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PRELIMS



POLITY & GOVERNANCE



THE BURGEONING EXPENDITURE OF ELECTIONS

Context: According to the **Centre for Media Studies (CMS)**, the total expenditure by various political parties for the general election to Lok Sabha this year was around ₹1,00,000 crores.

Background: -

- Urgent reforms are needed to address the burgeoning cost of election expenditures which threaten foundational principles of democracy.

Key takeaways

What are the limits in India?

- The election expenditure limit for candidates is ₹95 lakh per Lok Sabha constituency in larger States and ₹75 lakh in smaller States. With respect to Legislative Assemblies, they are ₹40 lakh and ₹28 lakh for larger and smaller States respectively.
- These limits are set, from time to time, by the Election Commission (EC).
- There are no limits on the expenditure of political parties during elections.

What are international standards?

- In the U.S., the financing for elections happens primarily by contributions from individuals, corporations, and political action committees (PAC).
- Out of the estimated expenditure in the November 2024 election cycle, around \$5.5 billion is estimated to be spent on the presidential election. This humungous raise is due to large donations.
- In the U.K., a political party is allowed to spend £54,010 for each constituency they contest. There are also limits placed on candidates' spending during the campaign. It translates, per constituency, to an average of £46-49,000 during the long campaign period (beginning five months before the full term of the House of Commons ends) and £17-20,000 during the short campaign period after elections are announced.

What are the challenges?

- Such increased expenditure that is met primarily through large donations creates an unholy nexus between the elected representatives and donors. This also acts as an entry barrier into electoral politics for many well-meaning citizens.
- In India, candidates from all major political parties breach the election expenditure limits. Further, there are no limits on political party spending during elections.
- The official expenditures declared by the BJP and Congress for the 2019 election were ₹1,264 crores and ₹820 crores, respectively. However, according to a report by the CMS, ₹50,000 crore was spent by various parties during the 2019 election.
- The CMS has estimated that spending during the 2024 election by various political parties was

close to ₹1,00,000 crores. Such inflated election expenditure fuels corruption, resulting in a vicious cycle.

What can be possible reforms?

- **The Indrajit Gupta Committee (1998) and the Law Commission report (1999)** have advocated for State funding of elections.
- Certain practical steps to create a level playing field regarding election expenditure can be implemented. These are based on **the EC's 2016 report on 'Proposed Electoral Reforms'**.
 - o Firstly, the law must be amended to explicitly provide that 'financial assistance' by a political party to its candidate should also be within the candidate's prescribed election expenditure limits.
 - o Secondly, there should be a ceiling on political party expenditures. This may be kept at not more than the expenditure ceiling limit provided for a candidate multiplied by the number of candidates of the party contesting the election.
 - o Finally, additional judges may be appointed in High Courts for the speedy disposal of election-related cases, which would act as a deterrent against violating these norms.

Source: [The Hindu](#)

ARTICLE 44

Context: Union Home Minister Amit Shah recently said that tribals would be exempted from the **Uniform Civil Code (UCC)** wherever it is implemented in India

Background: -

- At an event in Ranchi, Home Minister stated, "**The BJP has introduced a model of the Uniform Civil Code (UCC) in Uttarakhand.** In this model, **we have excluded tribals, respecting their customs, rituals, and laws.** Wherever we implement the UCC, tribals will be kept out of its scope."

Key takeaways

- A Uniform Civil Code is one that would provide for one law for the entire country, applicable to all religious communities in their personal matters such as marriage, divorce, inheritance, adoption etc.
- Article 44 of the Constitution lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.
- **Article 44 is one of the directive principles.** These, as defined in **Article 37, are not justiciable (not enforceable by any court) but the principles laid down therein are fundamental in governance.**
- Article 44 uses the words "state shall endeavour", other Articles in the 'Directive Principles' chapter use words such as "in particular strive"; "shall in particular direct its policy"; "shall be obligation of the state" etc. Article 43 mentions "state shall endeavour by suitable legislation" while the phrase "by suitable legislation" is absent in Article 44. All this implies that the duty of the state is greater in other directive principles than in Article 44.

Uniform Civil Code (UCC) of Uttarakhand

- UCC of Uttarakhand, enacted in early 2024, aims to standardize personal laws across the state, irrespective of religious affiliations.
- Key features include:
 - **Marriage and Divorce:** The UCC introduces uniform procedures for marriage and divorce, prohibiting practices like polygamy and child marriage. It sets a consistent minimum marriageable age for girls across all religious denominations.
 - **Inheritance and Property Rights:** The code ensures equal property rights for sons and daughters, eliminating distinctions between legitimate and illegitimate children concerning inheritance. It also provides equal property rights after death, including for adopted and biological children.
 - **Live-in Relationships:** The UCC regulates live-in relationships by imposing an obligation to register them.
 - **Applicability:** The code applies to all residents of Uttarakhand, except the Scheduled Tribes.

Source: [Indian Express](#)

WAQF

Context: In a letter to Lok Sabha Speaker, some Opposition members of the Joint Committee of Parliament on the Waqf (Amendment) Bill have threatened to “disassociate” from the panel, accusing its chairperson and BJP leader Jagdambika Pal of “bulldozing the proceedings” and “stonewalling” them.

Background: -

- In India, the history of Waqf can be traced back to the early days of the Delhi Sultanate when Sultan Muizuddin Sam Ghaor dedicated two villages in favour of the Jama Masjid of Multan. As the Delhi Sultanate and later Islamic dynasties flourished in India, the number of Waqf properties kept increasing in India.

Key takeaways

- Waqf refers to **properties dedicated exclusively for religious or charitable purposes under Islamic law, and any other use or sale of the property is prohibited.** Waqf means that the **ownership of the property is now taken away from the person making Waqf and transferred and detained by Allah.**
- ‘Waqif’ is a person who creates a waqf for the beneficiary. As Waqf properties are bestowed upon Allah, in the absence of a physically tangible entity, a ‘mutawalli’ is appointed by the waqif, or by a competent authority, to manage or administer a Waqf. —Once designated as waqf, the ownership is transferred from the person making the waqf (waqif) to Allah, making it irrevocable.
- India has had a legal regime for the governance of Waqfs since 1913, when the Muslim Waqf Validating Act came into force. The Mussalman Wakf Act, 1923 followed. After Independence, the Central Waqf Act, 1954, was enacted, which was ultimately replaced by the Waqf Act, 1995.
- In 2013, the law was amended to prescribe imprisonment of up to two years for encroachment on Waqf property, and to explicitly prohibit the sale, gift, exchange, mortgage, or transfer of Waqf

property.

- The Waqf law provides for the appointment of a survey commissioner who maintains a list of all Waqf properties by making local investigations, summoning witnesses, and requisitioning public documents.
- A Waqf property is managed by a mutawalli (caretaker), who acts as a supervisor. Waqf properties are managed in a way that is similar to how properties under Trusts are managed under the Indian Trusts Act, 1882.
- The Waqf Act states that any dispute related to Waqf properties will be decided by a Waqf Tribunal.
- The Tribunal is constituted by the state government, and comprises three members — a chairperson who is a state judicial officer not below the rank of a District, Sessions or Civil Judge, Class I; an officer from the state civil services; and a person with knowledge of Muslim law and jurisprudence.
- **The Waqf (Amendment) Bill, 2024 :**
 - o It changes the composition of the **Central Waqf Council and Waqf Boards to include non-Muslim members.**
 - o The **Survey Commissioner has been replaced by the Collector**, granting him powers to conduct surveys of waqf properties.
 - o Government property identified as waqf will cease to be waqf. Collector will determine ownership of such properties.
 - o Finality of the Tribunal's decisions has been revoked. The Bill provides for direct appeal to the High Court.

Source: [Indian Express](#)

NEW COASTAL ZONE PLAN OF KERALA

Context: The Union Ministry of Environment, Forest and Climate Change has approved the **Coastal Zone Management Plan (CZMPs)** of 10 coastal districts of Kerala.

Background: -

- The plan, prepared in tune with the provisions of the Coastal Regulation Zone Notification, 2019, permits the coastal districts to take advantage of the relaxed Coastal Regulation Zone (CRZ) rules and initiate development activities including construction of buildings towards the seaward side.

Key takeaways

- **A Coastal Zone Management Plan (CZMP)** is a framework designed to regulate and manage activities within coastal areas to balance environmental conservation with sustainable development.
- In India, the Ministry of Environment, Forest and Climate Change (MoEF&CC) issued the **Coastal Regulation Zone (CRZ) Notification in 2019**, which mandates the preparation of CZMPs by coastal states and Union Territories.

Key Objectives of CZMPs:

- **Environmental Conservation:** Protect ecologically sensitive areas such as mangroves, coral reefs, and wildlife habitats.
- **Sustainable Development:** Promote development activities that do not compromise the health of coastal ecosystems.
- **Livelihood Security:** Safeguard the interests and traditional rights of coastal communities, including fisherfolk.

Components of a CZMP:

- **Demarcation of Coastal Zones:** Identification and classification of coastal areas into different zones (e.g., CRZ-I, CRZ-II, CRZ-III, CRZ-IV).
- **Regulatory Measures:** Establishment of guidelines and restrictions for permissible activities within each zone to prevent environmental degradation.
- **Management Strategies:** Development of plans for pollution control, disaster management, and conservation of coastal and marine resources.

What does it mean for Kerala?

- The 2011 Census put the population density of Kerala at 859 persons per square kilometre, which is more than double the national average of 382 people per square kilometre. The coastal areas of the State are marked by a high density of population when compared to other parts of the State.
- The high demographic pressure on land had resulted in rampant violations of the CRZ rules along the coast. The focus of the CRZ 2011 regime, which was in force till the approval of the CZMP, was on the conservation of the coastal ecosystem, which in turn protected the livelihood of millions of fishers and coastal communities.

What are the benefits?

- The approval of the CZMP would directly benefit around 10 lakh people, according to an estimation of the State government as the earlier restrictions for the construction of new houses and repair of existing homes will be relaxed.
- The new regime will see the No Development Zone (NDZ) — the area which has to be left untouched — around the tidal-influenced water bodies reduced.

What about mangroves?

- Vast tracts of mangrove vegetation would be exposed to exploitation as the 2019 notification has limited the legal protection of government holdings of an extent over 1,000 sq. metre to 50-metre buffer zones.
- The new regime has also taken away the mandatory buffer zone around mangrove vegetation located in private holdings.

Source: [The Hindu](#)

NOT ALL PRIVATE PROPERTY CAN BE TAKEN OVER BY STATE

Context: In a landmark ruling that has implications on the citizen's right to hold property, a nine-judge bench of the Supreme Court ruled that not all private property can be deemed "material resource of the community" for redistribution under Article 39(b) of the Constitution.

Background: -

- **Falling under Part IV of the Constitution titled "Directive Principles of State Policy" (DPSP), Article 39(b) places an obligation on the state to create policy towards securing "the ownership and control of the material resources of the community are so distributed as best to subserve the common good".**

Key takeaways

- The ruling in the constitutional reference essentially undoes several decades of Supreme Court jurisprudence on the issue.
- A line of judgments holding that both public and private resources fell within the ambit of "material resources of the community" under Article 39(b) stem from a minority opinion by Justice V R Krishna Iyer in *State of Karnataka v Shri Ranganatha Reddy (1977)*.
- A 1982 five-judge constitution bench ruling in the case *Sanjeev Coke Manufacturing Company vs Bharat Coking Coal Ltd*, had affirmed Justice Iyer's view.
- The majority opinion of the SC has now disagreed with these judgments. It said Justice Iyer "cast the net wide, holding that all resources which meet material needs are covered by the phrase, and any attempts by the government to nationalize these resources would be within the scope of Article 39(b)".
- SC added, "In essence, the interpretation of Article 39(b) adopted in these judgments is rooted in a particular economic ideology and the belief that an economic structure which prioritises the acquisition of private property by the state is beneficial for the nation."
- As per the recent judgement, the text of the provision indicates that not all privately owned resources fall within the ambit of the phrase. However, privately owned resources are not excluded as a class, and some private resources may be covered.
- The court added that the *Ranganath Reddy* and *Sanjeev Coke* judgments "are incorrect to the extent that they hold that all resources of an individual are part of the community, and thus all private property is covered by the phrase material resources of the community".
- The majority opinion referred to India's economic growth trajectory — the mixed economy of the 1950-60s that included heavy industries and import substitution; the shift towards purportedly "socialist reforms" in the late 1960s and 90s, followed by "market-based reforms" in the 1990s or the "liberalisation years".

Source: [Indian Express](#)

POSITIVE SECULARISM

Context: The Supreme Court in *Anjum Qadri and Anr vs Union of India & Ors* upheld the constitutionality of the UP Madarsa Act, 2004.

Background: -

- The Allahabad High Court had declared the UP Madarsa Education Board Act “unconstitutional” on March 22 this year

Key takeaways

- The SC did not agree with the High Court’s decision to strike down the Madarsa Act based on secularism as part of the Basic Structure.
- Citing its **Indira Nehru Gandhi judgment (1975)**, the SC categorically held that the doctrine of Basic Structure should be invoked to examine the validity of a constitutional amendment, not an ordinary piece of legislation like the UP Madarsa Act.
- **The current judgment authored by CJI Chandrachud** held that in testing an ordinary law, courts should look just at legislative competence and consistency with fundamental rights. The judgment, accordingly, observed that an ordinary law cannot be declared unconstitutional for violating the basic structure of the Constitution because concepts such as democracy, federalism and secularism are undefined, and permitting courts to strike down legislation for their violation of such concepts will introduce an element of uncertainty in adjudication.
- The SC said in its **present verdict that Articles 25 to 30 contain the other facet of secularism**, that is, the practice of religious tolerance by the state. It observed that “by recognising and regulating the Madarsa education, the state legislature is taking positive action to safeguard the educational rights of the minorities.”
- The judgment also said, in essence, that **secularism is a facet of equality**. It rightly observed that **substantive equality shall remain an illusion unless the state is positively charged with the duty to provide equal treatment to all persons, irrespective of their religion, faith, or beliefs**.
- **The Court recalled its leading judgments on Article 30** to explain the extent of state control of minority institutions in the name of regulation. It clarified that the minority character of an institution cannot be annihilated or destroyed. Certainly, minorities do not have a right to aid and affiliation or recognition of degrees. However, at the same time, neither aid nor affiliation nor recognition by the state can come with such conditions that would destroy an institution’s minority character.
- Madarsa’s are entitled to **state protection under Article 26**, which gives religious denominations or any section thereof the right to establish and maintain institutions for religious and charitable purposes. Thus, purely religious institutions can **legitimately be established and maintained**.

Source: [Indian Express](#)

SANCTION NEEDED UNDER PMLA TO PROSECUTE PUBLIC SERVANTS

Context:The Supreme Court recently held that Section 197(1) of the Code of Criminal Procedure (CrPC) that mandates prior sanction from the government to take cognizance of an offence against public servants will apply to the **Prevention of Money Laundering Act (PMLA) too**.

Background: -

- Supreme Court said this while upholding the Telangana High Court decision, setting aside a trial court order taking cognizance of the complaint against IAS officers facing money laundering

charges.

Key takeaways

- **Section 197 (1) says**, “When any person who is or was a judge or magistrate or a public servant not removable from his office save by or with the sanction of the government, is accused of any offence alleged to have been committed by him while acting or purporting to act in the discharge of his official duty, no court shall take cognizance of such offence except with the previous sanction”.
- **The ruling pointed out that Section 65 of PMLA** makes the provisions of the CrPC applicable to all proceedings under the PMLA, provided the same are not inconsistent with the PMLA provisions.

Additional Information

- The **PMLA lays down stringent standard for granting bail**. Section 45 of the PMLA is a ‘negative’ provision — which bars courts from granting bail unless the accused can prove that there is no “prima facie” case against them, and that they will not commit any offence in the future.
- The first challenge to PMLA was against the alternate criminal law system that the PMLA creates since the ED is kept outside the purview of the Code of Criminal Procedure (CrPC). The ED is not considered ‘police’, and hence does not follow the provisions of CrPC for searches, seizures, arrests, and attachment of properties.

Source: [Indian Express](#)

NATIONAL LEGAL SERVICES DAY

Context: National Legal Services Day is observed in India every year on November 9.

Background: -

- **Article 39A** of the Constitution of India: It provides that State shall secure that the operation of the legal system promotes justice on a basis of equal opportunity, and shall in particular, provide free legal aid, by suitable legislation or schemes or in any other way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disability.

Key takeaways

- The Supreme Court of India established **National Legal Services Day in 1995** to provide **free legal assistance and support to society’s most vulnerable section**.
- It aims to bridge the gap between the law and people in greatest need through a variety of activities organised by NALSA and other legal entities, including legal awareness programs, workshops, and camps.
- **In 1987 Legal Services Authorities Act** was enacted to give a statutory base to legal aid programmes throughout the country on a uniform pattern. This Act was finally enforced on 9th of November, 1995 after certain amendments were introduced therein by the Amendment Act of 1994.

National Legal Services Authority (NALSA)

- The NALSA has been constituted under the **Legal Services Authorities Act, 1987** to provide free

Legal Services to the weaker sections of the society.

- It organizes **Lok Adalats for amicable settlement of disputes**. It also monitors and reviews various legal aid programs and provides rules and principles for legal services under the Act.
- It also distributes funding and grants to state legal services authorities and non-profit organisations to help them execute legal aid systems and initiatives.
- Hon'ble **Chief Justice of India is the Patron-in-Chief** and NALSA is housed at Supreme Court of India

State Legal Services Authority (SLSA) & District Legal Services Authority (DLSA)

- The **SLSA is established in every state to implement NALSA** policies and provide free legal services, including Lok Adalats.
- The **SLSA is headed by Hon'ble Chief Justice of the respective High Court** who is the Patron-in-Chief of the State Legal Services Authority.
- Similarly, in every District, **DLSA has been constituted to implement Legal Services Programmes in the District**. The **DLSA is chaired by the District Judge of the respective district** and is situated in the District Courts Complex in every District.

Who is Eligible for Getting Free Legal Services?

- Under Section 12 of the Legal Services Authorities Act every person who has to file or defend a case shall be entitled to legal services under this Act if that person is:
 - **Women and children; Members of SC/ST, Industrial workmen; Victims of mass disaster, violence, flood, drought, earthquake, industrial disaster; Disabled persons; Persons in custody.**
 - If that person is related to section 2 of the Juvenile Justice Act, 1986 (53 of 1986) or in a psychiatric hospital or psychiatric nursing home within the meaning of clause (g) of section 2 of the Mental Health Act, 1987 (14 of 1987)
 - Those persons who have **annual income of less than the amount prescribed by the respective State Government**, if the case is before any court other than the Supreme Court, and less than Rs. 5 Lakhs, if the case is before the Supreme Court.
 - **Victims of Trafficking in Human beings or begar.**

Source: [Indian Express](#)

CENTRAL ADOPTION RESOURCE AUTHORITY (CARA)

Context: Central Adoption Resource Authority (CARA), Ministry of Women and Child Development celebrates November as National Adoption Awareness Month to promote legal adoptions in the country

Background: -

- **The theme for Adoption Awareness Month 2024 is "Rehabilitation of Older Children through Foster Care and Foster Adoption".**

Key takeaways

- **The Central Adoption Resource Authority (CARA) is a statutory body under the Ministry of**

Women & Child Development, Government of India.

- Established in 1990, it serves as the **nodal agency for the adoption of Indian children**, overseeing and regulating both in-country and inter-country adoptions.

Key Functions of CARA:

- **Regulation of Adoption Procedures:** CARA monitors and regulates the adoption process for orphaned, abandoned, and surrendered children, ensuring adherence to standardized protocols.
- **Implementation of the Hague Convention:** Designated as the Central Authority under the Hague Convention on Inter-country Adoption (1993), CARA manages international adoption cases in compliance with international standards.
- **Accreditation of Agencies:** CARA accredits and supervises Specialised Adoption Agencies (SAAs) across India, ensuring they meet required standards for child care and adoption services.
- **Child Adoption Resource Information and Guidance System (CARINGS):** CARA operates CARINGS, an online platform that facilitates transparency and efficiency in the adoption process by connecting prospective adoptive parents with available children.

Source: [PIB](#)

FOREIGN CONTRIBUTION (REGULATION) ACT (FCRA)

Context:The centre recently announced that any NGO involved in anti-developmental activities and forced religious conversions will face cancellation of their registration under **Foreign Contribution (Regulation) Act (FCRA), 2010**.

Background: -

- The government has increased scrutiny of NGOs receiving foreign funds.

Key takeaways

- Originally enacted in 1976, and subsequently amended in 2010 and 2020, FCRA seeks to regulate the acceptance and utilization of foreign contributions and hospitality by individuals, associations, and NGOs.
- **Goal:** prevent foreign contributions from being used to affect national security, integrity, and sovereignty or to influence political processes.

Definition of Foreign Contribution (Section 2(1)(h), FCRA 2010):

- **Donation, delivery, or transfer from a foreign source of:**
 - **Articles:** Not for personal use if market value exceeds the limit set by the government.
 - **Currency:** Indian or foreign.
 - **Securities:** As per Securities Contracts (Regulation) Act, 1956, and Foreign Exchange Management Act, 1999.
- **Indirect Foreign Contribution:** Any article, currency, or foreign security received indirectly via another person from a foreign source is also treated as a foreign contribution.
- **Interest and Income:** Interest accrued on foreign contribution or any income derived from it is also considered foreign contribution.

- **Exclusion:** Fees from foreign students, cost of goods/services, and contributions towards these fees are not considered foreign contributions.

Entities Restricted from Receiving Foreign Contribution (Section 3(1), FCRA 2010):

- **Political Entities:** Election candidates, Political parties or office bearers, Organizations of a political nature as specified by the Central Government.
- **Media and Communication:** Registered newspaper correspondents, editors, cartoonists, owners, printers, and publishers; Associations or companies involved in audio/video news production or broadcasting, current affairs programs in electronic or other mass communication modes.
- **Government and Judiciary:** Judges, government servants, and employees of government-owned or controlled corporations; Members of any legislature.
- **Prohibited Individuals/Associations:** Individuals or associations specifically barred from receiving foreign contributions by the government.

Registration and Compliance:

- Organizations receiving foreign funds must register under FCRA, renewable every five years.
- They are required to open a designated FCRA bank account at the State Bank of India, New Delhi, for transparency and monitoring.
- Annual reports detailing the amount and usage of funds are mandatory to ensure compliance.

Amendments and Key Provisions:

- The 2020 amendment introduced new provisions like restricting administrative expenses to 20% of total foreign funds (from 50% previously) and requiring Aadhaar identification for all office bearers.
- It prohibits the transfer of foreign contributions from one organization to another, limiting the potential for misuse.

Suspension and Cancellation:

- The government can suspend or cancel the FCRA license of any organization if it finds irregularities or misuse of foreign funds, rendering it ineligible to receive foreign contributions.
- Appeals can be made but only after a one-year period following license cancellation.

Source: [Indian Express](#)

STATE FINANCE COMMISSIONS (SFCs)

Context: After being nudged by the Fifteenth Finance Commission, all states, except Arunachal Pradesh, have State Finance Commissions (SFCs) in place, the latest being Gujarat.

Background:

- The **15th Finance Commission**, formed in 2017, took serious note of the delay over constituting state finance commissions in its report in 2020, and recommended that those states which did not comply with the Constitutional provisions in respect of the SFCs — constitutional bodies at the state-level — would not be released grants after March 2024.

Key takeaways

- **Under Article 243 I of the Constitution**, “the Governor shall, as soon as may be within one year from the commencement of the Constitution (73rd Amendment) Act, 1992, and thereafter at the expiration of every 5th year, constitute a Finance Commission to review the financial position of the panchayats, and to make recommendations to the Governor as to the principles which should govern the distribution between the State and the panchayats of the net proceeds of the taxes, duties, tolls and fees leviable by the State.”

Key Functions:

- **Recommend principles for:**
 - Distribution of the net proceeds of taxes, duties, tolls, and fees between the State and local bodies.
 - Allocation of funds to Panchayats and Municipalities from the State’s Consolidated Fund.
 - Consider the taxes, duties, tolls, and fees assigned to or appropriated by local bodies.

Significance:

- Strengthens fiscal federalism at the state level.
- Ensures adequate funding for local self-governance institutions.
- Promotes accountability and transparency in financial management.

Challenges:

- **Implementation delays:** Recommendations often not implemented fully or on time.
- **Limited autonomy:** Dependence on State Governments for fund allocation.
- **Inadequate data:** Lack of accurate data on local finances hampers effective planning.
- **Overlapping responsibilities:** Ambiguity in roles of SFCs and State Planning Boards.

Source: [Indian Express](#)



INTERNATIONAL RELATIONS



ZEROING IN ON METHANE DIPLOMACY

Context: From November 11 to 22, leaders will gather in Baku, Azerbaijan, for the 29th Conference of Parties (COP29) to the United Nations Framework Convention on Climate Change (UNFCCC). The host, Azerbaijan, has put forward an action agenda, which includes pledges to increase battery storage capacity six-fold, dramatically expand electricity networks, and cut methane emissions from organic waste.

Background:

- The Baku meet is an opportunity for India to fast-track its efforts in reducing methane emissions.

Key takeaways

- **Methane's Climate Impact:** Methane accounts for approximately 30% of global warming since the pre-industrial era.
- **Global Warming Potential:** Methane is 28 times more potent than CO₂ on a 100-year timescale and 84 times more potent on a 20-year timescale, making methane reduction critical for immediate climate impact.
- Methane's detrimental effects go beyond its impact on climate change. Fires at waste dumpsites, for example, can cause significant spikes in air pollution. In 2022, a two-week fire at Delhi's Bhalswa dumpsite led to particulate matter concentrations reaching 30% to 70% above baseline levels.
- **At COP28, held in Dubai (November-December 2023), the U.S., China, and UAE sponsored a summit focusing on methane and non-CO₂ emissions.**

India's Methane Emissions:

- **India ranks as the third-largest emitter** of anthropogenic methane globally, following China and the U.S.
- **The 2016 Biennial Update Report to the UNFCCC estimates India's methane emissions at 409 million tons of CO₂-equivalent, with contributions from: Agriculture (74%), Waste (14%), Energy (11%), Industrial processes (1%).**

Challenges for India:

- India's agriculture sector, specifically rice cultivation and livestock, is the dominant source of methane emissions, making sector-wide reductions challenging.
- Hesitation in signing the Global Methane Pledge (targeting a 30% reduction in emissions from 2020 levels by 2030) due to agriculture's central role in India's economy.
- **Technical Challenges in Data Collection:**
 - **Emissions data in India**, especially for methane from waste, face challenges in quality and accuracy.
 - **Satellite monitoring in cities like Delhi and Mumbai has shown that actual emissions could be 50-100% higher than estimates.**

Opportunities for India:

- India can leverage international efforts to secure sector-specific financing and capacity-building support, especially in waste management.
- **Domestic Initiatives in Waste Management:**
 - **Indore Model:** Implements citywide organic waste sorting and a biomethane plant that fuels city buses.
 - **GOBARdhan Scheme:** Incentivizes the use of cattle waste to produce clean energy, especially in rural areas.
- **Agricultural Sector Initiatives:**
 - **National Mission for Sustainable Agriculture (NMSA):** Promotes climate-resilient practices, including methane reduction techniques in rice cultivation.
 - **National Livestock Mission:** Implements methane-mitigation practices, such as green fodder production and chaff cutting, to reduce emissions from livestock.

Source: [The Hindu](#)

GLOBAL TUBERCULOSIS REPORT

Context: The World Health Organization (WHO) released its Global TB Report 2024.

Background: -

- Globally, **82 lakh people were newly diagnosed with TB in 2023 – the highest number recorded since WHO began global TB monitoring in 1995** — making it the leading infectious killer again, surpassing Covid-19 in 2023.
- **India continues to have the highest burden of the disease**, accounting for more than a quarter of the global cases.

Key takeaways

- TB is caused by an organism called **mycobacterium tuberculosis**, which mainly affects the lungs, but can also impact other parts of the body. TB spreads through the air when an infected individual coughs, sneezes, or speaks.
- According to the **Global TB Report 2024**, India had an estimated 28 lakh TB cases in 2023, accounting for 26% of the global cases. And, there were estimated 3.15 lakh TB-related deaths, accounting for 29% of the deaths globally.
- The report also said the gap between the estimated number of cases and the number of people actually getting diagnosed has been closing.

India's effort in eliminating TB

- Although the elimination of tuberculosis is one of the sustainable development targets to be achieved by 2030 by the world, **India has set a target for 2025**.
- **The national strategic plan 2017-2025** sets the target for India to report no more than 44 new TB cases or 65 total cases per lakh population by 2025.
- In India, **the government offers free medicines for TB treatment**, which is essential as the

medicines can be expensive and the therapy may continue for as long as two years.

- One of the big challenges with tuberculosis treatment is the long duration for which people have to take medicines.
- **An online Ni-kshay portal** has been set up to track the notified TB cases. The government also launched a community engagement program where **Ni-kshay Mitras can adopt TB patients and provide them with monthly nutritional support.**
- Newer drugs such as **Bedaquiline and Delamanid** for the treatment of drug-resistant TB have been included in the government's basket of drugs provided to free TB patients.

Source: [Indian Express](#)

BALFOUR DECLARATION

Context: The Balfour Declaration was made on November 2, 1917. A century later, its violent ripples are still being felt.

Background: -

- The Declaration is often cited as a foundational document leading to the Israeli-Palestinian conflict, with its repercussions still evident in contemporary Middle Eastern geopolitics.

Key takeaways

- Arthur James Balfour (1848-1930): A prominent British statesman who held various powerful positions in the British government. He was nicknamed 'Bloody Balfour' for his harsh suppression of Irish revolts. However, his legacy is profoundly marked by the Balfour Declaration, which has had lasting implications in the Middle East.

The Balfour Declaration:

- **Date:** November 2, 1917, a letter from **Foreign Secretary Arthur Balfour to Lionel Walter Rothschild, a leader of the British Jewish community.**
- **Content:** The British government expressed support for the establishment of a "national home for the Jewish people" in Palestine, with the stipulation that this should not prejudice the civil and religious rights of existing non-Jewish communities in Palestine or the rights and political status of Jews in other countries.

Motivations Behind the Declaration:

- **Zionist Movement:** The late 19th and early 20th centuries saw the rise of Zionism, advocating for a Jewish homeland in response to persecution in Europe.
- **British Interests:** During World War I, Britain sought to gain Jewish support, particularly from influential communities in the U.S. and Russia, to bolster the Allied war effort. Additionally, control over Palestine was strategically important for safeguarding the Suez Canal and maintaining access to British colonies, including India.

Controversies and Criticisms:

- First, of course, is the fact that a British official made a promise to another Briton about land that belonged to a different people. Palestine then was a part of the Ottoman empire, and Britain had no legal right to promise it to anyone.

- Also, while the “civil and religious rights” of “non-Jewish communities” in Palestine are mentioned in the Declaration, it does not take into account the political rights of Arabs already living in Palestine.
- Britain had taken the consent of its Allied partners before the Declaration was issued, but no Palestinian leader was consulted.
- Also, the Declaration in spirit violated the promises made in the McMahon–Hussein correspondence (July 1915 to March 1916), in which the British had promised the Arabs an independent state in return for support against the Ottoman Empire in World War I.

Significance and Legacy:

- **Catalyst for Zionism:** The Declaration provided political legitimacy to the Zionist movement, accelerating Jewish immigration to Palestine and laying the groundwork for the eventual establishment of the State of Israel.

Source: [Indian Express](#)

UKRAINE LAUNCHES ITS BIGGEST DRONE ATTACK ON MOSCOW SINCE START OF WAR

Context: Ukraine attacked Moscow on Sunday with at least 34 drones, the biggest drone strike on the Russian capital since the start of the war in 2022, forcing flights to be diverted from three of the city’s major airports and injuring at least five people.

Background: -

- The barrages come amid expectations that US president-elect Donald Trump may put pressure on both sides to end the conflict.

Key takeaways

- Moscow and its surrounding region, with a population of at least 21 million, is one of the biggest metropolitan areas in Europe, alongside Istanbul.
- The 2-1/2-year-old war in Ukraine is entering what some officials say could be its final act after Moscow’s forces advanced at the fastest pace since the early days of the war and Donald Trump was elected 47th president of the United States.
- Kyiv, itself the target of repeated mass drone strikes from Russian forces, has tried to strike back against its neighbour with repeated drone strikes against oil refineries, airfields and even Russian strategic early-warning radar stations.
- Moscow and Kyiv have both sought to buy and develop new drones, deploy them in innovative ways, and seek new ways to destroy them – from using farmers’ shotguns to advanced electronic jamming systems.
- Russia has developed a series of electronic “umbrellas” over Moscow, with additional advanced internal layers over strategic buildings, and a complex web of air defences to shoot down the drones before they reach the Kremlin in the heart of the capital.

Additional Information:

- **Dragon drones essentially release a substance called thermite — a mixture of aluminium and iron oxide — developed a century ago to weld railroad tracks.**

WAR EMISSIONS ON TABLE AS COP29 KICKS OFF

Context: Besides resulting in human tragedy and large scale destruction, the two ongoing wars (gaza war & russia ukraine war) have also been exacerbating the climate change problem, adding significant amounts of greenhouse gas emissions into the atmosphere.

Background: -

- Wars and armed conflicts generate pollution, exacerbate climate change, damage ecosystems, and cause health issues among local communities that are felt across generations.

Key takeaways

- Emissions from conflicts is an issue that has largely been overlooked in the climate change conversation.
- Latest estimates suggest that the first two years of Russia-Ukraine war, which began in February 2022, would have contributed over 175 million tonnes of CO2 equivalent of emissions, including projected emissions estimated from reconstruction.
- **The conflict in West Asia could have added at least another 50 million tonnes.** Together, emissions from these two wars are comparable to annual emissions from Ukraine, Italy or Poland.
- Wars have a significant emissions footprint, not just from the explosives being used, but also from the military supply chains that are extremely energy intensive. Reconstruction has large emissions implications as well.
- Emissions from the weapons that cause damage — artillery, shells, mortars, missiles, rockets — constitute only a tiny fraction, just about 1.5%, of emissions from the warfare activities.
- The bigger sources of warfare emissions are fuels burnt in airplanes or tanks, and the manufacturing of weapons. Even when a war like that in Ukraine or Gaza is not on, the carbon footprint of the world's military is immense.

Source: [Indian Express](#)

MAKERS OF 'MAGIC' WEIGHT-LOSS DRUG SEMAGLUTIDE WANTS COPIES BANNED

Context: Novo Nordisk, the Danish pharmaceutical company that manufactures the popular weight-loss drug Wegovy and diabetes medication Ozempic, has asked authorities in the United States to stop the compounding of these products saying that this could pose safety risks.

Background: -

- **Wegovy and Ozempic, both of which contain semaglutide,** have been in heavy demand for months, and many compounding pharmacies in the US have created their own versions to cope with this.

Key takeaways

- **US Food and Drug Administration (FDA) regulations** allow human drug compounding — in which licensed pharmacists or physicians can combine, mix, or adjust the ingredients of a medication — to meet patient needs when popular branded formulations are in short supply.

Concerns over semaglutide:

- Over the past year, Novo Nordisk has filed at least 50 lawsuits against clinics and pharmacies that have produced compounded versions of its drugs.

GENERICS V COMPOUNDED DRUGS

Both are alternatives to brand-name medications, but they differ significantly in manufacturing and regulation.

MANUFACTURING

GENERICS are mass-produced by manufacturers once the patent on a brand-name drug expires. They contain the same active ingredients, and match branded versions in dosage, safety, quality, and intended use. Novo Nordisk's patent on semaglutide will expire in 2026.

COMPOUNDED DRUGS are prepared by licensed pharmacists and tailored to meet a patient's specific needs. Customisation can include adjusting the dosage or combining multiple drugs.

REGULATION

GENERICS must meet strict regulatory standards set by bodies like the FDA. For instance, they must prove bioequivalence, i.e., deliver the same amount of active ingredients into the bloodstream at the same rate as the branded original.

COMPOUNDED DRUGS are not subject to the same rigorous approval process, even though the ingredients used in compounding must be FDA-approved. Oversight typically falls to state pharmacy boards.

- On October 22, Novo Nordisk asked USFDA to put semaglutide on the **Demonstrable Difficulties for Compounding (DDC)** list, which restricts pharmacies from compounding a drug.
- The FDA considers a drug for the DDC list if factors such as its stability, dosage requirements, bioavailability, or necessary sterile handling make it difficult to create a safe and effective compounded version.

Source: [Indian Express](https://www.indianexpress.com)

GENDER MAINSTREAMING AND GLOBAL EFFORTS

Context: Recently, a two-day National Consultation on Revisiting and Re-envisioning the Beijing Declaration was organised by **National Alliance for Women's Organization**.

Background: -

- Thirty years after the historic **Fourth World Conference on Women in Beijing (September 4–15, 1995)**, where the Beijing Declaration and Platform for Action was adopted and women's rights were unanimously recognised as human rights, the global community continues to reflect on the progress.

Historical roots of women's movements

- Women's movements have built on events like the **Seneca Falls Convention and the Suffragette movement**. The 1848 Seneca Falls Convention was a historic meeting in New York where the "**Declaration of Sentiments**" was adopted. The document declared "that all men and women are created equal".
- The **Suffragette movement of the 19th and 20th century** was a long-drawn fight by women globally to gain their right to vote.
- Afterwards, women's movements expanded their demands. Simone de Beauvoir's *The Second Sex* (1949) challenged the traditional notion of gender by asserting that "one is not born, but rather becomes, a woman", postulating that gender identities are not biologically determined but socially constructed.
- By 1970, women's movements had gathered momentum. **Betty Friedan's The Feminine Mystique (1963)** became a bestseller as it brought the private "problem that has no name" till

then into the public domain. Friedan initiated discussion around devalued domestic work and critiqued the way it was romanticised.

- Women’s movement received further impetus from events like **‘The Women’s Strike for Equality’** in 1970. The strike was part of the second wave of feminism in the 1960s and 1970s.
- **The “Wages for Housework” campaign**, organised by the International Feminist Collective in 1972, mobilised women internationally to urge governments to recognise household and care work.
- Women of colour, immigrants, and other marginalised women face intersection of multiple issues of gender, race and class and this theory of intersectionality expanded the scope of feminist movement.

Unified global framework on women’s rights

- **The First World Conference on Women (1975)**, emerged from various women’s movements underlining the growing need for a unified global framework for addressing women’s rights.
- **The Universal Declaration of Human Rights (1948)**, affirmed equality in principle but lacked specific measures to address gender disparities. The Declaration on the Elimination of Discrimination Against Women (1967) lacked legal enforcement mechanisms.
- **The 1975 conference laid the groundwork for the declaration of 1976–1985 as the ‘International Decade of Women’.** The conference recognised gender equality as fundamental for development, sustainable peace and stability.

The Second World Conference on Women

- **The Second Conference on Women in 1980** shifted focus to more specific areas of women’s development, especially in education, employment and healthcare.
- **It led to the ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).** CEDAW, referred to as the International Bill of Rights for Women, is a core international human rights treaty. It redefined ‘discrimination’ to include not only legal inequalities but also social and cultural barriers.
- The four World Conferences on Women between 1975 and 1995 provided global platforms to advance women’s rights issues, culminating in the landmark Beijing Declaration, which remains a testament to the sustained fight for gender equality.

Source: [Indian Express](#)

BASIC COUNTRIES

Context: BASIC countries have been complaining against the Carbon Border Adjustment Mechanism (CBAM) introduced by the EU.

Background:

- On the opening day of the COP29 meeting, China, on behalf of the BASIC countries, had moved a proposal to include a discussion on “unilateral restrictive trade measures” — without mentioning CBAM — in the formal agenda of the COP meeting

Key takeaways

- **The BASIC countries (Brazil, South Africa, India, and China)** are a group of four large, newly industrialized nations that formed an agreement on November 28, 2009.
- **Purpose:** The BASIC countries were formed to act jointly at international climate change negotiations, particularly at the Copenhagen Summit (COP15). They aimed to present a united front on climate change issues and advocate for the interests of developing nations.

Key Features:

- **Common Stance:** The BASIC countries share a common stance on reducing greenhouse gas emissions and raising funds to combat climate change.
- **Copenhagen Accord:** The group played a crucial role in brokering the Copenhagen Accord with the United States.
- **UNFCCC:** The BASIC countries represent a collective voice at the Conference of Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC).

Significance:

- **Geographical and Population Coverage:** Together, the BASIC countries cover about one-third of the world's geographical area and nearly 40% of the world's population.
- **Economic Influence:** These countries are emerging economic powerhouses and wield significant influence in international forums.
- **Climate Change Advocacy:** The BASIC countries advocate for the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC), which emphasizes that developed nations should take greater responsibility for climate change mitigation due to their historical emissions.

Source: [Indian Express](#)



Economy



PARADOX OF STAGNANT RURAL WAGES

Context: The Indian economy has grown at an average annual rate of 4.6% from 2019-20 to 2023-24, and 7.8% in the last three fiscal years (April-March) alone. The farm sector's growth has averaged 4.2% and 3.6% for these respective periods. However, these macro growth numbers are not reflected in rural wages.

Background: -

- The average nominal year-on-year growth in rural wages during the five years ended 2023-24 worked out to 5.2%. It was higher, at 5.8%, for only agricultural wages. But in real inflation-adjusted terms, the average annual growth was -0.4% for rural and 0.2% for agricultural wages during this period.

Why are real rural wages stagnant, if not negative, when the GDP has been decent?

- One explanation has to do with rising **Labour Force Participation Rates (LFPR)** among women, especially in rural India.
- **LFPR is the percentage of the population aged 15 years and above that is working or seeking/willing to work for a relatively long part of a particular year.** The all-India average female LFPR was only 24.5% in 2018-19. It rose to 30% in 2019-20, 32.5% in 2020-21, 32.8% in 2021-22, 37% in 2022-23 and 41.7% in the latest official Periodic Labour Force Survey for 2023-24 (July-June).
- **The Finance Ministry's Economic Survey for 2023-24** has attributed the sharp jump in the rural female LFPR (21.2 percentage points since 2018-19) mainly to the government's schemes such as Ujjwala, Har Ghar Jal, Saubhagya, and Swachh Bharat.
- These programmes have not just substantially expanded household access to clean cooking fuel, electricity, piped drinking water, and toilets. They have also freed up rural women's time and effort that went into fetching water or collecting firewood and dung.
- The above freeing up of women's time and rise in female LFPR have, however, also ended up significantly boosting the aggregate size of the rural workforce. The resultant rightward shift of the labour supply curve – more people willing to work at the same or lower rates – has then exerted downward pressure on real rural wages.
- A second explanation looks at not the supply, but demand side of labour.
- The economic process is becoming increasingly capital-intensive and labour-saving as well as labour-displacing. If growth is coming from sectors or industries requiring fewer workers for every unit of output, it translates into a rising share of income generated from that accruing to capital (i.e. profits of firms) as against labour (wages/compensation of employees).
- Therefore, that the new entrants into the labour force, specifically women, are mostly finding employment in agriculture. This is a sector where marginal productivity (output per worker) is already low; the supply of more labour would only further depress wages. The fact that rural non-agricultural wages have grown even less – actually fallen in real terms – shows a worse picture for

non-farm labour demand.

[Indian Express](#)

CPI INFLATION AND IIP DATA

Context: The Ministry of Statistics and Programme Implementation (MoSPI) recently announced a change to the decade-old practice of releasing the Consumer Price Index (CPI) and Index of Industrial Production (IIP) data at 5:30 pm on the 12th of each month. The new release time is now set to 4 pm.

Background:

- While retail inflation data has always been released on a monthly basis, the wholesale inflation data was released weekly till December 2012. Now, it's released on the 14th of every month around noon.

Key takeaways

- Back in 2013, there were reports of data getting leaked before the official release time that had led to many representations to the Ministry to keep the timing of the data release after the market hours. The retail inflation and IIP data used to be released around 11-11:30 am on the 12th of every month till June 2013.
- **Retail inflation data, which is a closely watched indicator for the Indian economy**, would then become a crucial input for trading and taking positions in markets, especially in the forex and government bond markets.
- The new change has been introduced **“to provide more time on the day of release to access CPI (Consumer Price Index) & IIP (Index of Industrial Production) data, according to the ministry.**
- The Ministry stated that the **new release time aligns with the closing hours of major financial markets in India, “ensuring that CPI data dissemination does not interfere with active trading”.** **“This adjustment also adheres to MoSPI’s commitment to transparency and accessibility in data dissemination,”** it said.
- Analysts, however, point to the fact that while the stock markets may close by the 4pm release time, some financial markets such as the government bond and the foreign exchange markets, which are also sensitive to inflation data releases, remain open till 5 pm, The suggestion, therefore, is that the release time of 4 pm still does mean the data could be sensitive, given the extended timings of the bond market and the currency market.

Source: [Indian Express](#)

REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP (RCEP)

Context: India should be a part of the Regional Comprehensive Economic Partnership and Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Niti Aayog CEO BVR Subrahmanyam said recently.

Background: -

- **Subrahmanyam emphasised** that India will have to get into the global value supply chain as 70 per cent of the world's trade happens through the global supply chain.

Key takeaways

- **The Regional Comprehensive Economic Partnership (RCEP)** is a significant free trade

agreement among 15 Asia-Pacific nations: Australia, Brunei, Cambodia, China, Indonesia, Japan, South Korea, Laos, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Vietnam.

- Collectively, these countries account for approximately 30% of the world's GDP, trade, and population, making RCEP the largest trading bloc globally.

Key Features of RCEP:

- **Trade Liberalization:** RCEP aims to reduce tariffs and non-tariff barriers, facilitating smoother trade flows among member countries.
- **Market Access:** The agreement enhances market access for goods and services, promoting increased economic integration in the region.
- **Investment Opportunities:** By creating a more predictable and transparent investment environment, RCEP encourages cross-border investments among member states.
- **Economic Cooperation:** The partnership fosters collaboration in areas such as intellectual property, e-commerce, and competition policy, aiming to harmonize standards and regulations.

India's Position on RCEP:

- Initially, India participated in RCEP negotiations but decided to withdraw in 2019, citing concerns over trade deficits and the potential impact on domestic industries. Despite its absence, RCEP remains open to India's future participation, should it choose to reconsider its position.

Source: [Business Standard](#)

THE TRADE DEBATE

Context: Niti Aayog CEO's recent comment on Regional Comprehensive Economic Partnership (RCEP) and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) has reignited debates around trade agreements and its pros and cons.

Background:

- India should be a part of RCEP and CPTPP, Niti Aayog CEO BVR Subrahmanyam recently commented.
- India pulled out of the RCEP in 2019 after entering negotiations in 2013.

Key takeaways

- Many experts had argued back in 2019 itself that withdrawing from RCEP was an opportunity lost.
- Staying out of trade agreements like RCEP and not being deeply integrated with the global value chains that run through RCEP countries, was difficult to reconcile with the objective of becoming a global manufacturing hub, capturing export opportunities and foreign capital.
- As per a recent report by Oxford Economics, while India has "benefited from US trade rerouting away from China", the gains have been to "a much lesser extent" when compared to other Asian countries such as Vietnam, Indonesia and Malaysia.
- **The CEO of Niti Aayog, BVR Subrahmanyam** has said that India is missing out on the "China plus

one” opportunity and that it should consider joining agreements such as the RCEP and the Comprehensive and Progressive Agreement for Trans Pacific Partnership.

- **The China Plus One strategy, also known as C+1**, is a business strategy adopted by companies to diversify their supply chain and manufacturing activities away from China. The primary goal is to reduce dependency on China to mitigate risks associated with over-reliance on a single country. Rising labor costs in China have also prompted companies to seek alternative locations with lower production costs.
- India must reevaluate its trade policy. While the country has since signed some trade agreements with countries such as the UAE and Australia, progress on others, such as the agreements with the EU and UK, has been slow.

Source: [Indian Express](#)

MICRO, SMALL, AND MEDIUM ENTERPRISES (MSMES)

Context: India’s micro, small, and medium enterprises (MSMEs) have added nearly 10 crore new jobs over the past 15 months, according to official data from the Udyam portal.

Background:

- According to the figures, the number of registered MSMEs has now gone up to 5.49 crore from 2.33 crore in August last year while the number of jobs reported by these enterprises has shot up to 23.14 crore from 13.15 crore during this period.

Definition and Classification

- **Micro Enterprises:** Investment in plant and machinery or equipment up to ₹1 crore and annual turnover not exceeding ₹5 crore.
- **Small Enterprises:** Investment in plant and machinery or equipment up to ₹10 crore and annual turnover not exceeding ₹50 crore.
- **Medium Enterprises:** Investment in plant and machinery or equipment up to ₹50 crore and annual turnover not exceeding ₹250 crore.

Significance

- **Economic Contribution:** MSMEs contribute significantly to the GDP, employment, and exports. In India, they account for nearly 30% of the GDP.
- **Employment Generation:** MSMEs are major job creators, providing employment to millions of people.
- **Innovation and Entrepreneurship:** They foster innovation and entrepreneurship, often leading to the development of new products and services.

Government Support

- The Indian government has made significant strides to support MSMEs, particularly through its 2024-25 Union Budget allocating a substantial Rs 22,137.95 crore to the MSME Ministry—an increase of 41.6% from the previous fiscal year.
- **Digital Initiatives:** Initiatives like Udyam Registration and the MSME SAMBANDH portal.
- **Champions Platform:** The Champions platform, launched by Prime Minister Narendra Modi, provides handholding support to MSMEs and new entrepreneurs.

Source: [DD News](#)

ONE NATION ONE SUBSCRIPTION

Context: The Union Cabinet approved a budgetary allocation of Rs 6,000 crore for an initiative called 'One Nation One Subscription '(ONOS).

Background: -

- Aiming to centralise journal subscriptions for nearly 6,300 government-run institutions, ONOS seeks to provide equitable access to 13,000 scholarly journals under a single platform.

Current system

- **Higher education institutions (HEIs)** can access journals through 10 different library consortia. A library consortium is a group of two or more libraries that have agreed to cooperate to fulfil certain similar needs, usually resource sharing.
- For instance, **INFLIBNET Centre (Information and Library Network Centre)** in Gandhinagar is an Inter-University Centre of the University Grants Commission which oversees the UGC-Infonet Digital Library Consortium, providing access to selected scholarly electronic journals and databases in different disciplines.
- Apart from this, HEIs also subscribe to several journals individually.

What does the ONOS scheme offer?

- **Through the ONOS scheme, the Centre aims to consolidate the disaggregated approach to journal access.** ONOS will enable state and central government HEIs to access thousands of journals on one platform, which will be active from January 1, 2025.
- INFLIBNET has been designated as the implementing agency for this initiative. The central government negotiated one subscription price for each of the 30 different publishers and approved Rs 6,000 crore for three calendar years — 2025, 2026 and 2027.

What is the need for ONOS?

- **First**, it would expand access to the best scholarly journals for 55 lakh to nearly 1.8 crore students, faculty, and researchers across roughly 6,300 government universities, colleges, research bodies, and Institutions of National Importance (INIs), including those in Tier 2 and Tier 3 cities.
- **Second**, it would avoid duplication of journal subscriptions across different library consortia and individual higher education institutions and hence reduce excess expenditure.
- **Third**, a single subscription for all central and state government HEIs would provide better bargaining power when negotiating with publishers.
- **Fourth**, the Centre will gain insights into the extent to which journals are being accessed and downloaded by higher education ecosystem. This will not only help in long-term planning but also allow to encourage inactive institutions to fully utilise the platform and promote its benefits among their teachers, students, and researchers.

[Indian Express](#)

Context: The Cabinet approved the PAN 2.0 Project of the Income Tax Department (ITD), with a cost of Rs 1,435 crore.

Background: -

- The project aims to streamline and modernise the process of issuing and managing PAN and TAN, making it more user-friendly and efficient.

Key takeaways

- **PAN 2.0 Project is an e-Governance project of ITD for re-engineering** the business processes of taxpayer registration services.
- Under the project, the existing PAN system will be upgraded completely, the IT backbone will be revamped and PAN will be made as a common business identifier for all digital systems of specified government agencies.

How PAN 2.0 will be different from existing setup?

- **Integration of Platforms:** Currently, PAN-related services are spread across three different platforms: the e-Filing Portal, UTIITSL Portal, and Protean e-Gov Portal. With the implementation of PAN 2.0, all these services will be integrated into a single, unified portal. This one-stop platform will handle comprehensively issues/matters related to PAN and TAN, including application, updates, corrections, Aadhaar-PAN linking, re-issuance requests, and even online PAN validation.
- **Comprehensive use of technology for paperless processes:** Complete online paperless process as against prevailing mode
- **Taxpayer facilitation:** Allotment/updation/correction of PAN will be done free of cost and e-PAN will be sent to the registered mail id. For physical PAN card, the applicant has to make a request along with the prescribed fee

About PAN and TAN

- **A 10-digit alphanumeric number, PAN, enables the Income Tax Department to link all transactions of a person with the department.** These transactions include tax payments, Tax Deducted at Source (TDS) / Tax Collected at Source (TCS) credits, returns of income, specified transactions.
- **Once PAN is allotted, it remains the same forever. It is mandatory to quote PAN on filing of income tax return.**
- **TAN stands for Tax Deduction and Collection Account Number, which is a 10-digit alphanumeric number issued by the Income Tax Department.**
- TAN needs to be obtained by all persons responsible for deducting or collecting tax at source. It is compulsory to quote TAN in TDS/TCS return, any TDS/TCS payment challan, TDS/TCS certificates.

Source: [PIB](#)

EIGHT CARMAKERS LIKELY TO FACE EMISSION PENALTIES

Context: The centre has found out that eight carmakers including Hyundai, Kia, Mahindra, and Honda have higher than mandated fleet emission levels in financial year 2022-23, which could mean penalties of

around Rs 7,300 crore.

Background: -

- For 2022-23, the Bureau of Energy Efficiency, under the Union Ministry of Power, required car companies of all units sold during the year to achieve India's Corporate Average Fuel Efficiency (CAFE) norms.

Key takeaways

- The CAFE norms were tightened in the beginning of financial year 2022-23.
- The quantum of penalties has become a point of contention between the Centre and the auto industry.
- In 2022-23, models and variants of 18 automobile manufacturers were tested at accredited laboratories by simulating actual driving conditions. When the results for a set of cars did not conform to specified CAFE standards, then penalties were calculated for the total number of cars sold in the full year.

About Corporate Average Fuel Efficiency (CAFE) norms

- **CAFÉ norms were first notified by the Government in 2017**, under the Energy Conservation Act, 2001 to mitigate fuel consumption by lowering CO₂ emissions; aiming to reduce oil dependency and air pollution.
- **Applicability:** These norms apply to passenger vehicles with a gross vehicle weight (GVW) of less than 3,500 kg, including petrol, diesel, liquefied petroleum gas (LPG), compressed natural gas (CNG), hybrid, and electric vehicles manufactured or imported for sale in the country.
- **Phase I (2017-2022):** The first phase of CAFE norms was implemented from April 1, 2017. The average fuel consumption target was set at less than 5.49 liters per 100 km, with an average kerb weight of 1,037 kg.
- **Phase II (2022 onwards):** The second phase came into effect from April 1, 2022, with stricter targets. The average fuel consumption target was reduced to less than 4.78 liters per 100 km, with an average kerb weight of 1,082 kg.

Calculation Method:

- **Corporate Average Fuel Consumption (CAFC):** The fuel consumption is measured in liters per 100 km and is calculated based on the corporate average curb weight of all vehicles sold by a manufacturer in a fiscal year.
- **CO₂ Emissions:** The norms also set limits on CO₂ emissions, with a target of less than 130 grams per km until 2022 and less than 113 grams per km from 2022 onwards.

Source: [Indian Express](#)

GREENWASHING

Context: The Central Consumer Protection Authority (CCPA), under the Consumer Affairs Ministry, has issued guidelines for 'Prevention and Regulation of Greenwashing and Misleading Environmental Claims' to address greenwashing and misleading environmental claims.

Background: -

- The move is part of the government's crackdown on misleading advertisements.

Key takeaways

- **Greenwashing refers to the growing tendency of companies, organisations, or even countries to make dubious or unverifiable claims about their activities, products, or services being environment-friendly or climate-friendly.**
- It presents a false picture of the progress being made on the climate change front while at the same time rewarding entities for irresponsible behaviour.
- **The 2015 Volkswagen scandal**, in which the German car company was found to have been cheating in emissions testing of its supposedly green diesel vehicles, is one of the headline-grabbing examples of greenwashing. Several other big corporations, including Shell, BP, and Coca Cola have faced accusations of greenwashing.

Guidelines on preventing greenwashing

- Use of misleading words, symbols, or imagery, emphasizing positive environmental attributes while downplaying or concealing negative aspects would constitute greenwashing.
- The Generic terms like "clean", "green", "eco-friendly", "good for the planet", "cruelty-free", "carbon neutral", "natural", "organic", "sustainable", or similar other descriptions for a product would be allowed only if the company is able to substantiate these with evidence. The company will also have to use "adequate and accurate" qualifiers and disclosures while advertising such descriptions.
- When more technical terms such as "environment impact assessment", "greenhouse gas emissions", or "ecological footprint", are used to advertise a product or service, the companies would be mandated to explain their meaning and implications in a "consumer-friendly" language.
- The guidelines will apply to all environmental claims made by manufacturers, service providers, or traders whose goods, products, or services are the subject of an advertisement, or to an advertising agency or endorser whose service is availed for the advertisement of such goods, products, or services.

Types of Greenwashing

- **Greenhushing:** When a company or firms underreport or withhold information about their sustainability goals and progress.
- **Green-crowding:** It involves hiding in a group or crowd to avoid their unsustainable practices to be spotted.
- **Greenshifting:** It is an act of the company to shift the responsibility of adopting sustainable measures on consumers or individuals rather than having to take meaningful action at the corporate or brand level.
- **Greenlighting:** It occurs when a company spotlights a specific sustainability initiative undertaken by it to distract attention away from damaging activities.
- **Greenlabelling:** It is a marketing tactic adopted by companies to label their products something green or sustainable, but closer examination reveals this to be misleading.

Source: [Indian Express](#)

DIGITAL BHARAT NIDHI

Context: Minister of State for Communications, Dr. Pemasani Chandra Sekhar addressed question regarding Digital Bharat Nidhi in Lok Sabha.

Background:

- Of the more than ₹1.6 lakh crore collected by the central government under the Digital Bharat Nidhi (earlier known as the Universal Service Obligation Fund) until March 31 this year, only 51.4% allocated by the finance ministry has been fully utilised until September 30 this year.

About Digital Bharat Nidhi (DBN)

- The DBN is an **initiative by the Indian government** aimed at enhancing telecom connectivity across rural and underserved areas in the country.

Background:

- **Universal Service Obligation Fund (USOF):** DBN replaces the erstwhile USOF, which was established to provide telecom services in remote and rural areas at affordable prices through a universal access levy.
- **Telecommunications Act, 2023:** The DBN was established under this act, which replaced the Indian Telegraph Act.

Objectives:

- **Enhanced Connectivity:** To provide widespread and non-discriminatory access to quality ICT services at affordable prices in rural and remote areas.
- **Targeted Access:** To ensure equitable access to telecommunication services for underserved groups such as women, persons with disabilities, and economically and socially weaker sections.
- **Research and Development:** To fund research and development of telecom services, technologies, and products.

Projects and Schemes:

- **BharatNet:** Connecting Gram Panchayats (GPs) across India.
- **4G Saturation Project:** Expanding 4G coverage to uncovered villages in rural and remote areas.
- **Mobile Services in Aspirational Districts:** Providing mobile services in uncovered areas of Aspirational Districts.
- **Submarine Optical Fiber Cable (OFC) Connectivity:** Establishing OFC connectivity between Chennai and Andaman & Nicobar Islands, and between Kochi and Lakshadweep Islands.

Source: [Hindustan Times](#)



GEOGRAPHY



SUTLEJ RIVER

Context: Local residents of Sri Ganganagar district, Rajasthan held protests against alleged pollution in the river Sutlej, which they blame on factories in the neighbouring Punjab.

Background:

- The National Green Tribunal had imposed a fine of Rs 50 crore on the Punjab government in 2018 for “uncontrolled industrial discharge” into Sutlej and Beas. The tribunal once again pulled up the state in 2021, ordering it, as well as Rajasthan, to submit quarterly compliance reports to the Union Ministry of Jal Shakti (water resources) about the measures taken to curb the inflow of effluent discharge into the two rivers.

About Sutlej River

- **The Sutlej River is the longest river among the five rivers of the Punjab region.** The other four rivers that flow through the Punjab region are the Beas, Ravi, Chenab, and Jhelum.
- **It originates from the Rakshastal Lake near Mount Kailash in the Tibet Autonomous Region of China.**
- From Tibet, it flows through Himachal Pradesh, enters the Punjab plains in India, and then moves into Pakistan, where it **merges with the Chenab River to form the Panjnad River, which ultimately joins the Indus River.**
- **Tributaries:** Major tributaries include the Baspa and Spiti rivers.
- **Hydroelectric and Irrigation Projects:**
 - Bhakra Nangal Dam: One of India’s largest dams, providing hydroelectric power and irrigation.
 - Nathpa Jhakri Dam: A major hydroelectric project in Himachal Pradesh.
 - Indira Gandhi Canal: One of the longest irrigation canals in the world, transporting Sutlej water to Rajasthan for agricultural purposes.
- **Indus Waters Treaty (1960):** The Sutlej River is allocated to India under the Indus Waters Treaty, signed between India and Pakistan. The treaty divides the waters of the Indus River and its tributaries, ensuring the Sutlej, along with the Ravi and Beas rivers, are under India's control for usage.

Important Places Along the River:

- **Ropar Wetland:** A recognized Ramsar site in Punjab that is ecologically important.
- **Harike Wetland:** Another Ramsar site where the Sutlej meets the Beas River.

Source: [Indian Express](#)

LAKE KARIBA

Context: Lake Kariba is at near-record low, causing daily power cuts and devastating two African economies.

Background: -

- A punishing drought has drained Lake Kariba, raising the prospect that the Kariba Dam, which powers the economies of Zambia and Zimbabwe, may have to shut down for the first time in its 65-year history.

Key takeaways

- Lake Kariba is the **world's largest man-made lake and reservoir by volume and** is located on the border between Zambia and Zimbabwe in central Africa.
- **Formation:**
 - **Kariba Dam:** The lake was created by damming the Zambezi River at the Kariba Gorge between 1958 and 1963.
 - **Purpose:** The dam was built to provide hydroelectric power to Zambia and Zimbabwe.
- **Biodiversity:** The lake supports a vibrant ecosystem, including fish species like the kapenta, Nile crocodiles, and hippopotamuses.
- **Tourism:** The area around Lake Kariba is a popular destination for tourists, offering activities like fishing, boating, and wildlife viewing.

Source: [Guardian](#)

DEAD SEA

Context: Researchers have discovered meter-high chimneys on the floor of the Dead Sea. These are formed by the spontaneous crystallization of minerals from groundwater with an extremely high salt content flowing up out of the lake floor, the report in journal Science of the Total Environment.

Background: -

- Discovered for the first time, these vents are an important early warning indicator for sinkholes. These subsidence craters form in the area surrounding the Dead Sea and pose a significant hazard to the population.

Key takeaways

- **The Dead Sea is a landlocked salt lake** bordered by Jordan to the east and Israel and Palestine to the west and is located in the **Jordan Rift Valley, part of the Great Rift System.**
- **Salinity:**
 - The Dead Sea is one of the **saltiest water bodies on Earth**, with a salinity of about 34%.
 - The high salinity prevents most aquatic life, hence the name “Dead Sea.”
- **Lowest Point:** It is the lowest point on Earth's surface on land, sitting at approximately 430 meters below sea level and still dropping.
- **Unique Properties:**
 - The lake is rich in minerals, especially magnesium, bromide, and potassium, making it a hub for therapeutic and cosmetic products.
 - The high density of water allows people to float effortlessly.

- **Formation:**
 - Formed due to tectonic activity in the Jordan Rift Valley.
 - Fed mainly by the Jordan River, but with no outlets, leading to high evaporation rates.
- **Environmental Concerns:**
 - The Dead Sea is shrinking rapidly, with water levels dropping by over 1 meter annually due to diversion of the Jordan River and mineral extraction.
 - Sinkholes are increasingly forming in the region as a result of the declining water levels.
- **Cultural and Historical Significance:**
 - Mentioned in several historical and religious texts, including the Bible.
 - Nearby are significant archaeological sites, such as the Masada Fortress and Qumran Caves (where the Dead Sea Scrolls were discovered).

Source: [Science Daily](#)

SUDAN

Context: Russia vetoed a UN resolution on Monday calling for an immediate ceasefire in the war between Sudan's military and paramilitary forces and delivery of humanitarian aid to millions in desperate need.

Background: -

- Sudan plunged into conflict in April 2023, when long-simmering tensions between its military and paramilitary leaders erupted in the capital, Khartoum, and spread to other regions, including western Darfur, which was wracked by bloodshed and atrocities in 2003.

Key takeaways

- Sudan is a country located in northeastern Africa, bordered by Egypt to the north, the Red Sea to the northeast, Eritrea and Ethiopia to the east, South Sudan to the south, the Central African Republic to the southwest, Chad to the west, and Libya to the northwest.
- **Capital: Khartoum**
- **Major Rivers:** The Blue Nile and the White Nile, which converge in Khartoum
- **Colonial Era:** Sudan was jointly administered by Egypt and Britain from 1899 until its independence in 1956
- **Civil Wars:** Sudan experienced two prolonged civil wars, the first from 1955-1972 and the second from 1983-2005
- **South Sudan Independence:** South Sudan seceded from Sudan in 2011, becoming an independent country

Economy:

- **Main Industries:** Agriculture, livestock, oil, and minerals.
- **Challenges:** Sudan faces economic challenges, including inflation, unemployment, and ongoing conflicts

Culture:

- Languages: Arabic is the official language, but many local languages are also spoken
- Religion: Islam is the dominant religion, with Christianity and indigenous beliefs also present.

Additional Information : Conflict in Darfur

• **The War in Darfur, also nicknamed the Land Cruiser War**, was a major armed conflict in the Darfur region of Sudan that began in 2003 when rebel groups began fighting against the government of Sudan, which they accused of oppressing Darfur's non-Arab population.

• The government responded to attacks by carrying out a campaign of ethnic cleansing against Darfur's non-Arabs. This resulted in the death of hundreds of thousands of civilians and the indictment of Sudan's president, Omar al-Bashir, for genocide, war crimes, and crimes against humanity by the International Criminal Court.

Source: [The Hindu](#)

SABARMATI RIVER

Context: The Sabarmati Riverfront development project, which aims to transform around 38 kilometres of riverbanks from Ahmedabad to Gandhinagar across seven phases, has begun monetising its first phase, covering around 11 kilometres on either side of the river.

Background:

- The riverfront was one of the pet projects of Prime Minister Narendra Modi when he was the chief minister of Gujarat.

Key takeaways

- The Sabarmati River is one of the major west-flowing rivers in India, originating in the Aravalli Range of Rajasthan and flowing through Gujarat before emptying into the Gulf of Khambhat in the Arabian Sea.
- Tributaries: Wakan, Harnav, Hathmati, Watrak (left bank); Sei (right bank)
- Agriculture: The Sabarmati basin is primarily agricultural, with 74.68% of the basin area dedicated to farming.
- Monsoon-Dependent: The river is monsoon-fed, with flows dominated by the monsoon season.

Source: [Hindustan Times](#)

GUYANA

Context: India and Guyana sealed 10 agreements to strengthen cooperation in hydrocarbons, digital payment systems, pharmaceuticals, and defence after bilateral talks between Prime Minister Narendra Modi and Guyanese President Mohamed Irfaan Ali.

Background: -

- Prime Minister Modi's visit to Guyana marked a significant milestone in strengthening India-Guyana relations. This visit was notable as it was the first by an Indian Prime Minister to Guyana in over 50 years.

Key takeaways

- **Location:** Northeastern part of South America, bordered by the Atlantic Ocean (north), Venezuela (west), Brazil (south), and Suriname (east).
- **Capital:** Georgetown.
- Major Rivers: Essequibo, Demerara, Berbice.
- **Climate:** Tropical, with rainy and dry seasons.
- **Population:** ~800,000 (2023 estimate).
- **Ethnic Groups:** Indo-Guyanese (descendants of Indian laborers), Afro-Guyanese (African descendants), Indigenous peoples.
- **Language:** Official language is English.



- **Religion:** Christianity, Hinduism, and Islam are predominant.

- Guyana is home to a part of the Amazon rainforest, one of the most biodiverse regions in the world

Economy

- **Natural Resources:** Bauxite, gold, diamonds, timber, and recently discovered offshore oil reserves (2015).

- **Key Sectors:** Agriculture (sugar, rice), mining, and oil.

- **Oil Boom:** Significant oil discoveries by ExxonMobil; Guyana is emerging as one of the fastest-growing economies in the world.

- **Member:** CARICOM (Caribbean Community), UN, Commonwealth.

Source: [Indian Express](#)

DAL LAKE

Context: The famous Chinar boat race 2024 was organised in J&K's Dal Lake by the Army recently.

Background: -

- The Army has been organising sports and entertainment events in J&K as part of its endeavour to

build cordial and closer Army-public relationships.

Key takeaways

- **Dal Lake is a freshwater lake located in Srinagar**, the summer capital of Jammu and Kashmir, India. It is an urban lake and the second largest lake in Jammu and Kashmir.
- It is one of the **most famous attractions in the Kashmir Valley** and is often referred to as the "**Lake of Flowers**", "Jewel in the Crown of Kashmir", or "Srinagar's Jewel".
- **Primary Inflows:** Telbal Nallah from Marsar Lake
- **Primary Outflows:** Regulated through Dal Gate and Nalla Amir

Ecological Significance:

- **Ramsar Site:** Designated as a Wetland of International Importance under the Ramsar Convention in 2002.
- **Biodiversity:** Home to various flora and fauna, including lotus flowers, water lilies, and several fish species.
- **Floating Gardens:** Known as "Rad" in Kashmiri, these gardens blossom with lotus flowers during July and August.
- **Islands:** Includes islands like Char Chinar (Roph Lank) and Sona Lank (Gold Island).

Tourism and Activities:

- **Houseboats and Shikaras:** The lake is famous for its houseboats and colorful shikaras (wooden boats) that offer scenic cruises.
- **Mughal Gardens:** The lake is surrounded by Mughal-era gardens like Shalimar Bagh and Nishat Bagh, built during the reign of Emperor Jahangir.
- **Floating Market:** A unique market where vendors sell fresh produce and handicrafts from their shikaras.

Source: [The Hindu](#)

CYCLONE DEVELOPING IN BAY OF BENGAL, HEADING TOWARDS TAMIL NADU

Context: India Meteorological Department (IMD) recently announced intensification of the existing deep depression into a cyclone and the chances of the storm hitting the Tamil Nadu coast.

Background: -

- Flanked by the sea on three sides, India's east and west coasts are affected by cyclones, annually.

Key takeaways

- The storm will be identified as **Fengal, a name proposed by Saudi Arabia**.
- Climatologically, about five cyclones develop in the North Indian Ocean basin — comprising the Bay of Bengal and the Arabian Sea — each year. Of these, an average of four cyclones develop over the Bay of Bengal and one over the Arabian Sea. This basin is most prone to cyclone development during the pre-monsoon season (April – June) and post-monsoon season (October – December) months.

About Tropical Cyclones

- A “Cyclonic Storm” or a “Cyclone” is an **intense vortex or a whirl in the atmosphere with very strong winds circulating around it in anti-clockwise direction in the Northern Hemisphere and in clockwise direction in the Southern Hemisphere.**
- **Tropical cyclones** are those which develop in the regions between the Tropics of Capricorn and Cancer. They are the most devastating storms on Earth.
- They are also referred to as ‘**Hurricanes**’ over **Atlantic Ocean**, ‘**Typhoons**’ over **Pacific Ocean**, ‘**Willy-Willies**’ over **Australian Seas** and simply as ‘**Cyclones**’ over **north Indian Ocean (NIO)**.

Structure:

- Eye: Calm, cloud-free center.
- Eye Wall: Region of strongest winds and rainfall around the eye.
- Rain Bands: Spiral bands of thunderstorms extending outward.

Favourable Conditions for Formation

- Warm Ocean Waters: Sea surface temperatures $>26.5^{\circ}\text{C}$ provide the energy source.
- **Coriolis Effect:** Ensures rotation; absent at the equator.
- **Low Wind Shear:** Allows vertical development of storm clouds.
- **Pre-existing Disturbance:** Initial low-pressure zone.

Cyclone Formation Process (Cyclogenesis):

- Warm ocean heats the air above, causing it to rise and create a low-pressure zone.
- Moist air from surrounding areas rushes in, rises, and condenses, releasing latent heat.
- The Coriolis effect initiates rotation, forming a spiraling system.
- The cyclone intensifies as it absorbs more heat and moisture.

Source: [Indian Express](#)

BALTIC SEA

Context: The Swedish prime minister, Ulf Kristersson, has said the Baltic sea is now a “high risk” zone as he met Nordic and Baltic leaders days after a suspected sabotage attack on undersea cables.

Background: -

- The Swedish PM declined to speculate on who may have been responsible for the severing of two fibre optic telecoms cables in the Baltic. A Chinese ship – the Yi Peng 3 – that sailed over the cables about the time they were severed has remained anchored in the Kattegat strait between Sweden and Denmark since 19 November.

About Baltic Sea

- **The Baltic Sea is an arm of the Atlantic Ocean**, extending northward from southern Denmark almost to the Arctic Circle. It separates the Scandinavian Peninsula from the rest of continental Europe.
- **Boundaries:**
 - **West:** Denmark and the Kattegat Strait connecting it to the North Sea via the Skagerrak.

- o **North:** Sweden and the Gulf of Bothnia.
- o **East:** Finland, Russia, and the Gulf of Finland.
- o **South:** Germany, Poland, Lithuania, Latvia, and Estonia.
- o **Countries Bordering the Baltic Sea:** Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden.
- Brackish water due to limited exchange with the North Sea and high inflow of freshwater from rivers.



- **Coastline:** Rugged with numerous islands, peninsulas, and gulfs such as the Gulf of Bothnia and Gulf of Finland.

- **Major Rivers Flowing into the Baltic Sea:** Vistula (Poland), Oder (Germany/Poland), Neva (Russia), and Daugava (Latvia).

- **Shipping and Trade:**

- o Major shipping routes, linking Central and Eastern Europe to the global economy.

- o Ports like Gdańsk (Poland), Tallinn (Estonia), and St. Petersburg (Russia) are crucial for trade.

- Coastal resorts and historical cities like Stockholm, Helsinki, and Riga attract millions of tourists.

Source: [The Guardian](#)



Environment and Ecology



GREEN FIRECRACKERS

Context: Delhi earned the tag of the world's most polluted city on Friday after firecrackers were burst on the occasion of Diwali on Thursday despite a blanket ban in the national capital.

Background: -

- At 6 am on Friday, the Air Quality Index (AQI) was recorded at 359, which falls in 'very poor' category, according to CPCB.

Key takeaways

- Green crackers are eco-friendly fireworks** developed as a solution to the air and noise pollution caused by traditional firecrackers. They are designed to emit fewer pollutants and are developed with an emphasis on reducing the harmful effects of conventional crackers.

Conventional crackers	
Colour	Compounds
White colour	Aluminium, Magnesium, and Titanium
Yellow Colour	Sodium compounds
Blue Colour	Copper compounds
Red Colour	Strontium carbonates
Green Colour	Barium monochloride salts or Barium nitrate or Barium chlorate

- Both green crackers and traditional crackers cause pollution. However, the difference is that green crackers cause 30 per cent less air pollution as compared to traditional ones.

- Green crackers do not contain harmful chemicals like arsenic, lithium, or barium, which are found in conventional firecrackers and are responsible for high emissions of sulfur oxides, nitrogen oxides,

and particulate matter.

- Use of alternative chemicals and a reduced level of aluminum, which cuts down on the emission of particulate matter (PM).
- The Council of Scientific and Industrial Research (CSIR)** has developed 'green firecrackers' to combat pollution.
- According to the CSIR-National Environmental Engineering Research Institute**, green crackers must have a reduction in the size of the shell, elimination of ash usage, reduced usage of raw materials in the composition, and/or use of additives as dust suppressants to reduce particulate matter, SO₂, and NO₂ emissions.
- These 'green firecrackers' have types like SWAS (safe water releaser), SAFAL (safe minimal aluminium), and STAR (safe thermite cracker).**
- SWAS is a safe water releaser, which suppresses the dust released by releasing water vapour in the air. It does not comprise potassium nitrate and sulphur and the particulate dust released will reduce approximately by 30 per cent.
- SAFAL is safe minimal aluminium which has minimum usage of aluminium, and used magnesium

instead. It ensures a reduction in sound in comparison to traditional crackers.

- STAR is a safe thermite cracker, which does not comprise potassium nitrate and sulphur, and emits reduced particulate matter disposal and reduced sound intensity.

Source: [Indian Express](#)

MELANISTIC TIGERS

Context: A tigress from the Tadoba-Andhari Tiger Reserve, Maharashtra, was sent to the Similipal Tiger Reserve so as to diversify the genetic pool of the tiger population in Odisha.

Background:

- It is part of a plan by the Odisha government to tackle inbreeding in the tiger population that has resulted in increasing numbers of the once elusive black tigers or pseudo-melanistic tigers.

Key takeaways

What are pseudo-melanistic tigers?

- As far as appearances go, **pseudo-melanistic (pseudo: false; melanistic: dark coloured)** tigers appear to have a black coat with white and orange stripes occasionally peaking through.



- The most recent sighting of the black tiger was in 2017-18 in the Similipal Tiger Reserve.

How do the tigers get their colours?

- **The pseudo-melanistic tiger is a colour variant of the Bengal tiger.** Its strange coat is a result of a mutation in a particular gene.

- A comparison between tiger populations showed that apart from the Similipal population, the mutation of the gene is extremely rare. The only other black tigers that have been found beyond the Similipal population are in captivity—Nandankanan Zoological Park at Bhubaneswar and Arignar Anna Zoological Park at Chennai—whose ancestry could be traced back to the Similipal population.

Why are the mutations more common in Similipal?

- A majority of the tigers found in Odisha are in the Similipal Tiger Reserve. The All Odisha Tiger Estimation (AOTE-2023-24) says a total of 30 tigers were found in Odisha's forests of which 27 of them are in Similipal.
- Of these 27, atleast 13 adult tigers were found to be pseudo-melanistic. No other wild habitat in the world has pseudo-melanistic tigers.
- This has led to inbreeding in an already small founding population leading to higher chances of the mutated gene being passed down. The study also attributed the phenomenon of genetic drift which suggests that a mutation may appear in high frequency or die out all together depending on pure chance.

Source: [The Hindu](#)

DANA, THE WEATHER PATTERN THAT CAUSED FLASH FLOODS IN SPAIN

Context: Millions have been affected in Spain due to torrential rain. Flash floods caused by the immense deluge have led to the death of at least 64 people in the eastern Spanish region of Valencia.

Background: -

- The primary cause of the intense rain is likely an annual weather phenomenon known as a “gota fría,” or cold drop. It is also sometimes called a “DANA,” the acronym for “depresión aislada en niveles altos,” or isolated depression at high altitudes.

Key takeaways

- **DANA or cold drop takes place when cold air descends over the warm waters of the Mediterranean Sea.** This results in atmospheric instability, causing hotter, moist air on the surface of the sea to rise quickly, leading to the formation of dense, towering cumulonimbus clouds in a matter of hours. These clouds then dump heavy rain in parts of Spain.
- **The weather pattern’s occurrence is related to the polar jet stream** — a fast-moving wind current at high levels of the troposphere (the lowest layer of Earth’s atmosphere) which circulates from west to east and separates the cold polar air from the warm tropical air.
- Often, a pocket of cold air gets separated from the polar jet stream and collides with the warmer air over the Mediterranean Sea, which results in DANA.
- The phenomenon is a common occurrence in Spain and usually coincides with the onset of autumn and spring in the western Mediterranean.

Source: [Indian Express](#)

NATIONAL CLEAN AIR PROGRAMME (NCAP)

Context: Delhi is among the bottom five cities in terms of fund expenditure under the National Clean Air Programme (NCAP) — 68% of its funds are unutilised.

Background: -

- Delhi’s air quality was in the ‘very poor’ category recently after diwali.

Key takeaways

- **The National Clean Air Programme (NCAP)** is India's comprehensive strategy to combat air pollution across the country.
- **Launched in January 2019 by the Ministry of Environment, Forest and Climate Change (MoEFCC)**, the NCAP aims to systematically address air quality issues through targeted interventions and collaborative efforts.

Objectives:

- **Reduction Targets:** NCAP aimed for a reduction of 20-30% in PM10 concentrations by 2024-25 compared to the baseline year of 2017-18. The target has been revised to achieve up to a 40% reduction in PM10 levels or to meet national standards ($60 \mu\text{g}/\text{m}^3$) by 2025-26.
- **The programme focuses on 131 cities (non-attainment cities and Million Plus Cities) in 24 States/UTs by engaging all stakeholders.**

Key Features:

- **City-Specific Action Plans:** Each non-attainment city is required to develop and implement a tailored action plan addressing local sources of pollution.
- **Sectoral Interventions:** The NCAP emphasizes interventions across various sectors, including transportation, industry, power, residential, and agriculture, to mitigate pollution sources.
- **Monitoring and Evaluation:** A robust monitoring framework has been established to track progress, involving real-time air quality monitoring systems and periodic assessments.

Implementation Mechanisms:

- **Institutional Framework:** The Central Pollution Control Board (CPCB) oversees the implementation, supported by state pollution control boards and urban local bodies.
- **Funding:** Financial assistance is provided to states and cities for implementing action plans, with provisions for capacity building and technological support.
- **Capacity Building:** Training programs and workshops are conducted to enhance the capabilities of stakeholders involved in air quality management.

Recent Developments:

- **PRANA Portal:** In September 2021, the MoEFCC launched the **PRANA portal (Portal for Regulation of Air-pollution in Non-Attainment cities)** to monitor the implementation of NCAP and disseminate information on air quality management efforts.

Source: [Indian Express](#)

RANTHAMBORE NATIONAL PARK & TIGER RESERVE

Context:Ten of the 25 tigers 'allegedly missing' from Ranthambore National Park and Tiger Reserve have been traced, officials have confirmed

Background: -

- **Ranthambore Tiger Reserve (RTR)** had an estimated population of 88 tigers according to the 2022 census, published in 2023.

Key takeaways

- **Location:** Situated in the Sawai Madhopur district of Rajasthan, Ranthambore National Park lies at the northern edge of the Vindhya Range.
- **It is bounded to the north by the Banas River and to the south by the Chambal River.**

History and Significance:

- **Ranthambore Fort:** A UNESCO World Heritage Site, the Ranthambore Fort is located within the park. It was built in the 10th century by the Chauhan dynasty.
- It was declared a **national park in 1980** and **became part of Project Tiger in 1973**, making it a critical site for tiger conservation in India.

Biodiversity:

- **Flora:** The park features tropical dry deciduous forests, including species like dhok, babul, and ber

trees. It also has grasslands and riverine vegetation.

Fauna:

- **Carnivores:** Bengal tigers (*Panthera tigris tigris*), leopards, striped hyenas, and jackals.
- **Herbivores:** Sambar deer, chital (spotted deer), nilgai (blue bull), wild boar, and langurs.
- **Other animals:** Sloth bears, Indian gazelle (chinkara), and crocodiles.
- **Avifauna:** Over 270 species of birds, including painted storks, pelicans, and eagles.

Tiger Conservation:

- **Project Tiger:** Ranthambore is one of the major reserves under the Project Tiger initiative launched by the Indian government in 1973 to conserve tigers in India.
- **Tiger Population:** The park has a healthy population of Bengal tigers, and due to the open landscape and waterholes, tiger sightings are relatively common.

Source: [Down To Earth](#)

HOKERSAR WETLAND

Context: Lack of water due to excess deficit rainfall at the Hokersar wetland in the Kashmir Valley in recent years has impacted the arrival of migratory bird populations in the region.

Background: -

- According to the India Meteorological Department (IMD), Kashmir is facing a rainfall deficit of 81 per cent.

About Hokersar Wetland

- It is located near Srinagar in the Kashmir Valley, Jammu and Kashmir, India.
- It lies to the north of the **famous Dal Lake** and is situated at an elevation of about 1,585 meters (5,200 feet) above sea level.
- **Ecological Importance:** The wetland is a bird sanctuary, hosting a variety of migratory species, especially during the winter months. It is an important stopover for birds migrating along the Central Asian Flyway.
- **Protection and Conservation:** Hokersar Wetland was designated as a Wetland of International Importance under the Ramsar Convention in 2005 due to its global ecological significance.

Source: [Down To Earth](#)

WIND ENERGY GENERATION

Context: Wind energy generators has obtained a stay from the Madras High Court against “Tamil Nadu Repowering, Refurbishment and Life Extension Policy for Wind Power Projects” released by Tamil Nadu government.

Background: -

- Tamil Nadu, which is a pioneer in wind mill installations, has wind turbines that are over 30 years old.

Key takeaways

- India has a wind power potential of 1,163.86 GW at 150m above ground level (**National Institute of Wind Energy - NIWE**).
- At 120m, typical turbine height today, potential is 695.51 GW, with 68.75 GW in Tamil Nadu. Only about 6.5% of this wind potential is used at the national level and nearly 15% in Tamil Nadu.

Installed Capacity:

- India is ranked 4th globally in installed wind capacity.
- Key states: Gujarat, Tamil Nadu, Karnataka, Maharashtra, Rajasthan, and Andhra Pradesh, providing 93.37% of the country's wind installations.
- Tamil Nadu has 10,603.5 MW of installed capacity, **the second-highest in India**.

How are wind turbines maintained?

- Wind turbines that are more than **15 years old or have less than 2 MW capacity**, can be completely replaced with new turbines, which is known as repowering.
- They can also be refurbished by increasing the height of the turbine, changing the blades, installing a higher capacity gear box, etc., to improve the energy generated.
- When wind energy generators take up safety measures in the old turbines and extend its life, its called life extension.
- **The Ministry of New and Renewable Energy (MNRE)** released the “**National Repowering & Life Extension Policy for Wind Power Projects -2023**”. The NIWE estimates the repowering potential to be 25.4 GW if wind turbines of less than 2 MW capacity are taken into consideration.

What does repowering and refurbishing entail?

- Wind energy generators say that when turbines were installed in the 1980s, potential wind sites were mapped and the mandatory gap required between two wind mills were determined based on the technology available then.
- Sources in the industry point out that a 2 MW wind turbine is usually 120 metres high and requires 3.5 acres of land. It can generate upto 65 lakh units of power. A 2.5 MW turbine, which is available now, is 140 metres high and can generate 80 lakh units. It requires five acres. So, when an existing wind turbine is to be repowered by replacing it with a high capacity turbine, more land is required.
- In Tamil Nadu, wind mills installed after 2018 do not have banking facility. When a turbine is repowered, it will be treated as a new installation and the generator cannot bank the energy generated. This impacts the financial viability of the project.

Source: [The Hindu](#)

CENTRE NOTIFIES NEW WATER ACT RULES

Context:The Union Environment Ministry notified new rules for holding inquiry and imposing penalties for violations of the **Water (Prevention and Control of Pollution) Act**.

Background: -

- The new Rules – Water (Prevention and Control of Pollution) (**Manner of Holding Inquiry and Imposition of Penalty**) rules, 2024, will come into effect immediately.

Key takeaways

- The Rules come in the backdrop of the amendments made to the Water Act earlier this year, wherein offences and violations of the Act were decriminalised, replacing them with penalties instead.
- The amendments had also allowed the Centre to appoint officers to adjudicate offences, and violations and determine penalties.
- According to the Rules, the adjudication officer then has powers to issue notice to persons against whom complaints have been filed, detailing the nature of contravention alleged or committed.
- The adjudication office then considers the explanation provided and if needed, holds an inquiry into the complaint.
- The alleged violator could defend themselves or through a legal representative. The whole process has to be completed within six months from issuance of notice to the opposite party, the Rules state.

Source: [Indian Express](#)

CLIMATE GOVERNANCE: KEY THINGS TO KNOW

Context: The 2024 United Nations Climate Change Conference (COP29) kicked off on November 11 in Baku, the capital of Azerbaijan.

Background:

- In the midst of the expectations and demands surrounding various agendas at the ongoing conference, understanding the history of climate governance is crucial.

Key takeaways

United Nations Framework Convention on Climate Change (UNFCCC)

- UNFCCC is an international treaty, signed in 1992, that has provided a basis for climate negotiations.
- UNFCCC was opened for signature on 19 June 1992 at the United Nations Conference on Environment and Development (UNCED), also known as the Rio Earth Summit. The Framework Convention entered into force on 21 March 1994.
- The most remarkable feature of the UNFCCC is that it was a framework convention that provided a base upon which the infrastructure of climate governance has been built.
- It allowed and accommodated an extensive system of rules, mechanisms, processes, multiple actors and systems within it.
- The ultimate objective of the UNFCCC is to 'stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human-caused) interference

with the climate system’.

- The UNFCCC established foundational principles that guide international climate action. Chief among these principles is “common but differentiated responsibilities and respective capabilities” (CBDR-RC).

Conference of Parties or COP

- Over time, the Framework Convention paved the way for the development of institutions, processes and structures, aimed at enhancing global cooperation, such as the establishment of the **Conference of the Parties (COP)**, which serves as the convention’s governing body.
- Conference of the Parties or COP is the world’s only multilateral decision-making forum that brings together almost every country on the planet to formulate and implement policy responses to climate change collectively. Currently, there are 198 parties (197 countries plus the European Union) to the UNFCCC.
- The first COP, held in Berlin, Germany, in 1995, is notable for the Berlin Mandate, which marked a significant step forward. During this meeting, the need for legally binding commitments for developed nations was agreed upon.

Kyoto Protocol

- The Berlin Mandate set the groundwork for the adoption of the Kyoto Protocol at the COP3 which took place in Kyoto, Japan, in 1997.
- The Kyoto Protocol introduced legally binding targets specifically for developed countries, known as Annex I Parties under the UNFCCC, which were given emission target that is the maximum amount of greenhouse gas emissions that a Party may emit over a specified commitment period.
- The move reinforced the principle of common but differentiated responsibilities (CBDR) that had been introduced in the 1992 **UNFCCC**.
- In addition, the Kyoto Protocol introduced three mechanisms to facilitate emissions trading between developed and developing countries: International Emissions Trading, the Clean Development Mechanism and the Joint Implementation.
- The Kyoto Protocol officially came into force on 16 February 2005 after it was ratified by a sufficient number of countries. Any meeting that discusses or builds upon the Kyoto Protocol at the annual COP meetings is known as the Conference of the Parties for the Meeting of the Parties to the **Kyoto Protocol (CMP)**.
- This CMP designation signifies that it specifically pertains to negotiations and agreements under the Kyoto framework rather than the broader UNFCCC.

Source: [Indian Express](#)

INDIA’S ROAD TO NET-ZERO

Context: Climate action and plans of action by various countries is drawing significant attention as United Nations’ annual meeting of the Conference of the Parties (COPs) progresses in Baku.

Background: -

- A few COPs ago, India committed to achieving net-zero carbon emissions by 2070. Since then, it has implemented several policies while others are in the works to support this transition. It is widely acknowledged that this journey will not be without challenges.

Why net-zero at all?

- The scientific consensus is that to avoid devastating and irreversible consequences, the world must keep the global average annual surface temperature rise to within 1.5 °C above pre-industrial levels. The current increase is at least 1.1 °C over that in 1880.
- The Sixth Assessment Report of the U.N. Intergovernmental Panel on Climate Change estimated that from 2020, the remaining (cumulative) global carbon budget for limiting temperature rise to 1.5 °C is 400-500 billion tonnes (Gt) of CO₂. Currently, annual global emissions are around 40 GtCO₂. This means net global emissions must drop drastically to stay within the carbon budget.

Is net-zero equitable?

- The developed world, having caused the problem of climate change in the first place, is expected to reach net-zero emissions well before 2050, allowing more time for developing countries to balance their development goals with climate action. These expectations aren't being met, however.
- Developed countries are also expected to help finance climate action, but this hasn't materialised at the required scale. Developing countries, especially those that are small islands, are bearing more than their fair share of the brunt of climate change.
- So overall, neither climate change nor climate action is currently equitable.

A new consumption corridor

- India's lifestyle aspirations could easily become unsustainable in the long run, jeopardising our access to basic needs.
- In a scenario where consumption rises unchecked and India electrifies all end-use applications, the power demand could increase nine- to tenfold by 2070. Meeting it entirely via renewable energy will require more than 5,500 GW of solar and 1,500 GW of wind.
- This target is achievable if India's only priority is to expand renewable energy generation capacity. But if India is to maintain food and nutritional security, increase forest cover, and preserve biodiversity as well, these energy targets will become challenging. Going beyond 3,500 GW solar and 900 GW wind will demand considerable land trade-offs.
- India has a tough balancing act to pull off: availing good quality of life to a large share of its population (which has significant material and energy implications) while working towards its climate adaptation and mitigation goals.
- To this end, it is important to recognise the pitfalls of economic models. For example, the environmental Kuznets curve hypothesises that beyond a threshold, economic growth can be decoupled from carbon emissions. In reality, even the richest countries haven't achieved this decoupling.
- India need to envisage a long-term strategy incorporating 'sufficiency consumption corridors',

with a floor well suited to meeting our developmental goals and a ceiling of excess that will help avoid unsustainable growth. Equally important are demand-side measures to help maintain this corridor of consumption that will keep us on a sustainable pathway.

Demand and supply measures

- Some of the demand-side measures include the use of better construction materials and passive design elements to provide thermal comfort that doesn't require air-conditioning, energy-efficient appliances, public and/or non-motorised transport, local products to reduce the demand for long-haul freight, mindful dietary choices, and alternative fuels in industries.
- On the supply side as well, India needs to further decentralise energy production (including by the use of rooftop solar cells and of solar pumps for agriculture). Finally, it should continue to expand its nuclear power generation capacity.

Source: [The Hindu](#)

WHY CO₂ HAS CONTRIBUTED THE MOST TO GLOBAL WARMING

Context: India's carbon dioxide (CO₂) emissions from burning fossil fuels are expected to increase by 4.6% in 2024, the highest among major economies, according to a new report by Global Carbon Project.

Background: -

- CO₂ is one of the most important GHGs in the atmosphere and is the primary driver of anthropogenic climate change.

Key takeaways

- GHGs are those gases in the Earth's atmosphere that trap heat. The Sun emits shortwave radiation or sunlight that passes through the atmosphere and is absorbed by the planet's surface. Some of this sunlight is reflected back by the surface as infrared radiation (heat) which has a longer wavelength.
- GHGs such as **CO₂ and methane (CH₄)**, which cannot absorb shortwave radiation, trap infrared radiation.
- Studies have shown that CO₂ has contributed more than any driver to climate change. In fact, CO₂ is responsible for about 70% of global warming.
- In 2013, the Intergovernmental Panel on Climate Change (IPCC) compared the "**radiative forcing**" (RF) or heating effect of three different climate drivers: GHGs, aerosols, and land use change. It was found that between 1750 and 2011, CO₂ had the highest positive RF, meaning it had the greatest warming effect on the planet.
- The analysis also showed that other GHGs such as CH₄ or **Hydrofluorocarbons (an entirely human-made GHG)** which are much more potent — while CH₄ is around 80 times more powerful than CO₂, HFCs can be thousands of times more powerful — had less heating effect than CO₂.
- There are two reasons for this. One, CO₂ is much more abundant in the atmosphere compared to CH₄ and HFCs. Since the onset of industrial times in the 18th century, human activities have raised atmospheric CO₂ by 50%, which means the amount of CO₂ is now 150% of its value in 1750.

- Two, CO₂ remains in the atmosphere longer than the other major GHGs emitted due to human activities. It takes about a decade for CH₄ emissions to leave the atmosphere (it converts into CO₂) and about a century for nitrous oxide (N₂O).
- Notably, water vapour is the most abundant GHG in the atmosphere. However, it has a short cycle (10 days on average) and does not build up in the atmosphere in the same way as CO₂ does.

Source: [Indian Express](#)

GURU GHASIDAS - TAMOR PINGLA TIGER RESERVE

Context: The Chhattisgarh government has officially designated the Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary as a new tiger reserve, bringing the total number of tiger reserves in the state to four. The new reserve will be known as the **Guru Ghasidas-Tamor Pingla Tiger Reserve**.

Background: -

- The National Tiger Conservation Authority had accorded final approval for notifying the Guru Ghasidas- Tamor Pingla Tiger Reserve in 2021.

Key takeaways

- It is the 56th Tiger Reserve of the country. It is nestled in the Chota Nagpur plateau and partly in Baghelkhand plateau.
- The tiger reserve, encompassing a total area of 2829.38 sq.kms, includes a core/critical tiger habitat of 2049.2 sq.kms, comprising the Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary, and has a buffer of 780.15 sq.kms.
- This makes it the third largest tiger reserve in the country after Nagarjunasagar-Srisailem Tiger Reserve in Andhra Pradesh and Manas Tiger Reserve in Assam.
- Keeping in view the landscape approach to conservation as envisaged in India's National Wildlife Plan, the newly notified tiger reserve is contiguous with the Sanjay Dubri Tiger Reserve in Madhya Pradesh forming a landscape complex of nearly 4500 sq.kms.
- Further, the tiger reserve is connected to the Bandhavgarh Tiger Reserve in Madhya Pradesh to the West and Palamau Tiger Reserve in Jharkhand to the East.

Source: [PIB](#)

DELHI'S POLLUTION CASE

Context: Delhi is witnessing poor air quality prompting questions regarding the future of city.

Background: -

- Delhi is perhaps going to become, if it has not already, an uninhabitable city for two different reasons. In winters (October-February), pollution levels peak, while during summers (April-June), the heat waves are unbearable, both affecting Delhi's poor disproportionately

Why is Delhi's air quality so poor?

- The government often tells that stubble burning in Punjab, Haryana, and U.P. is responsible for Delhi's pollution. It's a half-truth.

- A 2023 report prepared by IIT Kanpur, IIT Delhi, TERI New Delhi, and Airshed Kanpur shows that, even during winter months, when sources of pollution external to Delhi are at their peak, half of the PM2.5 levels can be apportioned to Delhi itself .
- Vehicles alone contribute 58% to this total. The only realistic solution to air pollution is a massive shift in the way Delhi travels, that is, from private (cars and motorcycles) to public transport running on cleaner energy, with last mile connectivity, a step which will bring the number of vehicles on the road down significantly.

Why are the winters so much worse?

- The concentration of pollutants in the air depends not just on emissions but also on many meteorological factors — temperature, wind direction/speed, and rain, among other things.
- Hot air, being lighter, moves up (thereby carrying the pollutants with it), whereas cold air traps pollutants and keeps them closer to the ground. Similarly, wind can disperse the pollutants, while rain can force the most common air pollutants, like PM2.5 and PM10, to the ground. Cold air with slow wind speed and no rains make Delhi a pot of pollution with a lid on.
- Evidence shows that for the months which have a moderate AQI, either the wind speed is relatively higher (February-June) or rainfall is greater (July-September) than the rest of the year. Both these factors, aided by warmer air, lift the air quality of Delhi from poor/severe to moderate.
- Given that Delhi's own emissions are not winter-specific, its air quality would have been poor throughout the year but for these favourable factors from March through September.

Source: [The Hindu](#)

COLD WAVE

Context: Days after night temperatures dipped across Telangana, a public advisory has been issued for cold wave conditions.

Background: -

- The advisory has been issued by the **National Programme on Climate Change and Human Health (NPCCHH)**, under the Ministry of Health and Family Welfare, for Telangana and 16 other states and Union Territories about cold wave conditions.

Key takeaways

- The cold wave conditions signify a certain amount of fall of temperature at a given place with respect to normal climatological value.
- According to the Indian Meteorological Department, a cold wave occurs when the minimum temperature is 10°C or less for plains and 0°C or less for the hilly regions and negative departure from normal day temperature is 4.5 to 6.4°C. If negative departure is more than 6.4°C, it is a severe cold wave. Which means that day temperatures play an important role in cold waves.
- Additionally, the plains suffer a cold wave when minimum temperature is 4°C or less and a severe cold wave when minimum temperature falls to 2°C or less. Coastal areas suffer cold waves when the minimum temperature is 15°C or less and the negative departure from the minimum is 4.5 °C.

- The advisory highlights that the cold wave season extends from November to March, with December and January witnessing the highest frequency of extreme cold events.
- The affected States and Union Territories, identified as the 'Core Cold Wave Zone,' include Telangana, Punjab, Himachal Pradesh, Uttarakhand, Jammu and Kashmir, Ladakh, Delhi, Haryana, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, West Bengal, and Odisha.
- Certain population groups are particularly vulnerable. These include the homeless, the elderly, economically disadvantaged individuals, pregnant and lactating women, children, outdoor workers & farmers.
- The advisory cautions that prolonged exposure to cold can cause severe health issues, including hypothermia and frostbite. Non-freezing cold injuries, such as Immersion Foot—caused by prolonged exposure to cold, wet conditions—are also a risk.

Source: [The Hindu](#)

OPHIOPHAGUS KAALINGA

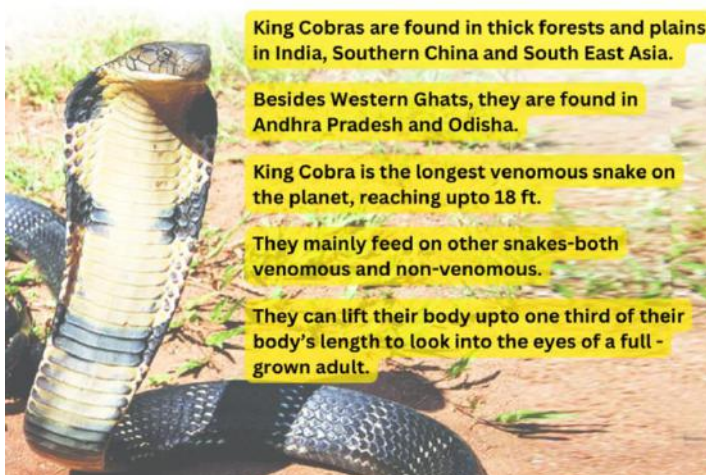
Context: King cobra found in the Western Ghats and known as 'Kaalinga Sarpa' in the local parlance is officially named Ophiophagus Kaalinga.

Background: -

- The name Kaalinga is deeply rooted in Kannada culture.

Key takeaways

- king cobra, whose habitat spreads across South Asia and Southeast Asia, was believed to belong



King Cobras are found in thick forests and plains in India, Southern China and South East Asia.

Besides Western Ghats, they are found in Andhra Pradesh and Odisha.

King Cobra is the longest venomous snake on the planet, reaching upto 18 ft.

They mainly feed on other snakes—both venomous and non-venomous.

They can lift their body upto one third of their body's length to look into the eyes of a full-grown adult.

to one species till a nearly decade-long research led by noted herpetologist, P. Gowri Shankar, brought to the fore four species of king cobra, of which Ophiophagus Kaalinga is one.

- Ophiophagus kaalinga, the Western Ghats king cobra, is a species of King cobra endemic to the Western Ghats of south-western India.

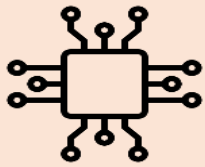
- It is found in Tamil Nadu, Kerala, Karnataka, Goa, and parts of Maharashtra. Its range extends from the Ashambu hills near Kanyakumari through various mountain

ranges, including the Agasthyamalai and Cardamom hills, reaching elevations of about 100 m to 1800 m above sea level.

- The species is hill-dwelling and thrives in mid-elevation rainforests (500–900 m) but can also be found in lower foothills and montane forests.
- The specific epithet kaalinga comes from the Kannada language of Karnataka, India, meaning "dark" or "black".

- As a member of the king cobra family, the Western Ghats king cobra is also considered as "vulnerable" under the IUCN Red List.
- The king cobras are the only snakes in the world to build nests and the female king cobras are found ferociously guarding them.

Source: [The Hindu](#)



SCIENCE & TECHNOLOGY



TITANIUM

Context: Indian Rare Earths Limited (IREL), a central PSU, and Ust-Kamenogorsk Titanium and Magnesium Plant JSC (UKTMP JSC), Kazakhstan signed an agreement to establish an Indo-Kazakh joint venture company — for production of titanium slag in India utilising ilmenite from Odisha.

Background: -

- The company will function as a catalyst in developing titanium value chain within India as it shall benefit low-grade ilmenite into high-grade titanium feedstock while generating employment.
- India possesses approximately 11% of the world's titanium-iron ore deposits, primarily found in the beach sands along the coasts of Kerala, Tamil Nadu, Andhra Pradesh, and Odisha.

Key takeaways

- Titanium is a strong, low-density, highly corrosion-resistant, and lustrous metallic element with the symbol Ti and atomic number 22.
- **Strength:** Titanium is as strong as steel but significantly lighter (about 45% lighter), making it ideal for applications where strength-to-weight ratio is crucial.
- **Corrosion Resistance:** It has excellent corrosion resistance, especially against seawater, acids, and chlorine, due to a protective oxide film that forms naturally on its surface.
- **Melting Point:** High melting point of about 1,668°C (3,034°F), which makes it useful in high-temperature applications.
- **Chemical Properties:**
 - **Oxidation:** Titanium can easily form titanium dioxide (TiO₂), a stable oxide layer that provides its corrosion-resistant properties.
 - **Alloying:** It is commonly alloyed with other metals like aluminum, iron, vanadium, and molybdenum to enhance its mechanical properties.
 - **Biocompatibility:** Titanium is biocompatible and non-toxic, which makes it ideal for medical applications like implants, prosthetics, and surgical instruments.

Major Uses of Titanium

- **Aerospace Industry:** Titanium's strength, light weight, and heat resistance make it an ideal material for aerospace components, including jet engines, aircraft frames, and missile structures. Titanium alloys help reduce weight and increase fuel efficiency in aircraft.
- **Medical and Dental Applications:** Due to its biocompatibility, titanium is widely used in orthopedic implants, dental implants, and bone plates. It is also used in surgical instruments and tools because it does not react adversely with body tissues.
- **Automobile and Sports Equipment:** High-performance car manufacturers use titanium in engines and exhaust systems for its strength and heat resistance. Titanium is also popular in sports

equipment, like golf clubs, bicycles, and tennis rackets, for its light weight and durability.

- **Pigments and Cosmetics:** Titanium dioxide (TiO_2) is widely used as a white pigment in paints, coatings, plastics, and cosmetics due to its opacity and brightness. It is also used in sunscreens for its UV-blocking properties.

Titanium Extraction and Production

- **Ores:** The main sources of titanium are ilmenite (FeTiO_3) and rutile (TiO_2). Australia, South Africa, Canada, and India are major producers.
- **Extraction:** The Kroll process is commonly used to extract titanium from its ores.
- **Recycling:** Titanium can be recycled efficiently, which is beneficial for industries like aerospace where material costs are high.

Source: [Times of India](#)

CYANOBACTERIA

Context: Researchers have discovered a novel strain of cyanobacteria, or algae, isolated from volcanic ocean vents that is especially adept at growing rapidly in the presence of CO_2 and readily sinks in water, making it a prime candidate for biologically-based carbon sequestration projects.

Background: -

- The strain, nicknamed “Chonkus,” was found off the coast of the island of Vulcano in Sicily, Italy — an environment in which marine CO_2 is abundant due to shallow volcanic vents.

Key takeaways

- Cyanobacteria, also known as blue-green algae, are a group of photosynthetic bacteria found in various aquatic and terrestrial ecosystems.
- They are some of the oldest organisms on Earth and played a crucial role in the oxygenation of the Earth’s atmosphere during the Great Oxygenation Event around 2.5 billion years ago.
- **Structure:**
 - They are prokaryotic organisms (lack a nucleus) and differ from true algae, which are eukaryotic.
 - They contain chlorophyll a and other pigments like phycocyanin and phycoerythrin, giving them their blue-green color.
- **Photosynthesis:**
 - Cyanobacteria are capable of oxygenic photosynthesis (producing oxygen), similar to plants, as they have chlorophyll.
 - They are autotrophic, meaning they produce their own food using sunlight.
- **Nitrogen Fixation:** Certain cyanobacteria, such as Anabaena and Nostoc, have specialized cells called heterocysts that can fix atmospheric nitrogen into ammonia, which is essential for soil fertility.
- **Habitat:** They are found in freshwater, marine, and terrestrial environments. They can thrive in extreme conditions, including hot springs, polar regions, and deserts.

Ecological Importance:

- **Primary Producers:** Cyanobacteria form the base of the food chain in many aquatic ecosystems and contribute significantly to global primary production.
- **Role in Nitrogen Cycle:** Through nitrogen fixation, they improve soil fertility and support plant growth, especially in rice paddy fields.
- **Oxygen Production:** They played a critical role in oxygenating the Earth's atmosphere billions of years ago, enabling the evolution of aerobic (oxygen-breathing) organisms.
- **Formation of Stromatolites:** Cyanobacteria contribute to the formation of stromatolites, which are layered rock structures and some of the oldest known fossils, providing evidence of early life on Earth.

Potential Hazards:

- **Harmful Algal Blooms (HABs):** Under nutrient-rich conditions, cyanobacteria can proliferate and form blooms, known as harmful algal blooms (HABs), which produce toxins dangerous to aquatic life and humans.
- **Cyanotoxins:** Certain species produce cyanotoxins (e.g., microcystins) that can contaminate drinking water sources, posing health risks.

Source: [Harvard](#)

COSTS OF POPULATION DECLINE

Context: The Chief Ministers of both Andhra Pradesh and Tamil Nadu expressed concerns about the low fertility rates in their States recently. Andhra Pradesh Chief Minister N. Chandrababu Naidu has said that he planned to introduce legislation to incentivise more children per family.

Background: -

- After decades of family planning policies seeking to slow population growth, India has been waking up to the fact that the success of such policies is also leading to an increasingly ageing population.

Key takeaways

- **Ageing Population:** Due to decades of family planning, India now faces an aging population, especially pronounced in southern and smaller northern States where Total Fertility Rates (TFR) are below replacement levels.
- **Example TFR (2019-2021):** Tamil Nadu (1.4); Andhra Pradesh, Telangana, Kerala, Punjab & Himachal Pradesh (1.5).
- Higher TFR in states like Bihar (3), Uttar Pradesh (2.7), Madhya Pradesh (2.6) indicates a demographic divide.
- Elderly population share is projected to rise across India, with more rapid increases in southern states.
- **Projections for 2036:** Kerala (22.8% elderly), Tamil Nadu (20.8%), Andhra Pradesh (19%), vs. Bihar (11%).

Economic Impact of Demographic Changes

- **Old Age Dependency Ratio:** Key indicator for demographic challenges, reflecting the number of elderly for every 100 working-age individuals (18-59 years). The Critical threshold is 15% (indicating aging crisis); already exceeded by Kerala (26.1), Tamil Nadu (20.5), Himachal Pradesh (19.6), Andhra Pradesh (18.5).
- Southern states have a limited demographic dividend window, with increased dependency burdens on working populations.
- **Health Expenditures:** Aging populations increase health costs significantly. Southern states, with 20% of India's population, accounted for 32% of national cardiovascular disease expenses (NSSO data, 2017-18).
- **Resource Allocation Disparity:** Slower population growth in southern states affects their share in central tax resources, despite higher contributions to central revenue.

Political Implications

- **Impact on Representation:** The 2026 expiration of the freeze on parliamentary seat allocations could lead to redistribution based on population.
- **Potential outcomes:** Uttar Pradesh (+12 seats), Bihar (+10), Rajasthan (+7); likely losses for Tamil Nadu (-9), Kerala (-6), Andhra Pradesh (-5).

Proposed Solutions

- **Pro-Natalist Policies:** Southern CMs advocate for policies encouraging higher fertility, but research suggests this approach is ineffective.
- **Alternative focus on work-family policies:** Paid maternity/paternity leave, childcare support, and policies to address the "motherhood penalty" can encourage sustainable fertility rates.
- **Increasing Working Lifespan:** Extending working years to balance the old age dependency ratio.
- **Encouraging Migration:** Southern states attract economic migrants, who contribute to the workforce yet are politically and financially counted in their home states, creating challenges for southern states in managing resources.

Source: [The Hindu](#)

WALKING PNEUMONIA

Context: In recent weeks, doctors have reported cases of "walking pneumonia," a mild yet persistent lung infection that can mimic symptoms of a common cold.

Background: -

- Unlike typical pneumonia, which can lead to severe lung inflammation and difficulty breathing, walking pneumonia is often less intense.

Key takeaways

- Walking pneumonia is a milder form of pneumonia caused by bacteria, primarily *Mycoplasma pneumoniae*. It is termed "walking" because patients are often able to carry on with daily activities despite the infection.

Symptoms:

- It often presents symptoms similar to those of a common cold or mild respiratory infection, including cough, sore throat, low-grade fever, and fatigue.
- Symptoms develop gradually and may last for weeks, making it hard to diagnose immediately.

Cause:

- The primary causative agent is the bacterium *Mycoplasma pneumoniae*, which lacks a cell wall, making it resistant to antibiotics that target cell wall synthesis (e.g., penicillin).

Transmission:

- Spread via respiratory droplets (coughing or sneezing) and can spread easily in crowded spaces like schools and dormitories.
- **Diagnosis:** Diagnosed through physical examination, chest X-rays, and sometimes serological tests or PCR to detect the bacteria.
- **Treatment:** Treated with antibiotics such as macrolides (e.g., azithromycin), doxycycline, or fluoroquinolones.
- Since symptoms are mild, bed rest, hydration, and over-the-counter medications are often recommended to manage symptoms.
- Although typically not life-threatening, walking pneumonia can lead to complications in the immunocompromised or elderly if untreated.

Source: [India Today](#)

WORLD DIABETES DAY

Context: Sir Fredrick Banting's birth anniversary is observed as World Diabetes Day on November 14 every year, as a tribute to the history behind the discovery of insulin, one of medicine's greatest breakthroughs.

Background: -

- In 1989, Queen Elizabeth kindled the Flame of Hope in Sir Frederick G. Banting Square, Ontario, Canada, to honour Dr. Banting's discovery of insulin. This eternal flame stands as a hope for millions affected by diabetes worldwide, representing the commitment to continue research until a definitive cure is found.

Key takeaways**Pancreas**

- **The pancreas is a dual-function organ:**
 - **Exocrine function:** Produces digestive enzymes to aid in breaking down carbohydrates, proteins, and fats.
 - **Endocrine function:** Produces hormones, including insulin which regulate blood sugar levels.

Insulin and its discovery

- **Insulin** : A hormone produced by the beta cells in the islets of Langerhans in the pancreas.

- **Role:**
 - o Helps glucose enter cells, providing them with energy.
 - o Stores excess glucose as glycogen in the liver and muscles for future use.
 - o Maintains blood sugar within a narrow range (70–140 mg/dL in most individuals).
- Insulin was discovered in 1921 by Frederick Banting and Charles Best, working under the guidance of John Macleod.
- James Collip, a biochemist, played another important role. While Banting and Best had successfully extracted insulin, their preparations were impure and caused adverse reactions in patients. Collip developed a method for purifying insulin, removing impurities, and ensuring its safety and efficacy, as the insulin was prepared mostly from dogs and cows.
- In 1923, the Nobel Prize was awarded to Frederick Banting and John Macleod for discovering insulin. The award sparked controversy as Banting felt that Best deserved recognition instead of Macleod. Conversely, Macleod believed Collip, who refined the insulin extraction process, deserved credit. In response, Banting shared half of his Nobel Prize money with Best, and Macleod did the same with Collip.
- In a remarkable gesture, Banting sold the patent rights to the University of Toronto for just \$1, ensuring that insulin could be produced widely and remain affordable.
- Collip's extraction techniques to purify insulin were viable for human use but not scalable for mass production.
- With recombinant DNA technology in the 1980s: scientists developed a method to insert the human insulin gene into Escherichia coli bacteria. This approach enabled bacteria to produce large quantities of insulin identical to that made by human bodies. The recombinant process allowed for mass production.

Source: [The Hindu](#)

ONE DAY ONE GENOME INITIATIVE

Context: The **Department of Biotechnology (DBT)** and Biotechnology Research and Innovation Council (BRIC) have launched the 'One Day One Genome' initiative.

Background:

- The initiative is led by BRIC in collaboration with **the National Institute of Biomedical Genomics (NIBMG)**, an institute under the DBT.

Key takeaways

- The One Day One Genome Initiative is a transformative project launched by the Department of Biotechnology (DBT) and the Biotechnology Research and Innovation Council (BRIC) to unlock India's vast microbial potential.

Objectives:

- **Microbial Exploration:** To explore and showcase India's unique microbial species and their roles in agriculture, the environment, and human health.
- **Genomic Data:** To make genomic data freely available to the public, fostering scientific

collaboration and community engagement.

- **Innovation:** To stimulate discussions, inspire research, and drive innovations with real-world applications.

Key Features:

- **Genome Sequencing:** The initiative involves genome sequencing of bacterial species isolated in India, revealing their genetic blueprint and potential applications.
- **Public Accessibility:** Fully annotated bacterial genomes, along with graphical summaries, infographics, and genome assembly details, will be made publicly available.

Significance:

- **Environmental Protection:** Research in this field can lead to better protection and management of the environment.
- **Agricultural Development:** It can contribute to the development of agriculture by enhancing nutrient cycling, soil fertility, and pest control.
- **Human Health:** The initiative can improve human health outcomes by supporting digestion, immunity, and mental health.

Source: [Krishi Jagran](#)

CLOUD SEEDING

Context: The Delhi government's appeal to the Centre to permit cloud-seeding and induce artificial rain as a means to tackle the capital's ongoing air pollution crisis is misplaced, scientists at the Indian Institute of Tropical Management, Pune, said.

Background: -

- Delhi's Environment Minister suggested that artificial rain could help settle airborne pollutants and improve visibility.

What is Cloud Seeding?

- Cloud seeding is a weather modification technique aimed at inducing or enhancing precipitation by dispersing substances into the atmosphere.
- **Substances used:** Silver iodide, potassium iodide, dry ice (solid CO₂), or liquid propane.

How it Works

- **Process:**
 - Tiny particles act as cloud condensation nuclei or ice nuclei.
 - They encourage water droplets to condense and form larger droplets, eventually falling as rain or snow.
- **Methods:**
 - **Aerial Spraying:** Using aircraft to disperse seeding agents.
 - **Ground-Based Release:** Releasing agents through generators on the ground.

Why cloud seeding may not work in Delhi?

- During winter, Delhi often experiences temperature inversions, trapping pollutants near the surface. These stable atmospheric conditions do not favor the development of clouds that could be seeded. Cloud seeding requires the presence of moisture-laden clouds.
- The scale of Delhi's pollution problem is vast, requiring massive, continuous rain over a large

area to have a measurable impact.

Source: [Indian Express](#)

IN - SPACe

Context: After satellites and launch vehicles, the Indian National Space Promotion and Authorisation Centre (IN-SPACe) is looking at ways for entry of private players in ground segments, according to a consultation document prepared by it.

Background:

- Ground stations are essentially ground-based antennas that help in communicating with the satellites. Offering ground station as a service (GSaaS) such as satellite control, telemetry and tracking, space data reception, and space situational awareness on pay-per-use basis, the sector has been envisioned to grow 30% by 2033 — from \$0.14 billion to \$2.5 billion, according to the document.

About IN-SPACEe

- The **Indian National Space Promotion and Authorization Centre (IN-SPACE)** is a single-window, autonomous agency under the **Department of Space (DOS)** of the Government of India.
- It was established in June 2020 to facilitate and promote private sector participation in the Indian space sector.

Purpose:

- **Promote Private Participation:** Enable and nurture non-governmental entities (NGEs) to accomplish their ventures in the space sector.
- **Authorize and Supervise:** Authorize space operations and services in the country through a well-defined framework.
- **Boost Space Economy:** Accelerate the development of the Indian space ecosystem and boost the space economy.
- **Share Space Infrastructure:** Allow NGEs to share space infrastructure and premises under the control of DOS/ISRO.
- **Establish New Infrastructure:** Support the establishment of new space infrastructure and facilities.

Source: [Indian Express](#)

PROBA 3

Context: The **Indian Space Research Organisation (ISRO)** will launch the European Space Agency's Proba-3 mission on its PSLV rocket from Sriharikota on December 4.

Background:

- Proba-1 (also launched by ISRO) and Proba-2 were launched in 2001 and 2009, respectively. Proba 3 will attempt the first-ever "**precision formation flying**", where two satellites will fly together and maintain a fixed configuration in space.

What is Proba-3?

- Proba-3 is an advanced mission by the European Space Agency (ESA) aimed at studying the Sun's corona.

- Proba-3 has an expected mission life of two years. Proba-3 will be placed in a highly elliptical Earth orbit with an apogee of 60,530 km and a perigee of 600 km.
- The mission is designed with two satellites that will be launched together, separate from each other and then fly in tandem. They will then form a solar coronagraph, an instrument that helps block out the bright light emitted by the Sun to reveal the objects and atmosphere around it.

Proba-3 carries three main instruments:

- **ASPIICS (Association of Spacecraft for Polarimetric and Imaging Investigation of the Corona of the Sun)** or the coronagraph: Its field of view is between the Sun's outer and inner corona, a circular belt normally observable during solar eclipse events.
- **DARA (Digital Absolute Radiometer):** Measures the Sun's total energy output known as the total solar irradiance.
- **3DEES (3D Energetic Electron Spectrometer):** Measures electron fluxes as it passes through Earth's radiation belts.

Why is Proba-3 unique?

- The two satellites — Occulter Spacecraft (weighing 200 kg) and the Coronagraph Spacecraft (weighing 340 kg) — will mimic a natural solar eclipse. They will manoeuvre precisely in Earth's orbit so that one satellite casts a shadow onto the other.
- A naturally occurring solar eclipse allows solar physicists to observe and study the Sun's corona for 10 minutes, across an average of about 1.5 eclipse events per year. Proba-3 will give six hours, equivalent to 50 such events annually, which will help deepen understanding of the Sun's corona like never before.
- Both the Occulter and the Coronagraph will face the Sun at all times. They will maintain a formation of a few millimetres and then move to a position where they will be 150 metres apart for six hours at a time.
- One satellite will act as a viewing telescope, kept at the centre of a shadow cast by the other satellite positioned 150 metres away. This positioning will facilitate observing the Sun's corona and will be autonomously achieved through precise flight formation.
- If done successfully, the Occulter will create an artificial yet stable eclipse, by masking large parts of the Sun. As a result, the Sun's blinding light will get blocked and only the solar corona will be visible to the coronagraph, which will photograph and facilitate studies of the lesser-known features.

Source: [Indian Express](#)



HISTORY AND ART & CULTURE



MAHARAJA RANJIT SINGH

Context: November 13 marks the birth anniversary of Maharaja Ranjit Singh of Punjab.

Background: -

- He was born on November 13, 1780 in Gujranwala, now in Pakistan, and ruled Punjab for almost four decades (1801-39). At the time of his death, he was the only sovereign leader left in India, all others having come under the control of the East India Company in some way or the other.

Key takeaways

- In 1799, Ranjit Singh established a unified Sikh empire after conquering Lahore. He overthrew chieftains who had divided the territory into Misls. He was given the title Sher-e-Punjab because he stemmed the tide of Afghan invaders in Lahore, which remained his capital until his death.
- Ranjit Singh's empire included the former Mughal provinces of Lahore and Multan besides part of Kabul and the entire Peshawar. The boundaries of his state went up to Ladakh — Zorawar Singh, a general from Jammu, had conquered Ladakh in Ranjit Singh's name — in the northeast, Khyber pass in the northwest, and up to Panjnad in the south where the five rivers of Punjab fell into the Indus. During his regime, Punjab was a land of six rivers, the sixth being the Indus.
- Ranjit Singh struck balance between his role as a faithful Sikh ruler and his desire to act as friend and protector of his empire's Muslim and Hindu people. He embarked on a campaign to restore Sikh temples – most notably rebuilding the Harmandir Sahib, the Golden Temple, at Amritsar in marble (1809) and gold (1830) – while also donating a tonne of gold to plate the Hindu Kashi Vishwanath temple.
- Ranjit Singh began to modernise his army along the line of European armies. He hired French and Italian mercenaries who had fought for Napoleon until the mighty French General's defeat in 1815.
- The new Fauj-i-khas ('special army') brigade was led General Jean-Baptiste Ventura and General Jean-Francois Allard, who were given generous salaries. They were later joined by Auguste Court and Paolo Avitabile. These generals settled down in Lahore, and adapted to Indian culture.
- Immediately after Ranjit Singh's death in 1839, the British East India Company began to bolster its military presence in regions adjacent to Punjab. Inevitably, conflict arose between the Khalsa (the Sikh army) and the British, leading to the Anglo-Sikh Wars.
- The first Anglo-Sikh War occurred from late 1845 to early 1846. This conflict led to the defeat and partial subjugation of the Sikh empire, resulting in the cession of Jammu and Kashmir as a separate princely state under British suzerainty.
- The Company inflicted a decisive and final defeat on Sikhs in 1849, after which 10-year-old Maharaja Duleep Singh became a pensioner of the British, and was exiled to London for the rest of his life.

Source: [Indian Express](#)

BIRSA MUNDA

Context: Prime Minister Narendra Modi marked the commencement of 150th Birth Anniversary Year celebration of Birsa Munda.

Background: -

- The Centre had in 2021 decided to celebrate November 15, the birth anniversary of Birsa Munda, as Janjatiya Gaurav Diwas.

Key takeaways

- **Born:** November 15, 1875, in Ulihatu, present-day Jharkhand.
- Belonged to the Munda tribal community, which practiced their distinct socio-cultural traditions.

Role as a Tribal Leader:

- Birsa Munda was a prominent freedom fighter, religious leader, and tribal reformer.
- He led the Munda Rebellion (also known as the Ulgulan or "The Great Rebellion") against the oppressive British colonial system and zamindari system.

Ulgulan Movement (1899–1900):

- The movement sought to protect tribal lands and rights from the Dikus (outsiders) like landlords, moneylenders, and the British.
- Focused on restoring tribal autonomy, ending forced labor (beth begari), and ensuring land ownership for tribal people.

Religious and Social Reforms:

- Advocated for monotheism and rejected superstitions, idol worship, and the influence of Christian missionaries.
- Encouraged the Munda community to reclaim their cultural and spiritual identity.
- Declared himself as "Dharti Aba" (Father of the Earth) and urged people to worship a single god and follow tribal traditions.

Arrest and Death:

- Arrested by British forces in 1900 during the rebellion.
- Died on June 9, 1900, in Ranchi Jail, under mysterious circumstances, at the young age of 25.
- Jharkhand State was established on his birth anniversary in 2000 as a tribute.

Source: [The Hindu](#)

LACHIT BORPHUKAN

Context: Every year, 24th November is celebrated as the 'Lachit Diwas' to mark the birth anniversary of the Assamese folk hero Lachit Borphukan.

Background: -

- He is considered one of the greatest of Assamese heroes, symbolising the valour, courage, and intelligence that defines the Assamese self-identity.

Key takeaways

- Lachit Borphukan was a legendary army commander of the Ahom kingdom. He defeated the Mughal forces, led by Raja Ramsingh-I, in the 'Battle of Saraighat', and thwarted a drawn-out attempt by them to take back Assam.
- Lachit was born on November 24, 1622, and grew up during a turbulent period of Assam's

history.

- He was chosen as one of the five Borphukans of the Ahom kingdom by king Charadhwaj Singha, and given administrative, judicial, and military responsibilities.

Battles of Alaboi and Saraighat

- Between 1615 and 1682, the Mughal Empire made a series of attempts, under Jahangir and then Aurangzeb, to annex the Ahom kingdom.
- In 1662, Mughal Governor of Bengal Mir Jumla's forces engaged with the Ahom army and went on to occupy part of the territory under Ahom rule.
- Between 1667 and 1682, the Ahoms under a series of rulers, launched a counter-offensive to reclaim lost territories.
- In 1669, Aurangzeb dispatched the Rajput Raja Ram Singh I to recapture territories won back by the Ahoms. The battle of Alaboi was fought on August 5, 1669 in the Alaboi Hills near Dadara in North Guwahati.
- While the Mughals preferred an open battle, Borphukan relied on his knowledge of the territory and engaged in guerrilla warfare, which provided an edge to his smaller, but fast moving and capable forces. After initial setbacks, Ram Singh sent his entire battery of Rajput soldiers and Mughal veterans and turned the tide of the battle.
- Unlike in Alaboi, where he was forced to fight on land instead of a naval battle, Lachit in Saraighat enticed the Mughals into a naval battle.
- Ahom forces combined a frontal attack and a surprise attack from behind. They lured the Mughal fleet into moving ahead by feigning an attack with a few ships from the front. The Mughals vacated the waters behind them, from where the main Ahom fleet attacked and achieved a decisive victory.
- Lachit died a year after the Battle of Saraighat from a long festering illness. In fact he was very ill during the Battle of Saraighat, as he heroically led his troops to victory. This only added to his legend.
- The battle of Saraighat proved that Lachit Barphukan was a master strategist who can be compared with the great generals in any part of India. Aptly, the Lachit Barphukan gold medal, instituted in 1999, is given to the best cadet from the National Defence Academy.

Source: [Indian Express](#)

JYOTIRAO PHULE

Context: November 28 marks the death anniversary of Jyotirao Phule.

Background: -

- He, along with Savitribai Phule, worked as a social reformer, fighting against social evils like untouchability and promoting women's education.

Key takeaways

- Jyotirao Govindrao Phule, also known as Jyotiba Phule, was born on April 11, 1827, and belonged to the Mali caste of gardeners and vegetable farmers.
- Despite the societal norms of his time, Phule received an education at the Scottish Mission High School in Pune. He was a talented student and later became a teacher himself
- Phule along with his followers formed Satyashodhak Samaj which meant 'Seekers of Truth' in order to attain equal social and economic benefits for the lower castes in Maharashtra.
- He was married off when he was only 13, and was personally rebuked in 1848, while attending the wedding of a Brahmin friend. With time, he realised the state of women in society and challenged it by first educating his wife Savitribai, and then starting an indigenously-run school for girls in Pune.
- The couple went on to open a school for girls in Bhidewada, Pune, in 1848. This became the country's first girls' school. Many more such schools were opened for girls, Shudras and Ati-Shudras (the backward castes and Dalits, respectively) in Pune, leading to discontent among Indian nationalists like Bal Gangadhar Tilak.
- They opposed the setting up of schools for girls and non-Brahmins, citing a "loss of nationality", and believing not following the caste rules would mean a loss of nationality itself.
- **Authored several works highlighting social issues:**
 - **Gulamgiri (1873):** Critique of Brahmanical hegemony and social exploitation.
 - **Shetkarayacha Asud (The Cultivator's Whipcord):** Highlighted the exploitation of farmers by landlords and moneylenders.
- He was bestowed with the title of Mahatma in 1888 by a Maharashtrian social activist Vithalrao Krishnaji Vandekar.

Source: [Indian Express](#)

JARAWA TRIBE

Context: In a historic move, the Jarawa tribe of the Andaman and Nicobar has been officially included in India's democratic fold with their enrolment in the electoral roll.

Background: -

- A total of 19 Jarawa tribe members were enrolled. For the first time, members of the Jarawa community will participate in the electoral process.

Key takeaways

- The Jarawa tribe is an indigenous group residing in the Andaman Islands, specifically on the western coast of the South and Middle Andaman Islands.
- **Current Population:** The Jarawa population is estimated to be between 250 to 400 individuals.
- **Historical Population:** The population declined significantly during British colonial rule but has since stabilized.
- They are classified as a **Particularly Vulnerable Tribal Group (PVTG)** due to their small

population, primitive technology, and relative isolation.

- **Jarawa Language:** The Jarawa speak their own language, which is part of the Ongan language family. It is distinct from other languages spoken in the Andaman Islands.
- **Lifestyle:**
 - **Hunter-Gatherers:** The Jarawa are traditionally hunter-gatherers. They hunt wild pigs and monitor lizards using bows and arrows, and fish in coastal waters.
 - **Diet:** Their diet includes wild fruits, roots, honey, and fish. They are known for their excellent nutritional health and robust physique.
 - **Housing:** They build temporary huts in their camps and use crude rafts to cross creeks and streams.
- **Contact with Outsiders:**
 - **Historical Isolation:** The Jarawa have largely shunned interaction with outsiders until the 1990s.
 - **Recent Interactions:** Since the 1990s, contact with settled populations has increased, with some Jarawa visiting nearby towns and settlements.

Source: [Nicobar Times](#)

KORAGA TRIBE

Context: The Revenue department in Kerala has initiated steps to provide land titles (patta) to the Koraga community.

Background: -

- The initiative is aimed at addressing longstanding issues of missing land documents and undefined boundaries, which have hindered the Koraga community's access to government housing schemes and left their lands uncultivated and forest-covered.

Key takeaways

- The Koraga tribe is a Particularly Vulnerable Tribal Group (PVTG) found primarily in the southern Indian states of Karnataka and Kerala. Here are some key details about the Koraga tribe:

Geographic Distribution:

- **Karnataka:** The Koraga tribe is mainly found in the Dakshina Kannada and Udupi districts, often referred to as Tulunaad. They are also present in small numbers in Uttara Kannada, Shimoga, and Kodagu districts.
- **Kerala:** The tribe is found in the Kasaragod district.
- **Current Population:** According to the 2011 census, the Koraga population is estimated to be around 16,376.
- **Historical Population:** The population was recorded as 16,071 in the 2001 census.
- **Koraga Language:** The Koraga tribe has its own language, which is classified as an independent Dravidian language. However, most Koragas also speak Tulu, Kannada, and Malayalam.

- The Koraga tribe is classified as a Particularly Vulnerable Tribal Group (PVTG) due to their primitive traits, geographical isolation, low literacy, and backwardness.
- **Social Structure:**
 - **Clans:** The Koraga tribe is divided into exogamous clans or sects known as balis.
 - **Matrilineal Descent:** The family structure is matrilineal, with descent reckoned along the female line. However, residence after marriage is patrilocal.
 - **Property Inheritance:** Property is equally divided among both sons and daughters.
- **Economy:**
 - **Agriculture:** The Koragas are primarily agriculturists, relying on forest produce such as bamboo, cane, and creepers for basketry.
 - **Livelihood:** They also engage in basket-making and other traditional crafts.
- **Cultural Practices:**
 - **Folklore and Music:** The Koragas have rich folklore, songs, and folk dances.
 - **Rituals:** They perform rituals and magics to appease their deities for bountiful crops and to ward off epidemics.
 - **Bhuta Worship:** They worship various Bhutas (deities) such as Panjurli, Kallurti, Korathi, and Guliga.

Source: [Hindu Businessline](#)

DEFENCE & SECURITY.

EXERCISE SEA VIGIL

Context: The Indian Navy is set to conduct the fourth edition of the pan-India Coastal Defence Exercise 'Sea Vigil-24' on Nov 20- 21.

Background: -

- While coastal security exercises are conducted by individual coastal states and maritime security agencies regularly, Exercise Sea Vigil coordinated by the Indian Navy stands out as a national level initiative that provides a holistic appraisal of India's maritime defence and security capabilities.

Key takeaways

- The exercise was first conceptualized in 2018 in response to the need for enhanced coastal defence following the 26/11 Mumbai terror attacks.
- Sea Vigil was designed to validate and enhance measures adopted to bolster Coastal Defence
- Encompassing the entire 11,098 km coastline and vast Exclusive Economic Zone of 2.4 million square kilometres, this comprehensive exercise will engage complete coastal security infrastructure and all maritime stakeholders, including the fishing community and coastal populace.
- One of the aims of the exercise is to raise awareness amongst coastal communities about maritime security.

'Sea Vigil-24' Overview

- Scheduled for 20 & 21 November 2024 across India's coastline.
- **Scale and Participation:** Largest edition yet, covering extensive geographical reach with 06 Ministries and 21 agencies/organizations participating.
- The exercise will focus on strengthening the security of coastal assets like ports, oil rigs, Single Point Moorings, Cable Landing Points and critical coastal infrastructure including the coastal population.

Source: [PIB](#)

EXERCISE POORVI PRAHAR

Context: The Indian Army is conducting exercise Poorvi Prahar from the 10th to the 18th of this month in the forward areas of Arunachal Pradesh.

Background: -

- According to the Indian Army, the exercise brings together a wide spectrum of cutting-edge military platforms and systems, showcasing the country's advancements in modern warfare technology.

Key takeaways

- Exercise Poorvi Prahar is a high-intensity tri-service military exercise conducted by the Indian Armed Forces.
- The exercise aims to enhance the joint combat effectiveness of the Army, Navy, and Air Force in executing integrated joint operations in challenging terrains.
- **Dates:** November 10 to November 18, 2024.
- **Participants:** Army, Navy, and Air Force.

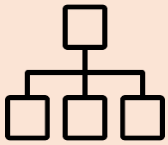
Objectives:

- **Inter-Service Coordination:** Improve coordination and synergy between the three services.
- **Operational Readiness:** Enhance the operational readiness of the forces.
- **Technological Integration:** Integrate advanced military technology and joint command structures.
- **Common Operating Picture (COP):** Develop a refined COP through joint control structures for better coordination.

Significance:

- **Strategic Deterrence:** Bolster India's strategic deterrence capabilities.
- **Modern Warfare:** Showcase India's advancements in modern warfare technology.
- **Theaterisation:** Pave the way for the theaterisation of command, enhancing the ability to execute seamless multi-domain operations.

Source: [News On Air](#)



GOVT. INITIATIVES, SCHEMES AND POLICIES, ORGANISATION



AYUSHMAN BHARAT PRADHAN MANTRI JAN AROGYA YOJANA (AB - PMJAY)

Syllabus:

- **Prelims & Mains - CURRENT EVENT**

Context: On October 29 (Ayurveda Day), Prime Minister Modi launched Ayushman Vaya Vandana health cards under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) to provide health coverage to people aged 70 years and above, regardless of their income and economic status.

Background: -

- Everyone age 70 or more will be entitled to a cover of Rs 5 lakh annually, shared within the family. This means if there are two elderly beneficiaries in the household, the cover will be split among them.

Ayushman Bharat Yojana

- The Ayushman Bharat Yojana, also known as the Pradhan Mantri Jan Arogya Yojana (PMJAY), is a health insurance scheme launched by the Government of India in 2018. Its primary aim is to provide comprehensive health coverage of up to ₹5 lakh per family per year. It connects the public and private health sectors into a one-nation, one-system.
- PMJAY is for inpatient secondary and tertiary care. The program goes even further by covering pre and post-hospitalization expenses, ensuring a more comprehensive healthcare experience. Outpatient services are not a part of the scheme.
- The scheme targets families identified through the Socio-Economic Caste Census (SECC) data.
- It is a Centrally Sponsored Scheme and states will have to contribute 40% to the cost of the scheme.

Extension of AB-PMJAY to elderly

- Elderly members (age 70 and more) of families that are already covered by their economic status will get a top-up cover of Rs 5 lakh — to be used only for the elderly.
- Those who are already covered under other government health schemes like the Central Government Health Scheme (CGHS), Ex-Servicemen Contributory Health Scheme, etc will have the option of choosing either Ayushman Bharat or continuing with their existing coverage.
- People who are covered under the Employees State Insurance Corporation (ESIC), however, will be eligible to have both their existing cover and Ayushman Bharat. This is because premiums for ESIC are paid by the insured and their employer, not the government.

Significance of extending AB-PMJAY to senior citizens:

- With increasing lifespans and an increasing number of people ageing in the next three decades, a fifth of India is likely to be over the age of 70 by 2050. There is a need for far-reaching changes in welfare policies to tackle this demographic transition.
- Older Indians are much more likely to be hospitalised and to stay in hospitals for longer.

- According to the India Ageing Report 2023, the elderly remain largely uncovered by any health scheme. Just over 20% of India's population above the age of 60 is currently covered by any government schemes.
- Women make up the larger share of the elderly population — a survey by NITI Aayog found that 58% of the elderly are women, and 54% among them are widows.
- It is significant for a country where out-of-pocket expenditure (OOPE) on health is often a reason for crushing poverty.
- A Niti Aayog position paper, released in January, recognised that with families becoming increasingly nuclear, ease of access and quality of care will be crucial determinants in the health-seeking behaviour of senior citizens.

Source: [Indian Express](#)

REGENERATIVE AGRICULTURE

Context: The Government of Odisha, in partnership with ICRISAT, launched a 'Compendium of Regenerative Agriculture' to promote regenerative agriculture.

Background: -

- The compendium outlines five key principles for sustainable farming: minimising soil disturbance, maximising crop diversity, maintaining soil cover, keeping living roots year-round, and integrating livestock.

Key takeaways

- Regenerative agriculture is a holistic approach to farming that focuses on restoring and enhancing the health of ecosystems.

Core Principles:

- **Soil Health:** The primary focus is on improving soil health through practices like minimal soil disturbance (no-till farming), cover cropping, and crop rotation.
- **Biodiversity:** Enhancing biodiversity by integrating a variety of crops and livestock, which helps in pest control and nutrient cycling.
- **Water Management:** Improving water retention and reducing runoff through practices like mulching and agroforestry.
- **Carbon Sequestration:** Increasing carbon sequestration in the soil to mitigate climate change by capturing atmospheric CO₂.

Practices:

- **Cover Cropping:** Planting cover crops to protect and enrich the soil during times when main crops are not growing.
- **Composting:** Adding organic matter to the soil through composting to improve soil structure and fertility.
- **Agroforestry:** Integrating trees and shrubs into agricultural systems to enhance biodiversity and

provide additional income sources.

- **Holistic Management:** Managing farms as integrated ecosystems, considering the interrelationships between soil, plants, animals, and humans.

Benefits:

- **Improved Soil Health:** Healthy soil supports better crop yields, reduces the need for chemical inputs, and enhances resilience to extreme weather.
- **Enhanced Biodiversity:** Diverse ecosystems are more resilient and productive, providing habitat for beneficial insects and wildlife.
- **Climate Mitigation:** By sequestering carbon, regenerative agriculture helps reduce greenhouse gas emissions and combat climate change.
- **Economic Viability:** Farmers can reduce input costs and improve profitability through sustainable practices.

Source: [Hindu Businessline](#)

NATURAL FARMING MISSION

Context: Centre recently announced a National Mission on Natural Farming (NMNF) to promote natural farming.

Background: -

- The mission, with a budget outlay of Rs 2,481 crore, will cover 1 crore farmers across the country

About National Mission on Natural Farming (NMNF)

- NMNF will be a standalone Centrally Sponsored Scheme under the Ministry of Agriculture & Farmers' Welfare.

Objectives:

- **Promote Chemical-Free Farming:** Encourage farmers to adopt natural farming methods that eliminate the use of synthetic fertilizers and pesticides.
- **Enhance Soil Health:** Improve soil health and fertility through organic practices like the use of cow dung, cow urine, and other natural inputs.
- **Support Biodiversity:** Foster biodiversity by promoting diversified cropping systems and integrated farming practices.
- **Climate Resilience:** Build resilience to climate risks such as droughts and floods by enhancing soil carbon content and water retention.

Key Components of NMNF

- **Diversified Multi-Cropping Systems:** Natural Farming encourages the adoption of multiple crops grown simultaneously to improve soil biodiversity and reduce pest outbreaks.
- **Desi Cow-Based Inputs:** Inputs derived from indigenous cows, such as cow dung and urine, form the backbone of Natural Farming. These are used to prepare nutrient-rich formulations like Jeevamrit and Beejamrit for soil and plant health.

Aspect	Natural Farming	Organic Farming
Input Dependency	Relies entirely on on-farm resources, avoiding external inputs.	Permits off-farm organic inputs like bio-fertilizers.
Fertilizers	Indigenous formulations like <i>Jeevamrit</i> .	Organic fertilizers such as vermicompost, manure, etc.
Certifications	Dedicated branding for chemical-free produce.	Strict certification protocols for organic products.

• **Bio-Input Resource Centres (BRCs):** To ensure farmers have access to Natural Farming inputs, the government plans to establish 10,000 BRCs, providing ready-to-use formulations and resources.

• **Capacity Building and Demonstration Farms:** Around 2,000 model demonstration farms will be established across India, supported by Krishi Vigyan Kendras (KVKs), agricultural universities, and trained Farmer Master

Trainers. These will serve as hubs for hands-on training.

Additional Information

Source: [Krishi Jagran](#)

DESIGN LAW TREATY (DLT)

Context: India has signed Riyadh Design Law Treaty, which seeks to harmonise procedures and simplify registration processes of industrial designs in different countries.

Background:

- After nearly two decades of negotiations, the member states of the World Intellectual Property Organization (WIPO) adopted the landmark Design Law Treaty (DLT).

Key takeaways

- The Design Law Treaty (DLT), also known as the Riyadh Design Law Treaty, is an international legal instrument adopted by the World Intellectual Property Organization (WIPO) in Riyadh on November 22, 2024.

Objectives:

- **Harmonize Procedural Frameworks:** The DLT aims to harmonize the procedural aspects of industrial design protection globally. This includes standardizing registration processes to make it easier and more affordable for designers to protect their work both domestically and internationally.
- **Promote Innovation:** By simplifying the design protection process, the treaty seeks to promote innovation and creativity, particularly among small and medium-sized enterprises (SMEs), startups, and independent designers.

Key Provisions:

- **Relaxed Time Limits:** The treaty introduces more flexible deadlines for filing and submissions, giving applicants greater leeway.
- **Restoration of Lost Rights:** There is a mechanism to restore rights in case of lapses, ensuring that applicants can recover lost opportunities.
- **Priority Claims:** Provisions have been added to make it easier to correct or add priority claims.

- **Multiple Designs:** Applicants can file multiple designs in a single application, saving time and costs.
- **Electronic Systems:** The treaty encourages countries to adopt electronic systems for design registration and facilitate the digital exchange of priority documents.

Impact:

- **Global Competitiveness:** By streamlining design protection processes, the DLT aims to boost the global competitiveness of designers and businesses.
- **Environmental Benefits:** The move towards electronic systems and paperless processes aligns with sustainability goals, reducing the environmental impact of design registration.
- **Support for SMEs and Startups:** The treaty is particularly beneficial for SMEs, startups, and independent designers, empowering them to secure design rights more easily worldwide.

Source: [PIB](#)

PLACES OF WORSHIP ACT

Context: A week after a district court in Sambhal ordered a survey of the Shahi Jama Masjid, the town in western Uttar Pradesh has been rocked with violence. The court's order came in a plea which claimed that Sambhal's Jama Masjid was built on the site of a Hindu temple.

Background: -

- The claim on masjid is similar to claims made in the cases of Gyanvapi mosque in Varanasi, the Shahi Idgah in Mathura etc. The claims in all of these disputes essentially seek to change the religious character of a place of worship, something that is prohibited by the Place of Worship Act, 1991.

Key takeaways

- **Purpose:** The Act was enacted to prohibit the conversion of any place of worship and to maintain the religious character of any place of worship as it existed on August 15, 1947.

Key Provisions:

- **Prohibition of Conversion (Section 3):** No person shall convert any place of worship of any religious denomination or any section thereof into a place of worship of a different section of the same religious denomination or of a different religious denomination or any section thereof.
- **Maintenance of Religious Character (Section 4):** The religious character of a place of worship existing on August 15, 1947, shall continue to be the same as it existed on that day.
- **Exceptions:** The Act does not apply to ancient and historical monuments, archaeological sites, and remains covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958. It also excludes cases that have already been settled or resolved and disputes that have been resolved by mutual agreement or conversions that occurred before the Act came into effect.
- **Penalties (Section 6):** Specifies penalties, including a maximum imprisonment term of three years and fines, for violating the Act.

Significance:

- **Communal Harmony:** The Act was introduced to promote communal harmony and prevent future

clashes over religious sites.

- **Legal Framework:** It provides a legal framework to maintain the status quo of religious places of worship as they existed on Independence Day.
- **Exclusion of Ayodhya Dispute:** The Act does not extend to the Ram Janmabhoomi-Babri Masjid dispute in Ayodhya, which was already sub-judice at the time the Act was enacted.

Source: [Indian Express](#)

MISCELLANEOUS

DIGITAL ARREST

Context: Indians lost Rs 120.30 crore in “digital arrest” frauds in the first quarter of this year alone, government cybercrime data shows.

Background: -

- According to the Ministry of Home Affairs (MHA), which monitors cybercrime at the central level through the Indian Cybercrime Coordination Centre (I4C), digital arrests have of late become a prevalent method of digital fraud.

Key takeaways

- Digital arrests refer to a type of cybercrime where scammers impersonate law enforcement officials to extort money from victims by threatening them with arrest.

How the Scam Works

- **Initial Contact:** Scammers contact victims via phone calls, text messages, or social media, posing as officials from agencies like the police, Central Bureau of Investigation (CBI), or the Reserve Bank of India (RBI).
- **False Accusations:** Victims are falsely accused of crimes such as money laundering, tax evasion, or cybercrime.
- **Intimidation:** Scammers use threats of arrest or legal action to instill fear in their victims.
- **Video Call Impersonation:** Scammers may arrange a video call, impersonating officials and using official-looking backgrounds to appear legitimate.
- **Demand for Payment:** Victims are pressured to pay a fine or bribe to avoid arrest or legal consequences.
- **Data Theft:** Scammers may also attempt to steal personal information, such as bank account details or passwords.
- Many of those carrying out these frauds are based in three contiguous southeast Asian countries: Myanmar, Laos and Cambodia.
- According to I4C, there are four types of scams which are on the rise— digital arrest, trading scam, investment scam (task based) and romance/dating scam.

Source: [Indian Express](#)

KALKA-SHIMLA RAILWAY

Context: Himachal Pradesh Chief Minister Sukhvinder Singh Sukhu recently urged the Ministry of Railways to explore the possibility of running trains on the Kalka-Shimla railway, a UNESCO World Heritage site, on green hydrogen.

Background:

- Sukhu said the government aims to make Himachal Pradesh a green energy state by March 31,

2026

Key takeaways

- The Kalka-Shimla Railway is a narrow-gauge railway line connecting Kalka in Haryana to Shimla, the capital of Himachal Pradesh.
- It is known for its scenic route through the Shivalik range of the Himalayas.
- It was designated a UNESCO World Heritage Site in 2008 as part of the "Mountain Railways of India", along with the Darjeeling Himalayan Railway and the Nilgiri Mountain Railway.

Historical Significance

- Opened in 1903 during British rule, the railway was constructed to provide better access to Shimla, then the summer capital of British India.
- Built by the Delhi-Umbala-Kalka Railway Company, this 96 km line is renowned for its engineering excellence and use of the hill railway technology of the period.

Engineering and Architectural Highlights

- The railway line features 103 tunnels and 864 bridges, demonstrating impressive engineering in a mountainous terrain.
- The Barog Tunnel (Tunnel No. 33) is the longest tunnel on this line, extending over 1 kilometer.
- Zig-zag patterns and sharp curves are unique aspects of its construction, with a gradient of 1:33, allowing the train to navigate steep ascents.

Cultural and Tourist Importance

- The Kalka-Shimla Railway is known for its toy trains, which attract tourists from around the world and offer panoramic views of the hills, valleys, and pine forests.
- It is often referred to as the "crown jewel" of Himachal tourism and plays a major role in promoting local tourism.

Source: [Outlook](#)**KUMBH MELA**

Context: The Maha Kumbh Mela 2025 is going to be held at Prayagraj from January 13th, 2025 to February 26th, 2025.

Background:

- The Maha Kumbh Mela is deeply embedded in Hindu mythology and represents one of the most significant gatherings of faith in the world.

Key takeaways

- Kumbh Mela is a major pilgrimage and festival in Hinduism, celebrated four times over the course of 12 years, the site of the observance rotating between four river-bank pilgrimage sites: Prayagraj (Ganges-Yamuna-Sarasvati confluence), Haridwar (Ganges), Nashik (Godavari), and Ujjain (Shipra).
- The timing of each Kumbh Mela is determined by the astrological positions of the Sun, Moon, and Jupiter. The celebrations occur at the exact moment when these positions are fully occupied, as it is

considered to be the holiest time in Hinduism.

- The festival is marked by a ritual dip in the waters. The act of immersing in these holy waters is believed to purify one of sins, liberate both individuals and their ancestors from the cycle of rebirth, and ultimately guide them towards Moksha, or spiritual liberation.
- Kumbh Mela was recognized by UNESCO in 2017 as an intangible cultural heritage of humanity.

Source: [PIB](#)

OLYMPICS BID

Context:The Indian Olympic Association (IOA) has sent a letter of intent to the International Olympic Committee (IOC), expressing its desire to host the Olympic and Paralympic Games in India.

Background: -

- After submitting the 'Letter of Intent', India advances from the 'Informal Dialogue' to the 'Continuous Dialogue' stage of the host election process. During this stage, the IOC performs a 'feasibility study' on the status of Games-related projects in the possible host country.

Key takeaways

- Confirming the contents of the letter, officials involved said it has dipped into the country's "vast cultural diversity, shaped by thousands of years of history".
- The entire nation is united in this dream by the spirit of 'Vasudhaiva Kutumbakam' — a Sanskrit phrase that means 'the world is one family' — and to seek peace, friendship and collective progress among all nations. This is India's and our Olympic bid's message to the world at a time when it is needed most," it says, according to sources.
- India is the "only major economy yet to host the Games", the letter says.
- Apart from highlighting the possibility of the Games serving as a "critical catalyst for India's continued rise on the global stage", the letter also talks about the "transformative economic, social and cultural impact in wider SAARC nations in South Asia".
- India is learnt to have told the IOC that "there are over 600 million Indians under the age of 25" and "in India's current stage of economic development, the Games would serve as a powerful force for job creation and business opportunities, particularly in sectors connected to sports infrastructure, services and tourism".
- India is one of the many countries in contention to host the Olympic Games in 2036, the earliest available slot after the Los Angeles Games in 2028 followed by Brisbane in 2032. A decision, following a long-drawn process, is not expected before 2026 or 2027, the IOC has said.
- While there is no mention of a host city in the letter of intent, Ahmedabad is considered to be the frontrunner.
- India's primary contenders are likely to be Saudi Arabia and Qatar, as there is an unwritten law of continent rotation, with the 2036 Games scheduled for Asia following Paris 2024 (Europe), Los Angeles 2028 (Americas), and Brisbane 2032 (Oceania).

Source: [Indian Express](#)

KODO MILLET PLANTS

Context:Ten wild elephants died in Madhya Pradesh's Bandhavgarh Tiger Reserve recently after consuming a "large quantity" of kodo millet plants, which had been infected with a fungus, a toxicology report released last week by ICAR-Indian Veterinary Research Institute (IVRI), Bareilly, said.

Background: -

- The toxicological examination report also rejected suspicions that the elephants may have been poisoned intentionally. This was after the samples tested negative for several other toxic substances.

Key takeaways

- Kodo millet is a nutritious cereal grain grown in parts of India, particularly in central and eastern India, as well as in parts of Africa.
- It is known for its resilience to drought and harsh growing conditions, making it an important crop in rain-fed regions.
- Kodo millet has recently gained attention as a nutrient-dense alternative to rice and wheat, especially under the Indian Government's initiative to promote millets for better nutrition and sustainable farming.
- Growing Season: Kodo millet is a short-duration crop, typically grown during the kharif season.
- It thrives in poor, dry soils with low water requirements, making it suitable for regions with limited irrigation.
- The plant height is typically around 1.5 to 2 meters, and it requires less water and fertilizers compared to traditional cereal crops like rice or wheat.
- Kodo millet is rich in proteins, fiber, and minerals such as iron, magnesium, and calcium.
- It has a low glycemic index, making it a healthy food choice for diabetics.
- It is a good source of antioxidants and vitamins, including B vitamins.

Challenges

- Mycotoxin Contamination: Kodo millet can be contaminated with mycotoxins, particularly cyclopiazonic acid (CPA), which can cause poisoning in both humans and animals.
- Anti-Nutritional Factors: Contains phytic acid, which can interfere with nutrient absorption

Source: [Indian Express](#)

INDIA'S TEA, SUGAR EXPORTS RAISE SUSTAINABILITY CONCERNS

Context: The Indian agricultural export is valued at \$53.1 billion in 2022-2023, up from \$8.7 billion in 2004-2005, a six-fold increase in less than two decades. But the rapid surge in exports poses multiple challenges related to sustainability. Tea and sugar, two prominent commodities, offer good examples to illustrate the problems herein.

Background: -

- For an economically developing economy like India, exports play a significant role in

strengthening the economy by increasing revenue, foreign exchange, and transactional options

Key takeaways

Tea

- India is the world's fourth-largest tea exporter and second largest producer and makes up 10% of global exports. The total value of Indian tea exports for 2022-2023 was \$793.78 million.
- There is growing evidence of stresses being imposed on production systems across the tea value chain. Three major challenges in the tea industry are the management of human-wildlife interactions, burgeoning chemical use, and labour concerns.
- More than half of tea plantation workers are women and they are often underpaid.
- There is a critical need for better management practices in and around tea estates in India, stricter monitoring of the maximum residue limits for pesticides, and better enforcement of existing labour regulations.

Sugar

- India is the world's second-largest sugar producer, with 34 million metric tonnes of production, about a fifth of the global production. India's sugar exports grew by 291% from \$1,177 million in FY 2013-2014 to \$4,600 million in FY 2021-22 and 64.90% in 2021-2022.
- About 50 million farmers depend on sugarcane cultivation in India. An additional half million depend on sugar and allied factories.
- Sugarcane is well-known for requiring a lot of water to cultivate. On average, 1 kg of sugar requires between 1,500 and 2,000 kg of water.
- Natural ecosystems like grasslands and savannahs in these states have also been converted to plant sugarcane. Along with the ensuing biodiversity loss, this change has increased the pressure on water resources and increased the need for alternate cropping patterns.
- The social dynamics of sugar industries narrate another story. Media reports have unearthed poor working conditions, including long working hours. Rising temperatures in peninsular India acts as a threat multiplier. Workers trapped in vicious debt cycles incur even more stress.

Millets

- Even as the sustainability challenges of these commodities persist, there are some others that promote long-term ecological and socio-economic sustainability.
- One prime example is millets, a sustainable option with which to increase domestic consumption as well as exports. Millets are resilient to harsh conditions and don't require more inputs to weather resource constraints. They preserve soil health and ensure nutritional security.
- In FY 2022-2023, the country shipped 169,049.11 metric tonnes of millets and millet-related products worth \$75.45 million. The rising demand highlights their potential as a sustainable agricultural commodity contributing to growth and environmental resilience.
- Agricultural production in India lives in a unique context: a large domestic consumption base and now a rapidly growing export base. These dynamics may benefit producers but they could also yield a paradox: whereby increasing dependencies between different actors in the supply chain

compromise ecological and social sustainability concerns.

Source: [The Hindu](#)

WAYANAD LANDSLIDES NOT NATIONAL CALAMITY: CENTRE

Context: The Union government informed Kerala that the Wayanad landslides cannot be declared a national calamity, and expressed the view that sufficient funds are available with the state for relief operations.

Background: -

- The state government had sought assistance of Rs 900 crore from the Centre towards the relief and rehabilitation of the people affected by the tragedy.

Key takeaways

- The Wayanad landslides occurred on July 30, 2024, in the Wayanad district of Kerala, India.
- **Location:** Punjirimattom, Mundakkai, Chooralmala, and Vellarimala villages in Meppadi Panchayat, Vythiri taluk.
- **Cause:** Heavy rains triggered landslides, causing hillsides to collapse and resulting in torrents of mud and water sweeping through the villages.
- **Casualties:** Over 420 fatalities and 397 injuries. Around 47 people are still missing

Centers response

- Under the existing provisions of SDRF/NDRF, there is no provision to declare any calamity as national disaster," Union Minister of State for Home Affairs Nityanand Rai said in a letter to Kerala government's special representative in Delhi.
- The Union minister said primary responsibility for disaster management rests with the state.

Source: [Indian Express](#)

SAFE HARBOUR CLAUSE

Context: The government recently reiterated its stance to revisit the safe harbour clause for social media intermediaries such as X, Telegram, Facebook, Instagram, etc, amid an increase in instances of misinformation and fake news over these platforms.

Background: -

- Currently under Section 79 of the Information Technology Act, 2000, the platforms have the immunity against legal prosecution for content posted by users. In case of removal of safe harbour clause or changes in its contours, such platforms will themselves become directly accountable for the user content and won't be able to enjoy legal immunity.

Key takeaways

- Section 79 of the IT Act says any intermediary shall not be held legally or otherwise liable for any third party information, data, or communication link made available or hosted on its platform.
- This protection, the Act says, shall be applicable if the said intermediary does not in any way, initiate the transmission of the message in question, select the receiver of the transmitted message and does not modify any information contained in the transmission.

- The protection accorded under Section 79, however, is not granted if the intermediary, despite being informed or notified by the government or its agencies, does not immediately disable access to the material under question.
- The intermediary must not tamper with any evidence of these messages or content present on its platform, failing which it lose its protection under the Act.
- The government talked about reconsidering the safe harbour clause last year during consultations on the Digital India Act, which once implemented will replace the decades old IT Act, 2000. However, the government is yet to issue a draft of the Digital India Bill for public consultation.

Source: [Indian Express](#)

3ZERO CLUB

Context: Recently, Bangladesh Chief Adviser Muhammad Yunus and Pope Francis jointly launched a 'Pope Francis Yunus 3Zero Club' in Rome in an effort to “usher in a transformative and inclusive future for humanity”.

Background: -

- Yunus, a Nobel laureate had in 2017 penned a book 'A World of Three Zeroes: the new economics of zero poverty, zero unemployment, and zero net carbon emissions’.

Key takeaways

- The Pope Francis Yunus 3Zero Club is an initiative launched by Professor Muhammad Yunus and Pope Francis in Rome on November 16, 2024.
- According to the latest counts, there are at least 4,600 Three Zero clubs across the globe, all inspired by Prof Yunus's vision. Many of the clubs are set up in universities.
- The club aims to create a transformative and inclusive future for humanity by focusing on three main goals: zero poverty, zero unemployment, and zero net carbon emissions.

Objectives:

- **Zero Poverty:** Eradicating poverty and ensuring that everyone has access to basic needs and opportunities.
- **Zero Unemployment:** Creating sustainable job opportunities and promoting economic growth.
- **Zero Net Carbon Emissions:** Reducing carbon emissions to combat climate change and promote environmental sustainability.

Key Features:

- **Youth Empowerment:** The 3Zero Club provides a platform for young people, especially those from marginalized communities, to develop innovative ideas and create concrete and sustainable solutions.
- **Collaborative Efforts:** The initiative encourages collaboration across countries, generations, and sectors to achieve its goals.

Source: [PTI](#)

MITIGATION WORK PROGRAMME (MWP)

Context: At the Mitigation Work Programme (MWP), India said that developed countries have historically contributed the most to greenhouse gas emissions.

Background:

- India said developed countries had “continuously shifted goals, delayed climate action, and consumed a highly disproportionate share of the global carbon budget.”

Key takeaways

- The Mitigation Work Programme (MWP) is an initiative established by the United Nations Framework Convention on Climate Change (UNFCCC) to help countries scale up their mitigation ambition and implementation to achieve the goals of the Paris Agreement.
- The MWP was created two years ago at COP27 in Sharm el-Sheikh, Egypt.

Objectives:

- **Scale Up Mitigation:** The primary goal is to scale up mitigation efforts to limit global warming to well below 2 degrees Celsius, with an aspirational target of 1.5 degrees Celsius.
- **Support National Contributions:** Assist countries in implementing and enhancing their Nationally Determined Contributions (NDCs).
- **Foster Innovation:** Generate discussions that are facilitative, constructive, innovative, and catalytic.
- **Inclusive Participation:** Ensure diverse participation from policymakers, stakeholders, and non-Party stakeholders.

Key Features:

- **Global Dialogues:** Conduct annual global dialogues and investment-focused events from 2023-2026 to discuss mitigation opportunities and challenges.
- **Thematic Workshops:** Host thematic workshops to share best practices, lessons learned, and overcome barriers to scaling up mitigation action.
- **Sectoral Approaches:** Consider sectoral approaches to identify cost-effective and scalable mitigation opportunities.
- **Regional Focus:** Address regional approaches to equity, sustainable development, and synergies with adaptation.

Source: [Economic Times](#)

4B MOVEMENT

Context: In the aftermath of Donald Trump’s victory, the 4B movement, which originated in South Korea, became one of the most searched topics online. Many American women took to social media to announce that they are adopting it in their lives.

Background: -

- The movement started in South Korea around 2016, when a woman was murdered in a Seoul subway station. Her killer said he had “felt ignored by women”. This was also the time when

multiple women in South Korea reported having been filmed by spycams.

- This movement belongs to the strain of radical feminism that believes that heterosexual relationships at their heart remain structures of oppression, and women need to break free of them to be truly independent and happy so they adopt “Four Nos” — no dating, no sex, no marriage, and no childbearing.

Key takeaways

- 4B stands for four bis, or no in the Korean language: bihon, bichulsan, biyeonae, and bisekseu, meaning the refusal of (heterosexual) marriage, childbirth, romance, and sexual relationships, respectively.
- In the Indian context, consider this — marriage often involves dowry, the burden of running the married home and raising the child is disproportionately on women, many women are penalised at their workplaces for motherhood duties, and intimate partner violence is common. While women are supposed to endure all this for the sake of love and duties, there are very little expectations from men.
- The proponents of the 4B movement believe that unless men work more actively for a gender-just society, women should not reward them with children, love, and emotional and other forms of labour.
- Essentially, the movement wants women to imagine more roles for themselves than just wives and mothers.
- Women not bogged down by domestic duties and not being controlled by a man can focus on their own aims, hobbies, comfort, and happiness, the movement believes. It also advocates women building strong solidarities with other women.

Why is it gaining popularity in America now?

- The US Supreme Court overturned Roe v Wade in 2022, taking away the constitutional right to abortion. As of November this year, 21 states have banned abortion or restricted the procedure earlier in pregnancy than what was granted in Roe v Wade.
- After the election, pro-Trump social media influencers trended a misogynist campaign called “Your body, My choice” which normalises rape and forced pregnancy. Undoubtedly, the slogan was an antithesis of the feminist slogan “My body, My Choice”. The 4B is a response to the happenings.

Why do some non-sexist people also oppose 4B?

- Some point out that just cutting off contact with men is not a solution — this puts the onus of staying away from men on the woman, instead of demanding change and accountability from men.
- Believing men as incapable of reform can play into the ‘boys will be boys’ school of thought, it is argued. Meaningful change can come by raising awareness and a sense of responsibility among men, and this can happen by pushing back from within relationships.
- Others point out that such totalising movements can be exclusionary of transgender rights. Another criticism is that these movements rob women of choice: one can be frustrated

with inequality but still want children, or in the case of heterosexual women, sexual pleasure.

Source: [Indian Express](#)

CLUSTER MUNITIONS

Context: A Russian ballistic missile with cluster munitions struck a residential area in northern Ukraine, killing 11 people and injuring 84 others.

Background: -

- Also, U.S. President Joe Biden authorized for the first time the use of U.S.-supplied longer-range missiles by Ukraine to strike inside Russia, after extensive lobbying by Ukrainian officials.

What are Cluster Munitions?

- **Definition:** Cluster munitions are explosive weapons designed to release multiple smaller submunitions or bomblets over a wide area.
- **Types:** Delivered via rockets, artillery, or aircraft.
- **Purpose:** Used to target personnel, vehicles, or infrastructure in a concentrated region.

Mechanism

- Cluster munitions open mid-air, scattering submunitions across a wide area.
- Many bomblets may remain unexploded, creating long-term risks similar to landmines.

International Concerns

- **Humanitarian Issues:**
 - Unexploded bomblets pose a threat to civilians for years after conflicts end.
 - High civilian casualties due to their indiscriminate nature.
- **Environmental Damage:** Land contamination and restricted use of agricultural areas.

Convention on Cluster Munitions (CCM)

- **Adopted:** 2008; entered into force in 2010.
- **Objective:** To prohibit the use, development, production, acquisition, stockpiling, and transfer of cluster munitions.
- **Ratifications:** Over 110 countries have ratified or acceded to the convention.
- **Provisions:**
 - Assistance for victims and clearance of contaminated areas.
 - States that have not joined: Major military powers like the USA, Russia, China, and India.

India's Position

- **India has not signed the CCM, citing:**
 - Security considerations and legitimate defensive needs.
 - Lack of universal adherence to the convention.
 - Concern over the efficacy of existing alternatives.

Source: [New Indian Express](#)

CARICOM

Context: Prime Minister Narendra Modi proposed seven key pillars to strengthen ties between India and

'CARICOM'.

Background: -

- Modi made the remarks as he joined leaders from CARICOM countries for the second India-CARICOM Summit in Guyana.

About CARICOM

- The Caribbean Community (CARICOM) is an intergovernmental organization that promotes economic integration and cooperation among its 15 member states and 5 associate members throughout the Caribbean region.

Purpose:

- **Economic Integration:** Promote economic integration and cooperation among member states.
- **Equitable Benefits:** Ensure that the benefits of integration are equitably shared among member states.
- **Coordination:** Coordinate foreign policy and regional security among member states.

Key Objectives:

- **Trade:** Facilitate the free movement of goods, services, and capital among member states.
- **Development:** Promote sustainable development and reduce poverty in the region.
- **Security:** Enhance regional security and stability.

Member States:

- **Full Members:** Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago.
- **Associate Members:** Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Curaçao, Turks and Caicos Islands

Source: [Indian Express](#)

GLOBAL STOCK TAKE

Context: A day before the scheduled close of talks, the COP29 meeting in Azerbaijan stared at a major crisis with almost every country and bloc rejecting the latest draft negotiating text.

Background:

- Several countries, including India and Saudi Arabia, objected to references being made to one particular paragraph in Global Stock Take (GST) which had asked all countries to transition away from fossil fuels, triple renewable energy by 2030, reduce emissions of non-CO2 gases including methane, and phase-down coal, among other things.

Key takeaways

- The Global Stocktake (GST) is a key mechanism under the Paris Agreement (2015) to assess the world's collective progress toward achieving the Agreement's goals, particularly limiting global warming to well below 2°C, preferably 1.5°C, above pre-industrial levels.
- **Key Objectives:**

- **Review Climate Actions:** Assess the implementation of countries' climate action plans, known as Nationally Determined Contributions (NDCs).
 - **Evaluate Support:** Examine the support provided to developing countries, including finance, technology transfer, and capacity-building.
 - **Promote Transparency:** Enhance transparency and accountability in reporting climate actions and support.
- **Process and Timeline**
 - **Periodicity:** The GST is conducted every five years, with the first stocktake completed in 2023 and the next one scheduled for 2028.

Source: [Indian Express](#)



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Integrated Learning Program (**S**-ILP) 2025

Online Comprehensive Integrated Self-study Program

01 **3 STAGES**
Prelims, Mains, Interview

02 **DAILY MENTORSHIP - LIVE!**

03 **COVERS ENTIRE GS***
Videos (GS1-GS4, Essay)

04 **ACCOUNTABILITY -
STUDY TRACKER**

05 Complete **GS NOTES (VAN)**

06 **DAILY TARGETS**

07 **MOST AFFORDABLE**

08 **CA, CSAT VIDEOS***

09 **Tests (67 PRELIMS TESTS
+ 77 MAINS TESTS)***



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MAINS

PAPER 1

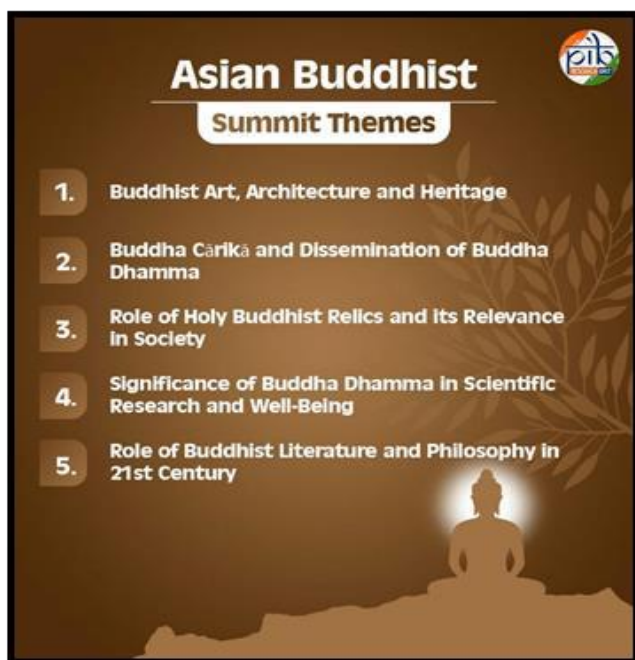
Asian Buddhist Summit (ABS)

GS I –Indian Culture

Context: The Government of India, in collaboration with the International Buddhist Confederation (IBC), is holding the first Asian Buddhist Summit (ABS) in the national capital.

Asian Buddhist Summit (ABS) 2024:

- It is the first Asian Buddhist Summit (ABS).
- It is themed 'Role of Buddha Dhamma in Strengthening Asia' and is a manifestation of India's Act East Policy, which is principled on the collective, inclusive, and spiritual development of Asia.
- It will bring together Buddhist 'Sangha' leaders, scholars, experts, and practitioners from various traditions across Asia to foster dialogue, promote understanding, and address contemporary challenges faced by the Buddhist community.

Focus Areas of the Summit:

- Its main theme is Buddhist Art, Architecture, and Heritage which reflects the spiritual and cultural ties within Buddhism. The Sanchistupas and Ajanta caves convey Buddha's teachings and artistic heritage.
 - It focuses on the Buddha Cārikā (Wanderings) and the Dissemination of Buddha Dhamma that helped to spread his teachings to people from diverse backgrounds.
 - The Buddhist Relics in Society symbolize Buddha's teachings, promote community gatherings, support local economies, and inspire peace and compassion.
 - It emphasizes the influence of Buddha Dhamma in Scientific Research and Well-being related to mindfulness, compassion, and interconnectedness and offers holistic approaches to health and wellness.
- It places importance on Buddhist Literature and Philosophy in the 21st Century that continues to offer wisdom on human nature, reality, and enlightenment.

Birsamunda

GS I–Modern Indian history from about the middle of the eighteenth century until the present – significant events, personalities, issues

Context: The President of India writes: As the nation begins the year-long celebrations of the 150th birth anniversary of this iconic figure in the history of modern India, I bow in gratitude to his blessed memory. I also recall how, during my childhood, hearing the legends of Bhagwan Birsamunda made me and my friends feel very proud of our legacy.

Birsamunda:

- He was a folk hero and a tribal freedom fighter who played a pivotal role in the Indian independence movement, particularly in the tribal regions of British India.
- He was born on November 15, 1875, in Ulihatu, Jharkhand, and his birthday is commemorated annually as 'JanjatiyaGauravDiwas' by the Government of India, highlighting his enduring legacy. He played a pivotal role in resisting British colonial rule and advocating for tribal rights.
- He belonged to the **Munda tribe** in the **Chhotanagpur Plateau area**.

Contributions of BirsaMunda to the Indian Freedom Movement:

- He led the Ulgulan movement to challenge the British-imposed zamindari system, which alienated tribals from their lands. The movement forced the British to enact the Chotanagpur Tenancy Act (CNT) in 1908, protecting tribal lands from being easily transferred to non-tribals.
- He founded the Birsait faith, which promoted monotheism, moral conduct, and the rejection of superstitions and alcoholism. His followers, known as Birsaits, resisted both British influence and missionary activities, strengthening tribal unity and identity.
- He strongly opposed the policies that led to land alienation and exploitation by landlords and moneylenders. His efforts in mobilizing tribals against forced labour and unfair taxation highlighted the issues of land rights, leading to legislative changes to protect tribal interests.
- He unified various tribal groups across the Chotanagpur plateau to collectively resist British exploitation and preserve their traditional way of life. His mobilization efforts extended beyond the Munda tribe, involving other tribal communities in Jharkhand and surrounding regions, fostering a broader resistance movement.

Significance/Importance of BirsaMunda's Ideals in Modern Times:

- His ideals play a prominent role in the protection of tribal lands even today as many tribals are facing displacement due to industrial projects. In recent times, the movements against large-scale mining projects in tribal areas, like those in Niyamgiri, Odisha, draw inspiration from Birsa's struggle for land rights.
- He emphasized education as a tool for empowerment, which is vital for the socio-economic upliftment of tribal communities even now. Government initiatives like Eklavya Model Residential Schools aim to provide quality education to tribal children, reflecting Birsa's vision for empowering tribal youth through education.
- He made efforts to revive and preserve a tribal culture which are echoed even in today's initiatives like the celebration of 'JanjatiyaGauravDiwas' on his birth anniversary that promotes and protects tribal heritage.

His fight for justice and rights continues to inspire contemporary movements like the implementation of the Forest Rights Act which advocates for the legal and constitutional rights of tribals.

Mundas:

- They are a nomadic-hunting-turned-farmer tribe living in the Chotanagpur district of today's Jharkhand and were subjected to a series of harsh policies and occurrences.
- Before colonial administration, the dominant system of land ownership in this region was known as "khuntkatti." It was based on customary rights and did not involve landlords.
- However, the passage of the Permanent Settlement Act (1793) resulted in a shift and aided colonialism's incursions into rural India. To optimize its earnings, the East India Company used the law to legitimize the Zamindari system of land revenue collection. This resulted in two classes: land-owning zamindars, who were considered outsiders or "dikus" by Indigenous populations, and "ryots" or tenants.
- The Act permitted the dikus to claim ownership rights through a deed that defined a specific territory. This uprooted indigenous people and denied them access to the land they had been cultivating for centuries.
- A variety of other crippling policies exacerbated the community's problems, including the exploitation of tribal people through the "begar" system of forced work, the forced reliance on money lenders for credit, and the replacement of traditional clan councils with courts.
- Finally, mass hunger was the outcome of the famines that began in 1896–1897 and 1899–1900.

PAPER 2

Article 44 and Tribals

GS II – Significant provisions of the Indian Constitution

Context: Union Home Minister said tribals would be exempted from the Uniform Civil Code (UCC) wherever it is implemented in India and added that there was “no confusion about it”.

Uniform Civil Code:

- It refers to a single set of laws governing personal matters such as marriage, divorce, adoption, inheritance, and succession for all citizens of India.
- It is mentioned in Article 44 of the Indian Constitution as a Directive Principle of State Policy, which states that the state shall endeavor to secure a uniform civil code for citizens throughout the territory of India.
- Article 44 is one of the directive principles. These, as defined in Article 37, are not justiciable (not enforceable by any court) but the principles laid down therein are fundamental in governance.
- Article 43 mentions “the state shall endeavour by suitable legislation” while the phrase “by suitable legislation” is absent in Article 44. All this implies that the duty of the state is greater in other directive principles than in Article 44.

Impact of UCC on the practices of tribals in India:

- Many tribal groups have objected to procedures of marriage and divorce under UCC. The tribals feel that their practices have allowed divorce and marriage ceremonies to be much simpler and do not require complex legal procedures which are cumbersome and inaccessible.
- Northeastern states fear that UCC enactment would withdraw the guarantee of protection of their socio, cultural religious practice as guaranteed under Articles 371A, 371B, 371C, 371G, and 371H.
- Polygamy is practiced among Naga tribes, the Gonds, the Baiga, and the Lushai among others, while polyandry is prevalent in the Himalayan region stretching from Kashmir to Assam. These practices would be abrogated following the enactment of UCC.

UCC as a cause of concern for tribal groups in India:

- UCC is a proposal to replace the personal laws based on the scriptures and customs of each major religious community in India with a common set of laws governing every citizen. Hence, tribals in India are worried about the implementation of the **Uniform Civil Code (UCC)** as they fear that it will erode their cultural identity and autonomy.
- UCC will violate their fundamental rights to freedom of religion, culture, and expression, which are guaranteed by the Constitution of India.
- Various Law Commission reports have pointed out that tribes in Assam, Jharkhand, and Odisha adhere to ancient customary laws of succession. States like Nagaland, Meghalaya, and Mizoram are concerned that UCC would come in conflict with safeguards regarding inheritance guaranteed under the Sixth Schedule of the Constitution.
- Social practices among North-Eastern tribal groups differ from community to community. They fear UCC will impact their traditional system, their way of life, and customs.
- UCC will undermine their self-governance and local democracy, which are essential for their empowerment and development.
- The tribals are concerned about the change in the legal age for marriage. They fear that minimum age criteria will infringe on their cultural practices.
- Most tribes in India have a patrilineal line of succession. They worry that non-tribal people and people of other religions may trap their women to grab land if daughters are allowed to claim their father's property.
- Special legislation such as the PESA Act, 1996; the Chota Nagpur Tenancy Act, 1908; and the Santhal Parganas

Tenancy Act, 1876, recognize customary practices in Jharkhand which are protected under the Fifth Schedule of the Constitution.

In Arunachal Pradesh, the community-based systems of settling disputes are considered more democratic than those perhaps a modern-day court would do. Adi community in Arunachal Pradesh has a Kebang system for settling disputes. Unlike the formal judicial system, everyone's a winner in the Kebang system. It will be under threat if UCC is enacted.

Ayushman Bharat Scheme

GS II –Government policies and interventions for development in various sectors and issues arising out of their design and implementation

Context: The Prime Minister has launched health cards under the Ayushman Bharat PradhanMantri Jan ArogyaYojana (AB PM-JAY) to provide health coverage to people aged 70 years and above, regardless of their income and economic status

Ayushman Bharat PradhanMantri — Jan ArogyaYojana (AB PM-JAY):

- Ayushman Bharat, a flagship scheme of the Government of India, was launched as recommended by the National Health Policy 2017, to achieve the vision of Universal Health Coverage (UHC).
- This initiative has been designed to meet Sustainable Development Goals (SDGs) and its underlining commitment, which is to “leave no one behind.”
- It is the world’s largest health insurance scheme fully financed by the government.
- It is an entitlement-based scheme that targets the beneficiaries as identified by the latest **Socio-Economic Caste Census (SECC)** data.
- The **National Health Authority (NHA)** has been constituted as an autonomous entity under the Society Registration Act of 1860 for the effective implementation of PM-JAY in alliance with state governments.

Objectives of AB-PMJAY:

- To reduce the financial burden of out-of-pocket expenditure (OOPE) on healthcare for the beneficiaries.
- To improve the access and affordability of healthcare services for the beneficiaries.
- To enhance the quality and efficiency of healthcare delivery systems in the country.
- To promote preventive, promotive, and curative health interventions for the beneficiaries.

Provisions/Features of AB-PMJAY:

- It is a centrally sponsored scheme where the **funding ratio is 60:40 for most states, 90:10 for northeastern states** and Himalayan states, and **100:0 for union territories without a legislature**.
- It provides a health cover of **Rs 5 lakh per family per year for secondary and tertiary care hospitalization** to more than **12 crore families**.
- It covers medical and surgical procedures for almost all health conditions through a **comprehensive list of 1,949 packages**, including **cancer care, cardiac care, neurosurgery, orthopaedics, burns management, mental disorders**, etc.
- It uses a robust IT platform to **ensure seamless delivery of services and prevent fraud and abuse**. The platform includes features such as a **beneficiary identification system, hospital empanelment module, transaction management system**, claim management system, grievance redressal mechanism, etc.
- It has a network of **more than 27,000 empanelled hospitals** across the country, out of which more than half are private hospitals.
- It has a **dedicated workforce of PradhanMantriArogyaMitras (PMAMs)** who guide and assist the beneficiaries at every step of their journey under the scheme. They are responsible for **beneficiary verification, registration, pre-authorisation, claim submission, etc.**
- It has a **monitoring and evaluation mechanism to ensure accountability and transparency**.
- It has a **National Anti-Fraud Unit (NAFU)** that designs, implements, and oversees anti-fraud initiatives.

- It has a call centre that makes calls to every beneficiary who has availed of treatment **within 48 hrs of discharge** to verify the quantity and quality of the treatment. Another **call is made after 15 days** to know about the prognosis.

Issues/Challenges faced by AB-PMJAY:

- Many eligible beneficiaries are not aware of their entitlements or how to avail them. It faces a low awareness level among the potential beneficiaries, **especially in rural areas**.
- There is an **uneven distribution and availability of healthcare infrastructure** and human resources in the country which results in a supply-side constraint.
- It faces the challenge of **ensuring timely and adequate reimbursement of claims to empanelled hospitals**, especially private ones.

There is a loophole in preventing and detecting fraud and abuse by some unscrupulous elements who try to exploit the scheme for personal gain.

News:

- The scheme will cover almost 6 crore individuals from 4.5 crore families. Of them, 1.78 crore are already covered by the scheme.
- Those covered under existing government health schemes will have the option of choosing either Ayushman Bharat or continuing with their existing coverage.
- People who are covered under the Employees State Insurance Corporation (ESIC), however, will be eligible to have both their existing cover and Ayushman Bharat. This is because premiums for ESIC are paid by the insured and their employer, not the government. People who have their own privately purchased insurance coverage will be eligible to have the Ayushman Bharat coverage as well.
- Members over the age of 70 years in families already covered following their economic status will get a top-up cover of Rs 5 lakh — to be used only for the elderly. These elderly beneficiaries will have to re-register to receive the top-up cover

Election Expenditure in India

GS II –Elections

Context: The total expenditure for U.S. presidential and Congressional elections in November 2024 is estimated at around U.S. \$16 billion (equivalent to ₹1,36,000crores). According to the Centre for Media Studies (CMS), the total expenditure by various political parties for the general election to Lok Sabha this year was around ₹1,00,000crores.

Status of Election Expenditure in India:

- The election expenditure limit for candidates is ₹95 lakh per Lok Sabha constituency in larger States and ₹75 lakh in smaller States.
- The expenditure limit for candidates for Legislative Assemblies is ₹40 lakh and ₹28 lakhs for larger and smaller States respectively. These limits are set, from time to time, by the Election Commission (EC).
- There are no limits on the expenditure of political parties during elections. In the **2024 Lok Sabha Election**, the cost of a **single vote** in India amounted to around **Rs 1,400** and **total expenditures** reached approximately **Rs 1 lakh crores**.
- Government advertisements, especially before elections, often serve as **campaigns for the ruling party**. The Central government spent **Rs 3,020 crore** on advertisements between **2018-19 and 2022-23**, with higher spending in **election years**—**Rs 1,179 crore in 2018-19** versus **Rs 408 crore in 2022-23**.
- Candidates initially spent **only Rs 25,000** during the first **general elections in 1951-52** which now skyrocketed to **Rs 75-95 lakh (a 300-fold increase)**. Additionally, overall election expenditure has **risen sixfold from Rs 9,000 crore** in 1998 to approximately **Rs 1,00,000 crore** in 2024.
- Political parties are required to submit **annual contribution reports** to the **Election Commission of India (ECI)** for donations **exceeding Rs 20,000**. They must also provide **Annual Audited Accounts (AAA)** and election expenditure reports within **75 days post-election**.
- The vast majority of political funding comes from **corporate entities** and businesses, creating a strong **nexus**

between donors and politicians.

Election Expenditure Govern in India:

- **Section 77** of the **Representation of the People Act (RPA) of 1951** requires candidates to keep a **detailed and accurate account** of all expenses related to their campaign from the day they **file their nomination until the election day**.
 - **Section 78** of the **Representation of the People Act (RPA) of 1951** mandates that every candidate **submit their election expense account** to the **District Election Officer** within 30 days of the result declaration.
- **According to the Companies Act of 2013**, a non-government company with **at least three years** in operation may contribute up to **7.5% of its average net profits from the last three years** to political parties registered under the RPA.
- **Under the Foreign Contribution (Regulation) Act (FCRA) of 2010**, political parties, candidates, and election-related entities in India are **prohibited from receiving foreign contributions**. This includes **funds, gifts, donations, and any financial support** from foreign sources.

Issues/Challenges Associated with Election Expenditure in India:

- **Regulation is absent regarding the limits on expenditures by political parties in India** which leads to an **uneven playing field**, favouring well-funded **national parties** over regional and independent candidates.
- National and **state-level parties** allocate a substantial portion of their budgets to **media advertisements**, surpassing expenditures for **grassroots activities** like rallies. It can **marginalise candidates** without access to significant financial resources.
- The growing influence of digital platforms like **Google and Meta (Facebook)** has widened the **spending gap**, with national parties investing significantly more in digital advertising than state parties. This trend exacerbates existing **inequalities** and **reduces the visibility** of smaller parties and candidates.
- The absence of regulation for **third-party campaigners** raises concerns about **unaccounted money** flooding the electoral process. There is a heightened risk of **quid pro quo arrangements** where financial contributions influence political decisions without proper accountability.

Way Forward:

The Indrajit Gupta Committee (1998) and the Law Commission report (1999) have advocated for State funding of elections. This would mean the government partially bears the election expenditures of candidates nominated by recognized political parties.

Simultaneous elections are touted as a panacea for addressing the issue of rising election expenditures. There are challenges on account of principles of federalism and constitutional amendments to this idea that need to be debated. It must also be noted that this mechanism may rein in campaign and publicity expenditure to some extent. The law must be amended to explicitly provide that 'financial assistance' by a political party to its candidate should also be within the candidate's prescribed election expenditure limits.

There should be a ceiling on political party expenditures. This may be kept at not more than the expenditure ceiling limit provided for a candidate multiplied by the number of candidates of the party contesting the election.

Additional judges may be appointed in High Courts for the speedy disposal of election-related cases, which would act as a deterrent against violating these norms.

Immunization in India

GS II –Health

Context: Studies now indicate that unvaccinated or under-vaccinated children are vulnerable to preventable illnesses and have to seek medical care, which in many cases leads to an unnecessary abuse of antibiotics, fueling the epidemic of antimicrobial resistance.

Immunization:

- It is the process of giving a vaccine to a person to protect them against disease.

- Immunity (protection) by immunization is similar to the immunity a person would get from disease, but instead of getting the disease, you get a vaccine. This is what makes vaccines such powerful medicine.
- Most vaccines are given by needle (injection) but some are given by mouth (orally) or sprayed into the nose (nasally).

Status of Immunization in India:

- According to the National Family Health Survey (NFHS-5, 2019–2021) over 76% of children aged 12–23 months were fully immunized.
- Polio and smallpox have been eradicated by the successful implementation of the immunization programme.
- India conducted one of the world's largest COVID-19 vaccination drives, administering over 2 billion doses by 2023.

Significance/Advantages of Immunization in India:

- It gives protection against deadly diseases such as polio, measles, diphtheria, tetanus, hepatitis B, and rotavirus diarrhea.
- It reduces the number of deaths from vaccine-preventable diseases in children under five by providing one of the most cost-effective ways to protect children's lives.
- It promotes herd immunity when a large portion of the population is vaccinated, the spread of infectious diseases slows down which in turn helps in the protection of the unvaccinated population.
- It enhances social and economic benefits as healthier populations contribute more to economic growth and reduce the financial strain on families.
- It plays a major role in controlling outbreaks of new or re-emerging diseases.
- Various immunization programs help India participate in global health security efforts by controlling outbreaks and contributing to research and production.
- It encourages scientific innovation by investing in vaccine research and development.
- It is expected to reduce antibiotic consumption, helping reduce the challenge of Antimicrobial Resistance (AMR).

Issues/Challenges faced by the Immunization Programmes of India:

- It suffers from geographical disparities as its coverage varies significantly across states and regions due to infrastructure gaps, inaccessibility, and socio-economic differences.
- It faces a major challenge of vaccine hesitancy due to cultural beliefs, misinformation, and fear of side effects that result in low immunization coverage.
- It suffers from inadequate health infrastructure as rural and hard-to-reach areas often lack sufficient cold chain infrastructure, healthcare workers, and vaccine supplies.
- Migrant populations and urban slum residents are often missed by routine immunization drives due to mobility and lack of documentation.
- The lack of awareness about the benefits of vaccines leads to lower participation.
- It often faces inadequate funding for outreach, logistics, and healthcare personnel.
- Vaccine wastage occurs due to improper storage, distribution delays, or underuse of multidose vials.

It suffers due to a shortage of trained healthcare workers, especially in rural areas, which hampers vaccine delivery.

Government of India's Immunization Programmes:

- The Universal Immunization Programme of 1985 is one of the largest public health programmes targeting close to 2.67 crore newborns and 2.9 crore pregnant women annually. Under UIP, immunization is provided free of cost against 12 vaccine-preventable diseases:
 - Nationally against 9 diseases - Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B, and Meningitis & Pneumonia caused by Hemophilus Influenza type B
 - Sub-nationally against 3 diseases - Rotavirus diarrhoea, Pneumococcal Pneumonia, and Japanese Encephalitis.
- Mission Indradhanush (IMI) of 2014 is a special drive to vaccinate all unvaccinated and partially vaccinated

children, and pregnant women under UIP.

- Intensified Mission Indradhanush(IMI) 5.0 of 2023 is a catch-up vaccination campaign for children up to 5 years of age and pregnant women, who were left out. It covers 12 diseases - Diphtheria, whooping cough, tetanus, polio, tuberculosis, measles and hepatitis-B, pertussis, meningitis and pneumonia, Japanese encephalitis (JE), and measles-rubella (MR).
- National Cold Chain Training Centre (NCCTE), Pune, and National Cold Chain & Vaccine Management Resource Centre (NCCVMRC)-NIHFW, New Delhi have been established to provide technical training to cold chain technicians in the repair and maintenance of cold chain equipment.
- The Electronic Vaccine Intelligence Network (eVIN) system digitizes the entire vaccine stock management, logistics, and temperature tracking at all levels of vaccine storage – from national to the sub-district.

National Cold Chain Management Information System (NCCMIS) tracks the cold chain equipment inventory, availability, and functionality.

India - Russia Trade

GS II –Bilateral agreements involving India and/or affecting India’s interests

Context: India is confident of achieving USD 100 billion in annual bilateral trade with Russia well ahead of the timeline of 2030 and a more substantive relationship between the two nations has a larger global resonance, the External Affairs Minister said while speaking at the 25th India-Russia Intergovernmental Commission on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC).

Current Status of India - Russia Trade:

- As per figures of the Department of Commerce, in FY 2023-24, bilateral trade has reached an all-time high of \$ 65.70 billion [Total bilateral merchandise trade for FY 2023-24: USD 65.70 billion; India’s exports: USD 4.26 billion; and India’s imports: USD 61.44 billion].
- Major items of export from India include pharmaceuticals, organic chemicals, electrical machinery and mechanical appliances, iron & steel, while major items of import from Russia include oil and petroleum products, fertilizers, mineral resources, precious stones and metals, vegetable oils, etc.
- Russia ranks fourth among all India’s trading partners and current trade stands at around \$65.5 billion.
- India aims to hit a USD 100 billion trade target with Russia before 2030.

Issues/Challenges in India- Russia Trade:

- In the context of the Ukraine war, India's growing ties with the US and the Quad can limit deeper strategic cooperation with Russia.
- Russia is losing its ability to balance the interests of India and China, diminishing India's leverage in multilateral forums through stronger ties with China.
- India faces a trade deficit of around USD 57 billion with Russia mainly due to imports of Russian crude oil, with the trade imbalance skewed in Russia's favour as India's exports to Russia remain comparatively lower.
- The trade relationship between India and Russia has been complicated due to sanctions by the European Union(EU) and Western powers on Russia as some Indian companies are targeted which puts India in a difficult position, balancing its defence and energy ties with Russia while adhering to international sanctions.
- India and Russia have not made much effort to diversify into sectors like automotive parts, electronics, and renewables except energy trade, particularly discounted crude oil.

India’s growing enthusiasm for other connectivity routes, such as the India-Middle East-Europe Corridor, could undermine the International North-South Transport Corridor (INSTC) strategic importance, leading to the potential underperformance of these initiatives that require Russia’s active cooperation.

Key Highlights of the 25th Session of IRIGC-TEC:

- India and Russia are optimistic about achieving a USD 100 billion trade volume well ahead of the 2030 target.

- India and Russia have made significant strides in overcoming payment and logistics challenges, with nearly 90% of India-Russia trade now being conducted in local or alternative currencies, with the remaining transactions still happening in freely convertible ones(widely used for international transactions).
- India and Russia are focused on diversifying the trade basket to reduce the current imbalance, which is largely driven by India's large crude oil imports from Russia.
- Both countries have placed significant importance on enhancing connectivity, particularly through the International North-South Transport Corridor (INSTC), the Chennai-Vladivostok Corridor, and the Northern Sea Route to improve trade and logistics.

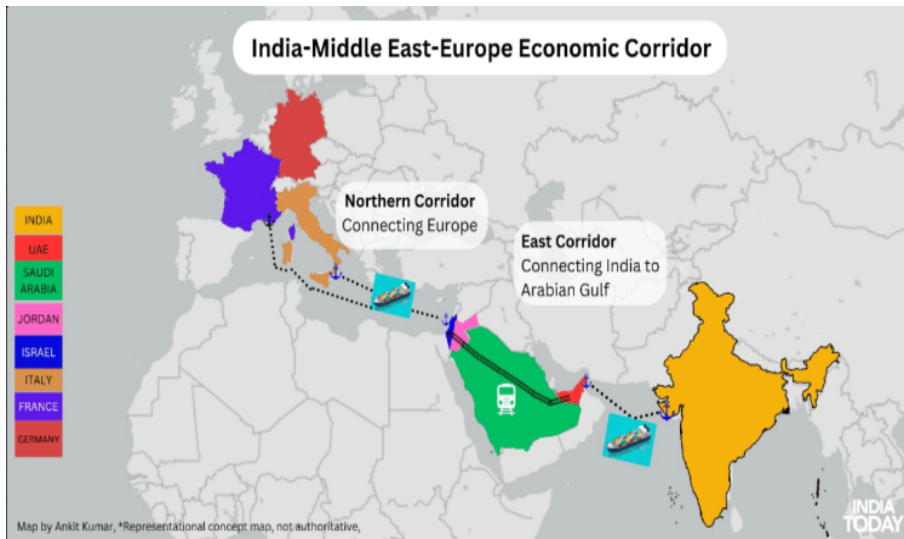
Various working groups and sub-groups were tasked with accelerating the finalization of the economic cooperation program for the period leading up to 2030 which includes enhancing market access and advancing discussions on services, investments, and technology exchange.

India Middle East Europe Economic Corridor (IMEC)

GS II –Regional and Global Groupings and Agreements involving India and/or affecting India's interests

Context: The ambitious transcontinental IndiaMiddle EastEurope Corridor (IMEC) was announced on the sidelines of the G20 summit in New Delhi. The proposed corridor is expected to reduce the transit time between its eastern and western nodes by 40%, and costs by 30%, compared to transportation via the Suez Canal.

India Middle East Europe Corridor (IMEC):



- It will consist of the railroad, ship-to-rail networks(road and sea), and road transport routes (and networks), extending across two corridors -
 - The East Corridor connects India to the Arabian Gulf.
 - The Northern Corridor connects the Arabian Gulf to Europe.

Source: India Today

- It aims to provide a reliable and cost-effective cross-border ship-to-rail transit network enabling

goods and services to transit to, from, and between India, the UAE, Saudi Arabia, Jordan, Israel, and Europe.

- It forms part of the Partnership for Global Infrastructure and Investment (PGII).

Significance of IMEC:

- It signifies the commitment of the US, Europe, and emerging powers such as India, Saudi Arabia, and the UAE to promoting a more balanced and interconnected Eurasian order.
- It would create a consolidated trade route that would reduce trade costs, promote market access, and encourage investment opportunities between the participating countries.
- It enhances regional connectivity through improved transportation infrastructure, cross-border cooperation, energy supply, and logistical efficiencies.
- It is expected to act as an effective medium of economic integration between India, West Asia, and Europe.
- It creates close economic ties resulting from the corridor that will incentivize cooperation on security, counterterrorism, and regional stability.
- It aims to promote clean energy development and export, expand energy grids and telecommunications, advance clean energy technologies, and improve internet access for all.

Issues/Challenges faced by IMEC:

- Its development has faced setbacks on the Western side due to the escalation of Israel-Palestine tensions and widened trust deficit between the Israel-Arab World.
- As a strategic competitor, China may seek to divert trade and investments towards its corridors, potentially undermining the effectiveness of IMEC. Further, the IMEC corridor, being an alternative land route, may pose a potential threat to Egypt's dominance in the region, diverting trade away from the Suez Canal.
- As it passes through multiple countries with diverse geographical terrains, regulatory procedures, transportation protocols, financial mechanisms, and infrastructural capabilities its construction will be challenging.
- The region is susceptible to various security threats, including terrorism, conflicts, and political instability.
- It consists of land and sea sections, which may escalate costs in comparison to exclusively land or maritime routes.

It requires massive finance for its construction and the arrangement of such funds is a challenge considering the recession that has been creeping in the US and other advanced economies.

Significance of IMEC for India:

- It is the second mega convergence between India and the United States in the Middle East after the I2U2 forum that can play a significant role in the Indo-US relationship.
- It provides an opportunity for India to build enduring connectivity between India and Arabia that helps to strengthen India's role as a driver in shaping regional connectivity.
- It breaks Pakistan's monopoly over India's overland connectivity to the West.

Its effective implementation would increase India's chances of getting an opportunity to join the Trans-African corridor. The Trans-African corridor is an envisaged US and the EU plan to build a corridor connecting Angola, the Democratic Republic of Congo, and Zambia.

India-Italy Relations

GS II –Bilateral, regional, and global groupings and agreements involving India and/or affecting India's interests

Context: Indian Prime Minister and his Italian counterpart announced a five-year strategic action plan outlining their vision for collaboration in a range of key sectors, including defence, trade, energy, and space.

India and Italy Relations:

- India and Italy are ancient civilizations with links going back 2,000 years. Italian port cities were important trading posts on the spice route. The Venetian merchant Marco Polo traveled to India in the 13th century and wrote about his experiences.
- In the last century, Nobel Laureate Rabindranath Tagore visited Italy in May-June 1926, a visit arranged by Carlo Formichi, a Professor of Sanskrit at the University of Rome.
- Mahatma Gandhi visited Rome in December 1931 on his way back from the Round Table Conference in London. Leaders of the Indian freedom struggle read the works of the Italian revolutionary Mazzini.
- The bilateral ties faced a setback in 2012 when two Italian marines were accused of killing two Indian fishermen in February that year. The PCA ordered Italy to pay compensation to India "for loss of life" and the cases were closed after Italy paid the agreed amount of Rs 100 million. Finally, the case was closed in 2021.
- There has been a regular exchange of visits at political and official levels between both countries. For instance, the Indian PM paid his first official visit to Italy in October 2021 to attend the G20 Summit. In March 2023, the Italian PM paid her first-ever state visit to India as the guest of honour of Raisina Dialogue.
- Italy is India's 4th largest trading partner in the EU. The bilateral trade between the two countries was valued at US\$ 14.25 billion in 2022-23, with the balance of trade being in India's favour.
- India - Italy Military Cooperation Group (MCG) is a forum established to boost defence cooperation. India and Italy signed a defence cooperation agreement (in 2023) to promote cooperation in varied defence domains such as security and defence policy, and defence industrial cooperation among others.
- The relationship between India and Italy was elevated to a Strategic Partnership in March 2023 during the visit of the Italian Prime Minister to India.
- Italy's decision to withdraw from the Belt and Road Initiative aligns with common goals in global connectivity between Rome and New Delhi.

- Italy supported India's entry into the Wassenaar Arrangement and Australia Group. The Blue-Raman project (with an Italian company at its core) will bring the Mediterranean and the Indian Ocean closer in exchange for digital data through a submarine cable system. Italy supported India's major initiatives including the International Solar Alliance (ISA), the India-Middle East-Europe Economic Corridor (IMEC), and the Global Biofuels Alliance (GBA).

Concerns/Challenges/Issues in India-Italy Relations:

- Both countries despite having historical trade ties dating back to the Roman era have relatively low the current volume of trade and investment.
- Italian Mariners' case sparked a conflict over legal jurisdiction and functional immunity, which ended only in 2020 with the verdict of the Permanent Court of Arbitration.
- In the Agusta Westland helicopter scandal, the defence firm owned by Italian company Leonardo was accused of bribery, resulting in India cancelling the procurement deal and banning Leonardo from the Indian defence market in 2015.

In 2021, the India-Italy-Japan trilateral partnership was launched yet it has not been operationalised.

Indian Prime Ministers and his Italian counterpart announced a comprehensive five-year Joint Strategic Action Plan (2025-29) to enhance cooperation across diverse sectors, including defence, trade, energy, and space. This plan follows a series of high-level meetings between the two leaders, reflecting their commitment to deepening the India-Italy Strategic Partnership. Some of the key points in the Action Plan are:

- **Defence:** Annual Joint Defence Consultative meetings and Joint Staff Talks to facilitate information sharing, visits, and training activities. Increased cooperation in the Indo-Pacific region to promote interoperability and strategic alignment. Strengthening public and private sector partnerships in defence technology.
- **Economic Cooperation:** Promoting industrial partnerships, technological centres, and mutual investment, also in automotive, semiconductors, infrastructure, and advanced manufacturing.
- **Connectivity:** Enhancing collaboration in maritime and land infrastructure also in the framework of the India-Middle East-Europe Economic Corridor.
- **Science & Innovation:** Expanding cooperation on critical and emerging technologies, forging technology value chain partnerships in both countries in sectors such as telecom, artificial intelligence, and digitalization of services.
- **Space:** Expanding cooperation between the Italian Space Agency and ISRO to include projects of common interest in Earth observation, heliophysics, and space exploration with emphasis on lunar science.
- **Migration and Mobility:** Promote legal migration channels, as well as fair and transparent labour training and recruitment procedures. A pilot will cover the training of health professionals in India and their subsequent employment in Italy.
- **Energy Transition:** Strengthen the Global Biofuels Alliance and International Solar Alliance.

India-Nigeria Relations

GS II –India's Bilateral Relations

Context: India accords high priority to its strategic partnership with Nigeria, the Indian Prime Minister said as he held wide-ranging talks with the Nigerian President with a focus on shoring up bilateral cooperation in sectors such as defence, trade, and energy.

India-Nigeria Relations:

- India and Nigeria, with a population of 1.4 billion and 220 million respectively, are both large, developing, and democratic countries with multi-religious, multi-ethnic, and multilingual societies.
- India established its Diplomatic House in Lagos in 1958 – two years before Nigeria became independent of British colonial rule in 1960.
- Both nations have been members of the Non-Aligned Movement (NAM), advocating for a world free of geopolitical blocs during the Cold War era.
- From the 1960s to the '80s, Indian teachers and doctors played a crucial role during the formative years of independent Nigeria.

- India also established the National Defence Academy in Kaduna and the Naval War College of Port Harcourt.
- Both countries raised the status of their bilateral relationship to a strategic partnership in 2007.
- Bilateral trade between the two countries exceeds USD 14 billion annually, making Nigeria India's largest trading partner in Africa.
- More than 200 Indian companies have invested about \$27 billion in Nigeria's manufacturing sectors.
- India has also emerged as a development partner on two fronts – by offering developmental assistance through concessional loans (\$100 million) and capacity-building training programs.
- India's imports from Nigeria include crude oil, accounting for over 70% of India's imports from Nigeria. India is one of the largest buyers of Nigerian oil.
- India's exports to Nigeria include pharmaceuticals, engineering goods, automobiles, agricultural machinery, and textiles.
- India has supported Nigeria's capacity-building efforts under the Indian Technical and Economic Cooperation (ITEC) Programme since 1964. India has also extended Lines of Credit worth \$30 million for a gas-fired turbine electricity generation station in Cross River State of Nigeria.

Significance of Nigeria's role in Africa:

- Nigeria is the fastest-growing economy in Africa and has the third-largest manufacturing sector.
- Its economy is the fourth-largest in the continent and its population the largest, which is why it is referred to as the "Giant of Africa".
- It is also a founding member of the African Union, a forum having all African countries as its members. The AU became a permanent member of the G20 at the India-hosted summit last year.
- Nigeria is a member of international organizations such as the United Nations, the Commonwealth of Nations, the Organisation of Islamic Cooperation, and the Organization of the Petroleum Exporting Countries (OPEC).

Issues/Challenges in India-Nigeria Relations:

- India lacks significant upstream assets in Nigeria, unlike China, which holds substantial production rights as India remains a mere buyer rather than a strategic investor in Nigeria's energy sector.
- One of the major issues is declining bilateral trade. The bilateral trade volume between Nigeria and India has fallen from US\$ 14.95 billion in 2021-22 to US\$ 11.8 billion in 2022-23, due to a decrease in the volume of oil purchased from Nigeria.
- The limited interactions at the level of heads of state (with the last Prime Ministerial visit 17 years ago) and the absence of regular Joint Commission meetings limit strategic dialogues on areas like defence and economic cooperation.
- One of the significant challenges to India's position as a key partner in Nigeria is the increasing Chinese footprint in Nigeria through the Belt and Road Initiative projects.

The absence of a comprehensive economic partnership agreement has limited the potential for trade diversification and industrial collaboration.

International Criminal Court (ICC)

GS II –Important International institutions, agencies and fora- their structure and mandate

Context: The International Criminal Court has issued arrest warrants for Israeli Prime Minister Benjamin Netanyahu, his former defence minister, and a Hamas leader, Ibrahim Al-Masri, also known as Mohammed Deif, for alleged war crimes and crimes against humanity.

International Criminal Court (ICC):

- It was established under a 1998 treaty called the "Rome Statute".
- It "investigates and, where warranted, tries individuals charged with the gravest crimes of concern to the international community: genocide, war crimes, crimes against humanity and the crime of aggression."
- It is headquartered in the Hague, Netherlands.
- At present, 124 countries are party to the Rome Statute, including Britain, Japan, Afghanistan, and Germany.

- India is not a member, nor are China and the US.
- It was established to prosecute the most heinous offences only when a country’s own legal machinery was unable or unwilling to act.

	INTERNATIONAL COURT OF JUSTICE- ICJ	INTERNATIONAL CRIMINAL COURT – ICC
ESTABLISHMENT YEAR	1946	2002
RELATIONSHIP WITH U.N	Official court of U.N, commonly known as "World Court".	Independent. Not governed by U.N. Can receive referrals from UNSC. Can initiate prosecution without UN action.
HEADQUARTERS	Peace Palace , Hague	Hague
JURISDICTION	U.N Member states. Can give advisory opinions to UN bodies. Cannot try individuals. Applies International Law	Individuals accused of international crimes. Uses International Law, as war crimes violate Geneva Convention.
TYPES OF CASES	Sovereignty, boundary disputes, maritime disputes, trade, natural resources, human rights, treaty violations, treaty interpretation, etc.	Genocide, crimes against humanity, war crimes, crimes of aggression.
DERIVES AUTHORITY FROM	States that ratify the U.N. Charter become parties to the ICJ Statute. Non-UN member states can also become parties to the ICJ by ratifying the ICJ Statute.	Rome Statute
APPEALS	ICJ decision is binding. UNSC can review if states do not comply.	Appeals Chamber, according to Rome Statute.
FUNDING	U.N funded	contribution from state parties to the Rome Statute; voluntary contributions from the U.N; voluntary contributions from governments, international organizations, individuals, corporations and

- Its official languages are English, French, Arabic, Chinese, Russian, and Spanish.
- Additionally, the offences should be committed either in a country that ratified the agreement or by a national of a ratifying country.
Unlike the International Court of Justice (ICJ), which deals with countries and inter-state disputes, the ICC prosecutes individuals.
- It can also practice its jurisdiction over cases referred by the UN Security Council to it.
- Its decisions are binding, but it depends on its members to ensure cooperation.

Crimes within the jurisdiction of the International Criminal Court:

- War crimes include torture, mutilation, corporal punishment, hostage-taking, and acts of terrorism. This category also covers violations of human dignity such as rape and forced prostitution, looting, and execution without trial. War crimes, unlike crimes against humanity, are always committed in times of war.
- Genocide includes all acts committed with the intent to destroy a national, ethnic, or religious group.
- Crimes against humanity are acts committed as part of a widespread or systematic attack directed against any civilian population, such as murder, deportation, torture, and rape. The ICC prosecutes the perpetrators even if the crimes were not committed in times of war.

Issues/Limitations of the International Criminal Court (ICC) in Criminal Justice:

- It lacks enforcement mechanisms as it relies on cooperation with countries for arrests, transfers, asset freezes, and sentence enforcement.
- The Non-States Parties such as Israel have no obligation to cooperate with the Court on its requests for arrest and surrender.
- Many of the major countries like China, the US, India, etc. are not parties to the ICC.
- Due to a lack of effective oversight on the authority of the ICC prosecutor and judges, there are insufficient checks and balances.

- The ICC has issued 46 arrest warrants, with only 21 of them having been detained with the help of its member states. So it faces challenges as many State Parties are reluctant to cooperate with the Court's requests for arrest and surrender.
- It faces a major issue of lack of retrospective jurisdiction as it can only address crimes committed after 1st July 2002, when the Rome Statute came into force.
- Its efficacy is affected by to scarcity of human resources and funds.

There have been allegations of bias against weak states, especially Africa by using the ICC as a tool of Western imperialism.

News:

- The International Criminal Court (ICC) has issued arrest warrants for Israeli Prime Minister Benjamin Netanyahu, former Defense Minister Yoav Gallant, and Hamas military commander Mohammed Deif, alleging their involvement in war crimes and crimes against humanity during the Israel–Hamas conflict.
- The charges against Netanyahu and Gallant include the use of starvation as a method of warfare, murder, persecution, and other inhumane acts. Deif is accused of orchestrating mass killings, hostage-taking, and rape during the October 7 attacks on Israel.

The warrants obligate the 124 ICC member states to arrest the individuals if they enter their territories, potentially restricting their international travel. However, enforcement remains uncertain, as the ICC lacks its own police force and relies on member states for execution.

Inter-State Council

GS II –Federalism

Context: The Inter-State Council, which works for Centre-State and interstate coordination and cooperation, has been reconstituted with the Prime Minister as its chairman, all chief ministers and nine Union ministers as members, and 13 Union ministers as permanent invitees.

Inter-State Council:

- Art 263 contemplates the establishment of an inter-state council to effect coordination between the states and between the centre and states
- It was constituted to facilitate Centre-State and Inter-State cooperation in India.
- The President can establish such a council at any time it appears to him that public interest would be served by its establishment. He is also authorized to define the nature of duties to be performed by such a council and its organization and procedure
- The Inter-State Council Secretariat (ISCS) in New Delhi was established in 1991 and is headed by a Secretary to the Government of India. The secretarial functions of the Zonal Councils have been transferred to the ISCS since 2011.
- The PM serves as the Chairperson. Members include Chief Ministers (CMs) of all States, CMs of Union Territories having a Legislative Assembly, and Administrators of UTs not having a Legislative Assembly, 6 Union Ministers of Cabinet rank, nominated by the Prime Minister, are also part of the ISC.

The functions of the Inter-State Council as defined by the Indian Constitution are:

- Inquiring into and advising upon disputes which may arise between the states
- Investigation and discussing subjects in which the states or the centre and the states have a common interest
- Making recommendations on any subject for the better co-ordination of policy and action

Issues/Challenges Faced by Inter-State Council:

- It suffers from infrequent meetings and underutilization. Despite repeated assertions by different Commissions, the ISC has held only 10 meetings in the last 22 years of its existence and made tardy progress

in addressing inter-state disputes.

- It faces key challenges due to its advisory and non-binding nature, which limits its impact on resolving disputes and hinders effective Union-State coordination.
- It lacks technical and management experts along with the autonomy that is required for effective functioning.
- There is no presence/engagement of the civil society in the council which makes it less participatory and cooperative.

It is not a permanent constitutional body for coordination between the states and central government. Rather, the President can establish it at any time if it appears to him that the public interests would be served by the establishment of such a council.

Minimum Dietary Diversity (MDD)

GS II –Health

Context: About 77 percent of children in India aged 6-23 months lack diversity in diet as suggested by the World Health Organization, with the country's central region showing the highest prevalence of minimum dietary failure, a study has found.

Minimum Dietary Diversity (MDD):

- It refers to a recommended standard set by the World Health Organization (WHO) for children aged 6-23 months.
- It suggests that during the previous day or within 24 hours, children should consume foods and beverages from at least five of the eight defined food groups.
- It aims to ensure that children receive a diverse range of nutrients to meet their nutritional needs and promote their healthy growth and development.
- It is part of the Infant and Young Child Feeding (IYCF) practices, which are assessed by a suite of indicators developed by the WHO and UNICEF. The eight food groups used for the tabulation of this indicator are:
 - Breast milk
 - Grains products
 - Vegetables such as roots, tubers, plantains
 - Pulses (beans, peas, lentils)
 - Nuts, seeds
 - Dairy products (milk, infant formula, yogurt, cheese)
 - Flesh foods (meat, fish, poultry, organ meats), eggs
 - Vitamin-A-rich fruits and vegetables

Issues/Challenges in Achieving Dietary Diversity in India:

- There are challenges related to access to diverse foods due to high poverty rates and regional inequalities, particularly in central and western states.
- In Public Distribution the main focus is on staple grains, offering limited variety and missing nutrient-rich foods like legumes, fruits, and vegetables.
- Due to a lack of awareness among caregivers, especially in rural areas, there is a reduced understanding of balanced diets, contributing to undernutrition.
- The dietary choices in some communities are influenced by cultural norms that may deprioritize certain food groups, limiting children's exposure to varied diets.
- Children's dietary choices are affected due to poor access to healthcare facilities and nutrition counselling with essential information.

Key Highlights of the Report:

- The states of Uttar Pradesh, Rajasthan, Gujarat, Maharashtra, and Madhya Pradesh reported the highest levels of inadequate diversity in children's diets -- all above 80 percent -- while Sikkim and Meghalaya were the only two to report an under-50 percent prevalence.

- Researchers noted a decline in the overall failure rate of MDD from 87.4% in NFHS-3 (2005-06) by utilizing data from the National Family Health Survey (NFHS-5) conducted between 2019 and 2021.
- The WHO suggests using the Minimum Dietary Diversity (MDD) score to evaluate the quality of a child's diet -- it is considered to be diverse if it contains five or more food groups, including breastmilk, eggs, legumes, nuts, fruits, and vegetables.
- According to the study, about 35% of the global child deaths and 11% of the total disease burden are due to inadequate nutrition. While in India, 1 in 3 children are underweight and stunted, and 1 in 5 children are wasted.
- The consumption of eggs registered an "impressive" rise, from around 5 percent in NFHS-3 to over 17 percent in NFHS-5 while that of legumes and nuts increased from nearly 14 percent during 2005-06 to over 17 percent during 2019-21.
- Researchers also found that the children of illiterate and rural-residing mothers with no exposure to mass media, those born first and not exposed to counselling and health check-ups at Anganwadi or Integrated Child Development Services (ICDS) centers were more likely to be consuming diets deficient in diversity. Anaemic children and those with low birth weight were also found to have a higher chance of consuming a non-diverse diet.

It called for a holistic approach from the government, including an improved public distribution system, intensified ICDS program, use of social media, and nutrition counselling through local self-governance.

Misleading Advertisements

GS II –Government policies and interventions

Context: The centre has released new guidelines to regulate misleading advertisements by coaching institutes, prohibiting false claims like 100 percent selection or 100 percent job security.

Misleading Advertisement:

- A misleading advertisement is defined under **Section 2 (28) of the Consumer Protection Act, 2019**, as any advertisement that:
 - Provides a false description of a product or service;
 - Offers false guarantees that mislead consumers;
 - constitutes an unfair trade practice through express representation;
 - Deliberately omits essential information about the product.

Regulation of Misleading Advertisements in India:

- The **Central Consumer Protection Authority (CCPA)** enforces the '**Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022**', which were issued per the powers conferred by the Consumer Protection Act, 2019. Its **objectives include**:
 - The guidelines seek to ensure that **consumers are not being fooled by unsubstantiated claims, exaggerated promises, misinformation, and false claims**.
 - Such advertisements violate various rights of consumers such as **the right to be informed, the right to choose and the right to be safeguarded against potentially unsafe products and services**.
 - The guidelines define "**bait advertising**", "**surrogate advertisement**" and "**free claim advertisements**".
 - They also lay down provisions to **protect children from exaggerated or unsubstantiated claims** in advertisements.
 - Advertisements targeting children are prohibited from featuring personalities from sports, music, or cinema for products that require a health warning or cannot be purchased by children.
 - Disclaimers in advertisements should not hide material information or attempt to correct misleading claims.
 - The guidelines also outline the **duties of manufacturers, service providers, advertisers, and advertising agencies** to bring more transparency and clarity to advertisements. This aims to help consumers make informed decisions based on facts.
 - CCPA can **impose penalties of up to 10 lakh rupees** on manufacturers, advertisers, and endorsers for misleading advertisements. For subsequent violations, the penalty can be up to 50 lakh rupees.

- The Authority can also **prohibit the endorser of a misleading advertisement from making any endorsements** for up to 1 year, and for subsequent violations, the prohibition can extend up to 3 years.
- Deceptive advertising falls under **Section 53 of the Food Safety and Standards Act, 2006**, making it punishable. FSSAI mandates advertisements to be truthful, unambiguous, and substantiated scientifically.
- **ASCI (Advertisement Standard Council of India)** is a **non-statutory tribunal** established as a self-regulated mechanism to introduce advertising ethics in India. It judges advertisements based on its **Code of Advertising Practice, also known as the ASCI code** which applies to advertisements seen in India, even if they are from abroad and directed at Indian consumers.
- **Consumer Protection Act of 1986** grants consumers the right to be informed about goods and services' quality, quantity, and price. Section 2(r) covers false advertisements under the definition of unfair trade practices. It also provides redressal against misleading advertisements.
- **The Cable Television Network Act of 1995 and the Cable Television Amendment Act of 2006** prohibit the transmission of advertisements that do not conform to the prescribed advertisement code. It ensures advertisements do not offend morality, decency, or religious sensitivities.
- The Cigarettes and Other Tobacco Products Act of 2003 prohibits direct and indirect advertisement of **tobacco products** in all forms of media.
- **The Drug and Magic Remedies Act of 1954 and the Drugs and Cosmetics Act of 1940** regulate drug advertisements. Prohibits the use of test reports for advertising drugs. Penalties for its violations include fines and imprisonment.
- **The Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Act of 1994** prohibits advertisements related to prenatal sex determination under Advertising harmful publications under the Young Persons (Harmful Publications) Act, 1956, is punishable.

The Indian Penal Code (IPC) prohibits obscene, defamatory, or inciteful advertisements. Offenses related to inciting violence, terrorism, or crime are illegal and punishable under IPC provisions.

New Guidelines for Coaching Institutes:

- The guidelines, titled 'Prevention of Misleading Advertisement in Coaching Sector', cover all forms of advertising across academic support, education, guidance, and tuition services. However, they exclude counselling, sports, and creative activities.
- Coaching centres are prohibited from making false claims regarding courses offered and duration; faculty credentials; fee structure and refund policies; selection rates and exam rankings; and guaranteed job security or salary increases.
- It defines 'coaching' to include academic support, education, guidance, study programmes, and tuition, but excludes counselling, sports, and creative activities.
- Coaching centres cannot use names, photographs, or testimonials of successful candidates without written consent obtained after selection. They must display disclaimers prominently and disclose important information about courses.

Key Directives from the Supreme Court to Regulate Misleading Advertisements:

- Advertisers must submit **self-declarations** before promoting products in the media.
- Advertisers are **now obligated to declare that their advertisements do not deceive or make untrue statements** about their products to prevent misleading consumers.
- Advertisers intending to run TV ads must upload declarations on the **Broadcast Seva portal**, which serves as a one-stop facility for stakeholders to request permissions, registrations, and licenses for broadcast-related activities from the **Ministry of Information and Broadcasting**. A similar portal for print advertisers is to be established.
- Social media influencers, celebrities, and public figures endorsing products **must act responsibly**. Endorsers should possess adequate knowledge about the products they promote to avoid deceptive advertising.

Ensuring consumer protection by establishing a transparent process for consumers to report misleading advertisements and ensure they receive updates on complaint status and outcomes.

National Monetisation Pipeline (NMP)

GS II –Government Policies and Interventions for Development in various sectors

Context: The NITI Aayog has increased the asset monetisation target for 2024-25 (FY25) by Rs 23,000 crore to Rs 1.9 trillion, moving closer to the overall Rs 6 trillion target set under the National Monetisation Pipeline (NMP) for a four-year period.

National Monetisation Pipeline (NMP):

- It envisages an **aggregate monetisation potential of Rs 6-lakh crore through the leasing of core assets of the Central government** in sectors such as roads, railways, power, oil and gas pipelines, telecom, civil aviation, etc., over four years (**FY 2022-25**).
- The **monetization through NMP only includes core assets**, excluding monetization through the **disinvestment of non-core assets**. Currently, only assets of **central government line ministries and CPSEs** in infrastructure sectors have been **included**.
- It is intended to **support investments under the National Infrastructure Pipeline (NIP) worth Rs 111 trillion in six years through FY25**.

Need for NMP:

- It aims to optimize resources by introducing private sector efficiency and market-driven approaches, ensuring better alignment of inputs and outputs.
- It encourages collaboration between the public and private sectors, fostering a more coordinated and streamlined approach to infrastructure development.
- Reluctance to implement labour reforms, poor decision-making, and ineffective governance contribute to the failure of public infrastructure assets.
- The optimum **input-output ratio is seldom observed** in a majority of government infrastructure projects leading to their overcapitalisation.

Significance of NMP:

- It is the first-of-its-kind initiative that will boost the economy, generate better employment opportunities, and drive the competitiveness of the Indian economy.
- It is linked with the **PM Gati Shakti**, which is a **holistic and integrated approach** to infrastructure development in India. Gati Shakti focuses on building a comprehensive and well-connected infrastructure network, while the NMP aims to monetize existing infrastructure assets to fund new projects.
- It advocates **unlocking idle capital from non-strategic underperforming** government-owned assets.
- It also **envisages reinvesting the funds**, thus received, into new infrastructure projects and **augmentation of assets such as greenfield infrastructure creation**.

Concerns/Challenges associated with NMP:

MONETISATION: KEY SECTOR WATCH

Approximate figures in ₹ crore
■ Revised target (2021-24)
■ Achieved



Source: Govt officials, NITI Aayog

- It is quite likely to create a vicious **cycle of creating new assets and then monetising the same** when they become liabilities for the Government at a later stage.
 - Taxpayers have expressed **concerns about potential double charges on public assets**. After funding the creation of these assets, they now **face an additional cost for utilizing them through payments to private entities** following their monetization.
 - Low level of capacity utilization in gas and petroleum pipeline networks, regulated tariffs in power sector assets, low interest among investors in national highways below four lanes, and multiple stakeholders which own stake in the entity. It has the **potential for monopolization through**

consolidation of ownership resulting from the transfer of assets, which could lead to increased prices.

PM-Vidyalaxmi Scheme

GS II –Government policies and interventions

Context: The Union Cabinet approved the PM-Vidyalaxmi scheme that makes students who get admission to Quality Higher Education Institutions (QHEIs) eligible for a collateral-free and guarantor-free education loan.

PM-Vidyalaxmi Scheme:

- It is a central sector scheme that seeks to provide financial support to students so that financial constraints do not prevent anyone from pursuing higher studies.
- It aims to expand and deepen the impact of the Government of India's education and financial inclusion initiatives from the past decade, with a focus on broadening access to quality higher education for India's youth.
- It will complement the Central Sector Interest Subsidy (CSIS) and the Credit Guarantee Fund Scheme for Education Loans (CGFSEL), both part of the PM-USP, overseen by the Department of Higher Education.
- Under the scheme, any student who gets admission to a Quality Higher Education Institution (QHEIs) will be eligible to get collateral-free and guarantor-free loans from banks and financial institutions to cover the full amount of tuition fees and other expenses related to the course.
- It is another key initiative stemming out of the National Education Policy, 2020, which recommended that financial assistance should be made available to meritorious students through various measures in both public and private HEIs.
- The Department of Higher Education will have a unified portal "PM-Vidyalaxmi" on which students will be able to apply for the education loan as well as interest subvention, through a simplified application process to be used by all banks. Payment of interest subvention will be made through E-vouchers and Central Bank Digital Currency (CBDC) wallets.
- It will be administered through a simple, transparent, and student-friendly system that will be interoperable and entirely digital.
- It will be available to India's top-quality higher educational institutions (HEIs) based on NIRF rankings.
- Eligible institutions include all government and private HEIs ranked within the top 100 across overall, category-specific, and domain-specific NIRF rankings, as well as state government HEIs ranked between 101-200, and all institutions governed by the central government. This list will be refreshed annually with the latest NIRF rankings.
- A budget of Rs 3,600 crore has been allocated for 2024-25 to 2030-31, with 7,00,000 new students expected to benefit from the interest subsidy over this period.
- For loans up to Rs 7.5 lakh, students can receive a 75 percent credit guarantee on outstanding defaults, supporting banks in providing these educational loans under the scheme.
- Students with an annual family income of up to Rs 8 lakh, who are not eligible for other government scholarships or interest subsidies, can receive a 3 percent interest subsidy on loans up to Rs 10 lakh during the moratorium period.
- The interest subvention support will be given to one lakh students every year. Preference will be given to students who are from government institutions and have opted for technical/ professional courses.

The Department of Higher Education will launch a unified portal – PM-Vidyalaxmi, where students can apply for education loans and interest subsidies through a streamlined application process accessible to all banks. The interest subsidy will be disbursed via E-vouchers and Central Bank Digital Currency (CBDC) wallets.

Right to Property

GS II –Indian Constitution—historical underpinnings, evolution, features, amendments, significant provisions and basic structure

Context: In a landmark ruling that has implications on the citizen's right to hold property, a nine-judge bench of the Supreme Court ruled that not all private property can be deemed "material resource of the community" for redistribution under Article 39(b) of the Constitution.

Private Property in India:

- Private property rights in India have evolved through various constitutional amendments and judicial interpretations.
- Initially, the 'right to property' was a fundamental right under Article 19(1)(f) and Article 31 of the Constitution.
- However, the 44th Amendment in 1978 relegated it to a constitutional right under Article 300A, allowing the state to acquire private property only through due process and with adequate compensation.

Article 39(b):

- It comes under the Directive Principle of State Policy. It directs the State to work towards redistributing resources to best serve the public interest.
- It imposes a positive obligation on the State to frame a policy to ensure that the 'ownership and control of material resources of the community' are distributed in such a way that they 'subserve the common good'.
- The current ruling limits the government's authority by rejecting the broad interpretation endorsed by Justice Iyer. The Court ruled that not all privately owned property can be deemed "material resources of the community" and thus safeguarded from automatic acquisition.

Implications of the SC Ruling:

- It underlines the importance of protecting individual property rights while ensuring that resource redistribution serves the public interest in a balanced and justified manner.
- It states that the Court's role is not to prescribe economic policy but to support "an economic democracy" as envisioned by the Constitution.
- It has recognized the dramatic shifts like private property, from traditional assets to data and space exploration by emphasizing the need to respect evolving market realities.
- It emphasized that the Constitution's Directive Principles are guiding policies, not enforceable laws.

It affirms the people's role, in shaping India's economic direction and adaptation to changing global and domestic conditions.

UN Peacekeeping Mission

GS II – Important International Institutions

Context: The UN peacekeeping forces in Lebanon, United Nations Interim Force in Lebanon (UNIFIL), released a statement accusing the Israel Defense Forces (IDF) of intentionally destroying an observation tower and the perimeter fence of a UN post in Marwahin.

UN Peacekeeping Mission:

- The UN Charter gives the Security Council primary responsibility for the maintenance of international peace and security.
- In fulfilling this responsibility, the Council can establish a UN peace operation.
- It provides security, political, and peacebuilding support to help war-torn countries make the difficult transition from conflict to peace.
- It involves the deployment of military, police, and civilian personnel to regions affected by conflicts or political instability.
- Basic Principles of Peacekeeping Operations:
 - Consent of the parties
 - Impartiality
 - Non-use of force except in self-defence and defence of the mandate

Significance of UN Peacekeeping Forces:

- UN Peacekeeping Forces have helped end conflicts and foster reconciliation by conducting successful peacekeeping operations in dozens of countries since 1948. These countries include Cambodia, El

Salvador, Guatemala, Mozambique, Namibia, and Tajikistan.

- UN Peacekeeping operations have made a positive impact on restoring stability, enabling the transition to democratic governance, and fostering economic development.
- UN Peacekeeping Forces was awarded the Nobel Peace Prize in 1988 for their continuous striving towards peace and stability.

Failures faced by the UN Peacekeeping Forces:

- The UN has failed to protect civilians, leading to mass casualties, such as the Rwanda genocide, in 1994 and 1995, where nearly 1 million Tutsis were killed.
- The UN peacekeeping mission has been criticized for inaction in Ukraine and Gaza. More than 100,000 peacekeepers could have been redeployed to prevent massive civilian casualties.

Challenges associated with UN Peacekeeping Missions:

- There have been challenges protecting civilians due to inadequate funding and resources by the UN Mission in South Sudan (UNMISS).
- Peacekeeping missions are often launched without clear, achievable mandates. For example, the UN mission in the Democratic Republic of Congo has struggled with an unclear mandate, shifting from monitoring peace agreements to directly engaging in combat with rebel groups.
- Local people view peacekeeping forces with suspicion and hostility which makes it difficult to function efficiently. For example, in Haiti, the UN Stabilization Mission (MINUSTAH) faced significant local opposition due to its linkage with the cholera outbreak.
- Many times, peacekeepers are attacked by militants leading to loss of lives. For example, the UN Multidimensional Integrated Stabilization Mission (MINUSMA) in Mali has become one of the deadliest peacekeeping missions, with frequent attacks by Islamist militants.
- There have been allegations of misconduct by the UN peacekeepers that undermines the mission's legitimacy and has damaged the reputation of UN peacekeeping.
- For example, the Central African Republic mission (MINUSCA) has been marred by numerous allegations of sexual exploitation and abuse by peacekeepers.

India's contribution to UN Peacekeeping Mission:

- India is the fifth-largest troop contributor with 5,424 personnel across 9 missions.
- India's contribution to the peacekeeping budget stands at 0.16%. India has been actively participating in peacekeeping right since 1950 when it supplied medical personnel and troops to the UN Repatriation Commission in Korea.
- India has deployed a platoon of women peacekeepers in Abyei as part of the Indian Battalion in the United Nations Interim Security Force for Abyei (UNISFA).
- In August 2021, India, in collaboration with the UN launched **UNITE AWARE platform**. It is a technology platform to ensure the safety and security of peacekeepers.
- Major RadhikaSen has been awarded 'Military Gender Advocate of the Year 2023' by the UN Headquarters.

A total of 150 Indian peacekeepers serving with the UN Mission in South Sudan (UNMISS) have received medals of honour for their dedicated service and sacrifice.

Undertrials in India

GS II –Government policies and interventions for development in various sectors and issues arising out of their design and implementation

Context: According to the National Crime Records Bureau's report Prison Statistics India 2022, of the 5,73,220 people incarcerated in Indian prisons, 4,34,302 (75.8%) are undertrials against whom cases are still pending.

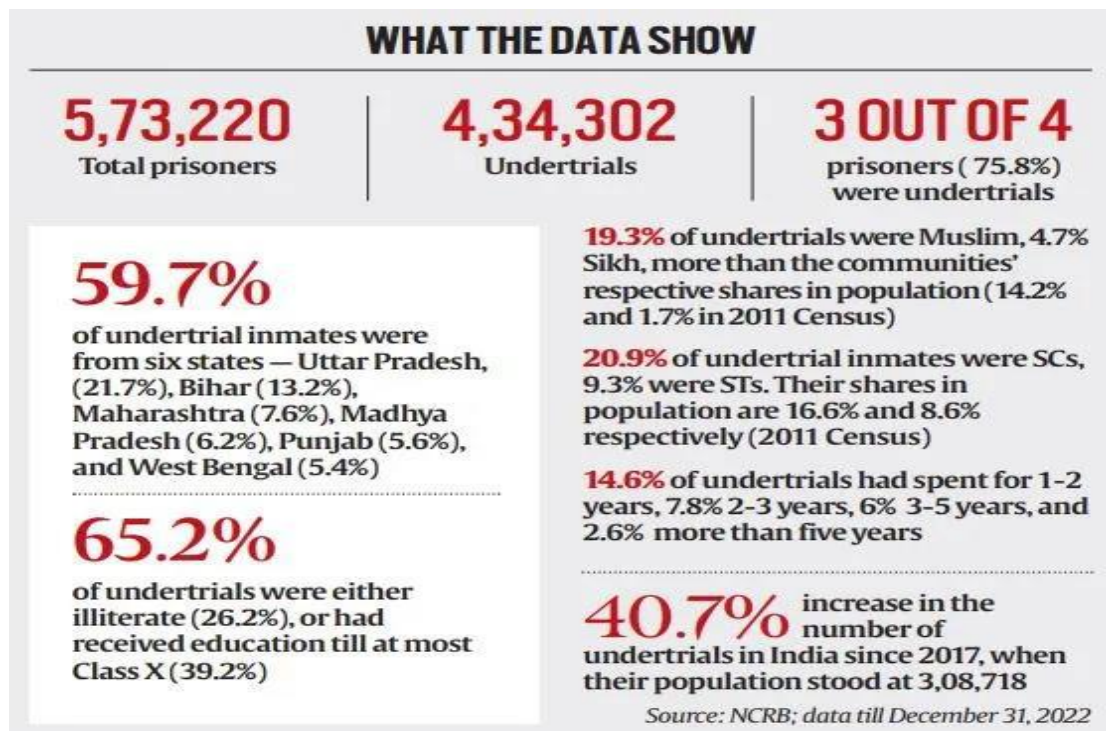
Undertrial:

- An undertrial is a person who is currently on trial or who is imprisoned on remand whilst awaiting trial or a person who is on trial in a court of law.

Status of Undertrial Prisoners in India:

According to the National Crime Records Bureau (NCRB) Prison Statistics India 2022 Report:

- Out of the 5,73,220 total incarcerated prisoners, 4,34,302 (75.8% of the total prison population) were undertrials.
- Out of the 23,772 women prisoners, 18,146 (76.33% of the total women prisoners) are undertrials.
- 8.6% of undertrials have been in prison for over three years (long-term undertrials).



Source: Indian Express

Reasons for the high number of Undertrials in India:

- The major reason for the high number of undertrials in India is due to the low capacity of the judicial system along with the lack of judicial infrastructure that leads to the pendency of cases. India has 21 judges per million population, while the Law Commission has recommended 50 per million.
- Lack of financial resources to afford legal aid and unable to pay bail amount as a large number of those under trial are poor, illiterate, and belonging to marginalized communities.
- Law Commission (268th Report) has highlighted that over 60% of arrests are unnecessary. It also highlighted that the affluent get bail with ease.
- Due to the poor 'Police-Population' Ratio, there have been delays in investigation and trial processes by police and prosecution functionaries. According to PRS, the sanctioned police strength was 181 police personnel per lakh persons in 2016, the actual strength was 137. The United Nations recommended standard is 222 police personnel per lakh persons.

Issues/Problems Faced by Undertrials in India:

- One of the major issues is the intermingling of prisoners as there is an absence of scientific classification methods to separate hardened criminals/convicts from young, first-time new criminals leading to exposure of circumstantial/young offenders to hardcore criminals making them vulnerable.
- The prisons in India are vulnerable to violence due to group violence and riots.
- There is a shortage of adequate space to lodge prisoners in safe and healthy conditions due to overcrowding

of prisons.

- Long incarceration without conviction, especially when the undertrial eventually turns out to be innocent, leads to mental health issues.
- The 'Right to Speedy Trial' was recognized by the Supreme Court in Hussainara Khatoon vs. Home Secretary, State of Bihar (1979). Prolonged incarceration without bail violates this right.

People booked under anti-drug laws constitute a substantial percentage of the prison population. Isolation inside prison leads to increased desperation to access banned substances which increases the danger of other prisoners being inducted into drug abuse.

News:

- Section 479 of the BNSS lays down the "Maximum period for which [an] undertrial prisoner can be detained". It states that a prisoner who is not accused of offences punishable with death or life imprisonment shall be released on bail if she has "undergone detention for a period extending up to one-half of the maximum period of imprisonment specified for that offence under that law".

The Supreme Court ruled that Section 479 of the BNSS should apply retrospectively to first-time offenders in cases registered before the BNSS's implementation (July 1, 2024). The court emphasized that the provision is "more beneficial" and directed state governments and Union Territories (UTs) to identify eligible prisoners and ensure their release.

Urban Local Bodies (ULBs)

GS II – Appointment to various constitutional posts, powers, functions, and responsibilities of various constitutional bodies

Context: Flagging concerns on the health of urban local bodies, the Comptroller and Auditor General of India (CAG) has found that city self-governments in 18 states that cater to 241 million residents are facing a 42 percent gap between their resources and expenditure and that only 29 percent of their expenditure goes towards programmatic and development work.

Urban Local Bodies (ULBs):

- Also known as Municipal Corporations, Municipalities, or Nagar Panchayats are the fundamental unit of urban governance in our cities.
- They are the first point of contact for citizens and are responsible for providing essential services such as waste management, sanitation, and urban planning.

Importance/Significance of Urban Local Bodies in India:

- It plays a crucial role in promoting sustainable urban growth through policies supporting land-use planning and infrastructure development.
- It is responsible for providing essential services to urban residents like water supply, sanitation, solid waste management, street lighting, and public health services.
- It plays a major role in developing and implementing plans to mitigate the impact of natural disasters and other emergencies at the local level.
- It empowers women and vulnerable sections of society through reservations in local bodies, as mandated by the 73rd and 74th Constitution Amendment Acts, which have led to their increased participation in the decision-making processes.
- It reflects Gandhiji's dream of 'Poorna Swaraj' through the 'oceanic circle of power' and 'democratic decentralization'.

Issues/Challenges Faced by Urban Local Bodies In India:

- Few parastatal agencies like urban development authorities (for building infrastructure), and public corporations (water, electricity, transportation services, etc) created by the state government deny the local bodies their functional autonomy.

- There have been delays in the conduction of elections to the urban local bodies by the state government, as no constitutional provisions for ensuring elections to ULBs.
- ULBs in India do not have wide taxation powers as compared to other developed nations. For example, in China, the major component for ULBs comes from selling land use rights and in the US the city governments can impose wide-ranging taxes.
- The power to devolve functions to local governments rests with the state government and most states have not devolved adequate functions to local government bodies.
- According to the RBI Report on Municipal Finances 2022, Urban Local Bodies are dependent on state and central transfers for around 35% of their revenue. Further, the top-down transfers to the ULBs from the state and central Govt. as a percentage of GDP are extremely less in comparison with other countries.
- The main aim of political empowerment of women in urban areas has been thwarted by the emergence of CorporatorPati/Mayor Pati syndrome.
- A District Planning Committee should be constituted as per the 74th Amendment in each district for the consolidation and integration of development plans prepared by the panchayats and urban local bodies. According to a study by the India Development Review, District Planning Committees are non-functional in 9 states. Further, in states where DPCs have been created, DPCs have failed to prepare integrated plans in 15 states.
- The corruption scandals, like MCD corruption in contract awards, have severely hampered the effective functionality of these bodies. Only 11 of the 35 States/Union Territories have enacted the Public Disclosure Law that mandates publishing of key civic data.
- There has been increasing criminalization of ULBs as a large number of corporators having criminal and corrupt backgrounds getting selected to the corporations and councils.
- States in India have failed in the timely constitution of the state finance commissions. Further, according to the RBI report, there has been a shortfall of 15% in the 15th FC recommended grants to ULBs due to the attached conditionalities.

There is a huge shortage of skilled staff in the Urban local bodies to carry out the designated functions entrusted to them. About 35% of posts in India's municipal corporations are vacant (as of 2022).

Successful ULBs in India:

- The Ahmedabad Municipal Corporation (AMC) has implemented several innovative initiatives to improve the quality of life for its citizens, including the Ahmedabad Janmarg Limited (AJL), a public-private partnership that operates a network of bus rapid transit corridors.
- The Pune Municipal Corporation (PMC) has been recognized for its effective waste management practices, including the implementation of a door-to-door waste collection system and the establishment of a waste segregation and processing facility.

The Surat Municipal Corporation (SMC) has implemented various initiatives with the use of technology to track the progress of infrastructure projects and the establishment of a centralized control room to manage emergencies. The SMC has also developed a network of pedestrian-friendly streets and the establishment of several public parks.

PAPER 3

Cloud Seeding

GS III –Conservation, environmental pollution and degradation, environmental impact assessment

Context: The Delhi government's appeal to the Centre to permit cloud-seeding and induce artificial rain as a means to tackle the national capital's ongoing air pollution crisis is misplaced, scientists at the Indian Institute of Tropical Management, Pune, said.

Cloud Seeding:

- Cloud seeding is a kind of weather modification technology to create artificial rainfall.
- It works only when there are enough pre-existing clouds in the atmosphere. Rain happens when moisture in the air reaches levels at which it can no longer be held, and cloud seeding aims to facilitate and accelerate that process by making available chemical 'nuclei' around which condensation can take place. These 'seeds' of rain can be the iodides of silver or potassium, dry ice (solid carbon dioxide), or liquid propane. The seeds can be delivered by plane or simply by spraying from the ground.
- Two ways of adding nuclei particles to clouds:
 - Using large cannons that shoot particles into the sky
 - Using airplanes that drop the particles from above. This method was used by IIT Kanpur. Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEX) – IV was conducted during two consecutive monsoon seasons in 2018 and 2019 over Solapur, Maharashtra.
- It uses mainly 8 chemicals - silver iodide, dry ice, potassium iodide, propane, calcium carbide, ammonium nitrate, sodium chloride, and urea compound.
- It has earlier been attempted in Karnataka, Andhra Pradesh, and Maharashtra to address drought.
- Similar experiments of cloud seeding had earlier been tried in Australia, America, Spain, and France. In the United Arab Emirates, the cloud seeding technique led to the creation of 52 storms in Abu Dhabi.
- Till last year, IMD had around 30 successful incidents of seeding. Also, such seeding is routine in Russia and other cold countries where the technique is used to disperse fog at the airports.

Significance/Benefits of Cloud Seeding:

- It is useful for drought-affected areas. As per the India Meteorological Department (IMD), 87% of India's districts are vulnerable to droughts.
- During fog season many flights get affected due to lowering visibility hence cloud seeding technique can help to improve visibility.
- As per India State of Forest Report (2021), 35.46% of the forest cover is prone to forest fires. Rain through cloud seeding will help to reduce the forest fire-affected region.
- As seeding accelerates hail embryo growth at a lower level in the cloud, where liquid water content is smaller and updrafts are weaker.
- Clouds can be diverted to other regions based on requirements as during the 2008 Olympics opening ceremony Beijing used it to make the ceremony precipitation-free.
- It will help to distribute rainfall across the country and hence help to recharge aquifers.

Concerns/Issues in Cloud Seeding:

- Silver iodide chemical is most commonly used to seed a cloud is known to be toxic for aquatic life because of bioaccumulation.
- It is done through dry ice (Carbon dioxide) which is a source of greenhouse gases and affects climate change.
- The World Meteorological Organization adopted guidelines in 2017 advising members not to perform weather modification activities without considering the high levels of uncertainty in effectiveness and potential harm involved.
- Clouds must be deep enough and of a suitable temperature (between -10 and -12 degrees Celsius) to be

seeded effectively.

It simply redistributes rain in drought-affected areas which can ultimately affect the Hydrological cycles.

News:

- The Delhi government has appealed to the central government to allow cloud seeding to induce artificial rain as a temporary solution to tackle the city's severe air pollution crisis.
- Winter weather in Delhi often involves temperature inversions, which trap pollutants near the surface and discourage cloud formation necessary for cloud seeding.
- The primary contributors to Delhi's winter air pollution are:
 - Vehicular emissions
 - Stubble burning in nearby states
 - Industrial activities

Fine particulate matter (PM2.5 and PM10) from these sources significantly worsens air quality

Coastal Flooding

GS III –Environmental Pollution

Context: The study paper, published in the journal *Frontiers in Forests and Global Change* has reported that a rising sea and coastal flooding could actually enhance the resilience of some coastal tree species while being detrimental to others.

Coastal Flooding:

- It is a sudden and abrupt inundation of a coastal environment caused by a short-term increase in water level due to a storm surge and extreme tides.
- The magnitude and extension depend on the coastal topography, storm surge conditions, and broader bathymetry of the coastal area.

Causes of Coastal Flooding:

- Rising sea levels due to global warming increase the frequency and intensity of coastal flooding. As per the UN's Intergovernmental Panel on Climate Change, 2014, there is a high degree of certainty that sea levels will rise by between 28 - 98cm by 2100, with the most likely rise being 55cm by 2100.
- Storm surges are short-term changes in sea levels caused by events such as tsunamis and cyclones one of the leading causes for coastal flooding.
- Cyclones, storms, and tsunamis can exacerbate coastal flooding, leading to severe damage and loss of life and property.
- Construction of infrastructure, such as ports and resorts, in coastal areas can increase vulnerability to flooding.
- The combination of rising seas and more powerful storms accelerates erosion, causing the loss of beaches and wetlands that act as natural buffers.
- Deforestation and erosion of coastal ecosystems can weaken natural barriers against flooding.

Impacts of Coastal Flooding:

- It results in significant loss of life and property damage, particularly in densely populated areas.
- Infrastructures like roads, bridges, etc. can be severely damaged leading to disruption of essential services.
- Industries such as tourism, fisheries, and agriculture suffer due to flooding, with coastal regions facing direct losses from halted operations, reduced productivity, and damaged assets.
- Persistent flooding can force communities to relocate leading to internal migration straining urban infrastructure and potential social conflicts in destination areas.
- Coastal ecosystems, such as mangroves and coral reefs, can be severely impacted by flooding, leading to a loss of biodiversity.

Government Initiatives for Coastal Management:

- MISHTI Initiative is a government-led initiative aimed at increasing the mangrove cover along the coastline and on saltpan lands.
- The National Centre for Sustainable Coastal Management aims to promote integrated and sustainable management of the coastal and marine areas in India for the benefit and well-being of the traditional coastal and island communities.
- Integrated Coastal Zone Management Plan is a process for the management of the coast using an integrated approach, regarding all aspects of the coastal zone, including geographical and political boundaries, in an attempt to achieve sustainability.

The Coastal Regulation Zone notification was issued in 1991 under the Environmental Protection Act of 1986, by the Ministry of Environment, Forest and Climate Change to regulate activities in coastal areas of India.

Key Findings of the Study:

- Over three billion people reside near coastlines and depend on coastal ecosystems and protecting coastal vegetation is essential for sustaining ecosystem services and supporting livelihoods.
- It indicates that species like American holly (*Ilex opaca*) prosper with elevated water levels, while loblolly pine (*Pinustaeda*) and pitch pine (*Pinusrigida*) show restricted growth under these conditions.
- Since 1993, sea levels have doubled their rise from 2mm per year, with researchers forecasting a threefold increase in coastal floods and double the flood days by 2050.
- It also noted certain species are better suited to adapt to shifts in precipitation, temperature, and sea levels. Trees are adapting rapidly to these changes; as sea levels rise by a few millimetres(mm) each year, many coastal tree species are gradually migrating inland to regions with lower tides and reduced salt exposure.

Its findings help forest managers prioritize species protection in coastal areas, emphasizing the importance of local conditions in assessing forest vulnerability to climate change.

COP29

GS III –Environmental Conservation

Context: Completely ignoring the demands of the developing nations for mobilization of at least 1.3 trillion dollars a year in climate finance, the developed countries managed to force an agreement at the COP29 meeting in Baku, promising to put together just 300 billion dollars a year, that too from 2035.

Key Highlights of COP29:

- It reached a landmark agreement to finalize the mechanisms for carbon markets, including country-to-country trading and a centralized carbon market under the United Nations.
- The COP29 Declaration on Reducing Methane from Organic Waste was endorsed by over 30 countries, including the US, Germany, the UK, and the UAE.
- Developed countries have committed to fund \$300 bn a year for developing countries by 2035. This replaces the earlier goal of developed countries financing \$100bn per year.
- It reinforced the importance of Indigenous Peoples and local communities in addressing climate change. It adopted the Baku Workplan and renewed the Facilitative Working Group (FWG) mandate under the Local Communities and Indigenous Peoples Platform (LCIPP).
- It operationalized the Paris Agreement Crediting Mechanism and finalized the framework for country-to-country trading of carbon credits.
- It extended the Lima Work programme which emphasized gender mainstreaming in climate actions.
- Around 13 countries submitted Biennial Transparency Reports (BTRs) under the Enhanced Transparency Framework.
- The COP29 Presidency in partnership with the Food and Agriculture Organization (FAO) launches the Baku Harmoniya Climate Initiative for Farmers.
- It marked a significant milestone as dedicated spaces were created to ensure the meaningful participation of children within the Youth-led Climate Forum for the first time.

India's Initiative in COP29:

- India co-hosted LeadIT Member Meet with Sweden that focussed on the decarbonization of heavy industry.
- India promoted solar adoption through the International Solar Alliance (ISA). India has been targeting a 20-fold increase in global solar energy capacity by 2050.

India has advocated finance unlocking and disaster-resilient support for Small Island Developing States (SIDS).

Note:

- Article 6.2 of the Paris Agreement allows bilateral agreements between countries to trade carbon credits based on mutually agreed terms.
- Paris Agreement Crediting Mechanism also known as Article 6.4 seeks to develop a centralised, United Nations-managed carbon emissions offset and trading system.
- The Baku Workplan prioritizes bridging Indigenous knowledge with modern science, enhancing Indigenous participation in climate dialogues, and embedding Indigenous values into climate policies.
- Baku Harmoniya Climate Initiative for Farmers is a platform that brings together the dispersed landscape of existing climate initiatives in the field of food and agriculture, to make support for farmers easier to find and to facilitate access to finance.

United Nations Framework Convention on Climate Change (UNFCCC):

- It is commonly known as the Earth Summit, the Rio Summit, or the Rio Conference, was ratified in 1992.
- It is an international environmental convention that aims to lower atmospheric concentrations of greenhouse gases to prevent dangerous anthropogenic interference with the Earth's climate system.

A Conference of the Parties (COP) is an annual gathering of the 197 parties to the convention to review the status of efforts to combat climate change.

Delhi Air Pollution

GS III –Environmental Pollution

Context: The Air Quality Index (AQI) in New Delhi was around 351 on the day after Diwali. Despite the ban on firecrackers in the national capital, various parts of the city saw violations.

Factors/Reasons for the Rise in Air Pollution in Delhi:

- The release of large amounts of toxic pollutants containing harmful gases like methane (CH₄), carbon monoxide (CO), volatile organic compounds (VOC), and carcinogenic polycyclic aromatic hydrocarbons in the atmosphere due to stubble burning in Punjab, Rajasthan, and Haryana. The IIT consortium report (IIT Kanpur, IIT Delhi, TERI, and Airshed, Kanpur) has estimated that stubble burning contributed up to 35% of Delhi's PM 2.5 levels during the peak October-November season.
- In winter, the pollutants are not dispersed effectively due to low-speed winds.
- As Delhi is a landlocked region, it does not have the geographical advantage of sea breeze to disperse the suspended pollutants.
- The predominant direction of winds in northern India is northwesterly winds after the withdrawal of monsoons that bring the dust from the Gulf region, northern Pakistan, and Afghanistan.
- Inversion height lowers with the decrease in temperature leading to concentration of pollutants in the lower atmosphere.
- Delhi has one of the highest numbers of registered private vehicles in India. Official emissions inventories of 2018 show that vehicles emit about 40 percent of the particulate load in the city of Delhi.
- The pollution level in the Delhi NCR region increases due to landfill burning and construction debris.
- Burning of firecrackers during Diwali further adds to the increase in air pollution levels.
- The current urban development strategy focuses on real estate development, a widening of roads, and allowing large fuel-guzzling vehicles which are major reasons for increased pollution.
- The expansion of grey infrastructure due to shrinkage in Water bodies, urban forests, green cover, and urban agriculture has added to increased pollution levels in Delhi.

Government Initiatives to tackle Air Pollution in Delhi:

- Crop Residue Management Scheme provides a subsidy to farmers for buying 'Turbo Happy Seeder', 'Super SMS attachment', 'rotavators', and 'superseeder'.
- Commission for Air Quality Management (CAQM) is a statutory body formed under the Commission for Air Quality Management in the National Capital Region and Adjoining Areas Act of 2021 that provides a framework to tackle the problem of air pollution due to stubble burning.
- The shift from BS-IV to BS-VI, push for Electric Vehicles (EVs), and Odd-even Policy have been implemented to reduce Vehicular pollution.

Graded Response Action Plan (GRAP) measures like shutting down thermal power plants and a ban on construction activities are implemented to curb air pollution.

Digital Arrest Fraud**GS III –Cyber Security**

Context: In its analysis of trends seen from January to April 2024, the Indian Cybercrime Coordination Centre found that Indians lost Rs 120.30 crore because of digital arrest scams.

Digital Arrest Fraud:

- It involves scammers pretending to be government officials. They approach potential victims through phone or video calls through WhatsApp, Skype, or other channels.
- Often, the victim is accused of being part of an illegal activity, such as the movement of drugs or a suspicious package.
- It involves a combination of sets and costumes depicting police stations and official badges where scammers convincingly make their fake identities seem real.
- Scammers use pressure tactics, intimidation, and fake documents to put the victims under so-called digital arrests, demanding that they do not end the call or attempt to even leave their homes.
- Following long-duration calls where the consequences of not following their orders are elaborated upon, the scammers demand payments. Money is essentially suggested as a route to secure the victims' "release" or to end the proceedings.
- In the Vardhman Group Director's Case, scammers duped the textile industry doyen S P Oswal into transferring Rs 7 crore to their bank accounts, by posing as CBI Officers and intimidating him in false money laundering cases is one of the prime examples of digital arrest fraud cases.
- According to the National Crime Records Bureau (NCRB) data, a significant rise in cybercrimes has been reported in the last few years- 10,395 in 2020, 14,007 in 2021, and 17,470 in 2022.

Challenges/Issues in countering the rising Digital Arrest Fraud Cases in India:

- The scammers in digital arrest fraud cases request payments through untraceable methods like cryptocurrency, gift cards, or wire transfers which makes it impossible for the victims to recover their financial losses.
- The scammers use threatening language and claim serious consequences like jail time, asset seizures, or even deportation which intimidates victims and creates psychological pressure, which can lead to anxiety and stress.
- Scammers often use methods like stealing personal information for identity theft, opening bank accounts, and credit cards, or committing other forms of fraud in the victim's name which makes it impossible to track the fraudsters.
- It is becoming very complex to detect and identify digital arrest fraud cases due to the increased use of Artificial Intelligence like deepfakes and voice modulation.
- It is creating challenges for law enforcement agencies to trace and prosecute scammers as many digital arrest scams originate overseas.

Government Measures to Counter Digital Arrest Scams:

'DIGITAL ARREST'

What to do if someone contacts you and threatens you with arrest?

- ▶ **Stop all further communication and disconnect from the internet immediately**
- ▶ **Report the incident to local police or cyber crime authorities by calling 1930 (24/7 helpline number)**
- ▶ **Contact your bank and freeze accounts or change passwords if necessary**
- ▶ **Keep evidence like call recordings, messages, and screenshots**



Image generated via AI for representational purposes

- The Indian Cybercrime Coordination Centre (I4C), is a dedicated wing under the cyber and information security division of the Union Ministry of Home Affairs, mandated to tackle burgeoning cybercrime cases. In its analysis of trends seen from January to April 2024, the I4C found that Indians lost Rs 120.30 crore because of this type of scam. It has blocked more than 1,000 Skype IDs linked to such activities, after collaborating with Microsoft.

- The government set up an inter-ministerial committee of various law enforcement and intelligence agencies to tackle the recent spurt in transnational organised cybercrimes against Indians from various Southeast Asian countries, such as Cambodia. Individuals targeted by cyber scams can report incidents immediately via the cybercrime helpline at 1930 or online at cybercrime.gov.in and notify local police.

Note:

Source: Deccan Herald

Directed Energy Weapons (DEWs)

GS III –Indigenization of Technology

Context:India made significant investments in the field of Directed Energy Weapons.

Directed Energy Weapons (DEWs):

- They are ranged weapons that use concentrated energy from electromagnetic or particle technology, rather than kinetic energy, to incapacitate, damage, disable, or destroy enemy equipment, facilities, and/or personnel.

Applications of DEWs:

- They are used in military defence to intercept and destroy incoming missiles, neutralize drones, and disable enemy electronics.
- The non-lethal DEWs are used in law enforcement and border security. For example, microwaves or lasers can be used for crowd control and border security.
- They have applications in space operations to protect satellites from debris and anti-satellite weapons.

Significance/Advantages of DEWs:

- When compared to traditional munitions, DEWs are potentially less costly per shot than missiles. For example, Britain's DEW 'DragonFire' laser, which was successfully test-fired recently, is reportedly able to shoot down enemy aircraft/missiles at a per-shot cost of less than £10.
- The speed of light in a laser beam enables near instantaneous reach to a target, a critical factor in countering fast-moving threats by eliminating the need for calculating intercept courses as required for interceptor missiles.
- Many DEWs operate silently and invisibly, especially those outside the visible spectrum, making them difficult to detect.
- They eliminate the need for traditional (physical) ammunition and mechanical loading, relying instead on a power source, which can simplify supply chains.
- Light and other forms of directed energy are unaffected by gravity, wind, or Coriolis force, allowing for highly accurate targeting.
- They can target large volumes of cheap unmanned systems and munitions, which can overwhelm current air and missile defences.

Challenges/Issues related to DEWs:

- Most DEWs have limited range, and their effectiveness decreases rapidly as the distance between the target and the weapon increases
- DEWs can be expensive to develop and manufacture, and the cost may not be justified by their effectiveness in some situations.
- DEWs can be countered by using reflective materials or other countermeasures, which can reduce their effectiveness.

The development of DEWs by one country leads to an arms race, as other countries seek to develop their own hypersonic weapons in response. This can lead to increased tensions and instability.

India's DEWs Projects:

- Directionally Unrestricted Ray-Gun Array (DURGA)-II Project initiated by the Defence Research Development Organization (DRDO) to build a 100-kilowatt lightweight DEW.
- 2kW DEW System developed by Bharat Electronic Limited for countering new threats like drones and Unmanned Aerial Systems.
- The Laser Science and Technology Centre (LASTEC) Laboratory of DRDO developing direct energy weapons, called project Tri-Netra.

Kilo Ampere Linear Injector (KALI) is a linear electron accelerator for targeting long-range missiles being developed by DRDO and the Bhabha Atomic Research Centre (BARC).

Foreign Portfolio Investment (FPI)**GS III –Indian Economy**

Context: The sustained sell-off by foreign portfolio investors (FPIs) since October this year hasn't deterred new FPIs from seeking permission to invest in Indian markets. Applications of about 40-50 new FPI registrations have come to the market regulator Securities and Exchange Board of India (SEBI) during the month.

Foreign Portfolio Investment (FPI):

- It refers to investments made by foreign individuals, corporations, and institutions in the financial assets of India, such as stocks, bonds, and mutual funds.
- It is mainly used for short-term gains and portfolio diversification.

Significance of Foreign Portfolio Investment (FPI):

- It brings substantial capital into a country's financial markets, providing liquidity and aiding in the development of the capital market.
- It contributes to a country's foreign exchange reserves, strengthening its ability to manage external shocks and maintain economic stability.
- Its increase can lead to greater market efficiency as the presence of foreign investors usually leads to better corporate governance and transparency as companies strive to meet international standards.
- It helps stimulate economic growth by providing the necessary funds for investment in various sectors.
- It provides an opportunity to diversify their investment portfolios for investors by spreading risk across different markets.
- It allows investors to access growth opportunities in emerging markets, potentially leading to higher returns.

Challenges/Issues with Foreign Portfolio Investment (FPI):

- It can be volatile, driven by global economic and geopolitical factors. Sudden inflows or outflows can lead to market instability and currency fluctuations, harming both domestic investors and the economy.
- It can be driven by speculative motives, leading to price bubbles and subsequent crashes.
- Large inflows and outflows of FPI can cause significant fluctuations in the host country's exchange rates.

This, in turn, impacts export competitiveness and economic stability. Identifying the ultimate beneficiaries of complex FPI structures can be challenging for regulators, raising concerns about potential misuse of funds and tax evasion.

Securities and Exchange Board of India (SEBI):

- It is a statutory body established on April 12, 1992, following the provisions of the Securities and Exchange Board of India Act of 1992.

Its basic function is to protect the interests of investors in securities and to promote and regulate the securities market.

Global Value Chains (GVCs)

GS III –Inclusive Growth

Context: Proposed U.S. rules on Chinese-connected car tech and Israel’s pager attacks indicate the changing focus of global supply chains — from resilience to security.

Global Value Chains (GVCs):

- It consists of intricate production networks that are fragmented across multiple firms and countries for cost optimization and to achieve production efficiency.
- Countries can participate in GVCs by engaging in either backward or forward linkages.

Significance/Benefits of GVCs:

- GVCs can increase economic growth, especially in developing countries, by attracting foreign direct investment (FDI), creating jobs, and enhancing exports. It also makes them part of the global economy.
- GVCs can boost inclusive and sustainable growth by streamlining economic systems.
- GVCs create a path for countries and firms to focus on their strengths and specialize in specific stages of production, leading to cost savings and increased efficiency.
- GVCs help countries create specialized industries for specific stages of the value chain.
- GVCs provide access to global markets which in turn enables firms to reach a wider customer base.
- Countries participating in GVCs can benefit from technology transfer, as they engage with more technologically advanced partners.

Issues/Concerns/Challenges related to GVCs:

- GVCs may widen economic gaps between countries since the gains from GVC participation are not distributed equally across and within countries.
- GVC participation increases the domestic economy’s exposure—albeit not necessarily its ability to cope with—external shocks.
- GVCs create strong links in price formation, implying that inflation in one country is more likely to spill over to its direct and indirect trading partners.

MSMEs across the world, especially in developing countries, face significant impediments with the entry of global firms and the associated competition in local markets.

Graphene

GS III –Science and Technology

Context: The Union Ministry of Electronics and Information Technology (MeitY) launched the India Graphene Engineering and Innovation Centre (IGEIC) under the vision of Viksit Bharat@2047.

Graphene:

- It is a single layer (2D-dimensional) of carbon atoms, tightly bound in a hexagonal honeycomb lattice.

- It was discovered in 2004 by Andre Geim and Konstantin Novoselov, who received the Nobel Prize in Physics for this in 2010, it is an allotrope of Carbon and a building block of Graphite (which is used in pencil tips).
- Chemical vapour deposition (CVD), cleavage of natural graphite, mechanical exfoliation, and hydrogen arc discharge are methods of synthesizing Graphene sheets.
- It is often referred to as a wonder material for its extraordinary electrical and electronic properties.
- It is 200 times stronger than steel, yet 6 times lighter.
- In the optical region, it absorbs only 2.3% of the light. Making it suitable for transparent touchscreens, solar cells, and display technologies.
- It has a thermal conductivity of up to 5000 W/m/K at room temperature, which is much higher than most other materials.
- It is impermeable to gases, even those as light as hydrogen and helium.
- The Quantum Hall effect in Graphene could also possibly contribute to standards in metrology, quantum computing, and advanced electronics.

Applications of Graphene:

- It can be used to develop Graphene-based semiconductors due to superior speed and energy efficiency compared to silicon.
- It has an extremely high surface area (2630 m²/g), which makes it useful for energy storage devices like batteries and supercapacitors.
- Depending on the pore size and the applied pressure, Graphenenanoporous membranes have an efficiency range of 33% to 100% for desalination and filtering of water.
- It has been demonstrated that Graphene can absorb liquids 600 times heavier than itself. It can adsorb ethanol, olive oil, nitrobenzene, acetone, and dimethyl sulfoxide.
- Its oxidized form, called Graphene Oxide (GO), offers low cytotoxicity, making it suitable for medical applications.
- Its exceptional strength makes it a promising material for armour and ballistic protection.

Issues related to Graphene:

- Studies have proved that the toxicity of Graphene oxide and Graphene destroys the lipid membrane after coming in direct contact with the human cell membrane, which comes out to be very dangerous.
- The customer base is narrowed and market growth is impeded by these costs, which limit extensive adoption, particularly in price-sensitive sectors.
- It lacked a band gap, preventing its use in electronics, as the band gap is essential for semiconductors to switch on and off.

Its production is severely limited and for years, it was only produced in small amounts.

India Graphene Engineering and Innovation Centre (IGEIC):

- It is a not-for-profit company registered under Section 8 of the Companies Act of 2013.

It is exclusively incorporated to create a hub of excellence in Graphene technology commercialization.

High-Performance Buildings (HPBs)

GS III –Infrastructure

Context:High-performance buildings (HPBs) are at the forefront of sustainable construction, tackling urgent needs like energy efficiency, climate resilience, and resource conservation. As climate change intensifies, resources become scarcer, and urbanization increases, HPBs — built to consume less energy, conserve resources, and withstand unpredictable weather — are an important part of achieving and keeping sustainable living.

High-Performance Buildings (HPBs):

- They are structures designed to exceed traditional standards in areas such as energy efficiency, environmental sustainability, occupant comfort, and operational performance.

- These buildings are engineered to achieve high standards in various areas, such as energy use, water conservation, air quality, and resource efficiency, while also considering long-term operational and economic sustainability.
- They are at the forefront of sustainable construction, tackling urgent needs like energy efficiency, climate resilience, and resource conservation.
- Building an HPB requires key practices such as integrative design, lifecycle-based materials, efficient energy and water management, performance monitoring, and climate-resilient features.

Key Features of HPBs:

- At the core of HPBs is an integrative design approach that encourages architects, engineers, sustainability consultants, and building owners to work together and set measurable performance goals. It ensures all building systems — air-conditioning, lighting, and building envelope components like walls, roofs, and windows — work together smoothly.
- It helps to maintain energy efficiency and reduce unnecessary energy consumption by maintaining HVAC Systems (Heating, Ventilation, and Air Conditioning) by regularly replacing filters, cleaning coils, and calibrating sensors.
- It has IoT-based air quality sensors that can automatically adjust ventilation systems which makes buildings more efficient and responsive to environmental conditions.
- It has energy-efficient LED options that can reduce energy consumption along with daylight harvesting, which makes use of natural light.
- It has adequate insulation for walls, roofs, and floors that can reduce the need for heating and cooling by minimizing heat transfer.
- It also incorporates green infrastructure elements such as permeable paving and bioswales to manage stormwater and cool urban heat islands.
- It uses sound-absorbing materials and effective partitioning can help reduce noise pollution in buildings.
- It incorporates natural elements, such as green walls, indoor plants, and water features to enhance the mental well-being of occupants.
- It uses sustainable materials like recycled steel, sustainably sourced timber, and low-impact concrete that plays a major role in reducing the environmental impact of buildings.
- It enhances water conservation and efficiency through rainwater harvesting and greywater recycling systems.
- It emphasizes waste reduction through recycling, and properly managing waste.

Significance of HPBs:

- It lowers operational costs due to reduced energy and water consumption, as well as less maintenance.
- It offers proactive solutions for India's rapid urbanization, driving the country toward a low-carbon, sustainable economy.
- It improves the health quality of its occupants due to better indoor air quality and comfort, leading to higher productivity and fewer health-related issues.
- It reduces carbon emissions, lowers waste generation, and uses fewer resources, contributing to a more sustainable environment.
- It often has higher resale value and increased tenant satisfaction due to its environmental and health benefits.

Issues/Challenges related to HPBs:

- Due to the cost of advanced materials, energy-efficient systems, and sustainable design features it needs a higher initial investment.
- It can be complex to integrate systems as designing and integrating various high-performance systems can be difficult.
- It often requires specialized maintenance and operation practices due to the complexity of advanced systems.
- Regulatory and code barriers can slow down the adoption of high-performance building practices or lead to

unforeseen complications during construction.

There is a lack of awareness among its occupants about sustainable building features which can be challenging to implement effectively.

India’s efforts towards promoting HPBs:

- The National Action Plan on Climate Change focuses on energy-efficient construction.
- The Energy Conservation Building Code (ECBC) aims to reduce energy demands by up to 30% in buildings.
- India’s Green Rating for Integrated Habitat Assessment (GRIHA) has registered over 3,000 projects that prioritize sustainable practices and reducing carbon emissions.
- The Indian Green Building Council (IGBC) has certified more than 14,000 projects, covering 12.5 billion square feet of green building space.

Hypersonic Missiles

GS III –Indigenization of technology and developing of new technology

Context:In a major boost to its military prowess, India has successfully flight-tested a long-range hypersonic missile off the coast of Odisha. This achievement has put the country in a select group of nations with a weapon that can strike with extreme speed and evade most air defence systems.

Hypersonic Missile:

- The term “Hypersonic” refers to a speed at least five times the speed of sound (also called Mach-5). This comes down to around a mile per second.
 - Its key feature is manoeuvrability which sets it apart from a ballistic missile that follows a set course or trajectory.
 - The two types of hypersonic weapons systems are Hypersonic Glide Vehicles (HGV) and Hypersonic Cruise Missiles. The HGVs are launched from a rocket before gliding to the intended target while HCMs are powered by air-breathing high-speed engines or ‘scramjets’ after acquiring their target.
 - Russia and China are believed to be ahead in developing hypersonic missiles while the US is developing a range of such weapons under an ambitious programme.

Advantages of Hypersonic Missiles:

- They can enable responsive, long-range strike options against distant, defended, or time-critical threats (such as road-mobile missiles) when other forces are unavailable, denied access, or not preferred.
 - They fly at lower altitudes than ballistic missiles, which means that they may be harder to track at long distances with some surface-based sensors, such as certain radar.

Issues/Challenges related to Hypersonic Missiles:Source: India Today

- Creating a system that is so fast needs to overcome several difficult engineering and physics challenges like heat generated due to friction and air resistance.

- Basic operations, like communications, can become a significant challenge during hypersonic flight as it must be operated with an incredible degree of precise manoeuvrability.

They are also more costly to develop in comparison to ballistic missiles.

News:

- The missile, developed by the DRDO, is designed to carry various payloads for ranges greater than 1,500 km.
- It has been indigenously developed by the laboratories of the Dr. APJ Abdul Kalam Missile Complex, Hyderabad, along with various other DRDO laboratories and in-industry partners.

India's Logistics Sector

GS III –Changes in Industrial Policy and their effects on industrial growth

Context:According to quick estimates of the economic think tank National Council of Applied Economic Research (NCAER), logistics costs in India ranged between 7.8% to 8.9% of GDP for the fiscal 2021-22.

Logistics:

- It encompasses **planning, coordinating, storing, and moving resources**, people, raw materials, inventory, equipment, etc., from **one location to another**, from the production points to consumption, distribution, or other production points.
- It **entails locating potential distributors and suppliers and evaluating the viability** and accessibility of such parties.

Status of India in the LPI:

According to the World Bank's 'Logistics Performance Index Report (2023): Connecting to Compete 2023', India ranks 38 out of 139 countries. India's rank has improved by six places from 44 in 2018 and sixteen places from 54 in 2014.

Initiatives that led to growth of Logistics Sector in India:

- Policy interventions like **the PM Gati Shakti Initiative, a National Master Plan for Multimodal Connectivity** that aims to reduce logistics costs and boost the economy by 2024-25.
- **National Logistics Policy (NLP) of 2022 was launched to ensure quick last-mile delivery, end transport-related challenges, save time, and money** for the manufacturing sector, and ensure desired **speed in the logistics sector**.
- According to the LPI Report, **India's rank moved up five places in the infrastructure score from 52nd in 2018 to 47th in 2023** as the government has invested in trade-related soft and hard infrastructure, **connecting port gateways on both coasts** to the major economic centers located in the interior regions of the country.
- Technology has been a critical component of India's logistics performance improvement efforts. Under a public-private partnership, the **government has implemented a supply chain visibility platform**, which has contributed to remarkable reductions in delays.
- Dwell time is **how long a vessel spends at a specific port or terminal**. It may also refer to the **amount of time that a container or cargo spends at a port or terminal before being loaded** onto a vessel or after being unloaded from a vessel. **India's very low dwell time (2.6 days)** is one example of how the country has improved its logistics performance.

Issues with India's Logistics System:

- The **Economic Survey 2022-23** indicates that logistics costs in India range from **14-18% of GDP**, higher than the global benchmark of 8%.
- Methodological challenges exist in estimating logistics costs, particularly as percentages of GDP. The **Dun and Bradstreet methodology** calculates the cost of doing business as a percentage of the consignment value, while **other reports cite logistics costs as percentages of GDP** without clear explanations, leading to variations in the figures.

- The modal mix in India's freight movement is heavily skewed towards road transport, **with 65% of freight being moved by road**. This has led to increased congestion, pollution, and logistics cost escalation on roads. Despite being a more cost-effective mode of transportation, **railways have been losing freight share to more flexible modes**, due to the convenience of road transport. The Indian Railways face infrastructural challenges such as the **lack of necessary terminal infrastructure, maintenance of good sheds and warehouses, an uncertain supply of wagons, and absence of all-weather roads** as a substantial part of the country is out of reach for railways.

Logistics Performance Index (LPI):

- It is an interactive benchmarking tool developed by the **World Bank Group**.
- It measures the ease of establishing reliable supply chain connections and the structural factors that make it possible.
- It helps countries **identify the challenges and opportunities they face** in their performance of trade logistics and what they can do to improve their performance.
- **It considers 6 parameters to evaluate logistics performance** - customs performance, infrastructure quality, ease of arranging shipments, logistics services quality, consignment tracking and tracing, and timeliness of shipments.

Lewis Model

GS III –Changes in Industrial Policy

Context: While the Lewis Model has proved successful for China, India grapples with its implementation, encountering challenges in the transition from agriculture to industrialization.

Lewis Model:

- Lewis Model suggested that **surplus labor in agriculture could be redirected to the manufacturing sector** by offering wages just high enough to attract workers away from the farm. This shift, in theory, **would stimulate industrial growth**, enhance productivity, and lead to **economic development**.
- It was given by Economist **William Arthur Lewis** in **1954**, who put forth the "**Economic Development with Unlimited Supplies of Labor**" and won the **Nobel Prize in Economics** in 1979.

Issues/Challenges in implementing the Lewis Model in India:

- Low wages and inadequate social security in urban manufacturing facilities fail to entice **rural agricultural laborers to relocate, given the high costs of urban living**, posing a hurdle to the implementation of the Lewis model.
- Manufacturing industries are **increasingly capital-intensive**, relying on **labor-displacing technologies** like **robotics and artificial intelligence**. This transition **restricts the absorptive capacity** of labor-intensive sectors to accommodate surplus agricultural workers.
- India faces a scenario of **disguised unemployment in the agricultural sector**, where a surplus of workers is engaged in activities that do not significantly contribute to increased productivity or income. This surplus labor situation **complicates the transition of workers to other sectors**.
- There exists a **mismatch between the skills demanded by the industries and the skills possessed by the workforce**. The education system might not adequately prepare individuals for the demands of the modern job market, resulting in a skill gap that impedes labor absorption in industries.
- Societal perceptions often **prioritize white-collar jobs over vocational or technical skills**. This bias against **blue-collar work** can limit the workforce available for skilled trade positions and technical jobs, affecting industrial growth.

Alternate Models to the Lewis Model for India:

- **Farm-as-Factory Model** suggests a focus on **elevating the value addition and productivity within India's agricultural sector** rather than transferring workers from agriculture to manufacturing. By emphasizing the promotion of **agribusiness, bio-fuels, and food processing** this approach aims to enhance employment

opportunities, income generation, and innovation for rural workers.

- **Services-led Model** proposes that **India should leverage its comparative advantage in services** to drive its economic growth as India has a strong presence in sectors such as **information technology, business process outsourcing, tourism, health care, and entertainment which** can create high-skilled jobs, boost exports, and attract foreign investment.

AmartyaSen's Capability Approach emphasizes enhancing individuals' capabilities and freedoms by prioritizing **education, healthcare, and social support**, this approach aims to empower individuals to pursue their own choices and opportunities.

Project Tiger

GS III –Conservation of wildlife

Context: The Chhattisgarh government notified the Guru Ghasidas-TamorPingla in the state as India's 56th tiger reserve. The reserve is expected to help Chhattisgarh improve its tiger population, which has been dwindling in recent years. It also opens an avenue to the state's ambition of reintroducing cheetahs at the reserve — the last cheetah was spotted here in the 1940s.

Project Tiger:

- It is a **centrally sponsored scheme** of the Ministry of Environment, Forests, and Climate Change providing central assistance to the tiger States for tiger conservation in designated tiger reserves.
- It was first initiated in the year **April 1, 1973**.
- It was administered by the **National Tiger Conservation Authority (NTCA)**.

Objectives of Project Tiger:

- Ensuring a viable population of the Bengal tiger ('endangered') in its natural habitats,
- Protecting it from extinction,
- Preserving areas of biological importance as a natural heritage that represent the diversity of ecosystems across the tiger's range in the country.

Protection Status of Tiger:

- Schedule I: Indian Wildlife (Protection) Act, 1972
- Endangered: International Union for Conservation of Nature (IUCN) Red List
- Appendix I: Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Tiger Landscapes of India:

- Shivalik Hills and the Gangetic Plains
- Central India
- Eastern Ghats
- Western Ghats
- North-Eastern Hills and Brahmaputra Plains
- Sunderbans

Contributions/Significance of Project Tiger:

- Project Tiger led to the creation of numerous tiger reserves across the country. There were nine reserves in 1973, the number has grown to over 50 in 2021. These reserves not only protect tigers but also the entire ecosystem.
- These reserves have safeguarded vast tracts of forested land, leading to ecological balance, groundwater recharge, and reduced human-animal conflict in buffer zones.
- The tiger population, which was estimated at 1,200 in the early 1970s, showed a remarkable recovery. As per the 2022 census, India is home to nearly 3,682 tigers, accounting for 75% of the global tiger population.
- The popularity of tiger reserves has boosted eco-tourism, leading to increased local employment and awareness about conservation.
- Tiger is an "umbrella species" that ensures viable populations of other wild animals (co-predators, prey) and forest, thereby ensuring the ecological viability of the entire area and habitat.
- Tiger habitats, particularly forests, are important for carbon sequestration and climate change mitigation

which in turn helps to reduce greenhouse gas emissions and slow down the pace of climate change.

Issues/Challenges Faced by Project Tiger:

- Poaching driven by the black market for tiger parts remains a significant threat.
- Infrastructural projects like roads, dams, and urban expansion have led to fragmented habitats, increasing human-tiger conflicts.
- Rising sea levels, especially in the Sundarbans, threaten the habitat of the Bengal tiger.
- Insufficient funds and resources have sometimes hindered the effective management of tiger reserves.
- Resettlement of communities from core areas and restrictions on resource extraction have sometimes led to friction between local inhabitants and forest officials.

Indian Initiatives to Protect Tiger:

- The Government conducts a national tiger census every four years to estimate the tiger population in the country.
- Tiger Conservation Plan is a document mandated under Section 38 V of the Wildlife (Protection) Act, 1972 for each tiger reserve, which prescribes management interventions for the said tiger reserve.
- Conservation Assured | Tiger Standards (CA|TS) is a comprehensive system that will provide a reference point to evaluate the existing management effectiveness of tiger conservation within integrated landscape planning and ensure that benefits from these efforts are optimized.
- The Government has also established Conservation Reserves and Community Reserves to protect critical tiger habitats outside of the designated tiger reserves.
- Lidar-based survey technology is being used to deal with the challenge of human-animal conflict that was causing the death of animals.
- M-STrIPES (Monitoring system for tigers – intensive protection and ecological status) uses GPS to geotag photo-evidences and survey information of tigers.

CaTRAT (Camera Trap Data Repository and Analysis Tool) for automated segregation of camera trap photographs to species.

Global Initiatives to Protect Tiger:

- Global Tiger Forum (GTF) was established in 1994 and is the only inter-governmental body for tiger conservation. Its membership includes seven tiger range countries: Bangladesh, Bhutan, India, Cambodia, Myanmar, Nepal and Vietnam.
- Global Tiger Initiative (GTI) was launched in 2008 as a global alliance of governments, international organizations, civil society, and the private sector to work together to save wild tigers from extinction.
- St. Petersburg Declaration on Tiger Conservation was adopted in 2010, by the leaders of 13 tiger range countries (TRCs) assembled at an International Tiger Forum in St. Petersburg, Russia. 13 tiger range countries – India, Bangladesh, Bhutan, Cambodia, China, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Russia, Thailand, and Vietnam.

Guru Ghasidas-TamorPingla:

- It is the fourth tiger reserve in Chhattisgarh after Achanakmar, Indravati, and UdantiSitanadi.
- The total area of the new tiger reserve is 2,829.387 sq km, making it the third largest tiger reserve in India.
- It is spread across four districts, Manendragarh-Chirmiri-Bharatpur (MCB), Korea, Surajpur, and Balrampur in the northern tribal Sarguja region of Chhattisgarh.
- The Guru Ghasidas-TamorPingla falls between two other important tiger reserves located in Bandhavgarh, Madhya Pradesh, and Palamau, Jharkhand. It is adjacent to Sanjay Dubri Tiger Reserve, also in MP.
- The reserve comprises a wide range of wildlife species (apart from tigers) such as elephants, sloth bears, vultures, peacocks, wolves, leopards, otters, chitals, jackals, nilgai, bison, hyenas, langurs, cobras, etc.

It is also rich in flora — comprising sal, saja, dhavda, kusum, etc — different types of vegetation. It consists of hills, plateaus, valleys, and a river system which create a diverse habitat for its rich wildlife.

Protected Planet Report 2024

GS III –Environmental Conservation

Context:The Protected Planet Report 2024 was prepared by experts at UNEP-WCMC in collaboration with IUCN and its World Commission on Protected Areas (WCPA).

Protected Planet Report 2024:

- It reveals that 17.6% of land and inland waters and 8.4% of the ocean and coastal areas globally are within documented protected and conserved areas.
- It is the first official evaluation of global progress on all elements of Target 3 since the Kunming-Montreal Global Biodiversity Framework(KM-GBF) was adopted in 2022.
- Protected and conserved areas must almost double in area on land and more than triple in the ocean for the 30% target to be reached by 2030.
- The strongest progress since 2020 has been in the ocean, but most of this has been in national waters. In areas beyond national jurisdiction, coverage remains very low, accounting for less than 11% of the total area covered by marine and coastal protected areas. This is despite the fact that the high seas cover 61% of the ocean.
- Data is insufficient to fully measure and understand the effectiveness of protected and conserved areas. Less than 5% of the world's land is covered by protected areas where management effectiveness has been assessed. The figure is 1.3% for the marine realm.
- Protected and conserved areas are not always established in the places that most need conserving. Only one-fifth of areas identified as the most important for biodiversity are fully protected. A further one-third of these important areas fall outside of protected and conserved areas entirely.
- Biodiversity is not fully represented within protected and conserved areas. Although one-quarter of ecological regions already have 30% coverage, some still have none, meaning species and ecosystems are unevenly conserved.
- Only 8.5% of the world's land is well-connected as well as protected.
- There is little evidence that protected and conserved areas are equitably governed. Governance assessments have been reported for only 0.2% of coverage on land and less than 0.01% at sea. Less than 4% of coverage is governed by Indigenous Peoples and local communities.
- Beyond protected and conserved areas, Indigenous and traditional territories cover at least an additional 13.6% of global terrestrial areas.

Target 3 of the Kunming-Montreal Global Biodiversity Framework (KM-GBF):

- It ensures and enables that by 2030 at least 30% of terrestrial, inland water, coastal, and marine areas, especially those critical for biodiversity, are effectively conserved and managed through well-connected, ecologically representative, and equitably governed protected areas.

This includes recognizing Indigenous and traditional territories and integrating these areas into wider landscapes and seascapes while ensuring sustainable use aligns with conservation goals and respects the rights of Indigenous peoples and local communities.

UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC):

- It is a global centre of excellence on biodiversity and nature's contribution to society and the economy.
- It works at the interface of science, policy, and practice to tackle the global crisis facing nature and support the transition to a sustainable future for people and the planet.

International Union for Conservation of Nature (IUCN):

- It is a membership Union composed of both government and civil society organizations.
- It harnesses the experience, resources, and reach of its more than 1,400 Member organisations and the input of more than 16,000 experts.

- It is the global authority on the status of the natural world and the measures needed to safeguard it.

IUCN World Commission on Protected Areas (WCPA):

- It is the premier network of protected and conserved area expertise, with over 3,000 members in 140 countries.

It provides scientific, technical, and policy advice, and advocates for systems of marine, freshwater, and terrestrial protected areas and other effective area-based conservation measures (OECMs) that result in positive outcomes for biodiversity conservation.

Sickle-Cell Disorder (SCD)

GS III –Health

Context: On the occasion of Janjatiya Gaurav Diwas on 15th November 2024, the Hon'ble Governor of Madhya Pradesh and Chief Minister unveiled a commemorative postage stamp dedicated to "Sickle Cell Eradication - 2047" at PG College, Dhar.

Sickle-Cell Disorder (SCD):

- It is an **inherited haemoglobin disorder** characterized by a **genetic mutation** that **causes red blood cells (RBCs) to assume a sickle or crescent shape** rather than their normal round shape.
- It leads to blocked blood flow, severe pain, organ damage, and reduced life expectancy.

Symptoms:

- It causes **chronic anaemia** leading to fatigue, weakness, and paleness.
- It also causes painful episodes like sudden and intense pain in the bones, chest, back, arms, and legs.
- It can lead to **delayed growth and puberty**.

Treatment:

- **Anaemia can be relieved through blood transfusions.**
- **The frequency of painful episodes can be reduced through hydroxyurea.**
- **Gene Therapy** can also be treated by bone marrow or **stem cell** transplantation by methods like **Clustered regularly interspaced short palindromic repeats (CRISPR)**.

Challenges related to the treatment and accessibility of SCD:

- There is a **lack of understanding about SCD** among the public and healthcare providers, leading to delayed diagnosis and inadequate treatment.
- There is a lack of specialized healthcare facilities and trained medical personnel for managing SCD in many rural and tribal areas.
- The long-term management of SCD can be financially burdensome for many families due to the cost of medications, regular check-ups, and potential hospitalizations.
- Inconsistent availability of essential medications for SCD treatment, such as **hydroxyurea and pain relievers**, is a concern in certain regions.
- The **absence of systematic newborn screening** and early detection initiatives results in missed opportunities for early intervention and genetic counselling.
- Rural, **remote, and tribal communities** face challenges in accessing quality healthcare due to geographical isolation, lack of transportation, and socioeconomic factors. **Stigma and discrimination** further hinder access to healthcare services.

Government Initiatives regarding SCD:

- **National Sickle Cell Anaemia Elimination Mission** aimed at enhancing the care for all **Sickle Cell Disease (SCD)** patients and reducing the disease's prevalence through an integrated approach **encompassing screening and awareness campaigns**. It targets the **complete elimination of sickle cell disease as a public health concern by 2047**.
- **National Health Mission (NHM) of 2013** is a flagship programme that encompasses provisions for disease

prevention and management, with a **specific focus on hereditary anomalies such as sickle cell anaemia**. It focuses on **raising awareness, facilitating early detection, and ensuring timely treatment** of sickle cell anaemia. It facilitates drugs like hydroxyurea to treat SCD in its **"essential medicines list"**.

- **The National Guidelines for Stem Cell Research 2017 restricts the commercialization of stem cell therapies** to clinical trials, except for Bone marrow transplantation (BMT) for SCD. Gene editing on stem cells is permitted only for in-vitro studies.
- **National Guidelines for Gene Therapy Product Development and Clinical Trials 2019** provides guidelines for the development and clinical trials of gene therapies for inherited genetic disorders. India has also approved a **five-year project** to develop CRISPR techniques for sickle cell anaemia treatment.
- **State Haemoglobinopathy Mission of Madhya Pradesh** aims to address the challenges in screening and management of the disease.
- **Rights of Persons with Disabilities (RPwDs) Act of 2016 includes SCD** that provides for benefits such as **reservation in higher education (minimum 5%), government jobs (minimum 4%), and allocation of land (minimum 5%),** for persons with benchmark disabilities and those with high support needs.

The Sickle Cell Eradication - 2047 initiative aims to create a healthier future for tribal communities.

World Sickle Cell Awareness Day:

- It is observed annually on 19th June.
- It aims to highlight the struggles faced by those with SCD, promote understanding of the disease, and streamline efforts towards improving patient care and finding a cure.
- The theme for 2024 was **"Hope Through Progress: Advancing Sickle Cell Care Globally."**

Space Docking

GS III –Space Technology

Context: A Hyderabad-based company handed over two 400 kg class satellites to ISRO, which will be part of the Space Docking Experiment planned by the space agency later this year

Space Docking:

- It involves the precise connection of two spacecraft, whether manned or unmanned, allowing those to operate as a single unit for critical tasks such as refuelling, repair, and crew exchange.

Space Docking Experiment (SPADEX):

- It is one of ISRO's most significant steps towards developing autonomous docking technology.
- Objectives of SPADEX:
 - Demonstrating autonomous docking of spacecraft in low Earth orbit.
 - Validating technology for flying two spacecraft in formation.
 - Testing remote robotic arm operations for docking.
 - Developing technology for controlling one spacecraft using another's attitude control system.
- It involves two vehicles - 'Chaser' and the 'Target' coming together and connecting in space.
- It will test how well the combined spacecraft maintains stability and control after docking, ensuring smooth operations for future missions.
- India's SPADEX experiment is unique because it focuses on developing indigenous, scalable, and cost-effective docking technology.
- It is designed to serve a wide range of spacecraft sizes and mission objectives, including potential collaborations for building space stations or deep space exploration.

Significance of Space Docking Experiment (SPADEX) for India:

- It plays a major role in India's space exploration ambitions such as Gaganyaan, Chandrayaan-4, and Bharatiya Antariksha Station (BAS) as it focuses on scalable and cost-effective docking technology developed in India.

- It marks a milestone in private sector participation, enabled by space sector reforms like IN-SPACe.
- It enables international collaboration opportunities for building space infrastructure and deep space exploration along with earning crucial foreign exchange.
- It has applications in improving the longevity of Geostationary Satellites, future interplanetary missions, assembling space solar stations for generating electricity from the Sun, etc.

Issues/Challenges related to the Space Docking Experiment (SPADEX):

- It is a complex system that requires precise communication and coordination as satellites will be travelling at immense speeds (about 8-10 km per second). A slight error in the navigation and control system can result in collision or failure to dock. Example: Sunita Williams’ Case.
- The autonomous complex maneuvers in real-time are technologically challenging due to various dynamic factors such as relative speeds and trajectories.
- There might be issues related to sensors used for docking due to the harsh environment of space.

It may also face threats due to space debris, microgravity effects, data transfer, and communication stability, etc. at the planning stage.

Wind Energy in India

GS III –Renewable Energy

Status of Wind Energy in India:

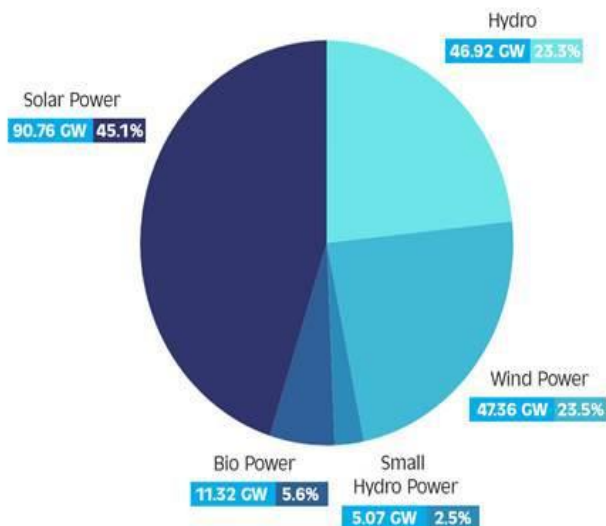
- According to the National Institute of Wind Energy (NIWE), India has a wind potential of 1,163.86 GW at 150 meters above ground level.
- India ranks fourth globally for installed wind energy capacity.
- Major wind energy states are Gujarat, Tamil Nadu, Karnataka, Maharashtra, Rajasthan, and Andhra Pradesh, which together contribute 93.37% of the country’s installed wind energy capacity.

Significance/Benefits of the Wind Energy Sector in India:

- It is a sustainable power source compared to fossil fuels as wind energy is inexhaustible and it replenishes naturally.
- It helps to reduce the carbon footprint and mitigate climate change as wind turbines generate electricity without producing CO₂ emissions.



Renewable Energy Capacity in India



As of October 10, 2024

population.

- It enhances energy independence and energy resilience as wind power reduces dependence on imported fuels.
- It creates jobs in manufacturing, installation, maintenance, and operations

Issues/Challenges with the Wind Energy Sector in India:

- New wind turbines, especially those with higher capacities (2 MW and 2.5 MW), require more land (3.5 to 5 acres) compared to older, smaller turbines. Acquiring large tracts of land for wind farms is a complex and time-consuming process in India which often leads to delays in project implementation and increased costs due to bureaucratic hurdles and land disputes.
- Wind energy generation depends on weather conditions which makes it unpredictable and variable during rough weather conditions such as monsoons.
- Since the 1980s when wind turbines were installed, habitats have come up between wind sites which pose new challenges of displacement and rehabilitation of

- Older policies do not always accommodate modern technological advancements or the current needs of the sector.
- It faces issues of underutilization of resources as India lacks consistent, high-quality wind resources leading to suboptimal site selection.
- The construction of wind farms can disrupt local ecosystems and wildlife habitats.

Government Policies for the Wind Energy Sector in India:

- National Offshore Wind Energy Policy of 2015 provides a framework to develop offshore wind energy in India's Exclusive Economic Zone and it grants the National Institute of Wind Energy (NIWE) the authority to identify potential offshore sites and support project implementation.
- Guidelines for Tariff-Based Competitive Bidding of 2017 promote competitive bidding to drive down wind energy tariffs, encouraging transparency and cost-efficiency in power procurement from wind projects.
- National Wind-Solar Hybrid Policy of 2018 aims to encourage hybrid projects that integrate wind and solar power, improving grid stability and reducing dependency on one energy source.

The Green Energy Corridor project focuses on creating transmission infrastructure to facilitate renewable energy integration into the national grid, including wind energy.

PAPER 4**Labour Ethics****GS IV – Determinants and Consequences of Ethics in Human Actions**

Context: An ILO report highlighted that among various work-related risks, long working hours are the leading cause of death among employees which has raised debate surrounding labour ethics.

Labour Ethics:

- It includes consideration of right and wrong on a wide range of questions having to do with the treatment of labour. It entails that employers are ethically required to provide a safe and healthy workplace for their employees.
- The Universal Declaration of Human Rights affirms that people have a right to rest and leisure, including reasonable limitations on working hours and periodic holidays with pay.

Ethical arguments for long work hours:

- For maintenance of essential services, during emergency situations like pandemic, wartime, etc. (Situational Ethics).
- Often results in a shortage of staff and a paucity of skilled workers. (Situational Ethics)
- To improve work productivity, efficiency, and competitiveness of industries and countries. (Utilitarian Ethics).

Ethical concerns against overtime and long work hours:

- It leads to violation of the ethical principle of non-maleficence which dictates that care should be taken not to harm others. Long working hours cause exhaustion leading to medical negligence, and disasters like Chernobyl, Space Shuttle Challenger Accident, etc.
- Choosing extra overtime income compromises the physical and mental health of the employee. For example, job burnout in investment banking.
- Mandating long work hours is against a sustainable work culture where businesses are mindful of workers' health.
- It leads to the erosion of family and societal values by eroding time for personal relationships and ties to the broader community.

Long work hours concentrate job opportunities for a limited set of labour force resulting in inequitable distribution of employment. It limits gainful employment opportunities for women who prefer shorter-hour shifts due to dual burdens.



Practice Questions



Q1.) With reference to Anti defection law, consider the following statements:

1. The Anti-Defection Law in India is governed by the Seventh Schedule of the Constitution.
2. The law applies to both Parliament and state assemblies.
3. An independent candidate joining a political party after the election face disqualification under Anti defection law.
4. The decision of the Presiding Officer is not subject to judicial review.

How many of the above statements are correct?

- a. Only one
- b. Only two**
- c. Only three
- d. All four

Q2.) The Pancheshwar Multipurpose Project (PMP), recently seen in news is planned to be developed on which one of the following rivers?

- a. Kaladan River
- b. Teesta River
- c. Mahakali River**
- d. Manas River

Q3.) Consider the following statements about Financial Action Task Force (FATF):

1. FATF is an inter-governmental body that sets global standards for anti-money laundering and combating the financing of terrorism.
2. It was established in 2011 during the G20 Summit held in Paris.
3. India is not a member of FATF.

How many of the above statements are correct?

- a. Only one**
- b. Only two
- c. All three
- d. None

Q4.) Consider the following:

1. Nagarajunasagar- Srisaillam

2. Panna

3. Satpura

Leopards are found in how many of the above given Tiger Reserves?

- a. Only one
- b. Only two
- c. All three**
- d. None

Q5.) With reference to Regulatory Sandbox (RS) scheme, consider the following statements:

1. The Regulatory Sandbox scheme is an initiative of NITI Ayog.
2. The RS aims to foster responsible innovation in financial services.
3. It involves live testing of new financial products or services in a controlled regulatory environment.
4. RS scheme Participants must ensure compliance with provisions of the Digital Personal Data Protection Act, 2023.

How many of the above statements are correct?

- a. Only one
- b. Only two
- c. Only three
- d. All four**

Q6.) Consider the following statements about United Nations Human Rights Council (UNHRC):

1. UNHRC is an intergovernmental body within the United Nations system.
2. The UNHRC reviews the human rights records of all United Nations Member States.
3. India is not a member of UNHRC.

How many of the above statements are correct?

- a. Only one
- b. Only two**
- c. All three
- d. None

Q7.) With reference to the Bureau of Energy Efficiency (BEE), consider the following statements:

1. The Bureau of Energy Efficiency is a statutory body.
2. It focuses on self-regulation and market principles to enhance energy efficiency across various sectors.
3. The State Energy Efficiency Index 2023 was released by the Bureau of Energy Efficiency in India.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. **All three**
- d. None

Q8.) Consider the following statements about Nano Urea?

1. It is the only nano fertilizer approved by the Government of India.
2. Nano Urea is developed and patented by the Indian Farmers Fertiliser Cooperative Limited.
3. Nano Urea reduces nitrate leaching and water contamination compared to traditional urea.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. **All three**
- d. None

Q9.) Consider the following centrally sponsored schemes:

1. PradhanMantriAdarsh Gram Yojana
2. PradhanMantriAwasYojna
3. BabuJagjivan Ram ChhatrawasYojana

How many of the above are the components of PradhanMantriAnusuchitJaatiAbhyudayYojana (PM-AJAY)?

- a. Only one
- b. **Only two**
- c. All three
- d. None

Q10.) In India, melanistic royal Bengal tigers can be found in their natural habitat in:

- a. Ranthambore Tiger Reserve
- b. **Similipal Tiger Reserve**
- c. Bandipur Tiger Reserve
- d. Kaziranga Tiger Reserve

Q.11) Consider the following statements:

Statement-I:

The National Urban Cooperative Finance and Development Corporation Limited (NUCFDC) is an umbrella organization for Urban Cooperative Banks in India.

Statement-II:

Its primary role is to modernize and strengthen the Rural Cooperative Banking Sector in India.

Which one of the following is correct in respect of the above statements?

- a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. **Statement-I is correct but Statement-II is incorrect**
- d. Statement-I is incorrect but Statement-II is correct

Q12.) With reference to National Commission for Protection of Child Rights (NCPCR), consider the following statements:

1. NCPCR is a statutory body established by the Government of India.
2. NCPCR operates under the Ministry of Women & Child Development of the Central Government.
3. Chairperson and members are appointed by the Central Government.
4. The Chairperson and other members serve a term of three years.

How many statements given above are correct?

- a. Only one
- b. Only two
- c. Only three
- d. **All four**

Q13.) With reference to Carbon Capture and Storage (CCS), consider the following statements:

1. CCS captures carbon dioxide (CO₂) emissions from industrial processes and preventing them from entering the atmosphere.
2. CCS allows to continue using fossil fuels while minimizing their environmental impact.
3. CCS can be applied to sectors like cement production, steel manufacturing, and chemical industries.

How many of the above given statements are not correct?

- a. Only one
- b. Only two
- c. All three
- d. **None**

Q14.) Consider the following statements:

Statement-I:

The Consumer Protection Act, 2019 is a comprehensive legislation enacted in India to safeguard the rights and interests of consumers.

Statement-II:

The Act establishes Central Consumer Protection Authority to addresses improper trade practices, misleading advertisements, and violations of consumer rights.

Which one of the following is correct in respect of the above statements?

- a. **Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I**
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. Statement-I is correct but Statement-II is incorrect
- d. Statement-I is incorrect but Statement-II is correct

Q15.) Consider the following statements:

1. The buffer zone and core zone in national parks are defined and regulated by the Wildlife Protection Act, 1972.
2. In core zone, regulated activities like sustainable use of natural resources, environmental education, and controlled tourism occur.

Which of the statements given above is/are correct?

- a. **1 only**
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Q16.) With reference to the e-KisanUpajNidhi, Consider the following statements:

1. It is a Digital Gateway initiative launched by the Warehousing Development and Regulatory Authority (WDRA).
2. The e-KisanUpajNidhi initiative allows farmers to store their produce without collateral in WDRA-registered warehouses.

Which of the statements given above are correct?

- a. 1 only
- b. 2 only
- c. **Both 1 and 2**
- d. Neither 1 nor 2

Q17.) With reference to MethaneSAT, consider the following statements:

1. MethaneSAT is developed by ISRO.
2. It is an Earth observation satellite designed to detect and monitor methane emissions globally.

Which of the statements given above is/are correct?

- a. 1 only
- b. **2 only**
- c. Both 1 and 2
- d. Neither 1 nor 2

Q18.) Consider the following:

1. Severe flooding
2. Increased coastal erosion
3. Extreme weather conditions

How many of the above can be the possible impact of reduced ice cover in arctic region?

- a. Only one
- b. Only two
- c. **All three**
- d. None

Q19.) With reference to Indian Biological Data Center (IBDC), consider the following statements:

1. It serves as India's first national repository for life science data.
2. It stores diverse biological data generated from publicly funded research within the country.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. **Both 1 and 2**
- d. Neither 1 nor 2

Q20.) With reference to the Uttar Poorva Transformative Industrialization Scheme - 2024 , consider the following statements:

1. Uttar Poorva Transformative Industrialization Scheme is a Central Sector Scheme.
2. It aims for the development of Industries and generation of employment in the states of North East Region.
3. It will be implemented by the Department for Promotion of Industry and Internal Trade.

How many of the statements given above are not correct?

- a. Only one
- b. Only two
- c. All three
- d. **None**

Q21.)With reference to India Artificial Intelligence (AI) mission, consider the following statements:

1. It is an initiative by the Ministry of Electronics and Information Technology (MeitY).
2. It aims to position India as a global leader in AI research and innovation.
3. It will be implemented by the 'IndiaAI' Independent Business Division (IBD).

How many statements given above are correct?

- a. Only one
- b. Only two
- c. **All three**
- d. None

Q22.) Consider the following statements about the National Commission for Scheduled Castes (NCSC):

1. The National Commission for Scheduled Castes is a constitutional body.
2. The Chairperson of the NCSC is appointed by the Prime Minister of India.

Which of the statements given above is/are correct?

- a. **1 only**

- a. 2 only
- b. Both 1 and 2
- c. Neither 1 nor 2

Q23.)With reference to Desert Star dunes, consider the following statements:

1. Star dunes are formed by opposing winds with changing directions.
2. Unlike other dunes, star dunes never collapse due to the continuous reorganization process.
3. Star dunes are currently found in deserts of African region only.

How many of the statements given above are correct?

- a. Only one
- b. **Only two**
- c. All three
- d. None

Q24.)With reference to the Avaana Sustainability Fund (ASF), consider the following statements:

1. The Avaana Sustainability Fund (ASF) is a venture capital fund.
2. It aims to invest in early-stage climate technology companies in India.
3. It is launched by the Small Industries Development Bank of India (SIDBI).

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. **All three**
- d. None

Q25.) The Sabroom Land Port, recently seen in news is located in India, along the international border with

- a. Myanmar
- b. **Bangladesh**
- c. Nepal
- d. Bhutan

Q26.)With reference to the Agni-V Missile, consider the following statements:

1. Agni-V is an advanced surface-to-surface ballistic missile.
2. It is developed indigenously by the Defence Research and Development Organisation (DRDO) of India.
3. Agni-V missile with MIRV technology can carry multiple warheads that can independently target different locations.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three**
- d. None

Q27) With reference to the Mines and Minerals (Development and Regulation) Act, 1957, consider the following statements?

1. The act is applicable to all minerals except minor minerals and atomic minerals.
2. As per the Act, State Government has the authority to specify the royalty rates for various minerals.
3. Under the Act, states have the authority to collect royalties.

How many of the statements given above are correct?

- a. Only one
- b. Only two**
- c. All three
- d. None

Q28.) Consider the following statements about Minimum Alternate Tax (MAT):

1. It ensures that companies contribute a minimum amount of tax, regardless of their tax exemptions and deductions.
2. It applies to all companies in India, including foreign companies.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2**
- d. Neither 1 nor 2

Q29.) With reference to Juno Space craft, consider the following statements:

1. Juno Space craft is launched by ISRO.
2. Juno aims to study Jupiter's composition, magnetic and gravity fields, and polar magnetosphere.
3. It seeks to investigate the planet's formation, origin, and the presence of water in its atmosphere.

How many of above given statements are correct?

- a. Only one
- a. Only two**
- b. All three
- c. None

Q30.) Consider the following:

1. Studying ocean currents
2. Monitoring climate patterns and changes
3. Enhancing cyclone prediction
4. Identifying potential fishing zones.

Data from Oceansat -3 is applicable to how many of the above given purposes?

- a. Only one
- b. Only two
- c. Only three
- d. All four**

Q31.) Consider the following countries:

1. Armenia
2. Belarus
3. Kazakhstan
4. Kyrgyzstan
5. Afghanistan
6. Russia

How many of the above-mentioned countries are the members of the Eurasian Economic Union (EAEU)?

- a. Only two
- b. Only three
- c. Only four
- d. Only five**

Q32.) With reference to Indian Network for Fishery and Animal Antimicrobial Resistance (INFAAR), consider the following statements:

1. It is a network of laboratories established under the Indian Council of Agricultural Research (ICAR).

2. INFAAR collates surveillance data to evaluate baseline data and identify AMR trends in livestock, poultry, and fisheries.
3. It seeks to understand the impact of interventions required for the mitigation of antimicrobial resistance.

How many of the statements given above are not correct?

- a. Only one
- b. Only two
- c. All three
- d. **None**

Q33.) Consider the following statements:

1. The Global Methane Tracker is an annual report released by the International Energy Agency (IEA).
2. It provides the most recent data on methane emissions from the energy sector.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. **Both 1 and 2**
- d. Neither 1 nor 2

Q34.) With reference to the T+0 settlement cycle, consider the following statements:

1. It is introduced by the Reserve Bank of India.
2. In this settlement cycle, investors selling their stocks will receive money on the same day of the sale.

Which of the statements given above is/are correct?

- a. 1 only
- b. **2 only**
- c. Both 1 and 2
- d. Neither 1 nor 2

Q35.) The Darién Gap, recently found in news is a geographic region in the Isthmus of Darién connecting the

- a. Africa and West Asia
- b. Europe and Asia
- c. **Central and South America**
- d. South Korea and Japan

Q36.) With reference to fluoride contamination, consider the following statements:

1. Fluoride leaches from rocks and soil into groundwater.
2. When fluoride levels exceed 1.5 mg/L, it becomes toxic to humans.
3. Excessive fluoride leads to skeletal fluorosis.

How many of the statements given above are not correct?

- a. Only one
- b. Only two
- c. All three
- d. **None**

Q37.) Consider the following pairs:

- | Geo-heritage sites | States |
|--------------------------|------------------|
| 1. Pandavula Gutta - | Karnataka |
| 2. Siwalik Fossil Park - | Himachal Pradesh |
| 3. Lonar Lake - | Maharashtra |

How many of the above pairs are correctly matched?

- a. Only one
- b. **Only two**
- c. All three
- d. None

Q38.) With reference to the Reusable Launch Vehicle (RLV) Pushpak, consider the following statements:

1. It is developed by the Indian Space Research Organisation.
2. Its primary goal is to enable low-cost access to space.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. **Both 1 and 2**
- d. Neither 1 nor 2

Q39.) With reference to Agnipath Scheme, consider the following statements:

1. It is a short-service manpower model introduced by the Ministry of Defence.
2. It aims for recruiting soldiers across the Army, Navy, and Air Force.

3. Unlike regular servicemen, Agniveers do not receive pension benefits.
4. The government assists in rehabilitating soldiers who leave the services after four years by providing skill certificates and bridge courses.

How many of the above statements are correct?

- a. Only one
- b. Only two
- c. Only three
- d. All four**

Q40.) The Gulf of Tonkin is a maritime region located in the northwestern portion of the

- a. Black Sea
- b. Red Sea
- c. South China Sea**
- d. Arabian Sea

Q41.) With reference to Reserve Bank Integrated Ombudsman Scheme (RB-IOS), consider the following statements:

1. RB-IOS aims to provide cost-free redress of customer complaints involving 'deficiency in service' on the part of entities regulated by the RBI.
2. RBI Governor serve as the Appellate Authority under the scheme.

Which of the statements given above is/are correct?

- a. 1 only**
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Q42.) Consider the following statements about 'Ghost Particles':

1. Ghost Particles are miniscule subatomic particles that hardly interact with anything.
2. They belong to the family of particles known as leptons.

Which of the statements given above is/are not correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2**

Q43.) Consider the following National Parks:

1. Papikonda National Park

2. Sri Venkateswara National Park
3. Rajiv Gandhi National Park

How many of the above are located in Andhra Pradesh?

- a. Only one
- b. Only two
- c. All three**
- d. None

Q44.) Consider the following statements:

1. Equinoxes are occurring twice a year when the Sun is exactly above the Equator.
2. The spring equinox marks the start of spring in the Northern Hemisphere and autumn in the Southern Hemisphere.

How many statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2**
- d. Neither 1 nor 2

Q45.) Consider the following statements:

Statement-I:

The State of the Global Climate 2023 report is an annual report issued by the World Meteorological Organization (WMO).

Statement-II:

It provides crucial insights into climate trends, extreme events, and the impact of human activities on our planet.

Which one of the following is correct in respect of the above statements?

- a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I**
- b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c. Statement-I is correct but Statement-II is incorrect
- d. Statement-I is incorrect but Statement-II is correct

Q46.) Consider the following statements:

Statement-I:

As per the Plastic Waste Management (Amendment) Rules, 2024, the term "producer"

also includes persons engaged in manufacturing of intermediate material used for manufacturing plastic packaging.

Statement-II:

The manufacturer of compostable plastic/biodegradable plastic will have to inform the Central Pollution Control Board (CPCB) the quantity of such commodities introduced in the market and the pre-consumer waste generated by it.

Which one of the following is correct in respect of the above statements?

- Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I**
- Statement-I is correct but Statement-II is incorrect
- Statement-I is incorrect but Statement-II is correct

Q47.) With reference to UN World Happiness Report 2024, consider the following statements:

- Finland continues to hold the top spot as the world's happiest country for the seventh consecutive year.
- India maintains its position at 126th in the global happiness index, which is the same as last year.
- Afghanistan remained at the bottom of the list.

How many of the statements given above are correct?

- Only one
- Only two
- All three**
- None

Q48.)With reference to The National Internet Exchange of India (NIXI), consider the following statements:

- National Internet Exchange of India (NIXI) is a statutory body

- NIXI was created to enhance the use of Internet Service Protocols (ISPs) within India.
- NIXI operates the Indian Registry for Internet Names and Numbers (IRINN), which serves as the National Internet Registry.

How many of the statements given above are correct?

- Only one
- Only two
- All three**
- None

Q49.) With reference to World Air Quality Report, 2023, consider the following statements:

- The annual World Air Quality Report reviews the status of air quality around the world.
- China is the most polluted country in the world.
- India had the four most polluted cities in the world.

How many of the statements given above are correct?

- Only one
- Only two**
- All three
- None

Q50.) Consider the following statements about the e-Shram Portal:

- The e-Shram Portal is a government initiative launched by the Ministry of Labour & Employment in India.
- Its primary objective is to provide social security and welfare schemes to unorganized workers across the country.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2**
- Neither 1 nor 2

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