with APO through designated National Productivity Organizations (NPOs).
4. In India, the National Productivity Council (NPC) under the Ministry of Commerce and Industry functions as the designated NPO.

Functions and Structure

1. APO works to enhance productivity in sectors such as agriculture, industry, services and public administration for sustainable economic growth.
2. The organisation consists of the Governing Body, National Productivity Organizations and the Secretariat headed by a Secretary-General.
3. The Governing Body is the highest decision-making authority of APO and meets annually to determine strategic priorities, approve major proposals and review the performance of the Secretariat.

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SECURITY

1. INS Mahendragiri

Context

The Indian Navy recently received the warship INS Mahendragiri from Mazagon Dock Shipbuilders Limited in Mumbai, marking a key addition to its naval fleet.

About INS Mahendragiri

1. INS Mahendragiri is the sixth vessel in the **Nilgiri-class frigates**, developed under **Project 17A** for the Indian Navy.
2. It was designed by the **Warship Design Bureau** and constructed at Mazagon Dock Shipbuilders Limited in Mumbai.
3. These frigates are built as multi-role warships, capable of handling a wide range of maritime threats and operational challenges.
4. The ship uses a **Combined Diesel or Gas (CODOG)** propulsion system, which includes both a diesel engine and a gas turbine working with controllable pitch propellers for efficient performance.
5. It is also equipped with an advanced **Integrated Platform Management System (IPMS)** to monitor and control onboard machinery.
6. The vessel carries a modern mix of weapons and sensors, allowing it to carry out anti-air, anti-surface, and anti-submarine warfare.
7. Project 17A frigates feature advanced technologies such as MF-STAR radar, BrahMos supersonic cruise missiles, and Barak-8 long-range surface-to-air missiles.
8. Other ships in this class already delivered to the Navy include **INS Nilgiri, INS Himgiri, INS Udaygiri, INS Taragiri, and INS Vindhyagiri.**

2. INS Sagardhwani

Context

The **INS Sagardhwani** recently made a visit to **Cam Ranh, Vietnam**, marking an important step in deepening scientific collaboration between India and Vietnam, particularly in marine research.

About INS Sagardhwani

1. The **INS Sagardhwani** is an oceanographic research vessel commissioned in **July 1994** for marine scientific exploration.
2. It was designed by the **Naval Physical and Oceanographic Laboratory (NPOL), Kochi**, and built by **Garden Reach Shipbuilders & Engineers (GRSE)**.
3. The term *Sagardhwani* means the **"voice of the sea"**, symbolising the vessel's role in marine scientific research and exploration.
4. It is equipped with **advanced oceanographic instruments and research laboratories** for conducting studies at sea.
5. The vessel has completed **over 200 scientific missions**, mainly in **marine acoustics and naval oceanography**.
6. Its research supports the development of **theoretical models used in naval sensors and weapon systems**.
7. INS Sagardhwani has participated in the **Sagar Maitri initiative**, a collaborative effort of the Indian Navy and DRDO.
8. The initiative aligns with India's vision of **MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)**.
9. It promotes **regional cooperation in ocean research and scientific collaboration**, especially among **Indian Ocean Rim nations**.

3. INS Sindhukesari

Context

The Indian Navy's Kilo-class submarine INS Sindhukesari has recently reached Colombo to undergo an Operational Turnaround, which involves routine maintenance and logistical support.

About INS Sindhukesari

1. INS Sindhukesari is a 3,000-tonne diesel-electric submarine operated by the Indian Navy and belongs to the **Kilo-class submarine family**.
2. Built under **Project 877** in **collaboration with Russia**, it was inducted into service on 19th December 1988.
3. The submarine is about 72.6 metres long and uses diesel-electric propulsion for underwater operations.
4. It can remain deployed for around 45 days and is manned by a crew of nearly 53 personnel.
5. With a maximum diving capability of about 300 metres, it can achieve speeds of up to 18 knots.

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6. It carries a mix of weapons such as torpedoes, anti-ship missiles, and mines, and has been upgraded to launch Klub (3M-54E) cruise missiles.

Kilo-Class Submarines: Features and Role

1. The Kilo-class submarine was originally designed by the Soviet Union (now Russia) and is known domestically as Project 877 Paltus.
2. First introduced in 1980, these submarines continue to serve in several navies due to their reliability and effectiveness.
3. They are mainly deployed for anti-ship and anti-submarine warfare, particularly in shallow and coastal waters.
4. Typically ranging from 70 to 74 metres in length, they can travel at speeds of about 10–12 knots on the surface and 17–25 knots underwater.
5. These submarines can be equipped with torpedoes, underwater mines, and even surface-to-air missiles depending on configuration.
6. Known for their extremely quiet operation, they are often nicknamed **"Black Hole"** submarines, reflecting their strong stealth capabilities.

4. Turkey Unveils 'Yildirimhan' ICBM

Context

Turkey has introduced the prototype of the Yildirimhan Missile, an intercontinental ballistic missile (ICBM), as part of its broader push to modernise its defence capabilities. The development reflects Turkey's efforts to reduce dependence on foreign military technology and enhance its role as a key strategic and defence player in the Middle East and within NATO.

About Yildirimhan Missile

1. The missile is designed to strike targets at distances of up to **6,000 km**, giving it the capability to reach regions across Europe, Asia, and Africa if launched from Turkish territory.
2. It is expected to achieve speeds of nearly **Mach 25, or around eight kilometres per second**, placing it in the category of extremely high-speed hypersonic weapons.
3. The missile uses four rocket propulsion engines to support long-range flight and high-speed performance.
4. The system can carry either a single warhead or multiple warheads with a combined payload capacity of nearly three tonnes.
5. The missile is powered by liquid nitrogen tetroxide-based fuel. Although liquid-fuel systems generally require more preparation time before launch, they allow greater flexibility in balancing payload capacity and operational range.
6. Turkey is likely to deploy the missile through a mobile wheeled launcher platform, which can improve mobility and make detection more difficult during operations.

5. Suryastra Rocket System

Context

Recently, India marked a significant advancement in indigenous defence technology after Pune-based private defence company Nibe Limited successfully conducted the trial of the long-range Suryastra rocket system at Chandipur, Odisha.

About Suryastra Rocket System

1. Suryastra is India's **first indigenous universal multi-calibre rocket launcher** system developed by Pune-based NIBE Limited in collaboration with Israel's Elbit Systems.
2. The system is based on Elbit Systems' PULS (Precise and Universal Launching System) technology.
3. It is a long-range rocket artillery system designed for precision strikes against enemy positions, radar sites, command centres and logistics hubs.
4. The launcher is mounted on a mobile 6×6 Tatra truck platform, enabling rapid deployment and battlefield mobility.
5. It uses interchangeable modular pods that allow the launch of different types of rockets and missiles from a single platform.
6. The system can fire 122 mm rockets for short-range operations, 306 mm EXTRA missiles with a range of about 150 km, and 370 mm Predator Hawk missiles capable of striking targets up to 300 km away.
7. It can also launch SkyStriker loitering munitions, or suicide drones, with an operational range of nearly 100 km.
8. Suryastra is capable of engaging multiple targets simultaneously at varying ranges with high precision.
9. During trials, the system achieved a circular error probable (CEP) of less than five metres.
10. It is equipped with an advanced fire-control system integrating GPS, inertial navigation and digital ballistic computation.

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6. Exercise CINBAX-II

Context

An Indian Army team has recently left for Cambodia to take part in the second edition of the joint military exercise between **India and Cambodia**, known as CINBAX-II.

About Exercise CINBAX-II

1. The second edition of the joint military drill CINBAX-II is being held between the Indian Army and the Cambodian Army in Kampong Speu Province, Cambodia.
2. The exercise focuses on improving coordination, interoperability, and overall operational effectiveness between the two forces.
3. Around 120 Indian Army personnel are taking part, mainly from a battalion of the Maratha Light Infantry Regiment.
4. It is designed as a company-level training exercise conducted under the framework of Chapter VII of the United Nations mandate.
5. The drill emphasises operations in challenging environments, particularly semi-urban areas, reflecting real-world conditions.
6. A key focus is on counter-terrorism activities, especially those linked to UN peacekeeping missions.
7. It also provides an opportunity for both sides to exchange experiences, strategies, and best practices in military operations.
8. The exercise highlights strengthening defence cooperation between India and Cambodia and is expected to further enhance bilateral ties.

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7. Exercise Pragati

Context

The Indian Army will host military delegations for the first edition of the multilateral exercise 'Pragati' at the Foreign Training Node in Umroi, Meghalaya.

About Exercise Pragati

1. PRAGATI, which stands for **Partnership of Regional Armies for Growth and Transformation in the Indian Ocean Region**, is a joint military exercise involving multiple countries.
2. A major feature of the event is a two-day defence industry exhibition, designed to showcase Indian Army capabilities and encourage cooperation with defence industries from **ASEAN countries**.
3. The participating countries include **11 nations** from the region: Laos, Myanmar, Seychelles, Sri Lanka, Philippines, Nepal, Maldives, Malaysia, Vietnam, Cambodia, and Bhutan.
4. The initiative reflects India's effort to position itself as a key partner in promoting regional security cooperation across an important maritime zone.
5. The exercise is designed to **improve coordination among different armies** by focusing on shared security challenges and collective response mechanisms.
6. Pragati' represents cooperation aimed at the growth and modernisation of armed forces in the Indian Ocean region through shared engagement.

8. Project Deepak

Context

The Border Roads Organisation's Project Deepak recently marked its 66th Raising Day celebrations in Shimla, Himachal Pradesh.

About Project Deepak

1. The project was started in **1962** by the **Border Roads Organisation** to strengthen infrastructure in difficult and high-altitude regions.
2. Its operational area covers key districts of Himachal Pradesh, including Shimla, Kinnaur, Kullu, and Lahaul-Spiti.

Major Contributions and Work

1. Over the years, Project Deepak has played an important role in building strategic roads such as the Hindustan-Tibet Road and important sections of the Manali–Leh highway.
2. It has also contributed significantly to disaster response and humanitarian relief operations in remote and vulnerable areas.
3. The project is known for working in some of the toughest terrains and extreme weather conditions in the country.

Border Roads Organisation

1. Border Roads Organisation was established on **7th May 1960** to develop road connectivity in border and remote regions, especially in northern and northeastern India.
2. It operates under the **Ministry of Defence**, bringing its entire functioning under the ministry since 2015.
3. BRO is responsible for constructing and maintaining road networks not only in India's border areas but also in friendly neighbouring countries.
4. Its motto, "**Shramena Sarvam Sadhyam,**" reflects

its guiding principle that hard work can achieve everything.

9. Naval Anti-Ship Missile Short Range

Context

The Defence Research and Development Organisation (DRDO), in collaboration with the Indian Navy, has carried out the first successful salvo launch of the Naval Anti-Ship Missile–Short Range (NASM-SR) off the coast of Odisha in the Bay of Bengal.

About Naval Anti-Ship Missile–Short Range (NASM-SR)

1. NASM-SR is a short-range, air-launched anti-ship missile developed for naval strike missions.
2. It is designed to be deployed from naval helicopters to accurately target and damage enemy vessels, including strikes near the waterline.
3. The missile has been developed **by DRDO**, led by the Research Centre **Imarat in Hyderabad**, with support from other labs and domestic industries.
4. It follows a sea-skimming flight path, helping it stay low and avoid radar detection, with an effective strike range of about 55 km.
5. The system supports salvo firing:
   a. Multiple missiles can be launched rapidly from a single helicopter platform
6. Its propulsion setup includes:
   a. A solid booster for initial thrust
   b. A sustainer engine for continued flight
7. For navigation and targeting, it uses advanced systems such as fibre-optic gyroscope-based inertial navigation and a radio altimeter.
8. The missile is equipped with a two-way data link, allowing:
   a. Lock-on after launch
   b. Mid-course updates and retargeting
9. It features electro-mechanical actuators and jet vane controls, ensuring better maneuverability during flight.
10. Key components like the seeker, avionics, and guidance software have been developed within India, highlighting its indigenous nature.

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ECONOMY

1. RAINMUMBAI

Context

Recently, the National Commodity and Derivatives Exchange (NCDEX) launched "RAINMUMBAI", India's first SEBI-approved exchange-traded weather derivatives contract, aimed at providing a financial risk-management tool against uncertainties arising from rainfall variability and monsoon fluctuations.

About RAINMUMBAI

1. The contract has been developed in collaboration **with Indian Institute of Technology Bombay** using Mumbai's historical rainfall patterns.
2. It will track deviations between actual rainfall and the city's Long Period Average (LPA) during the monsoon season.
3. Rainfall observations recorded by the India Meteorological Department (IMD), including data from Santacruz, Colaba and Automatic Weather Stations (AWS), will be used for settlement purposes.
4. Unlike conventional insurance products, payouts under weather derivatives are linked directly to observed weather data instead of physical loss assessment, ensuring faster settlement and lower operational complexity.
5. The contract is expected to benefit sectors such as agriculture, logistics, tourism, construction, energy and power generation, where economic activity is significantly influenced by weather conditions.
6. Trading will be permitted only during the monsoon months of June, July, August and September, in line with Mumbai's rainfall cycle.
7. The derivative contract will be cash-settled and traded in lots valued at ₹50 per millimetre of rainfall.
8. Trading hours for the contract have been fixed from 10:00 a.m. to 11:30 p.m. on weekdays.

Derivatives

1. Derivatives are financial instruments whose value is derived from an underlying asset or benchmark.
2. The underlying asset may include commodities, stocks, bonds, currencies, interest rates or market indices.
3. Such instruments are commonly used for risk hedging, speculation and portfolio management without direct ownership of the underlying asset.

National Commodity and Derivatives Exchange (NCDEX)

1. The National Commodity and Derivatives Exchange (NCDEX) is a commodity exchange primarily focused on agricultural commodities in India.
2. Established in 2003, it is headquartered in Mumbai.
3. The exchange facilitates electronic trading in agricultural derivative products, especially futures contracts.
4. It mainly deals in commodities such as wheat, sugar, cotton and spices.
5. NCDEX functions under the regulatory supervision and oversight of the Securities and Exchange Board of India (SEBI).

2. Full FDI Opening in Insurance Sector

Context

1. The Government has permitted **100% Foreign Direct Investment (FDI)** in the insurance sector under the **automatic approval route**, marking a major step towards opening up the financial sector.
2. This change has been introduced through the **Foreign Exchange Management (Non-Debt Instruments) (2nd Amendment) Rules, 2026**, following the **Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025**.
3. The reform is aimed at improving capital inflow, widening insurance coverage, and modernising the industry structure.

Understanding FDI in the Insurance Sector

1. FDI refers to investment by foreign entities in business operations located in another country.
2. In insurance, it involves foreign participation in ownership and management of Indian insurance companies and related service providers.
3. It helps strengthen the sector through:
   a. Additional financial resources
   b. Advanced technology and digital systems

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c. Global expertise in risk assessment and product innovation

d. Better operational efficiency

4. The sector is regulated by the **Insurance Regulatory and Development Authority of India (IRDAI)**, which ensures licensing, solvency, governance standards, and protection of policyholders' interests.

Policy Evolution of FDI in Insurance

1. **2000**: Entry of private players allowed with a **26% foreign investment limit**.
2. **2015**: Limit enhanced to **49%**, while management control remained largely domestic.
3. **2021**: Ceiling further raised to **74%**, allowing majority foreign ownership.
4. **2026**: Full liberalisation with **100% FDI permitted under automatic route**.

Key Provisions of the Reform

1. Approval process simplified by shifting to the **automatic route**, eliminating prior government clearance.
2. The **Life Insurance Corporation (LIC)** remains under a special cap of **20% foreign investment** due to its strategic importance.
3. At least one top-level executive (CEO/MD/Chairperson) must be a **resident Indian citizen**.
4. Where intermediaries are part of larger financial groups, sector-specific FDI norms will continue to apply.

Significance of the Reform

1. **Wider insurance coverage**: Helps improve penetration, especially in rural and underserved regions.
2. **Stronger capital base**: Enhances financial stability and solvency of insurance firms.
3. **Technology infusion**: Encourages adoption of digital platforms and InsurTech solutions.
4. **Improved business environment**: Automatic approval reduces delays and increases investor confidence.
5. **Financial inclusion**: Expands access to insurance for low-income and vulnerable groups.

Challenges and way forward

Challenges	Way forward
Increased competition may impact smaller domestic insurers	Support domestic firms through innovation incentives and capacity building
Possibility of excessive foreign influence in financial services	Maintain balanced regulatory oversight to safeguard national interests
Need for stronger monitoring of complex insurance entities	Strengthen IRDAI with advanced supervision tools and risk-based regulation
Concerns over consumer rights and claim settlement efficiency	Improve grievance redressal systems and ensure transparency in policies
Risks related to data security and financial sovereignty	Establish robust cybersecurity and data protection frameworks
Uneven growth of insurance penetration in rural areas	Promote targeted incentives for rural and inclusive insurance products

Conclusion

The move to allow **100% FDI in the insurance sector** represents a significant structural reform aimed at strengthening India's financial ecosystem. It is expected to bring in capital, technology, and global expertise, thereby expanding insurance coverage and improving efficiency. However, its success will depend on a strong regulatory framework, balanced competition, and effective consumer protection to ensure inclusive and sustainable growth.

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3. India's Water–Energy–Food Nexus

Context

Global assessments such as the World Bank's *"Nourish and Flourish"* and the IEA report **"Sheltering from Oil Shocks" (2026)** highlight the strong interlinkages between water, energy, and food systems. For India, managing these interdependencies is critical to ensuring food security, sustainable growth, and resource efficiency.

Core Concern: Fragmented Resource Management

The key issue is not physical scarcity but inefficient and uncoordinated use of resources across sectors.

1. Agriculture depends heavily on both irrigation water and electricity, increasing stress on groundwater reserves.
2. Cultivation of water-intensive crops in unsuitable regions accelerates aquifer depletion and creates inefficiencies in water use.
3. Subsidised electricity for irrigation encourages over-extraction of groundwater in several states.
4. Price and procurement policies influence cropping

patterns, often reinforcing resource-intensive agriculture.

Interlinked Sectoral Vulnerabilities

1. Dependence on imported crude oil exposes agriculture and transport systems to global price volatility.
2. Fluctuations in energy prices directly affect irrigation costs, transport expenses, and food inflation.
3. Energy supply disruptions can quickly impact agricultural production and food distribution networks.
4. Agricultural subsidies often incentivise higher resource consumption rather than efficiency.
5. Climate variability increases uncertainty in agricultural output and water availability.

Governance and Institutional Gaps

1. Separate functioning of water, energy, and agriculture sectors limits integrated planning.
2. Distorted pricing mechanisms reduce incentives for conservation and efficiency.
3. Inadequate systems for measuring and tracking water use hinder informed policymaking.
4. Limited convergence between renewable energy deployment and agricultural water needs reduces sustainability gains.

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Way Forward

1. Create an integrated nexus governance framework for joint planning across ministries
2. Rationalise subsidies through Direct Benefit Transfer (DBT) and promote smart metering.
3. Shift to agro-climatic based crop diversification strategy.
4. Reorient public spending towards irrigation efficiency and farm infrastructure.
5. Develop digital water auditing and integrated resource tracking systems
6. Scale up renewable energy adoption in agriculture, especially solar irrigation systems.
7. Promote climate-resilient agriculture and adaptive water management practices.

Conclusion

India's water–energy–food nexus demands a shift from isolated sectoral policies to an integrated governance approach. Aligning agricultural incentives, energy pricing reforms, and water management systems is essential for ensuring sustainability, resilience, and long-term food security.

4. Indian Rupee Depreciation (2026)

Context

The Indian rupee has come under significant pressure in 2026, slipping to an all-time low of nearly ₹95.33 per US dollar. This means that purchasing one US dollar now requires more than ₹95. The currency has weakened from around ₹90 in the beginning of 2026 and nearly ₹ 85 a year earlier, reflecting an annual depreciation of about 12%. This decline is considerably higher than the normal yearly movement of 3–4% and is broadly comparable to the stress seen during the 2013 currency turbulence.

Link with 2013 "Fragile Five" Episode

1. In 2013, **India, along with Indonesia, Brazil, South Africa, and Turkey**, was grouped as the **"Fragile Five"** due to vulnerabilities in external sector stability. The classification emerged during a period of sharp currency weakness triggered by global financial tightening and domestic external imbalances.
2. A similar pattern is visible today, although the severity varies across countries and India's macroeconomic position has evolved significantly since then.

Global Drivers of Exchange Rate Pressure

1. The 2013 crisis was largely driven by the US Federal Reserve's decision to reduce quantitative easing, which led to reversal of global liquidity flows. Capital that had earlier moved into emerging markets shifted back to safer assets in advanced economies.
2. In the current phase, **tighter global financial conditions, higher interest rates in advanced economies, and risk-averse investor sentiment** continue to influence capital flows, exerting pressure on emerging market currencies, including the rupee.

Domestic Structural Factors

Several internal macroeconomic factors contribute to currency vulnerability:

1. A sustained current account deficit indicates that imports continue to exceed exports, creating foreign exchange demand pressures.
2. Dependence on external capital inflows to finance this gap increases exposure to sudden shifts in global investor sentiment.
3. When foreign inflows weaken, demand for domestic currency declines, leading to depreciation.
4. Simultaneous stress in both current and capital accounts intensifies exchange rate volatility, as seen in both 2013 and 2026 episodes.

Comparative Performance of Emerging Market Currencies

1. Indonesia has shown relative stability with limited currency movement.
2. Brazil and South Africa have witnessed appreciation, supported by improved external sector conditions.
3. Turkey continues to experience prolonged currency weakness due to deep structural economic challenges.

Role of Foreign Exchange Reserves

Foreign exchange reserves have played a crucial stabilising role during periods of external stress. In both 2013 and 2026, they have helped manage volatility, smooth currency fluctuations, and cushion the impact of capital outflows.

Way forward

1. Strengthen export competitiveness and diversify export basket towards high-value goods and services.
2. Attract stable long-term FDI and improve investment climate consistency
3. Build stronger domestic financial resilience and reduce external vulnerability.
4. Maintain adequate forex reserves and adopt prudent external debt management.
5. Promote domestic production, energy diversification, and import substitution where feasible

Conclusion

The 2026 rupee depreciation reflects a combination of global financial tightening and domestic external sector pressures. While similarities with the 2013 episode are evident in terms of capital flow dynamics, India's current economic structure is more diversified. Strengthening export capacity, ensuring stable capital inflows, and improving macroeconomic resilience remain key to stabilising the currency in the medium term.

5. Hybrid Annuity Model (HAM)

Context

The Ministry of Road Transport and Highways (MoRTH) has recently strengthened bidding rules for road projects under the Hybrid Annuity Model by introducing stricter penalties and potential disqualification for firms linked to serious construction failures.

Hybrid Annuity Model (HAM)

1. Hybrid Annuity Model (HAM) is a **public–private partnership framework** used mainly for highway development in India.
2. It was introduced to revive private investment in road infrastructure after earlier models like Build-Operate-Transfer (BOT) faced issues such as traffic uncertainty, financing stress, and delays in land acquisition.
3. HAM blends features **of EPC (Engineering, Procurement and Construction) and BOT-Annuity models**, sharing responsibilities between the government and private players.
4. Importantly, traffic and revenue risks remain with the government, reducing uncertainty for private investors.

Key Features of HAM

1. Under this system, the government typically pays 40% of project cost during construction, while the remaining 60% is funded by the private developer and recovered later through fixed annuity payments.
2. Fixed annuity payments by the government after construction phase over the concession period.
3. No toll risk for private players, improving financial predictability.
4. Construction and maintenance responsibilities lie with private firms, ensuring operational efficiency.
5. Payments are linked to performance standards and project milestones.
6. Greater bankability due to assured repayment structure.

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Recent Policy Update by MoRTH

1. Through a circular issued in April 2026, MoRTH extended stricter norms earlier applied to EPC contracts to HAM projects as well.
2. A new **"catastrophic failure clause"** has been introduced to improve accountability and construction quality.
3. Bidders involved in major structural failures in any highway project within the last two years may face up to a 30-mark penalty or disqualification.
4. The rule applies to both ongoing and completed projects and will be part of all future HAM bidding documents.

Definition of Catastrophic Failure

1. Collapse of bridges, flyovers, or underpasses.
2. Failure of embankments or road surfaces leading to non-usability.
3. Tunnel collapses or incidents causing entrapment beyond 72 hours.
4. Failure of Pavement Quality Concrete.
5. Accidents involving collapse of construction equipment such as launching girders causing fatalities.

Significance of the Reform

1. Strengthens quality control and safety standards in highway construction.
2. Acts as a preventive mechanism by screening bidders at the entry stage itself.
3. Encourages participation of firms with strong engineering and safety track records.
4. Addresses rising concerns, as deficiencies were reported in 67 national highway projects over the last three years.

Challenges and Way forward

Challenges	Way forward
Long-term fiscal burden on government due to annuity commitments	Improve project appraisal and realistic fiscal planning for long-term liabilities
Risk of inflated project costs during bidding stage	Strengthen bid evaluation and adopt transparent cost benchmarking systems
Delays due to land acquisition, utility shifting, and clearances	Single-window clearance mechanism with time-bound approvals
Quality concerns and past structural failures in some projects	Strict enforcement of safety audits and performance-based penalties
Dependence on strong contract management for success	Enhance institutional capacity of implementing agencies and monitoring systems

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6. Commercial LPG Price Hike

Context

The recent increase in the price of commercial LPG cylinders has raised concerns for small businesses, especially in the food and hospitality sector. While domestic LPG prices remain stable, the rise in commercial fuel costs has wider implications for inflation, livelihoods, and the informal economy.

Background

1. LPG in India is used in two main forms. Domestic LPG is used by households and is usually subsidised due to its social importance. Commercial LPG, used by restaurants, hotels, bakeries, and small food vendors, is priced at market rates and directly affects business costs.
2. Small and informal food enterprises form a large part of India's urban economy. They operate on thin margins and are highly sensitive to changes in input costs such as fuel, food ingredients, and transport.

Impact of Commercial LPG Price Hike

The increase in commercial LPG prices affects multiple layers of the economy:

1. **Small businesses:** Higher cooking costs reduce profitability, especially for street vendors, small restaurants, and cloud kitchens.
2. **Employment:** Informal workers may face reduced wages or fewer working hours due to cost-cutting by businesses.
3. **Consumers:** Part of the increased cost is transferred through higher food prices or reduced portion sizes.
4. **Local supply chains:** Demand for vegetables, dairy, packaging, and transport services linked to food businesses may decline, affecting micro and small enterprises.

Way Forward

1. Promote gradual shift to cleaner and efficient energy sources like PNG where feasible.
2. Improve access to credit and targeted financial support for MSMEs.
3. Expand gas pipeline and distribution networks beyond major cities.
4. Strengthen monitoring of essential service inflation and targeted relief measures.
5. Encourage cluster-based development and support for small food businesses.

Conclusion

The rise in commercial LPG prices is not just an isolated cost change but a factor that affects employment, consumption, and small business viability. It highlights the need for balanced energy pricing policies and stronger support systems for the informal sector, which remains a key driver of India's urban economy.

7. Debt Recovery Tribunals

Context

The Department of Financial Services (DFS) recently held a meeting in New Delhi with senior officials of Debt Recovery Appellate Tribunals and Debt Recovery Tribunals (DRTs) to review and discuss matters related to debt recovery processes and tribunal operations.

About Debt Recovery Tribunals (DRTs)

1. Debt Recovery Tribunals are special **quasi-judicial bodies** created under the Recovery of Debts Due to Banks and Financial Institutions Act, 1993 to resolve loan-related disputes.
2. They mainly deal with cases where borrowers default

on loans above ₹20 lakh, particularly those involving secured loans from banks and financial institutions.

3. Along with recovery cases, DRTs also hear Securitisation Applications filed under the SARFAESI Act, 2002 by borrowers or other affected parties.

Structure and Composition

1. Each tribunal is headed by a Presiding Officer who is qualified to serve as a District Judge.
2. They may also include additional administrative or technical members appointed by the Central Government.
3. At present, around 39 DRTs are functioning across India, each assigned a specific territorial jurisdiction.

Functions and Powers

1. DRTs have the authority to summon witnesses, examine them, and require the submission of relevant documents.
2. They can accept evidence through affidavits and also order commissions for examining documents or witnesses when needed.
3. The tribunals are empowered to review or dismiss applications and can conduct hearings even in the absence of one party (ex parte proceedings).

Jurisdiction and Scope

1. Their authority is limited to debt recovery matters involving banks and financial institutions within their assigned regions.
2. The Central Government defines the territorial boundaries within which each tribunal operates.

8. Bureau of Indian Standards

Context

The Bureau of Indian Standards (BIS) has recently released several new standards for medical assistive technologies under the National List of Essential Assistive Products (NLEAP) initiative, aimed at improving quality and accessibility of essential assistive devices in healthcare.

About The Bureau of Indian Standards (BIS)

1. The Bureau of Indian Standards (BIS) is India's national standards-setting body, established under the **BIS Act, 2016.**
2. It functions under the **Ministry of Consumer Affairs, Food and Public Distribution** and is **headquartered in New Delhi**, with offices across India.
3. It replaced the Indian Standards Institution (ISI), which was set up in 1947, and represents India in global standard bodies like ISO and IEC.

Core Mandate

1. BIS is responsible for developing and implementing standards related to quality, safety, and certification of goods and services.
2. It ensures uniformity in products through standardisation, testing, and marking systems.

Key Functions

1. The organisation provides certification and licensing to manufacturers across sectors including agriculture, textiles, and electronics.
2. It supports consumer safety by ensuring availability of reliable products & reducing health risks.
3. It also aids economic growth by promoting exports, encouraging import substitution, and streamlining product varieties.

9. India & International Fund for Agricultural Development (IFAD)

Context

Recently, India and the International Fund for Agricultural Development (IFAD) jointly launched an eight-year Country Strategic Opportunities Programme (COSOP) for 2026–2033 aimed at strengthening rural development and resilience.

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About International Fund for Agricultural Development (IFAD)

1. International Fund for Agricultural Development (IFAD) is a specialised UN agency and international financial institution established in 1977 after the 1974 World Food Conference to reduce poverty and hunger in rural areas of developing countries.
2. It provides low-interest loans and grants for agriculture, food security and rural livelihood projects, especially for small farmers, pastoralists, fisherfolk and rural entrepreneurs.
3. IFAD promotes technology transfer, disaster preparedness, climate-resilient development and better market participation for vulnerable rural communities.
4. India is a founding member of IFAD, which currently has 180 member countries, and its headquarters is located in **Rome.**
5. The organisation also publishes the Rural Development Report on global rural development issues.

Country Strategic Opportunities Programme (COSOP)

1. The Country Strategic Opportunities Programme (COSOP) is an eight-year framework for 2026–2033 aimed at strengthening rural livelihoods and improving income opportunities in India.
2. It focuses on enhancing the social, economic and climate resilience of rural communities.
3. The programme also seeks to strengthen knowledge systems for scaling successful rural development models across India and other countries of the Global South.

10. Electronic Gold Receipts

Context

The National Stock Exchange of India (NSE) has recently introduced a new trading segment called Electronic Gold Receipts (EGRs), allowing gold to be traded in a digital and exchange-based format.

About Electronic Gold Receipts (EGRs)

1. Electronic Gold Receipts (EGRs) are digital securities that represent ownership of physical gold held in **secure vaults**.
2. These receipts are issued under the supervision of **Securities and Exchange Board of India** and are traded on stock exchanges like shares.

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Operation of Electronic Gold Receipts (EGRs)

1. The process begins when physical gold is deposited in SEBI-approved vaults, which then gets converted into EGR units.
2. A newly registered entity called a Vault Manager, approved by SEBI, is responsible for storing and managing the deposited gold for EGR creation.
3. Once issued, EGRs are credited to the investor's demat account, making them easy to trade on exchanges.
4. Investors also have the option to convert EGRs back into physical gold whenever required, offering flexibility between digital and physical holding.
5. The EGR system is designed for a wide range of participants, including jewellers, refiners, traders, and both retail and institutional investors.

11. Aviation Turbine Fuel Pricing

Context:

Aviation Turbine Fuel (ATF) is the primary fuel used in aircraft operations and is one of the most significant cost components for airlines in India. In recent times, rising ATF prices have increased operational pressure on airlines, affecting their financial stability and raising concerns about long-term sector viability.

ATF Pricing Mechanism in India

ATF pricing in India is determined through a semi-market-linked structure influenced by both global and domestic factors:

1. **International crude oil prices** form the base reference, as ATF is derived from crude oil.
2. **Exchange rate fluctuations** (rupee–dollar) directly impact import costs.
3. **Freight and logistics charges** are added to the base price.
4. **Oil Marketing Companies (OMCs)** include refining and marketing margins.
5. **State-level VAT** varies widely, leading to different ATF prices across states.

Thus, ATF pricing is a cumulative outcome of global oil markets and domestic tax structures.

Current Concern

Airlines in India, including major carriers, have expressed concern over rising ATF prices, as fuel accounts for a large share of their operating costs. Persistent price increases are:

1. Reducing profit margins
2. Increasing ticket pricing pressure
3. Raising risks of route optimisation and capacity cuts

This has created broader concerns regarding **airline financial sustainability and sector stability**.

Challenges and Way Forward

Challenges	Way Forward
ATF is not included under the Goods and Services Tax (GST), preventing input tax credit benefits for airlines.	Bringing ATF under the GST regime to ensure uniform taxation and enable input tax credit.
Dependence on global crude oil prices and exchange rate volatility makes ATF prices unstable.	Strengthening fuel hedging mechanisms and promoting long-term procurement strategies by airlines.
Fuel constitutes 30–50% of airline operating costs, making the sector highly sensitive to price fluctuations.	Encouraging cost-efficient fleet modernisation and fuel-efficient technologies.
Rising costs reduce airline profitability and may force capacity cuts or route rationalisation.	Providing temporary fiscal relief or policy support during periods of extreme fuel price volatility.

Lack of coordinated tax policy between Centre and states increases inefficiency in pricing structure.	Enhancing Centre–State coordination for a more uniform aviation fuel taxation framework.

Conclusion

ATF pricing remains a critical structural challenge for India's aviation sector. While global oil price dependence is unavoidable, domestic tax rationalisation and inclusion under GST can significantly improve cost efficiency. A balanced policy approach is essential to ensure both airline viability and growth of the aviation sector in India.

12. UDGAM Portal

The Reserve Bank of India (RBI) has informed the Supreme Court that 30 banks have been integrated into its UDGAM portal, allowing legal heirs to easily search and trace unclaimed funds of deceased account holders.

About UDGAM Portal

1. It has been developed in collaboration with Reserve Bank Information Technology Private Limited (ReBIT), Indian Financial Technology and Allied Services (IFTAS), and participating banks.
2. At present, 30 banks are integrated with the portal, covering nearly 90% of the value of unclaimed deposits held in the Depositor Education and Awareness (DEA) Fund of the RBI.

Purpose and Functioning of the Portal

1. Bank deposits are treated as "unclaimed" when savings or current accounts remain inactive for 10 years, or fixed deposits are not withdrawn within 10 years of maturity, after which such funds are transferred to the RBI-managed Depositor Education and Awareness (DEA) Fund.
2. The portal allows registered users to search for such unclaimed accounts and deposits across multiple banks through a single platform.
3. It includes both individual and non-individual accounts that fall under the category of unclaimed deposits.
4. However, UDGAM only facilitates search and provides information on the respective bank's claim process, while actual settlement of funds must be done directly with the concerned bank.

Unclaimed Deposit Reference Number (UDRN)

1. After registration, users receive an Unclaimed Deposit Reference Number (UDRN) linked to the searched account.
2. It is generated through the Core Banking System and assigned to each unclaimed account transferred to the DEA Fund.
3. The UDRN ensures confidentiality by masking account and branch details while enabling smooth processing of claims between customers and banks.

13. Mission SAKSHAM

Context

The Reserve Bank of India (RBI) has recently introduced "Mission SAKSHAM," an initiative aimed at strengthening capacity in the **urban cooperative banking sector.**

About Mission SAKSHAM

1. This initiative focuses on building a stronger, more stable ecosystem for the sector, with long-term emphasis on growth, resilience, and better governance.
2. It has been designed after discussions with key stakeholders, including **cooperative federations** and umbrella bodies of urban cooperative banks.
3. The programme targets large-scale capacity building, covering nearly 1.4 crore participants across the country.
4. Training will be delivered through a mixed approach:
   a. Classroom sessions
   b. Digital and e-learning modules
5. It aims to improve:
   a. Management skills
   b. Regulatory compliance
   c. Risk handling and operational efficiency
   d. Overall institutional strength
6. Participants will include bank board members, senior executives, and risk management professionals.
7. The initiative will be implemented across India in a mission-mode format to ensure wide reach and consistency.
8. Learning content will also be made available in regional languages to improve accessibility.

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Science And Technology

1. Drishti Satellite

Context

Indian space start-up **GalaxEye** launched its first satellite, 'Drishti', aboard a SpaceX Falcon 9 rocket from Vandenberg Space Force Base in California. The satellite is regarded as the world's first Earth observation system capable of simultaneously capturing optical and radar images of the same location. The launch marks an important advancement in India's private space sector and indigenous satellite imaging capabilities.

Space Imaging Technology

1. Space imaging refers to the collection of visual and electromagnetic data from space for observing Earth and outer space objects.
2. The technology is widely used in environmental monitoring, agriculture, disaster management, infrastructure planning, weather analysis and defence surveillance.

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Major Space Imaging Technologies

Optical Imaging

1. Optical sensors capture visible light to generate clear and high-resolution images.
2. These systems are useful for mapping and visual interpretation.
3. However, their effectiveness declines during cloud cover and low-light conditions.

Synthetic Aperture Radar (SAR)

1. SAR technology uses microwave signals to image Earth's surface.
2. It can function under all weather conditions and during both day and night.
3. However, SAR imagery is comparatively complex and requires specialised interpretation.

Emerging Imaging Technologies

1. Infrared and thermal imaging are used to detect heat signatures and temperature variations.
2. Hyperspectral imaging enables identification of minerals, vegetation and gases through spectral analysis.
3. Artificial intelligence and cloud computing are increasingly being integrated into satellite systems for real-time data processing and analysis.

Limitations of Conventional Imaging Systems

1. Existing Earth observation systems generally rely on either optical imaging or SAR technology separately.
2. Optical satellites provide visually clear images but face operational limitations under cloudy conditions.
3. SAR satellites ensure uninterrupted imaging capability but produce data that is relatively difficult for ordinary users to interpret.
4. Combining datasets from separate optical and radar satellites often creates alignment and synchronisation challenges.

Drishti's Opto-SAR Innovation

1. Drishti integrates optical and SAR sensors within a single satellite platform.
2. The satellite enables both systems to observe the same geographical location simultaneously.
3. GalaxEye developed a proprietary synchronisation mechanism that aligns both imaging systems in real time.
4. This reduces dependence on manual data fusion and improves the accuracy and usability of satellite imagery.
5. Artificial intelligence is also used to generate optical-like imagery from SAR data when cloud cover obstructs visual imaging, thereby improving continuity of Earth observation.

Relevance for India

1. Tropical countries such as India frequently experience cloud cover and unpredictable weather conditions that affect conventional optical imaging systems.
2. Drishti addresses this challenge by enabling reliable and continuous Earth observation irrespective of weather conditions.
3. The technology is particularly relevant for developing countries that require affordable and uninterrupted imaging systems.

Applications of Drishti

1. The satellite has both civilian and strategic applications.
2. It can be used for crop monitoring, disaster response, urban planning, infrastructure assessment, border

management and defence intelligence.

India's Expanding Private Space Ecosystem

1. Drishti reflects the growing contribution of Indian private start-ups in advanced space technologies.
2. The Indian Space Policy 2023 has encouraged private participation by opening end-to-end space activities to non-government entities.
3. Indian companies are increasingly contributing to innovations in launch systems, satellite technologies and propulsion systems, thereby strengthening India's commercial and strategic space capabilities.

Conclusion

The launch of Drishti highlights India's growing capabilities in advanced Earth observation and private space innovation. By integrating optical and radar imaging within a single platform, the satellite addresses important limitations associated with conventional imaging systems and improves all-weather observation capability. The development also reflects the increasing role of Indian start-ups in strengthening technological self-reliance and strategic capacity in the space sector.

2. Fiber Optic Drones

Context

Recent reports suggest that Hezbollah is **using fiber optic drones against Israel**

About Fiber Optic Drones

Fiber optic drones are unmanned aerial vehicles (UAVs) that use fiber optic technology for communication and control instead of standard wireless systems.

Key Features and advantages

1. **Strong signal security:** Communication through optical fiber makes it very difficult to jam, intercept, or disrupt data transmission.
2. **Low delay in communication:** These drones provide almost instant (near-zero latency) data transfer, which is useful for real-time monitoring and targeting.
3. **Stable and high-speed connection:** Fiber optic cables allow large amounts of data to be transmitted quickly and reliably over long distances.
4. **Effective in difficult environments:** They can function well in areas where GPS signals are weak or radio frequencies are blocked, such as electronic warfare zones.

How they work

1. These drones remain physically connected to a ground station through a thin fiber optic cable (tether).
2. The cable carries control signals and sends back live video and data to the operator.
3. In many cases, the tether can also supply power, reducing dependence on onboard batteries.

Applications

1. **Defense and warfare:** Used for surveillance, reconnaissance, and precision operations in conflict zones.
2. **Infrastructure and telecom work:** Helpful in inspecting networks, cables, and critical infrastructure.
3. **Disaster management:** Useful in search, rescue, and monitoring operations during emergencies.

3. Hantavirus

Context

A suspected outbreak of hantavirus on a cruise ship based in the Netherlands has led to the death of three people, while three others are currently reported to be ill.

About Hantavirus

1. Hantavirus is a rare but serious disease linked to rodents such as rats, transmitted through contact with their urine, saliva, or droppings.
2. It can lead to two major conditions: **Hantavirus Pulmonary Syndrome**, which affects the lungs, and **Hemorrhagic Fever with Renal Syndrome**, which impacts the kidneys and may cause bleeding complications.

Mode of Spread

1. Infection mainly occurs when contaminated particles from rodent waste are inhaled or come into contact with humans.
2. Direct bites are uncommon, and human-to-human transmission is extremely rare.

Health Effects

1. Initial symptoms usually appear after 1–8 weeks and resemble flu-like illness, including fever, body pain, fatigue, and digestive issues.
2. In advanced stages, it can cause severe breathing difficulty, fluid buildup in the lungs, and life-threatening organ complications.

At-Risk Groups

1. Individuals working or staying in rodent-prone environments such as farms, construction sites, or outdoor camps are more exposed.
2. Children, pregnant women, and immunocompromised persons are advised to avoid contact with rodents.

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Treatment and Prevention

1. There is no specific antiviral treatment; care is mainly supportive, including oxygen therapy and intensive care in severe cases.
2. Preventive steps include controlling rodent presence, sealing entry points in buildings, and using protective gear while cleaning contaminated areas.

4. Lupus Disease

Context

World Lupus Day is observed every year on 10 May across the world to raise awareness about lupus, a chronic autoimmune disease and its impact on health.

About Lupus Disease

1. The disease is seen more commonly in **women than men**, and most often develops in the **20–40 years age group**, though it can also appear in newborns, children, and older adults.
2. Lupus is a **chronic autoimmune disorder** in which the immune system mistakenly attacks the body's own healthy tissues instead of defending them.
3. It leads to **widespread inflammation**, which may damage multiple organs such as the **brain, skin, kidneys, heart, lungs, joints, and blood cells**.
4. The exact cause is not known, but it is thought to be linked with **genetic, environmental, and hormonal factors**.

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Clinical Features, Course of Disease, and Management Approach

1. Symptoms of lupus vary widely from person to person depending on which organs are affected, making it a **highly unpredictable and variable disease**.
2. The condition typically progresses in a **cyclical manner**, with **flare-ups (active phases of symptoms)** followed by **remission periods** when symptoms reduce or disappear.
3. Common manifestations include **fatigue, fever, joint pain, skin rashes, headaches, mouth ulcers, confusion, swollen glands, and blood clotting issues**.
4. If the disease is not properly managed, it can lead to **serious complications affecting vital organs such as the kidneys, heart, lungs, and brain**.
5. Although there is **no permanent cure**, lupus can be effectively controlled through **medications and lifestyle changes**, which help reduce symptoms and prevent flare-ups.

Types of Lupus

1. **Drug-induced lupus** develops due to certain medicines and usually goes away once the medication is stopped.
2. The most common form, **Systemic Lupus Erythematosus (SLE)**, accounts for about **70% of cases** and can affect several organs with varying severity.
3. **Neonatal lupus**, a rare type, occurs in newborns and is associated with **maternal antibodies passed from the mother**.
4. **Subacute cutaneous lupus** often leads to **skin sores that worsen after exposure to sunlight**.
5. **Discoid lupus** mainly affects the skin and causes **long-lasting red rashes that do not heal easily**.

5. Zwan-Wolf Effect

Context

Recent observations by the MAVEN mission of the National Aeronautics and Space Administration have revealed the presence of the Zwan-Wolf effect in the atmosphere of Mars, offering fresh insights into how the planet responds to solar wind activity.

About the Zwan-Wolf Effect

1. The Zwan-Wolf effect refers to the compression of charged particles along magnetic field structures known as flux tubes.
2. **First identified in 1976**, it had previously been observed only in planetary magnetospheres.
3. The phenomenon occurs when solar wind interacts with a planet's magnetic environment, creating pressure differences that redistribute charged particles.
4. This interaction produces regions with comparatively lower particle density near the solar wind stream.
5. On Earth, the process helps deflect solar wind and reduces the impact of harmful charged particles.

Significance of the Discovery on Mars

1. The effect was detected in the Martian ionosphere below an altitude of nearly 200 km.
2. Unlike Earth, Mars lacks a strong global magnetic field, making its atmosphere more vulnerable to space weather interactions.
3. Observations showed redistribution of charged particles within the Martian atmosphere due to solar wind activity.
4. The discovery improves understanding of atmospheric

loss, space weather processes, and the evolution of the Martian climate.

About MAVEN

1. MAVEN is the first mission dedicated to studying the upper atmosphere of Mars and its interaction with space weather.
2. It is part of the National Aeronautics and Space Administration Mars Exploration Program and entered Mars orbit in 2014 after its launch in 2013.
3. The spacecraft carries instruments to study solar wind interactions, atmospheric composition, and ultraviolet radiation.
4. The mission has shown that Mars lost nearly two-thirds of its early atmosphere to space.

6. NASA Psyche Mission

Context

NASA's Psyche spacecraft recently captured and transmitted a clear crescent view of Mars while passing at a distance of about 5 million kilometres, highlighting an important visual milestone during its ongoing deep-space mission.

About Psyche Spacecraft

1. NASA launched the **Psyche spacecraft on 13 October 2023** to begin its deep-space mission targeting a **metal-rich asteroid also named Psyche**.
2. Built roughly the size of a **small van**, it travels using a **solar-electric propulsion system powered by xenon gas**, which enables gradual acceleration over long distances.
3. During its journey, it carries a **multispectral imager** that uses twin cameras with filters and telescopic lenses to capture the asteroid in different **wavelengths of light**.
4. It includes a **gamma-ray and neutron spectrometer** to analyse the **chemical elements present on the asteroid's surface**, along with a **magnetometer** to check for evidence of an **ancient magnetic field**.
5. The spacecraft is expected to be **captured by the asteroid's gravity in late July 2029**, after which the **main mission will begin in August 2029**.
6. Once in orbit, it will spend about **two years studying the asteroid**, including mapping its surface, capturing images, and determining its composition in detail.

7. India's First Orbital Data Centre Satellite

Context

Pixxel, a Bengaluru-based satellite imaging company, in collaboration with Sarvam, is developing India's first orbital data centre satellite named **Pathfinder**. Scheduled for launch in 2026, the mission aims to test advanced onboard computing capabilities in space using artificial intelligence and hyperspectral imaging technologies.

The project reflects the growing global interest in space-based computing as a future component of digital and satellite infrastructure.

Orbital Data Centre

1. An orbital data centre refers to satellites equipped with high-performance computing systems capable of processing and analysing data directly in space.
2. Unlike conventional satellites that mainly transmit raw information to Earth, these systems can process data onboard using advanced graphics processing units (GPUs).
3. The concept is based on **edge computing**, where computation occurs close to the source of data generation, reducing transmission delays and dependence on terrestrial cloud infrastructure.

Pathfinder Mission

The Pathfinder mission is designed as a technology demonstration project to evaluate whether data-centre-grade computing hardware can function efficiently in low Earth orbit.

The satellite will:

1. use advanced GPUs for onboard computing,
2. support artificial intelligence applications in orbit, and
3. integrate hyperspectral imaging technology for analysing Earth observation data directly in space.

The mission will also assess the performance of computing systems under orbital conditions such as radiation exposure and thermal stress.

Importance of Orbital Data Centres

1. **Reducing Pressure on Earth-Based Data Centres:** Rapid expansion of artificial intelligence and cloud services has increased demand for electricity, cooling infrastructure and land resources on Earth.
2. **Faster and Efficient Data Processing:** Processing satellite data directly in orbit can reduce communication delays and lower the burden of transmitting massive volumes of raw information to Earth.

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3. **Access to Continuous Solar Energy:** Satellites in orbit can access near-continuous solar energy, making space a potentially favourable environment for energy-intensive computing systems.
4. **Strategic and Technological Significance:** Orbital computing is emerging as an important sector with applications in communication, remote sensing, defence and advanced digital technologies. Several international firms, including SpaceX, Blue Origin and Microsoft through Azure Space, are exploring related technologies.

Major Challenges

1. Managing heat in space is difficult because vacuum conditions prevent normal heat dissipation, increasing the risk of overheating in advanced processors.
2. Exposure to cosmic radiation can damage electronic components and affect the reliability of digital data.
3. Radiation-resistant chips used in spacecraft are generally less advanced than commercial processors available on Earth, limiting computing performance.
4. Satellites require efficient power-storage systems to maintain operations during periods without sunlight.
5. Repairing and maintaining orbital computing systems remains technically difficult and expensive.
6. Space-based computing infrastructure is currently more costly than conventional terrestrial data centres.

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Significance for India

1. Strengthens India's capabilities in advanced satellite technology and onboard computing systems.
2. Encourages indigenous innovation in emerging space technologies.
3. Improves efficient processing of hyperspectral and Earth observation data.
4. Reduces dependence on terrestrial infrastructure for specialised satellite applications.
5. Positions India in the emerging global orbital computing ecosystem.

Future Prospects

1. Supporters believe that reusable rockets, lower launch costs and deployment of large satellite constellations could improve the long-term economic viability of orbital computing systems.
2. However, experts believe that orbital data centres are more likely to complement terrestrial cloud infrastructure in the near future rather than replace it entirely.

Conclusion

The Pathfinder mission represents an important step in India's expanding space technology ecosystem and highlights the growing convergence of satellite systems and advanced computing technologies.

Although orbital data centres continue to face significant technological and economic challenges, they hold long-term potential for transforming data processing, Earth observation and future digital infrastructure in space.

8. Geocell Technology in Road Construction

The **CSIR-Central Road Research Institute** and **Bharat Petroleum Corporation Limited** have been recognised by the India Book of Records and Asia Book of Records for constructing the first roadblock section using geocell technology made from end-of-life plastic waste, marking a sustainable innovation in road infrastructure.

About Geocell Technology

1. **Geocell** is a three-dimensional confinement system used to strengthen weak soil and improve its ability to bear loads in engineering projects.
2. The structure is made of interconnected honeycomb-like cells, usually produced from materials such as **High-Density Polyethylene (HDPE)** or polyester.
3. During construction, the cells are expanded on the ground and filled with materials like sand, soil, clay, or aggregates to create a reinforced layer.
4. After compaction, the geocell structure combines with the surrounding soil to provide greater stability and durability.

Uses of Geocell Technology

1. **Pavement Reinforcement:** Helps improve the strength of road subgrades and base layers, thereby increasing pavement life.
2. **Slope Stabilisation and Channel Protection:** Provides lateral support to soil on slopes and channels, helping prevent erosion and land instability.
3. **Retaining Structures:** Used in constructing steep earth-retaining walls and mechanically stabilised soil structures.

9. Coal Gasification and India's Clean Energy Shift

Context

The Central Government has approved a ₹37,500 crore scheme to encourage coal gasification in India with the

aim of promoting cleaner use of coal, lowering imports of fuel and chemical products, and improving the country's energy security.

About Coal Gasification

1. Coal gasification is a thermo-chemical process in which coal is converted into a synthetic fuel gas known as **syngas.**
2. In this process, coal is heated at very high temperatures, generally between 1000°C and 1400°C, with a limited supply of oxygen or air and steam.
3. Before the reaction begins, coal is crushed into fine particles to improve the efficiency of the conversion process.
4. The powdered coal is then fed into a gasification reactor where partial oxidation takes place instead of complete burning.
5. During this reaction, coal breaks down into different gaseous substances that together form syngas.
6. The produced syngas mainly contains carbon monoxide, hydrogen, methane, carbon dioxide and water vapour.
7. The raw gas generated in the reactor is further cleaned by removing impurities such as sulfur compounds, tar and dust particles.
8. Syngas obtained through this process can be used in the production of fuels, fertilisers and industrial chemicals.
9. Compared to conventional coal combustion, coal gasification is considered a cleaner method of utilising coal resources.
10. It can reduce India's dependence on imports of natural gas, methanol, ammonia and other essential products.

10. Methane Alert and Response System (MARS)

Context

The UN Environment Programme's International Methane Emissions Observatory (IMEO) has announced that its Methane Alert and Response System will now be expanded to include monitoring of methane emissions from coal mines and waste facilities.

About Methane Alert and Response System (MARS)

1. It is designed as a **"data-to-action"** system that provides open and reliable information to governments and companies so they can take steps to reduce methane emissions.
2. This is the world's first public satellite-based system that detects and reports large methane leaks across the globe in near real time.
3. The system was introduced at **COP 27** in 2022 and started its pilot operations in January 2023.
4. Using satellite technology, it identifies major methane emission hotspots and sends alerts to relevant stakeholders for corrective action, supporting global climate goals like the Paris Agreement and the Global Methane Pledge.

Working Mechanism

1. Satellites first detect large human-caused methane emission events across different regions.
2. After detection, notifications are sent to the concerned countries and companies responsible for those emission sources.
3. These stakeholders are then expected to respond by taking measures to control or reduce emissions.
4. The system also monitors follow-up actions and tracks progress to prevent future methane leaks through improved coordination.

International Methane Emissions Observatory (IMEO)

1. IMEO was launched during the **G20 Leaders Summit in 2021** to improve global methane emission monitoring and data accuracy.
2. It initially focused on **emissions from the fossil fuel sector**, particularly oil and gas operations.
3. The observatory integrates data from multiple sources, including scientific studies, satellite-based observations through MARS, company-reported data under OGMP 2.0, and national emission inventories.

Oil and Gas Methane Partnership (OGMP 2.0)

1. OGMP 2.0 is **UNEP's flagship initiative** that brings together companies in the oil and gas sector to improve transparency and accuracy in methane emissions reporting.
2. It works through a structured framework that standardises how companies measure, report, and reduce methane emissions globally.

11. DAMPE Satellite

Context

China's DAMPE space telescope has observed that cosmic rays, such as hydrogen and helium nuclei, drop off sharply after reaching a certain high-energy limit. This means that extremely high-energy particles are far less common in space than expected.

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About DAMPE Satellite

1. **DAMPE (Dark Matter Particle Explorer)**, also called "**Wukong**," is China's first dedicated space telescope for studying high-energy particles in space.
2. It was launched on **December 17, 2015**, and placed in a **sun-synchronous polar orbit** about **500 km above Earth**.
3. The satellite detects and studies **cosmic rays, gamma rays, and electrons** coming from outer space.
4. Its main scientific aim is to measure very high-energy electrons and gamma rays with high precision, helping scientists search for possible **signals of dark matter.**
5. So far, DAMPE has collected data from around **18.5 billion high-energy particle events** since its launch.

12. Rumen Fluke Disease

Context

Rumen fluke disease was recently reported from Odisha's Kendrapada district, where around 70 cattle died due to amphistome infection, locally referred to as 'Kurmi'.

About Rumen Fluke

1. Rumen flukes are parasitic worms that infect ruminants and are found worldwide.
2. The infection, known as **paramphistomosis**, is more prevalent **in tropical and subtropical regions.**
3. Adult parasites inhabit the rumen, while immature larvae damage the small intestine.
4. Snails serve as intermediate hosts in the parasite's life cycle.
5. Transmission occurs through consumption of contaminated water or vegetation carrying larval stages.
6. Heavy infestation can cause intestinal damage and severe health complications in livestock.
7. Major symptoms include diarrhoea, rapid weight loss, reduced milk yield, and swelling below the jaw called "bottle jaw".
8. Infected animals may lose body mass despite normal feeding behaviour.
9. Anthelmintic drugs are used for treatment, while proper grazing and pasture management help in disease control.

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GEOGRAPHY AND ENVIRONMENT

1. AI-Driven Block-Level Monsoon Forecasting

Context

Recently, the India Meteorological Department (IMD) introduced India's first AI-enabled block-level monsoon forecasting system for providing early and localised forecasts of rainfall and monsoon onset.

About AI-enabled block-level monsoon forecasting system

1. The India Meteorological Department (IMD), along with the Indian Institute of Tropical Meteorology (IITM), Pune, and the National Centre for Medium Range Weather Forecasting (NCMRWF), has developed India's first AI-enabled block-level monsoon forecasting system.
2. The system combines artificial intelligence with numerical weather prediction models to generate forecasts of monsoon progression up to four weeks in advance.
3. Forecasts are released every Wednesday and currently have an estimated error margin of around four days.
4. Monsoon onset is assessed on the basis of a continuous five-day rainfall spell and the absence of prolonged dry conditions during the following 30 days.
5. The initiative is aimed at providing hyperlocal and impact-based weather services, particularly for rainfed agricultural regions where monsoon timing is critical for farming and water management.
6. Forecast information and alerts are disseminated through mobile applications, SMS services and agricultural extension networks.
7. At present, the forecasting system covers 3,196 blocks across 15 states and one Union Territory, with plans for gradual expansion to other parts of the country.

2. Atlantic Meridional Overturning Circulation (AMOC)

Context

Recent scientific studies have raised concerns regarding the rapid weakening of the Atlantic Meridional Overturning Circulation (AMOC), a major oceanic circulation system that regulates global climate. Scientists warn that continued weakening of the AMOC could disrupt global weather patterns, intensify climate extremes and adversely affect monsoon systems, including the Indian summer monsoon.

Atlantic Meridional Overturning Circulation (AMOC)

1. The AMOC is a large system of interconnected ocean currents operating in the Atlantic Ocean.
2. It functions as a global heat conveyor belt by transporting warm and saline surface water from tropical regions towards the North Atlantic and areas around Greenland.
3. In the cold polar regions near Greenland, the water cools, becomes denser and sinks into deeper ocean layers.
4. The cold deep water then flows southward before resurfacing and warming again, thereby completing the circulation cycle.
5. Through this continuous process, the AMOC redistributes heat across the planet and plays a crucial role in maintaining global climatic balance.

Causes Behind the Weakening of the AMOC

1. The AMOC is primarily driven by differences in ocean temperature and salinity.
2. Rapid global warming has accelerated the melting of the Greenland ice sheet and Arctic ice.
3. The increased inflow of freshwater into the North Atlantic reduces the salinity and density of seawater.
4. As freshwater is lighter and less saline, it weakens the sinking of cold water near Greenland that sustains deep ocean circulation.
5. Consequently, the overall strength of the AMOC is gradually declining.
6. Scientific projections indicate that the weakening trend may intensify further during the 21st century if greenhouse gas emissions continue to rise.

AMOC as a Climate Tipping Point

1. The AMOC is regarded as a potential climate tipping point because excessive weakening may trigger abrupt and irreversible changes in the global climate system.
2. A major slowdown could destabilise ocean-atmosphere interactions and alter long-term climatic

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patterns across continents.

3. Potential consequences include:
   a. disruption of global rainfall systems,
   b. increased frequency of extreme weather events,
   c. regional sea-level rise, and
   d. heightened climate instability.

Global Climate Implications

1. The AMOC plays a critical role in regulating heat distribution between the northern and southern hemispheres.
2. Weakening of the circulation could disturb climatic conditions across Europe, Africa, the Americas and Asia.
3. It may also influence Pacific Ocean dynamics by altering the global heat balance, thereby intensifying El Niño events.
4. Stronger and more unpredictable El Niño conditions can increase the occurrence of droughts, floods and heatwaves in different regions of the world.

Implications for India

1. India's agriculture, water resources and food security remain heavily dependent on the southwest monsoon.
2. A weaker AMOC could alter tropical rainfall systems and reduce the strength of moisture-bearing winds reaching the Indian subcontinent.
3. This may lead to:
   a. erratic monsoon rainfall,
   b. prolonged dry spells,
   c. increased drought frequency,
   d. groundwater stress, and
   e. decline in agricultural productivity.
4. Intensified El Niño conditions associated with AMOC weakening may further increase the risk of climate-induced disasters such as floods and crop failures.
5. The phenomenon poses significant challenges to water security, rural livelihoods and climate resilience in India.

Way Forward

1. Global efforts to reduce greenhouse gas emissions must be strengthened to limit further disruption of ocean circulation systems.
2. Countries should enhance climate monitoring, oceanographic research and early warning mechanisms.
3. India needs to promote climate-resilient agriculture, efficient water management and improved monsoon forecasting systems.
4. Greater international cooperation in climate governance and marine scientific research is essential to address emerging climate risks.

Conclusion

The weakening of the AMOC reflects the increasing vulnerability of the global climate system under the impact of climate change. Accelerated melting of the Greenland ice sheet and rising freshwater inflow into the North Atlantic have emerged as critical drivers of this process. Given its potential implications for monsoon dynamics, agriculture and water security, the issue holds serious significance for India and underscores the need for coordinated global climate action and resilient adaptation strategies.

3. Pre-Monsoon Thunderstorms in Uttar Pradesh

Context

Severe pre-monsoon thunderstorms recently caused heavy casualties and widespread damage across several districts of Uttar Pradesh, particularly Prayagraj, Mirzapur and Bhadohi. Strong winds, lightning and intense rainfall uprooted trees, damaged infrastructure and disrupted power supply.

These storms, locally known as *Andhi*, commonly occur during the pre-monsoon season in northern India between April and May.

Thunderstorms

A thunderstorm is a weather event associated with lightning, thunder and rainfall. It develops mainly due to convection, where warm and moisture-laden air rises rapidly into the atmosphere.

Conditions Necessary for Formation

1. **Moisture:** Adequate atmospheric moisture is essential for cloud formation and precipitation.
2. **Atmospheric Instability:** The rising air must remain warmer and lighter than the surrounding air so that it continues to ascend.
3. **Triggering Mechanism:** A lifting force is required to push warm air upward. Such lifting may result from:
   a. Surface heating
   b. Mountain barriers
   c. Interaction of contrasting air masses
   d. Convergence of moist and dry winds

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Formation Process

1. Solar heating warms the Earth's surface.
2. Warm, moist air rises upward through convection.
3. As the air cools, condensation leads to cloud formation.
4. Vertical cloud growth into colder regions forms ice particles.
5. Collisions among these particles generate electrical charges, producing lightning.
6. Rapid heating of surrounding air creates sound waves heard as thunder.

Life Cycle of a Thunderstorm

1. **Developing Stage**
   a. Formation of cumulus clouds
   b. Dominance of upward-moving air currents
   c. Rapid vertical cloud growth
   d. Minimal rainfall

2. **Mature stage**: This is the most destructive phase. Its features are:
   a. Heavy rainfall
   b. Strong winds and lightning
   c. Simultaneous updrafts and downdrafts
   d. Possibility of hailstorms and tornado-like conditions
   e. Formation of gust fronts

3. **Dissipating Stage**
   a. Downdrafts dominate the system
   b. Moisture supply weakens
   c. Rainfall gradually decreases
   d. Lightning activity may persist briefly

Reasons Behind the Extreme Intensity

1. **High Surface Temperatures**: Temperatures above 45°C intensified convection and accelerated upward air movement.
2. **Moisture Inflow**: Strong winds transported moisture from the Bay of Bengal into northwestern Uttar Pradesh, increasing humidity levels.
3. **Western Disturbances**: Cool, dry upper-level winds interacted with warm, moist surface air, creating severe atmospheric instability favourable for violent storms.
4. **Unusually Strong Winds**: Several districts recorded wind speeds above 100 kmph, with some areas nearing 130 kmph, making the event more destructive than typical seasonal storms.

Forecasting: Progress and Challenges

The India Meteorological Department issued advance warnings regarding thunderstorm activity, supported by an expanded weather observation network.

However, precise prediction of wind intensity remained difficult because thunderstorms are highly localised, short-lived and occur simultaneously over scattered areas. Unlike cyclones, they do not follow a fixed track, limiting evacuation measures and making early warning systems the primary method of risk reduction.

Conclusion

The recent thunderstorms in Uttar Pradesh underline the increasing vulnerability of northern India to extreme weather events during the pre-monsoon period. Strengthening forecasting capability, public awareness and disaster preparedness is essential to minimise future loss of life and property.

4. Sabarmati River

Context

The Sabarmati River in Ahmedabad has dried up temporarily after authorities stopped water release at the Vasna barrage to repair its gates, causing difficulties for people in the city.

About Sabarmati River

1. The Sabarmati River is a **west-flowing river of western India**, covering a total length of about **371 km**, of which approximately **323 km lies in Gujarat** and **48 km in Rajasthan**.
2. It has its origin in the **Dhebar Lake (Jaisamand Lake region)**, situated in the **southeastern Aravalli region of Udaipur district in Rajasthan**.
3. Flowing first in a **southwestward direction**, the river later enters the plains of Gujarat, where it continues its journey across the state.
4. The drainage basin is naturally bounded by the **Aravalli Hills in the north and northeast**, the **Rann of Kutch in the west**, and the **Gulf of Khambhat in the south**.
5. Its important tributaries include the **Wakal, Harnav, Hathmati, Watrak, and Madhumati rivers**, which contribute to its drainage network.
6. A significant portion of the basin, nearly **74.68%, is used for agriculture**, showing its importance for regional farming activities.
7. Along its course, the river supports major urban centres such as **Ahmedabad and Gandhinagar**, and it flows through Ahmedabad in a **north–south direction, dividing the city into eastern and western parts**.

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5. Urban Heat Island Effect in Delhi

Context

Delhi and the National Capital Region are experiencing increasingly severe and prolonged heatwaves, with high temperatures continuing even during the night. Rapid urbanisation, excessive concretisation, shrinking green cover and rising dependence on cooling systems have intensified the **Urban Heat Island (UHI) Effect**, making urban areas significantly warmer than surrounding regions.

Causes of Rising Urban Heat

1. **Heat-Absorbing Infrastructure:** Concrete, asphalt, steel and glass absorb large amounts of solar heat during the day and release it slowly at night, preventing effective cooling.
2. **Dense Construction and Poor Ventilation:** High-rise buildings, narrow streets and unplanned urban growth restrict natural airflow and trap heat within the urban environment.
3. **Glass-Dominated Architecture:** Modern glass-heavy buildings increase indoor temperatures by trapping solar radiation, leading to greater dependence on air conditioning.
4. **Vehicular Emissions and Traffic Corridors:** Heavy traffic and transport infrastructure generate additional heat, especially along congested transport corridors.
5. **Decline of Green and Blue Spaces:** Loss of trees, wetlands and water bodies has weakened the city's natural cooling mechanisms and reduced evapotranspiration.

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Heat Feedback Loop and Energy Stress

1. **Urban Warming from Cooling Systems**: Air conditioners cool indoor spaces but release waste heat into the surrounding environment, contributing to rising outdoor temperatures.
2. **Increasing Pressure on Power Infrastructure**: Growing dependence on cooling systems has sharply increased electricity demand, raising concerns regarding grid stability and future energy security during extreme heat events.

Economic and Ecological Impact

1. **Decline in Productivity**: Extreme heat reduces labour efficiency in industries, construction activities and outdoor occupations, affecting overall economic output.
2. **Supply Chain and Infrastructure Stress**: Heatwaves disrupt transportation, storage and industrial operations, increasing operational costs and reducing efficiency.
3. **Ecological Degradation**: Encroachment on wetlands and floodplains, along with declining vegetation cover, has weakened ecological temperature regulation in the city.

Measures Needed

Measures	Purpose
Adoption of cool roofs, reflective coatings and heat-resistant materials	Reduce urban heat absorption
Promotion of passive cooling and natural ventilation	Lower dependence on energy-intensive cooling systems
Climate-sensitive urban planning and ventilation corridors	Improve airflow and reduce heat accumulation
Expansion of urban forests, parks and water bodies	Strengthen natural cooling and ecological resilience
Promotion of public transport and electric mobility	Reduce vehicular emissions and anthropogenic heat
Adoption of energy-efficient cooling technologies	Reduce electricity demand and waste heat generation
Heat-action plans and community cooling centres	Protect vulnerable populations during heatwaves
Strengthening renewable energy and power infrastructure	Improve resilience against rising cooling demand

Conclusion

The Delhi heat crisis reflects the combined impact of climate change, ecological degradation and unplanned urbanisation. Addressing the Urban Heat Island Effect requires climate-sensitive urban planning, ecological restoration and energy-efficient infrastructure.

A balanced approach integrating environmental sustainability, public health and urban resilience is essential for building heat-resilient cities in India.

6. Western Disturbances

Context

Northwest India is experiencing a short break from rain and thunderstorms as the latest **Western Disturbance** has weakened and moved eastward, leading to improved weather conditions in the region.

About Western Disturbance

1. Western Disturbances (WDs) are **extra-tropical storm systems** that originate over the **Mediterranean**

region and move eastwards towards the Indian subcontinent.

2. They are most active in India during the **winter months (November to March)**, influencing seasonal weather patterns in the northern parts of the country.
3. As they travel, these systems carry **moisture-laden air** and interact with the **subtropical westerly jet stream**, affecting weather over **India, Pakistan, Nepal, and Bangladesh**.
4. The name "Western Disturbance" comes from their **origin in the western region relative to India**, while "disturbance" refers to the **low-pressure, unstable atmospheric conditions** they create.
5. They play an important role in agriculture by bringing **rainfall and snowfall essential for the Rabi crop season**, especially in **Punjab, Haryana, and Delhi**.

7. Suru River

Context

More than a month after a six-year-old boy from Ladakh drowned in the Suru River near Hunderman, his body was recently recovered from Pakistan-occupied Kashmir (PoK) and brought back home.

About Suru River

1. The Suru River is a major tributary of the Indus River flowing through the Kargil region of Ladakh.
2. It rises from the **Panzella Glacier near the Pensi La Pass**, close to the Drang Drung Glacier in the Zanskar region.
3. The Drang Drung Glacier also feeds the **Stod River**, which flows in the opposite direction.
4. The river's source is located about 142 km south of Kargil town and nearly 79 km north of Zanskar.
5. With a total length of around 185 km, the river forms part of the western and northern boundary of the Zanskar Range.
6. The valley is dominated by the **Nun Kun mountain massif**, whose glaciers contribute to the river's flow.
7. Along its course, the river is joined by the Shafat Nala, which originates from the Shafat Glacier.
8. Near Kargil, it receives waters from the Botkul River, while the Dras River joins it further downstream near Kharul.
9. After crossing into Pakistan-occupied Kashmir (PoK), the Suru River ultimately merges with the Indus River at Nurla.
10. The Suru River flows past several settlements, including Tongul, Suru, Grantung, Goma, and Kharul, with Kargil being the largest town situated along its banks.
11. Historically, a branch of the ancient Silk Road followed the course of the Suru River, linking the regions of Kargil and Skardu.

8. Cloud Iridescence and Rainbow Clouds

Context

Indonesia recently saw a rare weather event called a "**rainbow cloud**," also known as **cloud iridescence**, which attracted public attention because of its bright, colourful patterns visible in the sky.

About Rainbow Cloud

1. It occurs when **sunlight interacts with extremely small water droplets or tiny ice crystals suspended in clouds**.
2. This optical effect is produced through **diffraction**, where light bends and spreads after encountering particles that are similar in size to the **wavelength of visible light**.
3. Due to this process, **light is separated into multiple colours**, creating visible **pastel shades and rainbow-like patterns** across cloud surfaces.
4. The effect becomes more distinct when cloud particles are **very small and relatively uniform in size**, allowing clearer separation of colours.

Conditions for Formation and Rarity

1. **Cloud iridescence is relatively rare** because several specific atmospheric conditions must occur together.
2. The clouds must be **thin enough for sunlight to pass through**, yet contain droplets or ice crystals that are **nearly identical in size**.
3. Even slight variation in particle size can **weaken or completely prevent the colour formation**.
4. The phenomenon also depends strongly on the **position of the Sun and the observer's viewing angle**, which determines visibility.

Types of Clouds That Produce Iridescence

1. Iridescence is most commonly observed in **newly forming clouds and semi-transparent clouds**, where particle uniformity is higher.
2. It is seen in cloud types such as **altocumulus, cirrocumulus, cirrus, and lenticular clouds**.
3. Among these, **lenticular clouds** often show especially

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dramatic iridescence due to smooth shapes and stable airflow that support **highly uniform droplet formation**.

4. These clouds generally develop at **high altitudes**, where relatively stable atmospheric conditions allow consistent interaction between sunlight and particles.

Difference Between Rainbow Clouds and Real Rainbows

1. Although called "rainbow clouds," they are **not true rainbows**.
2. **Rainbows form when sunlight is refracted, reflected, and dispersed inside raindrops after rainfall**.
3. In contrast, **cloud iridescence is caused by diffraction and interference involving microscopic droplets or ice crystals**.
4. Unlike the **large arc shape of rainbows**, iridescent clouds show **soft, uneven colour patches**, often closer to the Sun and less structured in appearance.

9. Rakchham-Chitkul Wildlife Sanctuary

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Context

The recent sighting of a female Himalayan brown bear along with her cubs in the Rakchham-Chitkul Wildlife Sanctuary of Himachal Pradesh has renewed attention towards the conservation of this rare species and its high-altitude Himalayan habitat.

About Rakchham-Chitkul Wildlife Sanctuary

1. Rakchham-Chitkul Wildlife Sanctuary, also known as the **Sangla Wildlife Sanctuary**, lies in the Kinnaur district of Himachal Pradesh.
2. The sanctuary forms part of the Western Himalayan range and spreads across an area of nearly 30.98 sq. km.
3. Snow-covered mountains, alpine valleys and fast-flowing rivers dominate the landscape of the sanctuary.
4. The sanctuary extends from about 3,200 metres to 5,486 metres above sea level, which creates diverse ecological conditions.
5. Unlike many other protected areas in Himachal Pradesh, the sanctuary falls in a dry climatic zone and therefore receives very little monsoon rainfall.
6. The region supports dry temperate forests, coniferous forests, sub-alpine vegetation, alpine scrublands and high-altitude pastures.
7. Rhododendron, oak, pine and several medicinal herbs grow naturally in the sanctuary.
8. The **Lamkhanga Pass** trekking route passes through the sanctuary and connects Kinnaur in Himachal Pradesh with the Gangotri region of Uttarakhand.
9. The sanctuary also provides habitat to snow leopards, Himalayan black bears, musk deer and several Himalayan bird species.

Himalayan Brown Bear

1. The scientific name of the Himalayan brown bear is *Ursus arctos isabellinus*.
2. The species inhabits the high-altitude Himalayan region and ranks among the largest mammals found there.
3. People also refer to it as the Himalayan Red Bear or Isabelline Bear, while locals in Ladakh call it **"Denmo".**
4. The Himalayan brown bear survives mainly in alpine and sub-alpine habitats above the timberline between 3,000 and 5,500 metres.
5. The species occurs across the northwestern and central Himalayas, including India, Pakistan, Nepal, Bhutan and the Tibetan Autonomous Region of China.
6. In India, the species survives in fragmented populations across Jammu and Kashmir, Himachal Pradesh and Uttarakhand.
7. The bear develops thick reddish-brown or sandy-coloured fur that protects it from extreme cold conditions.
8. Himalayan brown bears consume grasses, roots, bulbs, insects and small mammals such as marmots, pikas and voles.
9. Male bears generally grow larger than females and weigh around 135 kg on average.
10. During winter, the species hibernates inside dens to survive harsh climatic conditions.
11. Researchers consider the Himalayan brown bear one of the oldest surviving brown bear lineages in the world.
12. Some local legends connect the bear's upright posture with stories of the mythical Yeti or "**Abominable Snowman".**
13. The IUCN Red List classifies the Himalayan brown bear as **Critically Endangered.**

10. Ulsoor Lake Desilting Project

After over three decades, Ulsoor Lake has been drained for desilting and restoration work, but conservation activists

argue that the proposed desilting depth of 0.6 metres is inadequate for proper lake rejuvenation.

About Ulsoor Lake

1. Ulsoor Lake is a man-made waterbody located in **Bengaluru**, Karnataka, and is among the city's oldest and largest lakes.
2. The lake was created in 1648 by Kempe Gowda II, and it derived its name from the nearby village of Halsur, and was also referred to as **Halasuru lake**
3. It was later renovated in 1862 during the British era by **Lewin Bentham Bowring**, after which the name "Ulsoor" became widely used.
4. Spanning around 123.6 acres, the lake has a maximum depth of about 18 feet and is a key urban ecological feature.
5. The waterbody has an uneven, irregular shape that is often compared to the map of India.
6. A distinctive feature is its seven small islands, which are connected by bridges within the lake.
7. Along its banks lies **Kensington Park**, which adds recreational and aesthetic value to the area.

11. Sacred Groves

Context

The Kerala State Biodiversity Board (KSBB), in collaboration with local Biodiversity Management Committees, has recently launched a pilot programme aimed at restoring **sacred groves** as part of its broader biodiversity conservation efforts.

About sacred groves

1. Sacred groves are small to large patches of natural vegetation that are traditionally dedicated to local gods, goddesses, or nature spirits.
2. These areas are protected by communities due to long-standing cultural beliefs, customs, and religious practices passed down through generations.
3. They represent some of the oldest forms of community-based environmental conservation in India.

Ecological Importance

1. Sacred groves serve as important pockets of biodiversity, often preserving rare and native plant and animal species.
2. Human interference is strictly limited, with activities like cutting trees and hunting generally not allowed.
3. In some cases, limited use such as collecting honey or dry wood is permitted in a sustainable manner.

Distribution in India

1. India is estimated to have over one lakh sacred groves spread across different regions.
2. They are commonly found in ecologically rich areas such as the Western Ghats, the Himalayas, northeastern hills, and central India.

Local Names Across States

1. Meghalaya: Law Kyntang / Asong Khosi
2. Kerala: Sarpa Kavu / Kavu
3. Himachal Pradesh: Dev Van
4. Odisha: Thakuramma / Jahera
5. Tamil Nadu: Kovilkaadu
6. Rajasthan: Orans
7. Karnataka: Devarakadu
8. Assam: Madaico / Than
9. Uttarakhand: Dev Van / Bugyal
10. Maharashtra: Devgudi / Devrai
11. Jharkhand: Sarana / Jaherthan
12. Chhattisgarh: Devgudi / Sarana / Matagudi

12. Limestone Resources in India

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Context

The Ministry of Mines is preparing to begin the second phase of auctioning The Ministry of Mines is preparing to begin the second phase of auctioning limestone blocks in Jammu and Kashmir to promote mineral resource development in the region. blocks in Jammu and Kashmir to promote mineral resource development in the region.

About Limestone

1. Limestone is an important sedimentary rock mainly composed of calcium carbonate, commonly occurring as **calcite or aragonite.**
2. The rock is found in geological formations ranging from the **Pre-Cambrian age** to recent periods, except in **Gondwana formations.**
3. In addition to calcium carbonate, limestone may contain magnesium-bearing minerals such as dolomite and magnesite.
4. Limestone deposits also include smaller amounts of minerals like quartz, clay, feldspar, pyrite and iron carbonate.
5. Among Indian states, **Karnataka possesses the highest share of limestone** resources, followed by Andhra Pradesh, Rajasthan, Gujarat, Meghalaya and Chhattisgarh.

Uses of Limestone

1. Limestone is extensively used in the **cement industry**, where it serves as a major raw material for cement production.
2. In the iron and steel sector, it is used as a **flux** during metallurgical operations to remove impurities.
3. The mineral also plays an important role in the manufacture of chemicals such as calcium carbide, alkali and bleaching powder.
4. In agriculture, limestone is applied for soil conditioning and is used in fertilisers like calcium ammonium nitrate.
5. Limestone-derived materials such as chalk and precipitated limestone are widely used in products including paint, rubber, cosmetics, toothpaste and shoe polish. Top of Form

13. D'Ering Memorial Wildlife Sanctuary

Context

A tiger has been spotted in the **D'Ering Memorial Wildlife Sanctuary** in Arunachal Pradesh after nearly 20 years, indicating a rare and significant wildlife presence in the region.

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About D'Ering Memorial Wildlife Sanctuary

1. The sanctuary lies in the **East Siang district of Arunachal Pradesh**, close to the **Assam border**, forming part of the inter-state ecological zone.
2. It was first brought under protection in **1976**, following the designation of the **Lali Reserve Forest** as a protected area.
3. Later, in **1986**, the site was renamed as **D'Ering Memorial Wildlife Sanctuary**, replacing its earlier identity as **Lali Wildlife Sanctuary.**
4. The landscape is dominated by **floodplains formed by the Siang River and its tributaries**, making it a classic riverine habitat.
5. The region has a **tropical monsoon climate**, receiving rainfall from both the **south-west and north-east monsoon systems**.
6. The ground surface mainly consists of **riverine plains**, which are frequently affected by **seasonal flooding due to river overflow**.

Vegetation and Wildlife Diversity

1. The sanctuary represents a typical **floodplain ecosystem** dominated by **riverine grasslands and open plains**, where vegetation is largely adapted to periodic flooding.
2. The ground layer is mainly covered with **grasses and thatch**, while scattered tree species such as **Bombax ceiba, Dillenia indica, Albizia spp., and Termenelia myriocarpa** grow in patches suited to wet conditions.
3. This varied habitat supports important mammals including **hog deer, wild pig, elephant, and tiger**, along with a highly diverse bird population of **over 150 species**.
4. It is also significant for conservation of endangered birds like the **White-winged Wood Duck and Bengal Florican**, highlighting its ecological importance within the region.Bottom of Form

Society And Culture

1. Ambedkar Labour Laws

Context

Dr. Ambedkar's approach to labour issues went beyond survival needs and focused on ensuring dignity, self-development, and improved quality of life for workers.

Vision of Labour Welfare

1. Ambedkar viewed labour not merely as a workforce but as individuals entitled to social, cultural, and intellectual growth.
2. He believed that economic progress should also ensure human dignity and holistic development of workers.
3. His early political efforts included organising the Independent Labour Party to represent working-class concerns.

Role as Labour Member (1942–46)

1. During his tenure in the Viceroy's Executive Council, Ambedkar handled labour-related responsibilities at a time when India was undergoing rapid industrialisation under colonial rule.
2. The period marked a shift of workers from agrarian settings to industrial employment, with limited legal protection.
3. His appointment in 1942 became a turning point in institutionalising labour welfare measures in India.

Major Labour Reforms Introduced

1. Working hours were reduced from 12 to 8 hours, aligning India with global labour standards.
2. Introduced maternity benefits to protect women workers' health and employment continuity.
3. Established systems such as provident fund and employee insurance to ensure financial security.
4. Promoted paid leave, dearness allowance, and better wage structures.
5. Strengthened trade union rights by mandating recognition of unions.
6. Supported creation of employment exchanges to improve job access.
7. Advocated housing and healthcare facilities for industrial workers.
8. Advocated basic dignity at the workplace, including hygiene facilities and humane working conditions.
9. Emphasised that labour welfare should ensure respect for workers, not just economic compensation.

Institutional and Policy Innovations

1. Chaired the first Tripartite Labour Conference in 1942, bringing together government, employers, and workers for structured dialogue.
2. Recommended placing labour legislation under the Concurrent List to ensure uniform national standards.
3. Established the Labour Investigation Committee in 1944 to study wages, working conditions, and social welfare of workers across sectors.

Sector-Specific Welfare Measures

1. Inspired by field visits, he introduced targeted welfare initiatives for mining workers.
2. Led to creation of welfare funds for mica miners in 1946, later extended to coal, iron ore, manganese, limestone, dolomite, and beedi workers.
3. Focused on improving safety, wages, and living conditions in hazardous industries.

Constitutional Vision for Labour Rights

Key provisions reflecting his philosophy in the Constitution include:

1. Article 39: Equal pay for equal work and adequate livelihood for all citizens.
2. Article 43: Living wages, decent working conditions, and access to leisure and social life.
3. Article 39(b) and (c): Fair distribution of resources and prevention of wealth concentration.

Broader Ideological Perspective

1. Ambedkar believed labour rights must be supported not only through legal reforms but also through political representation of workers.
2. He stressed that trade unions alone were insufficient without workers participating in democratic decision-making processes.
3. His vision placed labour rights within a broader framework of social justice and political empowerment.

2. Brain Death Certification

Context

The Supreme Court of India is examining the current framework for certifying brain death and has sought expert advice from doctors at All India Institute of Medical Sciences. The review follows concerns that existing

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procedures may sometimes be misused, particularly in cases linked to organ donation. Questions have been raised about the subjectivity of tests like the **apnea test** and non-compliance with safeguards such as mandatory videography. There is also debate on whether advanced diagnostic tools like EEG and cerebral angiography should be included.

Understanding Brain Death

1. Brain death, also referred to as brain stem death, is a permanent and irreversible loss of all brain functions, including those necessary for breathing.
2. Even if machines maintain heartbeat and blood circulation, the individual is medically declared dead as recovery is not possible.

Causes and Clinical Background

1. It generally occurs due to severe brain injuries caused by events such as road accidents, falls, or strokes.
2. These conditions deprive the brain of oxygen, leading to irreversible damage.

Role in Organ Donation

1. Brain-dead individuals are a key source for organ transplantation since vital organs remain functional with life support.
2. Organs like the heart and lungs, which cannot be donated by living persons, can be retrieved in such cases.
3. Although donations after circulatory death are possible, brain-dead donors remain the primary source.

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Importance of Certification

1. Formal declaration of brain death enables deceased organ donation, benefiting patients requiring transplants of organs such as kidneys, liver, heart, and eyes.
2. It reduces dependence on living donors, who may face medical risks despite improved surgical safety.

Status of Organ Donation in India

1. Despite a high number of deaths due to traumatic brain injuries and strokes annually, organ donation rates remain very low.
2. India's deceased organ donation rate is significantly below several countries, highlighting a gap between potential donors and actual donations.

Existing Certification Protocol in India

1. As per National Organ and Tissue Transplant Organisation guidelines:
   a. Brain death must be certified by a panel of four doctors, including a neurologist/neurosurgeon and the treating physician.
   b. The condition must be confirmed twice, with a minimum gap of 12 hours.
   c. The underlying cause must be clearly established.
2. Reversible conditions such as drug effects, low body temperature, or metabolic imbalances must be ruled out before certification.

Diagnostic Methods and Debate

1. Current rules rely mainly on clinical bedside tests and do not mandate advanced investigations.
2. **Electroencephalogram (EEG):** Measures electrical activity in the brain; absence of signals indicates no brain function.
3. **Cerebral Angiogram:** Assesses blood flow in the brain; absence of circulation confirms irreversible damage.
4. While these tests provide objective confirmation, their universal use is debated due to feasibility concerns.

Challenges and Way Forward

Challenges	Way Forward
Limited awareness and understanding of brain death among medical professionals	Conduct nationwide training programmes and continuous medical education for doctors
Inconsistent training during postgraduate medical education	Introduce mandatory modules on brain death certification in medical curricula
Absence of uniform standards across hospitals	Develop and enforce a standardised national protocol with strict monitoring
Subjectivity in existing clinical tests such as apnea test	Incorporate additional confirmatory tests (EEG/ angiogram) where feasible
Poor compliance with procedural safeguards like videography	Ensure strict implementation through audits and legal accountability
Limited infrastructure in smaller hospitals	Strengthen healthcare facilities and create referral systems to higher centres
Low public awareness and misconceptions about organ donation	Launch targeted awareness campaigns to build trust and acceptance

Gap between potential and actual organ donors	Improve identification and timely certification of brain-dead patients

Conclusion

Strengthening the brain death certification process is essential not only for ensuring ethical medical practices but also for improving organ donation rates in India. A balanced approach combining stricter protocols, better training, and enhanced infrastructure can help address existing concerns while promoting life-saving transplants.

3. Daishoin Temple

Context

A fire recently damaged the Reikado Hall of the Daishoin Temple, which was known for preserving Japan's 'eternal flame' for nearly 1,200 years, drawing attention to the conservation of cultural heritage sites in Japan.

About Daishoin Temple

1. Daishoin Temple is a Buddhist temple of the **Shingon sect** located at the foothills of Mount Misen on Miyajima Island in Japan's Chugoku region.
2. The temple was founded in 806 CE by Kobo Daishi after returning from China following the practice of gumonji-ho, a 100-day Buddhist spiritual discipline.
3. The temple complex contains several halls, statues, and Buddhist religious structures.
4. Miyajima Island, also known as Itsukushima, is situated in the Seto Inland Sea near Hiroshima and is regarded as an important centre of Japan's Buddhist and Shinto traditions.
5. The island is internationally known for its floating red torii gate, which appears to float on water during high tide.
6. Built around 1168 CE, **Itsukushima Shrine** is constructed over water with stilt-supported structures connected by wooden walkways.
7. The shrine includes the main hall, prayer hall, and Noh theatre and is recognised as a **UNESCO World Heritage Site**.

4. International Booker Prize

Context

The novel **Taiwan Travelogue** by Taiwanese author Yang Shuāng-zǐ, translated into English by Lin King, won the 2026 International Booker Prize.

About International Booker Prize

1. It is an annual literary award recognising outstanding works of fiction translated into English and **published in the United Kingdom or Ireland.**
2. The prize was introduced in 2005 under the name "Man Booker International Prize."
3. It honours both authors and translators, highlighting the importance of translation in global literary exchange.
4. The winner receives a prize amount of £50,000, shared equally between the author and translator.
5. Shortlisted authors and translators are also awarded £2,500 each.
6. The award aims to promote wider readership of translated literature globally.

Indian Winners

1. Geetanjali Shree won the 2022 prize for Tomb of Sand, translated by Daisy Rockwell, becoming the first Hindi work to receive the award.
2. Banu Mushtaq received the 2025 prize for Heart Lamp, translated by Deepa Bhasthi, marking the first Kannada work to win the award.

5. Koraga Tribe

Context

The situation of the Koraga Tribe has highlighted continuing housing inequality, with the UN-Habitat World Cities Report 2026 pointing to caste-based exclusion and policy gaps as major barriers to secure housing for vulnerable communities.

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About Koraga Tribe

Distribution and Language

1. The Koraga are a Particularly Vulnerable Tribal Group (PVTG) mainly found in the Dakshina Kannada and Udupi districts of Karnataka and the Kasaragod district of Kerala.
2. Small Koraga settlements are also present in other parts of Karnataka.
3. The community primarily speaks Koraga Bhasha and Tulu.

Social and Cultural Features

1. The Koragas follow a matrilineal social system and are organised into clan groups known as "bali."
2. Village affairs are traditionally guided by a senior elder called the "Mooppan."
3. Folk traditions, music, and ritual performances form an important part of their cultural identity.
4. Dholu (drum) and Voote (flute) are important traditional musical instruments of the community.

Livelihood and Religious Practices

1. The community depends mainly on agriculture, forest resources, wage labour, and traditional crafts such as basket weaving.
2. The Koragas broadly follow Hinduism along with distinct tribal beliefs and practices.
3. They worship spirits known as "Bhutas" and perform rituals associated with protection from evil spirits.

6. Thadou Tribe

Context

The Thadou tribe was recently in the news following an attack in Manipur's Kangpokpi district in which three church leaders from the community were killed and several others sustained injuries.

About Thadou Tribe

1. The Thadou are an indigenous tribal community mainly inhabiting Manipur, adjoining Northeastern states and parts of Myanmar.
2. In Manipur, they primarily live in the hill regions around the Imphal Valley and constitute the state's second-largest tribe after the Meiteis, with a population of about 1.9 lakh as per the 2011 Census.
3. The community shares close ethnic and cultural ties with the broader Chin-Kuki-Mizo groups, and their language belongs to the Tibeto-Burman branch of the Sino-Tibetan family.
4. Thadou settlements are usually located in forested hilly areas and generally lack a planned village layout. The village chief's house is typically the largest structure and serves as a centre for community discussions and dispute resolution.
5. The community mainly practices subsistence activities such as cultivation, hunting, fishing and animal rearing, with Jhum cultivation being the dominant agricultural system.
6. Traditionally, the Thadou followed an animistic faith centred on nature spirits and the supreme deity Pathen, though the majority now practice Christianity.
7. The Hun-Thadou festival is an important cultural celebration marking the arrival of the New Year.

7. Rupa Tarakasi: Odisha's Silver Filigree Craft

Context

Recently, the traditional Rupa Tarakasi silver filigree industry of Cuttack in Odisha, popularly known as the "Silver City" of the State. has been facing challenges due to rising silver prices and new restrictions on silver imports, affecting artisans and craft production.

About Rupa Tarakasi

1. It is regarded as one of the finest forms of silver craftsmanship in India.
2. In Odia, **"tara" means wire** and **"kasi" refers to decorative design work.**
3. The craft is believed to have existed since at least the 12th century and received significant patronage during the Mughal period.
4. The process involves transforming silver into fine wires or thin foils to create intricate jewellery, decorative artefacts and cultural items.
5. Along with silver, metals such as copper, zinc, cadmium and tin are also used in the alloy mixture.
6. The artisans engaged in this craft are locally known as "Rupa Banias" or "Roupyakaras".
7. Rupa Tarakasi is widely associated with ornaments worn by Odissi dancers and various religious and ceremonial objects.
8. The craft received the Geographical Indication (GI) tag in 2024 for its cultural and artistic significance.

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HISTORY

1. Komagata Maru Incident

Context

The Komagata Maru Incident stands as a significant episode in the history of colonial India and global migration. It highlighted the contradictions within the British Empire, where subjects were denied equal rights despite formal claims of imperial unity. The incident also played a key role in shaping India's anti-colonial consciousness.

Background: Socio-Economic Conditions in Punjab

In the early 20th century, Punjab experienced severe socio-economic distress under colonial rule. The British promoted the region as a "**martial race**" hub, heavily recruiting soldiers for the army. However, this facade of loyalty masked deeper structural issues:

1. Expansion of agriculture under colonial policies increased dependence on moneylenders, leading to widespread rural indebtedness.
2. Frequent outbreaks of diseases such as malaria and plague worsened living conditions.
3. Limited economic opportunities compelled many Punjabis to migrate abroad in search of better livelihoods.

This environment also contributed to the rise of revolutionary nationalism, particularly the **Ghadar Movement**, which aimed at overthrowing British rule through armed struggle.

The Voyage and Legal Challenge

The Komagata Maru voyage was not merely a migration attempt but a deliberate protest against discriminatory immigration laws.

1. The ship was chartered by **Gurdit Singh**, a Sikh businessman.
2. It carried 376 passengers, mostly from Punjab, all legally British subjects.
3. Their destination was Vancouver, Canada.

At the time, Canada enforced the **Continuous Journey Regulation (1908)**, which required immigrants to arrive directly from their country of origin without stops—effectively excluding Indians.

Standoff in Canada (May–July 1914)

Upon reaching Vancouver:

1. Passengers were denied entry and confined to the ship under harsh conditions.
2. Legal appeals failed in Canadian courts.
3. Only 22 passengers were allowed to disembark based on prior residency.
4. The Canadian government, under Robert Borden, ordered the ship's expulsion with naval support.

The ship was forced to leave Canadian waters after nearly two months of resistance.

Return to India and Budge Budge Tragedy

When the ship returned to India:

1. British authorities treated passengers with suspicion, viewing them as potential revolutionaries.
2. At Budge Budge near Calcutta, attempts to forcibly relocate them led to resistance.
3. Police opened fire, resulting in around 20 deaths and several arrests.

This violent episode is remembered as the Budge Budge Massacre.

Impact on the Indian National Movement

1. **Rise of Revolutionary Nationalism**

   The incident strengthened anti-British sentiments and boosted support for the Ghadar movement, which later attempted an uprising in 1915.

2. **Exposure of Colonial Hypocrisy**

   It demonstrated that being a British subject did not guarantee equal rights across the Empire, undermining imperial legitimacy.

3. **Role of Indian Diaspora**

   The episode highlighted how overseas Indians contributed to India's freedom struggle, adding an international dimension to nationalism.

4. **Psychological Impact**

   The humiliation and violence associated with the incident deepened distrust toward colonial rule and inspired future resistance.

Canada's Response and Later Apology

The incident remained a sensitive issue in Canada's history:

1. In 2008, an apology by Stephen Harper was considered insufficient.
2. In 2016, Justin Trudeau formally apologized in

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Parliament, acknowledging the injustice.

Conclusion

The Komagata Maru incident is a landmark event that reveals the racial and political inequalities embedded in colonial systems. It not only intensified India's struggle for independence but also serves as a reminder of the challenges associated with migration, citizenship, and equality. For contemporary governance, it underscores the need to align legal frameworks with principles of justice and human dignity.

2. Gandhi–Tagore Debate on the Charkha

Context

Mahatma Gandhi and Rabindranath Tagore shared a close intellectual relationship for nearly three decades, yet they differed on several political and philosophical issues. One of their most important debates centred on the **charkha** and the khadi movement.

Intellectual Differences Between Gandhi and Tagore

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1. The ideological differences between Gandhi and Tagore became visible after Gandhi's return from South Africa and his visit to Shantiniketan in 1915. Despite mutual respect, they differed on:
   a. nationalism,
   b. education,
   c. political mobilisation,
   d. religion, and
   e. social reform.
1. After the Jallianwala Bagh Massacre, Gandhi launched the Non-Cooperation Movement, whereas Tagore feared that excessive nationalism and mass mobilisation could weaken critical thinking and encourage blind conformity.
2. Although Tagore did not join the movement, he strongly opposed colonial repression and renounced his British knighthood in protest.
3. The two leaders also differed over Gandhi's interpretation of the 1934 Bihar earthquake as divine punishment for untouchability. Tagore rejected linking natural disasters with moral or religious explanations.
4. Historians often describe Gandhi as a nationalist mass mobiliser rooted in moral discipline, while Tagore is viewed as an internationalist thinker who emphasised creativity, individuality and intellectual openness.

Debate on the Charkha

1. During the 1920s, Gandhi promoted the charkha and khadi movement as central elements of the national movement. Congress workers were encouraged to wear khadi and contribute hand-spun yarn regularly.
2. For Gandhi, the charkha represented:
   a. economic self-sufficiency,
   b. rural reconstruction,
   c. dignity of manual labour,
   d. social cooperation, and
   e. resistance to exploitative industrial systems.
3. He believed spinning could connect educated Indians with rural poverty and strengthen social responsibility.
4. In his essay **The Cult of the Charkha**, **Tagore** criticised the excessive importance attached to spinning. He argued that:
   a. compulsory uniformity could suppress individuality and creativity,
   b. repetitive labour involved "muscles and not the mind," limiting intellectual engagement, and
   c. India should embrace science and modern technology rather than reject them in the name of nationalism.
5. Using examples such as Sparta and Athens, Tagore argued that societies progress through openness and intellectual development rather than rigid conformity.
6. However, Tagore did not oppose the practical use of the charkha for helping poor people secure basic clothing. His concern was mainly with its elevation into a dominant political and moral symbol.
7. In response, **Gandhi** defended the spinning wheel in **The Poet and the Charkha**. He argued that spinning restored dignity to labour and reduced dependence on exploitative economic systems. Gandhi also clarified that he was not entirely opposed to machinery, but supported technology that promoted social welfare without deepening inequality.

Significance of the Debate

1. The Gandhi–Tagore debate reflected two different visions of India:
   a. Gandhi emphasised mass participation, moral discipline and village-based reconstruction.
   b. Tagore stressed individual freedom, creativity and intellectual openness.
2. Their disagreement highlighted the diversity of ideas within the Indian national movement and demonstrated the importance of democratic and intellectual debate

in shaping modern India.

Conclusion

The debate on the charkha was not merely about spinning or khadi but about larger questions concerning nationalism, freedom, technology and development.

Despite their ideological differences, both Gandhi and Tagore remained committed to India's moral and cultural regeneration, making their dialogue an important part of India's intellectual and political history.

3. Piprahwa Relics

Context

Leh recently became the centre of a significant spiritual event as the sacred Piprahwa relics of Gautam Buddha were brought to the high-altitude town, marking a notable moment of religious and historical importance in Ladakh.

About Piprahwa Relics

1. India has taken urgent steps after reports emerged of a planned Sotheby's auction of certain Piprahwa relics in Hong Kong, with the Ministry of Culture issuing a legal notice to stop the sale.
2. These relics, found in **1898** at the **Piprahwa** Stupa in Uttar Pradesh, are linked to ancient Kapilavastu and are traditionally associated with Gautam Buddha's early life.
3. The findings include sacred objects such as bone remains, crystal containers, gold ornaments, and other ritual items.
4. A Brahmi inscription on one of the caskets connects the relics to Gautam Buddha and states they were placed by the **Sakya clan**.
5. Legally, the artefacts are classified as **'AA'** category antiquities in India, giving them the highest level of heritage protection.
6. The find made by William Claxton Peppé was brought under British authority through the Indian Treasure Trove Act of 1878.
7. A portion of the relics, including bone fragments and ashes, was subsequently presented to King Chulalongkorn of Siam (present-day Thailand), a revered Buddhist monarch.
8. While most of the collection was transferred to the Indian Museum in Kolkata in 1899, some pieces remained with the descendants of British excavator William Claxton Peppé and have recently surfaced in the international market.
9. Between 1971 and 1977, the Archaeological Survey of India carried out further excavations at the site and recovered more steatite caskets containing 22 sacred bone relics, which are currently housed in the National Museum in New Delhi.

4. Udayan Fort

Context

The historic **Udyan Fort** in Kaushambi, which dates back nearly 2,500 years to the time of the ancient Vatsa Mahajanapada, has received official approval for restoration.

About Udyan Fort

1. Udayan Fort (also called **Udayan Kila**) is situated in the **Kaushambi district of Uttar Pradesh**, along the banks of the **Yamuna River**.
2. It is linked to **King Udayana**, the ruler of the ancient **Vatsa Mahajanapada**, one of the 16 Mahajanapadas of early India.
3. The fort functioned as an important **administrative and capital centre** of the Vatsa kingdom around the **6th century BCE**.

Religious & Cultural Significance

1. Historical records from **Buddhist and Jain traditions** mention that both **Lord Buddha and Mahavira** visited Kaushambi during their times.
2. These interactions contributed to the region's growth as a notable centre of **early spiritual and cultural development**.
3. King Udayana himself is remembered for his **military strength, diplomacy, and support for culture and learning**.

Archaeological Features

1. Excavations have revealed **pottery, coins, and ancient tools**, indicating a long-standing and active settlement.
2. The site contains remains of **brick structures spread across the area**, suggesting dense habitation in the past.
3. The site shows traces of **thick defensive walls, raised earthen embankments, and bastion-like structures**, some reaching significant heights.
4. Evidence of **moats or protective trenches** also points to a strong defensive system around the fort. **Top of FormBottom of Form**

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SCHEMES IN NEWS

1. Advance Authorisation Scheme and Duty-Free Imports

Context

Recently, the government capped the amount of gold that can be imported under the Advance Authorisation (AA) Scheme in order to strengthen monitoring of duty-free imports.

About Advance Authorisation (AA) Scheme

1. The Directorate General of Foreign Trade (DGFT) administers the Advance Authorisation (AA) Scheme to promote exports.
2. The scheme allows duty-free import of inputs used in manufacturing export products.
3. Exporters can also import packaging material, fuel, oil and catalysts required during production.
4. The scheme exempts imports from duties such as Basic Customs Duty, Integrated GST, Compensation Cess, Anti-dumping Duty and Safeguard Duty, subject to conditions.
5. The government issues Advance Authorisation with an export obligation requiring exporters to ship the finished products within the prescribed period.
6. Manufacturer exporters and merchant exporters linked with supporting manufacturers can avail benefits under the scheme.
7. The scheme covers physical exports, intermediate supplies and specified categories of deemed exports.
8. It also permits supply of stores to foreign-going ships and aircraft where **Standard Input Output Norms (SION)** are available.
9. The authorisation remains valid for 12 months from the date of issue.

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2. PM-AJAY Scheme

The Ministry of Social Justice and Empowerment has launched the PM-AJAY portal and AJAY mobile application to improve transparency, monitoring, and digital delivery of the Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY).

About PM-AJAY Scheme

Salient Features

1. PM-AJAY is a Centrally Sponsored Scheme launched in 2021-22 for the socio-economic empowerment of Scheduled Castes (SCs).
2. The scheme focuses on economic empowerment, skill development, educational support, and infrastructure development in SC-dominated areas.
3. It was formed by merging three earlier schemes — Pradhan Mantri Adarsh Gram Yojana (PMAGY), Special Central Assistance to SC Sub Plan (SCA to SCSP), and Babu Jagjivan Ram Chhatrawas Yojana (BJRCY).

Coverage and Beneficiaries

1. Scheduled Caste beneficiaries living below the poverty line are eligible for assistance under income-generation and skill-development programmes.
2. Villages with 50% or more SC population are eligible for infrastructure-related grants under the scheme.

Key Interventions

1. Development of SC-majority villages into 'Adarsh Grams' by addressing gaps in critical infrastructure and basic services.
2. Financial assistance for livelihood activities, including skill development and asset creation.
3. Grants for district and state-level socio-economic projects aimed at the welfare of Scheduled Castes.
4. Construction of hostels and residential schools for SC students in institutions funded by the Centre, States, and Union Territories.
5. The scheme also supports hostel facilities in institutions ranked under the National Institutional Ranking Framework (NIRF).

3. BHAVYA Scheme

Context

The Union Government recently issued guidelines for the implementation of the BHAVYA (Bharat Audyogik Vikas Yojna) Scheme aimed at developing industrial parks across the country.

About BHAVYA (Bharat Audyogik Vikas Yojna)

1. BHAVYA (Bharat Audyogik Vikas Yojna) is a **Central Sector Scheme** aimed at **promoting world-**

class industrial ecosystems across India.

2. The scheme seeks to strengthen initiatives such as Make in India and PM Gati Shakti through integrated manufacturing zones with plug-and-play infrastructure and multimodal connectivity.
3. It focuses on developing investment-ready industrial infrastructure supported by reliable utilities, digital governance systems, worker amenities, and sustainable features.
4. Under the scheme, **100 industrial parks are proposed to be developed over a six-year period from 2026–27 to 2031–32.**
5. Both greenfield and eligible brownfield projects are included under the scheme.
6. The minimum land requirement has been fixed at 100 acres for non-hilly states, while hilly states, Northeastern states, Union Territories, and smaller states require at least 25 acres.
7. Implementation of the scheme will be carried out through Special Purpose Vehicles (SPVs) incorporated under the Companies Act, 2013.

4. SARTHAK Public Distribution System (PDS) Scheme

Context

Recently, the Cabinet Committee on Economic Affairs (CCEA) approved the **SARTHAK Public Distribution System (PDS) Scheme**, a comprehensive initiative aimed at enhancing the efficiency, transparency, and technological integration of the Public Distribution System across the country.

About SARTHAK Public Distribution System (PDS) Scheme

1. **SARTHAK (Scheme for Assistance in Ration Transport and Handling–Income with Automation in PDS)** is an umbrella scheme aimed at modernising the **Public Distribution System (PDS)**.
2. It integrates two existing schemes:
   a. Assistance to States for intra-State movement of foodgrains and Fair Price Shop (FPS) dealer margins under the **National Food Security Act (NFSA), 2013**.
   b. SMART PDS (Scheme for Modernization and Reforms through Technology in Public Distribution System).
3. The scheme aims to create a **unified administrative framework** for efficient foodgrain distribution and strengthened implementation of the **NFSA, 2013**.
4. The scheme will remain operational till **March 2031**.

Salient Features

1. Promotes the use of **Artificial Intelligence (AI), Machine Learning (ML), Natural Language Processing (NLP), and Blockchain** to streamline PDS operations.
2. Envisages **integrated databases and a standardised digital architecture** for real-time monitoring across the PDS network.
3. Provides for **AI-enabled analytics, grievance redressal systems, and State Command and Control Centres** to strengthen data-driven governance and oversight.
4. Introduces **ISO-certified process frameworks** to enhance transparency, security, and operational sustainability.

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ETHICS

1. NEET Leak: Ethical Governance Crisis

Context

1. The Supreme Court expressed concern over the NEET-UG 2026 paper leak, highlighting the trauma caused to nearly 23 lakh students and their families.
2. The Court criticized the NTA for institutional weaknesses, "ad-hocism," lack of accountability, and absence of institutional memory.
3. The controversy has reignited debates on examination integrity, public trust, accountability, and ethical governance in high-stakes competitive examinations.

Ethical Issues Involved

1. Violation of Fairness and Equality of Opportunity

a. Paper leaks undermine the principle of **level playing field** for all aspirants.

b. Honest candidates are unfairly disadvantaged despite years of hard work.

c. Violates **Article 14 (Equality before Law)** and merit-based selection.

d. Erodes faith in the principle that success should depend on effort and competence.

e. Contradicts **John Rawls' principle of Fair Equality of Opportunity**.

f. Creates psychological injustice where honest students bear the consequences of others' misconduct.

2. Institutional Failure and Lack of Accountability

a. Repeated examination irregularities indicate systemic governance deficiencies.

b. Absence of clearly identifiable responsibility weakens accountability.

c. Reflects failure of public institutions to discharge their fiduciary duty.

d. Violates values of **responsibility, answerability, and integrity** in public administration.

e. Frequent transfers causing loss of expertise reveal weak institutional design.

f. Illustrates what **Max Weber** warned against - administrative inefficiency arising from poor institutionalization.

3. Breach of Public Trust

a. Competitive examinations represent a social contract between citizens and the state.

b. Students invest years of effort expecting impartial evaluation.

c. Paper leaks destroy credibility of examination systems.

d. Weakens citizens' trust in government institutions.

e. Damages legitimacy of public recruitment and admission processes.

f. Violates the ethical principle of **trusteeship**, where institutions must safeguard public confidence.

4. Psychological Harm and Human Cost

a. Students experience anxiety, uncertainty, frustration, and emotional exhaustion.

b. Families invest significant financial, emotional, and social resources.

c. Re-examinations impose additional burdens on vulnerable candidates.

d. Raises concerns regarding **compassion and empathy in governance**.

e. Violates the principle of **non-maleficence**—institutions should avoid causing avoidable harm.

f. Highlights the ethical obligation of the state to protect citizens from administrative failures.

5. Ethical Challenges in Governance of Large-Scale Examinations

a. Overdependence on procedural compliance without institutional learning.

b. Weak coordination among multiple agencies handling sensitive processes.

c. Inadequate risk management despite previous controversies.

d. Failure to anticipate vulnerabilities reflects poor ethical foresight.

e. Raises questions about balancing efficiency, security, and transparency.

f. Demonstrates the need for **institutional integrity rather than individual excellence alone**.

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Course of Action

1. **Strengthen Institutional Accountability Framework**
   a. Clearly define responsibility at every stage of examination management.
   b. Establish fixed accountability chains for paper setting, printing, transport, and evaluation.
   c. Introduce performance audits and independent oversight mechanisms.
   d. Create consequences for negligence and misconduct.
   e. Ensure accountability is both individual and institutional.
   f. Adopt principles of **good governance and answerability**.
2. **Build Strong Institutional Memory and Capacity**
   a. Develop permanent knowledge repositories and standard operating manuals.
   b. Reduce dependence on individual officers through institutionalized processes.
   c. Retain specialized personnel through longer tenures in critical functions.
   d. Conduct periodic training and capacity-building exercises.
   e. Establish dedicated examination management cadres.
   f. Reflects the principle that institutions must outlast individuals.
3. **Enhance Technological and Procedural Security**
   a. Transition NEET to **Computer-Based Testing (CBT)** in a phased manner.
   b. Implement encrypted digital transmission of question papers.
   c. Strengthen multi-factor authentication systems.
   d. Expand AI-based monitoring and anomaly detection.
   e. Improve cyber-security infrastructure and threat assessment.
   f. Follow recommendations of the **Radhakrishnan Committee**.
4. **Adopt Student-Centric and Ethical Governance**
   a. Ensure transparent communication during crises.
   b. Provide counselling and psychological support to affected candidates.
   c. Minimize uncertainty through time-bound decision-making.
   d. Develop uniform protocols for handling leaks and re-examinations.
   e. Prioritize welfare of students while ensuring examination integrity.
   f. Reflect **Ethics of Care** emphasizing empathy and human dignity.
5. **Promote Transparency and Public Trust**
   a. Publish periodic examination integrity reports.
   b. Encourage third-party audits of examination processes.
   c. Strengthen parliamentary and judicial oversight.
   d. Involve experts from technology, administration, cybersecurity, and academia.
   e. Foster transparency without compromising confidentiality.
   f. Follow the example of institutions like the **UPSC**, known for robust procedural credibility.

Conclusion

The NEET paper leak is not merely an administrative failure but an ethical crisis affecting justice, trust, and the aspirations of millions. Restoring credibility requires accountable institutions, technological safeguards, and citizen-centric governance so that merit, integrity, and public confidence remain the foundation of India's examination system.

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PLACES IN NEWS

Place	Context	Key Highlights
1. Oman	Oman's **Sohar and Salalah** ports, located along the Indian Ocean, are helping facilitate the smooth export of food products from India to six Gulf Cooperation Council (GCC) countries.	1. **Oman** is a country in **Western Asia** located on the **Arabian Peninsula**, bordered by the **United Arab Emirates, Saudi Arabia, and Yemen**. Its capital is **Muscat**. 2. It has coastlines along the **Arabian Sea** and the **Gulf of Oman**, and includes offshore territories such as **Masirah Island** and **Al-Hallaniyah Island**. 3. Oman has a predominantly **arid desert climate**, while southern regions are influenced by the **Southwest Monsoon (May–September)**. 4. **Jebel Shams (Mount Shams)**, at about **9,777 feet**, is the country's highest peak. 5. The **Rub' al-Khali (Empty Quarter)**, one of the world's largest sand deserts, extends into Oman.
2. Qom	Amid the deteriorating security situation in Iran, Qom has drawn attention as a major centre hosting thousands of Indian students studying in religious seminaries and universities.	1. **Qom** is a city in **north-central Iran** and the capital of **Qom Province**. 2. It is Iran's leading centre of **Shia Islamic learning, theology, and pilgrimage**, emerging as a major centre of **Shi'ite Islam** in the **8th century AD**. 3. The city is home to the **Shrine of Fatima Masumeh**, one of Iran's holiest pilgrimage sites, and the country's largest **theological seminary**. 4. Qom is also an important **petroleum distribution centre** with cement, petrochemical, and textile industries. 5. It played a significant role in the **1979 Iranian Revolution** and later served as the base of **Ayatollah Ruhollah Khomeini**.
3. Gulf of Aden	An oil tanker was reportedly hijacked by unidentified armed men off Yemen's Shabwa coast and diverted towards the Gulf of Aden near Somali waters, highlighting growing maritime security concerns in the region.	1. The **Gulf of Aden** is a strategic arm of the **Indian Ocean** located between **Yemen** and the **Horn of Africa**. 2. It connects the **Red Sea** and the **Arabian Sea** through the **Bab-el-Mandeb Strait**, forming a key global shipping route. 3. Nearly **11% of global seaborne oil trade** passes through the gulf. 4. It is bordered by **Yemen, Djibouti, Somalia, the Arabian Sea,** and the **Socotra Islands**. 5. The gulf is about **900 km long** and is named after the Yemeni port city of **Aden**. 6. The **Sheba Ridge** is its major underwater feature. 7. Monsoon-driven upwelling supports rich marine productivity, and the gulf has **lower salinity than the Red Sea**.

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4. South Korea	Recently, the Defence Ministers of India and South Korea held bilateral discussions in Seoul focusing on strengthening defence cooperation and expanding strategic partnership between the two countries.	1. **South Korea** is located in **East Asia** on the southern half of the **Korean Peninsula**, with **Seoul** as its capital and largest city. 2. The **38th Parallel North** traditionally separates **North Korea** and **South Korea**. 3. It is bordered by the **Yellow Sea**, **East China Sea**, and **East Sea (Sea of Japan)**. 4. The country is largely mountainous, with the **Taebaek Mountains** along the eastern coast. **5. Mount Halla** (1,950 m), an extinct volcano on **Jeju Island**, is the highest peak. 6. Major rivers include the **Han** and **Nakdong**. 7. South Korea has a **continental climate** and possesses minerals such as **anthracite coal, iron ore, graphite, gold, silver, tungsten, lead, and zinc**.
5. Uzbekistan	India and Uzbekistan recently conducted the 17th Foreign Office Consultations in New Delhi as part of efforts to deepen bilateral relations and expand cooperation in various sectors.	1. **Uzbekistan** is a **doubly landlocked country in Central Asia**, bordered by **Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, and Turkmenistan**. Its capital is **Tashkent**. It is one of only **two doubly landlocked countries in the world**, the other being **Liechtenstein**. 2. The **Kyzylkum Desert** and **Turan Plain** cover much of the country. 3. The eastern region is marked by the **Tien Shan, Gissar, and Alay** ranges. **Beshtor Peak** (about **14,104 ft**) is the highest point. 4. Uzbekistan lies between the **Amu Darya** and **Syr Darya** river systems, while **Aydar** and **Sarygamysh** are major lakes. 5. The fertile **Fergana** and **Zeravshan** valleys are important agricultural regions and include the historic cities of **Samarkand** and **Bukhara**. 6. The country includes **Karakalpakstan** and possesses significant reserves of **natural gas, copper, uranium, zinc, lead, and tungsten**.

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ESSAY

Education is what remains after one has forgotten what one has learned in school

The great physicist **Albert Einstein** once observed a curious paradox during his tenure at Princeton University: his most brilliant students often struggled with real-world applications, while those who had forgotten specific formulas but retained conceptual thinking excelled in research. This observation captures the essence of a profound educational truth - that genuine learning transcends the mechanical retention of facts and figures taught within classroom walls. **True education** represents the **enduring capacity for critical thinking, adaptability, and wisdom** that persists long after specific lessons fade from memory.

Einstein's insight challenges our conventional understanding of educational success, which often equates learning with the ability to recall information on demand. However, this perspective reveals a deeper dimension of human intellectual development. **Education**, in its truest sense, is not merely the accumulation of knowledge but the **cultivation of mental faculties** that enable individuals to navigate an ever-changing world with confidence and creativity. It encompasses the development of **analytical thinking, emotional intelligence, moral reasoning,** and **the capacity for lifelong learning** - qualities that remain vibrant and functional even when specific academic content becomes distant memories.

This understanding becomes particularly relevant in our contemporary context, where the half-life of technical knowledge continues to shrink, and the **ability to adapt, unlearn, and relearn** has become more valuable than static expertise. The question then arises: what constitutes this enduring educational residue, and how can we cultivate learning experiences that transcend the temporary retention of curricular content to foster genuine intellectual and personal transformation?

The Alchemy of Learning: From Information to Wisdom

The transformation of raw information into enduring wisdom represents one of education's most mysterious processes. When students memorize the periodic table, they acquire factual knowledge; when they develop the ability to **recognize patterns, make connections, and think systematically**, they gain something far more valuable. This **cognitive architecture** - the mental frameworks for processing information - constitutes the true treasure of education that survives long after specific facts are forgotten.

Consider the example of **Dr. A.P.J. Abdul Kalam**, who often spoke about how his early education in a small-town school shaped his thinking more than any advanced technical training. While he may have forgotten the specific physics equations from his school days, the **curiosity, discipline, and systematic approach** he developed there became the foundation for his later achievements in aerospace engineering and leadership. His ability to **synthesize complex information, communicate effectively, and inspire others** - these were the educational gifts that transcended any particular curriculum.

The **neuroscience of learning** supports this perspective, revealing that while specific memories fade, the **neural pathways strengthened through educational experiences** continue to influence how we process information throughout our lives. When a student struggles through a challenging mathematical proof, they may forget the specific steps, but their brain develops **enhanced logical reasoning capabilities.** When they engage in literary analysis, the specific interpretations may fade, but their capacity for **nuanced thinking and empathy** grows stronger.

This process extends beyond cognitive development to encompass **emotional and social intelligence.** The collaborative projects, debates, and presentations that fill school years may be forgotten in their specifics, but they cultivate **communication skills, teamwork abilities, and confidence** that become integral to one's personality. A student who learns to **question assumptions, seek evidence, and consider multiple perspectives** carries these intellectual habits far beyond any particular subject matter.

The Paradox of Forgetting: When Less Becomes More

The relationship between forgetting and learning presents a fascinating paradox that challenges traditional educational assumptions. **Forgetting**, rather than representing educational failure, often signals the **successful integration of learning** into one's cognitive framework. When specific facts fade from conscious memory, the **underlying thinking patterns and problem-solving approaches** they helped develop become more deeply embedded in our mental architecture.

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This phenomenon explains why many successful professionals cannot recall specific details from their formal education yet demonstrate sophisticated **analytical and creative capabilities** in their work. A successful entrepreneur may have forgotten the specific case studies from business school, but retained the **strategic thinking, risk assessment, and leadership principles** that those cases were designed to teach. The **essence of learning** - the development of judgment, intuition, and adaptability - often emerges more clearly when the superficial details recede into the background.

Hermann Ebbinghaus's forgetting curve demonstrates that while specific information decays rapidly, the **methods of learning and thinking** become more efficient with practice. Students who struggle through multiple mathematical proofs may forget each individual proof, but develop an enhanced capacity for **logical reasoning and pattern recognition.** Those who engage deeply with historical analysis may forget specific dates and events, but retain **sophisticated abilities for understanding causation, evaluating evidence, and recognizing historical patterns** in contemporary situations.

However, critics argue that this perspective risks **devaluing factual knowledge** and specific skills that remain crucial for professional competence. Medical professionals, for instance, must retain vast amounts of specific information about anatomy, pharmacology, and diagnostic procedures. Engineers need to remember precise formulas and safety protocols. The **challenge** lies in **distinguishing** between **foundational knowledge** that must be **retained** and **information** that serves **primarily** as a **vehicle** for **developing thinking skills**.

Nevertheless, even in these technical fields, the most successful practitioners often emphasize that their **problem-solving abilities, clinical judgment, and innovative thinking** - rather than mere factual recall - distinguish them from their peers. The specific information provides the raw material, but the **educational processes that develop wisdom, judgment, and adaptability** create the capacity to use that information effectively and continue learning throughout one's career.

Beyond the Classroom: Education as Life Preparation

The most profound educational outcomes often manifest not in academic settings but in how individuals navigate the complexities of life, relationships, and citizenship. **True education** prepares people not just for examinations but for the **unpredictable challenges of human existence** - situations that require creativity, resilience, ethical reasoning, and emotional intelligence rather than textbook knowledge.

Consider how **Mahatma Gandhi's** educational philosophy emphasized character development alongside intellectual growth. His concept of **"Nai Talim" (Basic Education)** recognized that education should cultivate the whole person - developing not just cognitive abilities but also **moral reasoning, practical skills, and social consciousness**. Gandhi understood that the specific subjects taught in schools were less important than the **values, thinking patterns, and life skills** that educational experiences could foster.

This holistic approach to education becomes evident in how well-educated individuals handle **crisis situations, ethical dilemmas, and interpersonal conflicts.** They may not remember specific lessons about leadership or communication, but they demonstrate **emotional regulation, empathy, and problem-solving abilities** that were cultivated through years of educational experiences. The student who learned to **research thoroughly, consider multiple perspectives, and present arguments clearly** carries these capabilities into every aspect of adult life.

Modern research in emotional intelligence confirms that the **social and emotional skills** developed through educational experiences often prove more predictive of life success than academic achievement measured by grades or test scores. The ability to **collaborate effectively**, **manage stress**, **adapt to change**, and **maintain curiosity** - these educational outcomes persist and strengthen long after specific academic content fades from memory.

Furthermore, education's role in developing **civic consciousness and democratic participation** exemplifies how learning transcends individual benefit to serve broader social purposes. Students who engage with diverse perspectives, learn to evaluate evidence critically, and develop empathy for different viewpoints become citizens capable of **thoughtful participation in democratic processes**. They may forget specific historical facts or political theories, but retain the **intellectual habits and moral commitments** necessary for maintaining a healthy society.

Cultivating Enduring Learning: Pathways to Transformative Education

Recognizing that true education transcends temporary knowledge retention demands a fundamental reimagining of educational practices and priorities. **Transformative education** focuses on developing **metacognitive abilities** - teaching students not just what to think but how to think, how to learn, and how to continue growing intellectually throughout their lives.

Project-based learning exemplifies this approach by

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engaging students in complex, real-world challenges that require **synthesis, creativity, and collaboration.** When students work together to design solutions for environmental problems or create multimedia presentations about social issues, they develop **research skills, critical thinking abilities, and communication competencies** that persist long after the specific project details fade. The **process of learning** becomes more important than any particular content outcome.

Socratic questioning and dialogue-based education similarly emphasize the development of **intellectual curiosity and analytical thinking** over information transmission. When teachers guide students to discover principles through questioning rather than simply presenting facts, they cultivate **independent thinking and problem-solving abilities.** Students learn to **ask better questions, seek evidence, and construct reasoned arguments** - capabilities that serve them throughout life regardless of their specific career paths.

Interdisciplinary approaches that connect learning across subject boundaries help students develop **systems thinking and pattern recognition abilities**. When they explore how mathematical concepts apply to artistic creation, or how historical patterns illuminate contemporary social issues, they develop **cognitive flexibility and creative problem-solving skills.** These **cross-cutting competencies** prove far more durable and valuable than isolated subject-matter expertise.

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The integration of **mindfulness and reflection practices** into education helps students develop **self-awareness and emotional regulation** - qualities that enhance both learning and life satisfaction. When students regularly reflect on their learning processes, identify their strengths and challenges, and set goals for improvement, they develop **metacognitive skills and personal agency** that support lifelong growth and adaptation.

Educational institutions must also embrace **assessment practices** that evaluate **thinking processes, creativity, and problem-solving abilities** rather than focusing exclusively on content recall. **Portfolio-based assessment, peer evaluation, and self-reflection** can help students and educators recognize the development of enduring capabilities that constitute true educational achievement.

The profound truth embedded in Einstein's observation about education reveals itself most clearly when we consider the **transformative power of genuine learning experiences**. While specific facts and formulas may fade from memory, the **intellectual habits, emotional capabilities, and moral sensibilities** cultivated through thoughtful education become integral to who we are as human beings. These enduring gifts of education - **curiosity, creativity, empathy, resilience, and wisdom** - enable individuals to navigate an uncertain world with confidence and contribute meaningfully to society.

The challenge for contemporary education lies not in abandoning factual knowledge but in **balancing content delivery with capability development.** Students need both the **foundational knowledge** that enables participation in their chosen fields and the **thinking skills and personal qualities** that allow them to adapt, innovate, and grow throughout their lives. The most effective educational approaches recognize that **information serves as a vehicle for developing intelligence,** and that the ultimate goal is cultivating human beings capable of **lifelong learning, ethical reasoning, and creative contribution.**

As we move forward in an era of rapid technological and social change, Einstein's insight becomes increasingly relevant. The **specific knowledge** that students acquire in school will inevitably become outdated, but the **capacity for learning, thinking, and growing** that education can foster will serve them throughout their lives. "Education is what remains after one has forgotten what one has learned in school" - and what remains, when education is done well, is nothing less than the **enhanced capacity for human flourishing** in all its dimensions.

NOTES

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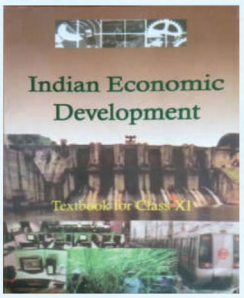
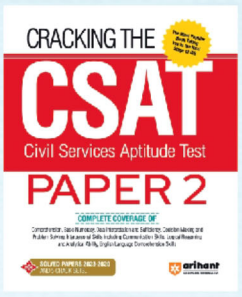
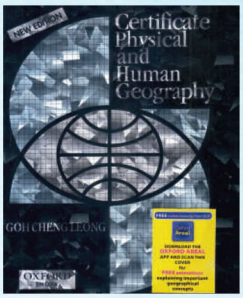
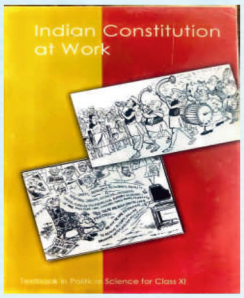
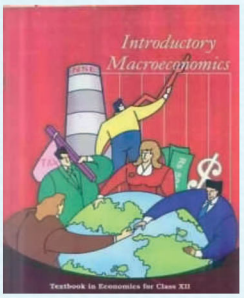
We provide the following books to our classroom students

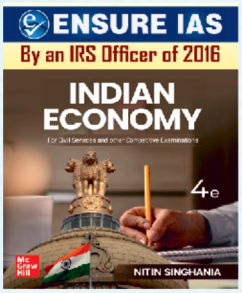


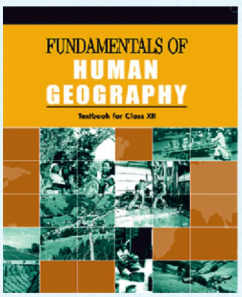


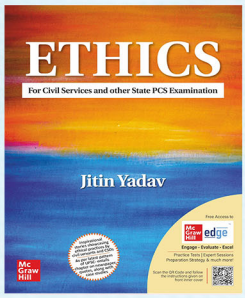


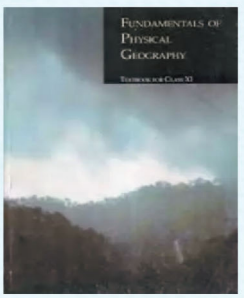


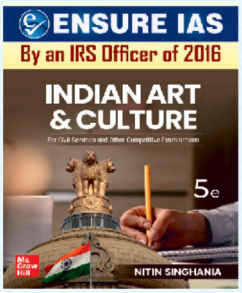


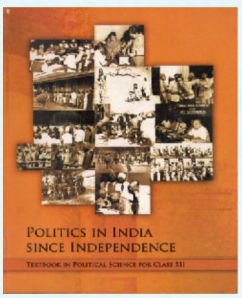


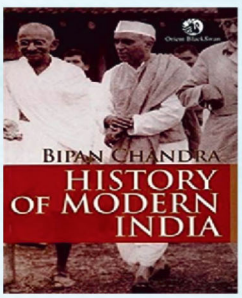


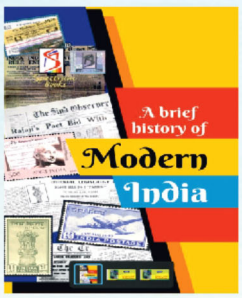


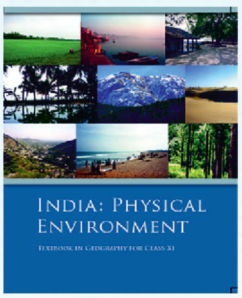


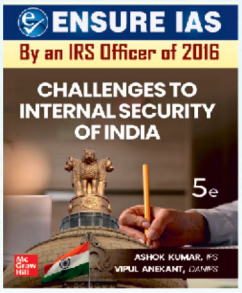


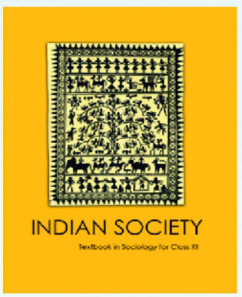


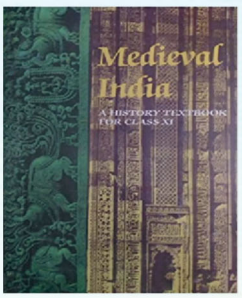


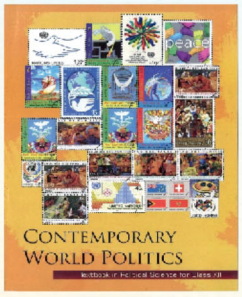


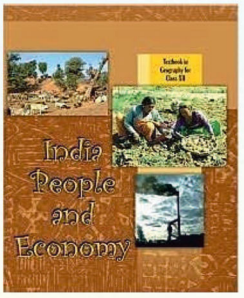


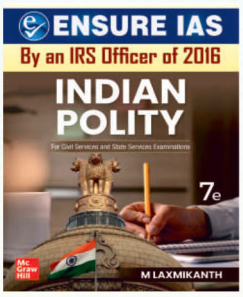


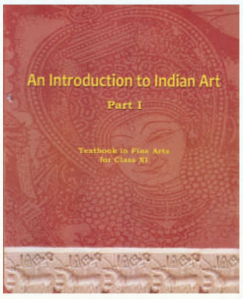


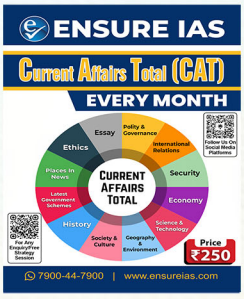












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