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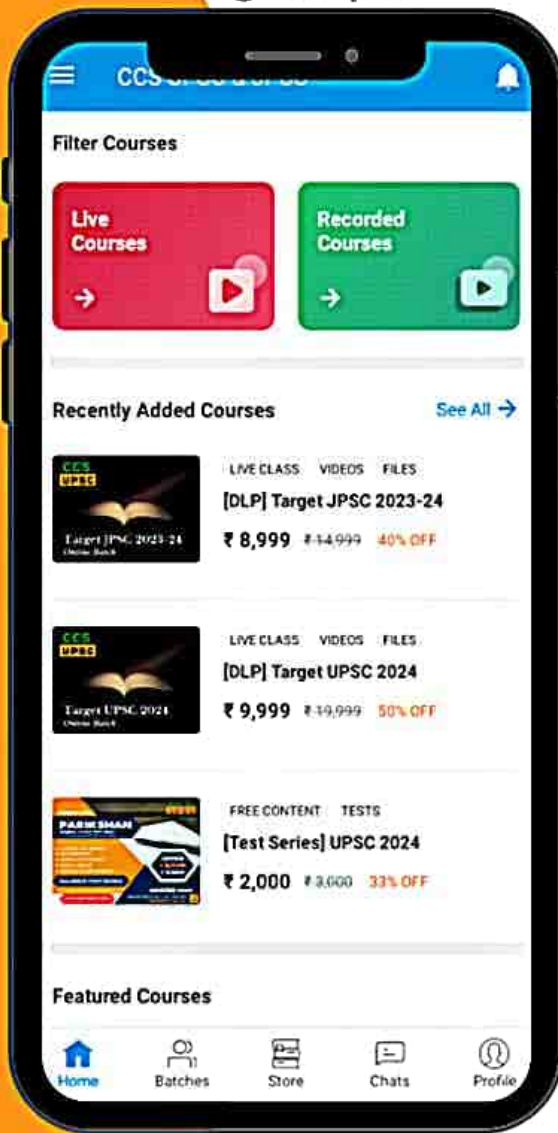
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Current Affairs

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Chapter- 1

ART AND CULTURE

Kalbelia community

Why in News

The Kalbelia community, also known as the "Snake Charmers," is a nomadic tribe residing in the Thar Desert in Rajasthan, India.

Important Points

- Kalbelia community cultural practices, including their unique dance form, music, and traditions, form an integral part of their identity.

Legend

- Sage Kanifnath was offered a bowl (belia) of poison (kaal or death) by his spiritual mentor Gorakhnath.
- When he drank it to the last drop, Gorakhnath blessed Kanifnath with the ability to ingest poison and handle venomous creatures.
- And so, Kanifnath's followers from around the Thar desert in Rajasthan came to be known as Kalbeliyas.
- They venerated snakes and made a living as snake-charmers.
- Divided into two primary groups, Daliwal and Mewara, the Kalbelias traditionally roamed and practiced snake handling and snake venom trading.
- Often called to rescue snakes from domestic settlements, they also caught them in the wild, and earned a livelihood showcasing their ability wherever they roamed as a nomadic tribe.
- Over time, they diversified their livelihoods, engaging in agriculture, cattle rearing, and the arts.
- Living nomadically in makeshift camps known as "deras," the Kalbelias have a deep understanding of local flora, fauna, and herbal remedies.



Cultural Significance

Dance and Music:

- The Kalbeliya dance, also called the Sapera dance, is a captivating and rhythmic art form.
- Women, adorned in vibrant traditional attire, perform this dance that mimics snake movements.
- The dance involves intricate movements replicating a serpent's motion, accompanied by musical instruments like pungi, dufli, been, and rhythmic beats of khuralio and dholak.
- Instruments like the pungi, dholak, and khartal accompany the dance, creating a lively atmosphere.
- Recognized by UNESCO as Intangible Cultural Heritage in 2010.

Costumes and Attire:

- Women wear elaborate, colorful traditional attire symbolizing the scales of a snake.
- Their clothing is adorned with mirrors, embroidery, and vibrant patterns.
- Heavy jewelry, including necklaces, earrings, bangles, and anklets, complements their dance performances.

Challenges

- Legislation like the Wildlife Act of 1972 banned their traditional snake handling, leading them to transition to performing arts for income.
- The community's income sources, mainly from performances and tourism, are sporadic and season-specific, prompting them to engage in agriculture or cattle rearing.

Religious and Social Traditions

- The Kalbelias are predominantly Cultural Hindus, practicing snake worship, particularly honoring Nāga and Manasa, and celebrating Naga Panchami.
- Unique from mainstream Hindu practices, they have distinct marriage customs, bury their dead instead of cremation, and observe different religious traditions.

Santiniketan

Why in News

A Centre-approved board/plaque identifying Santiniketan as UNESCO-approved world heritage site has been erected by Visva-Bharati at the location.

Important Points

About Santiniketan:

- Founded by Debendranath Tagore and home to Visva-Bharati, the university set up by his son Rabindranath - was accorded world heritage status by UNESCO.
- Established in rural West Bengal in 1901 by poet and philosopher Rabindranath Tagore, it was a residential school and centre for art based on ancient Indian traditions and a vision of the unity of humanity transcending religious and cultural boundaries.
- A 'world university' was established at Santiniketan in 1921, recognizing the unity of humanity or "VisvaBharati".
- Distinct from the prevailing British colonial architectural orientations of the early 20th century and of European modernism, Santiniketan represents approaches toward a pan-Asian modernity, drawing on ancient, medieval and folk traditions from across the region.

Debendranath Tagore:

- Maharishi Debendranath Tagore was a scholar and a social reformer. He joined the BrahmoSamaj in 1842, which was founded by Raja Rammohan Roy in 1828.
- Earlier, he headed the TattvabodhiniSabha, which was founded in 1839. The sabha started a monthly theological journal named TattvabodhiniPatrika in Bengali.
- TattvabodhiniSabha and TattvabodhiniPatrika, both focused on the systematic study of India's past with a rational outlook and propagated the ideas of Raja Rammohan Roy.
- In later years, TattvabodhiniSabha was incorporated into the BahmoSamaj.
- Debendranath Tagore's Samaj came to be known as the AdiBrahmoSamaj.



Rabindranath Tagore:

- Born in Kolkata on May 7, 1861, emerged as a globally acclaimed poet, author, philosopher, and the first Nobel laureate from Asia.
- Revolutionized Bengali literature by introducing innovative prose and verse forms, liberating it from classical Sanskrit conventions. He was highly influential in bridging Indian and Western cultures.

- Composed around 2230 songs known as RabindraSangeet and painted 3000 artworks. Notably, he penned India's national anthem, Jana GanaMana, and Amar Sonar Bangla, the national anthem for Bangladesh, leaving an indelible mark on Sri Lanka's anthem as well.
- Received a knighthood in 1915, he renounced it in 1919 as a protest against the Amritsar (JallianwallaBagh) Massacre.
- Founded ViswaBharti University, initially named Shantiniketan.
- Among his major literary contributions, Gitanjali: Song Offerings, which earned him the Nobel Prize, stands out. Other notable poetic works include Sonar Tari and Manasi.
- Tagore delved into novels, plays, and short stories in both Bengali and English, with outstanding pieces like Chitra and The Post Office.
- Credited with pioneering the Bengali short story, his exceptional narratives are collected in The Hungry Stones and Other Stories and The Glimpses of Bengal Life.

First Indian Art, Architecture & Design Biennale 2023

Why in News

Indian PM inaugurated the first Indian Art, Architecture & Design Biennale (IAADB) 2023 at the Red Fort, initiating cultural dialogue and fostering collaboration for the evolving economy.

Important Points

- The Prime Minister of India, Shri Narendra Modi, inaugurated the first Indian Art, Architecture & Design Biennale (IAADB) 2023 at the iconic Red Fort. The event also marked the launch of the 'Aatmanirbhar Bharat Centre for Design' and the student Biennale, Samunnati.

Unveiling Cultural Spaces at Red Fort

- During the inaugural ceremony, Shri Modi unveiled the 'Aatmanirbhar Bharat Centre for Design' and explored the exhibition, emphasizing the Red Fort's historical importance. The establishment of cultural spaces in five major cities namely Delhi, Kolkata, Mumbai, Ahmedabad and Varanasi was highlighted as a historic step to enrich these cities culturally.



Prime Minister's Address

- Addressing the gathering, the Prime Minister welcomed attendees to the World Heritage Site and underscored the role of symbols in connecting nations with their past. He praised the diverse works showcased at IAADB, describing it as an amalgamation of colors, creativity, culture, and community connect. The Prime Minister congratulated the Ministry of Culture, participating nations, and all involved for the successful organization of IAADB.

Art, Culture, and India's Heritage

- Shri Modi recalled India's glorious past, emphasizing its economic prosperity and the enduring appeal of its culture and heritage. He highlighted government efforts, such as the development of cultural centers in Kedarnath and Kashi, and the redevelopment of Mahakal Lok, to create new dimensions in preserving national heritage and culture.

IAADB's Global Impact

- The Prime Minister positioned IAADB as a crucial step towards institutionalizing global cultural initiatives in India. He mentioned upcoming events like the International Museum Expo and the Festival of Libraries in 2023, aiming to establish India's presence alongside renowned global initiatives.

Aatmanirbhar Bharat Centre for Design

- Shri Modi emphasized the significance of the newly inaugurated 'Aatmanirbhar Bharat Centre for Design,' stating that it would provide a platform for artisans and designers to innovate and promote India's unique crafts. He expressed confidence in Indian craftsmen leaving their mark on the world with modern knowledge and resources.

Enriching Local Art and Themes

- The Prime Minister outlined the creation of cultural spaces in five cities as a historic step and urged everyone to carry forward themes like 'Deshaj Bharat Design: Indigenous Designs' and 'Samatva: Shaping the Built' as a mission. He stressed the importance of making indigenous design part of youth study and research.

Connecting with India's Roots

- Shri Modi reiterated the vital role of art, culture, and architecture in connecting the human mind with the inner self and recognizing its potential. He spoke about the diverse arts encapsulated in Chatushashta Kala, emphasizing their importance in human civilization.

India's Cultural Contributions

- The Prime Minister highlighted the indestructible culture of Kashi and its contribution to literature, music, and arts. He praised the recently launched Ganga Vilas Cruises, connecting Kashi to Assam and showcasing the cultural richness along the banks of the Ganga.

Art, Nature, and Sustainability

- Shri Modi emphasized that art is born close to nature, and India's architecture has been both long-lasting and environmentally sustainable. He drew parallels between the riverfront culture in India and traditions like ghats, wells, ponds, and step wells.

India's Economic and Cultural Vision

- The Prime Minister emphasized India's economic growth contributing to the progress of the world and highlighted the vision of 'Atmanirbhar Bharat' bringing new opportunities. He noted that India's revival in art and architecture would contribute to the nation's cultural upliftment.

Adopt a Heritage 2.0

Why in News

Last date of submission of application for the current phase of for "Adopt a Heritage 2.0" Program has been decided as 31st December 2023.

Important Points

- The "Adopt a Heritage 2.0" program aligns with the objective of preserving India's rich cultural heritage through corporate involvement and strategic partnerships, aiming for sustainable heritage management and promotion of responsible tourism.
- The "Adopt a Heritage 2.0" program initiated by the Archaeological Survey of India (ASI) aims to enhance the upkeep and preservation of India's cultural heritage sites in alignment with the vision of 'Virasat Bhi, Vikas Bhi'.
- This program is a revamped version of the earlier scheme, the "Adopt a Heritage Scheme," launched in 2017.
- The Archaeological Survey of India (ASI) is a premium government agency that has 3696 monuments under its protection which are spread throughout the country.
- These monuments not only exhibit the rich cultural heritage of India but also play a significant role in fostering the economic growth.



- ASI had launched the “Adopt a Heritage 2.0” programme on 4th September 2023.
- The programme seeks collaboration with the private/public sector companies / trusts / societies / NGOs etc. through their CSR funding who intend to provide, develop, and maintain ‘amenities’ at centrally protected monuments and sites.
- Italy, with numerous UNESCO Heritage Sites, successfully engaged corporations for heritage maintenance after a period of government financial constraints, marking a significant collaboration for preservation efforts.

Adopt a Heritage 2.0 Programme

- Collaborative Effort: It involves the Ministry of Tourism, Ministry of Culture, ASI, and State/UTs governments, promoting collaboration between various stakeholders for responsible tourism.
- Amenities and Monument Adoption: Stakeholders can apply to adopt a monument or specific amenities at a monument through a dedicated web portal. This defines the amenities sought for different monuments under the Ancient Monuments and Archaeological Sites and Remains Act (AMASR), 1958.
- Corporate Contribution: The program seeks to encourage corporate stakeholders to contribute to the preservation of heritage sites, fostering corporate social responsibility (CSR) activities for the next generations.
- Appointment Term: The appointed stakeholders will have a term of five years initially, extendable up to five more years.

Adopt a Heritage Scheme (2017)

- Launch and Objective: Launched on World Tourism Day in 2017, the scheme aims to develop synergy among partners for responsible tourism, involving public and private sector companies in the maintenance and development of tourist infrastructure at heritage sites.
- Monument Mitras: Agencies or companies, termed 'Monument Mitras,' participate through the 'Vision Bidding' process, associating their CSR activities with the best vision for the heritage site.

Rationale and Previous Attempts

- Challenges in Maintenance: Heritage sites face operational and maintenance challenges, necessitating immediate provision of basic amenities and long-term sustainable infrastructure.
- Previous Corporate Involvement Attempts: Efforts such as the National Culture Fund, 'Campaign Clean India,' and initiatives by entities like India Tourism Development Corporation (ITDC) and ONGC have involved public-private partnerships in heritage management.

Indira Gandhi Peace Prize

Why in News

The Indira Gandhi Prize for Peace, Disarmament and Development for 2023 has been awarded jointly to Daniel Barenboim and Ali Abu Awwad for their efforts in promoting peace and understanding between Israel and the Arab world.

Important Points

- The joint awarding of the Indira Gandhi Prize for Peace, Disarmament and Development to Daniel Barenboim and Ali Abu Awwad is a recognition of their significant contributions to fostering peace and understanding in the Middle East, particularly in the context of the Israel-Palestine conflict.

Daniel Barenboim

- Barenboim is an internationally acclaimed classical pianist and conductor known for his performances with leading orchestras worldwide.
- His partnership with Palestinian literary scholar Edward Said influenced his vision for a peaceful resolution of the Israel-Palestinian conflict through respect, discourse, and dialogue.



- He founded the West-Eastern Divan Orchestra and the Barenboim-Said Akademie to bring together youth from Israel, Palestine, and other Arab and North African countries, fostering unity and understanding through music.
- He has received various awards, including the Great Cross of Merit of the Federal Republic of Germany, the Prince of Asturias Awards, and the Commander of the Legion of Honour.

Ali Abu Awwad

- Awwad is an eminent Palestinian peace activist dedicated to a non-violent resolution of the Israel-Palestine conflict.
- Born in 1972 into a politically active refugee family, Awwad's commitment to non-violence was solidified during a 17-day hunger strike he and his mother undertook while he was in prison.
- In 2014, Awwad co-founded Roots, a local Palestinian-Israeli initiative promoting understanding, non-violence, and transformation.
- Awwad's peace-building efforts led to the creation of Taghyeer, a Palestinian non-violence movement launched by over 3,000 Palestinians in 2016. It focuses on social development needs and advocates for a non-violent path to end the Occupation.
- He believes in non-violence as a means to practice humanity and achieve peace by accepting differences and respecting each other's rights.

Indira Gandhi Peace Prize

- The Indira Gandhi Peace Prize, also known as the Indira Gandhi Prize for Peace, Disarmament and Development.
- It is a prestigious award given by the Indira Gandhi Memorial Trust every year to individuals or organisations that have made outstanding contributions to promoting international peace, development and a new international economic order; ensuring that scientific discoveries are used for the larger good of humanity, and enlarging the scope of freedom.
- The prize was instituted in 1986 in memory of Indira Gandhi, the former Prime Minister of India, who was assassinated in 1984.
- The prize carries a cash award of 2.5 million Indian rupees and a citation.
- The panel constituted by the Indira Gandhi Memorial Trust consists of prominent national and international personalities including previous recipients. The recipients are chosen from a pool of national and international nominees.

Yogmaya Temple

Why in News

Yogmaya Temple is a historically important monument believed to be standing at the site of an ancient temple that is said to have come up during the period of the Mahabharata.

Important Points

About Yogmaya Temple:

- It is also known as the Jogmaya Temple, is an ancient Hindu shrine situated in the heart of Mehrauli (Delhi), a few hundred metres away from the famous Qutub Minar.
- It was built by a noble in the court of Mughal Emperor Akbar II by the name of Lala Sidhu Mal between 1806 and 1837.
- The area was known as Yoginipura in ancient Jain texts and Prithviraj Chauhan himself was said to have patronised a Yogini temple here shortly before his city's destruction.



- It was a focal point of Akbar II's rule.
- The temple has a replica of the Goddess Yogmaya, also called the "Pure Goddess."
- The most famous festival celebrated only in this temple is the 'Phoolwalon ki Sair.'

Importance

- The Yogmaya Temple is an integral part of the annual Phool Walon Ki Sair, an interfaith festival of Delhi.
- The temple is close to the Iron Pillar in the Qutb Complex, and within the Lal Kot walls, the first fortress citadel of Delhi, constructed by the Tomar/Tanwar Rajput King Anangpal I around AD 731.

Bahmani Sultans

Why in News

The Karnataka High Court directed the Kalaburagi district authorities to remove encroachments from the historical fort of Bahmani Sultans in the city.

Important Points

- The Bahmani Sultanate, also known as the Bahmanid Empire, was a significant medieval Muslim state in the Deccan region of South India.
- It was established by Ala-ud-Din Hasan Bahman Shah in 1347 and lasted until 1527 when it fragmented into five smaller states.

Foundation and Expansion

- Establishment by Hasan Bahman Shah: The Bahmani Sultanate was founded by Hasan Bahman Shah, a governor appointed by the Delhi Sultanate. He declared independence and established his capital at Gulbarga.
- Territorial Expansion: Under subsequent rulers, especially during the reigns of Muhammad Shah I and Firuz Shah, the Bahmani Sultanate expanded its territories across the Deccan region, encompassing areas such as Gulbarga, Bidar, Bijapur, and Golconda (modern-day Hyderabad).

Administration and Governance

- Feudal System: The Sultanate was administratively divided into four provinces (Daulatabad, Bidar, Berar, and Gulbarga) with tarafdars or subedars governing each. The sultanate was governed through a decentralized feudal system. Provinces were ruled by governors known as walis or nayaks, who held considerable power in their respective regions.
- Central Administration: The sultanate had a centralized administrative structure with key departments handling revenue, justice, and military affairs.



Cultural and Socio-Economic Development

- Patronage of Arts and Culture: The Bahmani rulers were patrons of art, literature, and architecture. They encouraged the development of Deccani culture, which was a blend of Persian and Indian influences. Notable structures include Gulbarga's Jama Masjid, Bidar's Rangeen Mahal, and Bijapur's Gol Gumbaz. Urdu, Persian, and Arabic literature flourished during this period.
- Promotion of Regional Languages: The Bahmani court supported the use of local languages like Dakhni (early form of Urdu) and Kannada, contributing to their literary growth.
- Economic Prosperity: Trade and commerce flourished in the Bahmani Sultanate due to its strategic location. The region was a center for international trade, particularly in horses, textiles, and spices.

Religious Policies

- **Religious Tolerance:** The sultans followed a policy of religious tolerance, allowing diverse religious communities like Hindus, Muslims, Jains, and Christians to coexist peacefully.
- **Promotion of Syncretic Culture:** The sultanate's cultural milieu was marked by the syncretic blending of different religious traditions and practices.

Decline and Fragmentation

- **Internal Strife and Dynastic Conflicts:** As the Bahmani Sultanate expanded, internal conflicts and power struggles among the nobility weakened its unity.
- **Rise of Five Successor States:** In 1527, the sultanate disintegrated into five smaller states known as the Deccan Sultanates: Ahmadnagar, Bijapur, Golconda, Berar, and Bidar, each ruled by independent rulers.

Rulers

Founding Ruler:

Ala-ud-Din Hasan Bahman Shah (1347-1358):

- Founder of the Bahmani Sultanate after declaring independence from the Delhi Sultanate.
- Established Gulbarga as the capital and began the Sultanate's expansion in the Deccan region.

Early Rulers:

Muhammad Shah I (1358-1375):

- Consolidated power and expanded Bahmani territories.
- Shifted the capital to Bidar.
- Promoted art, literature, and culture.

Firuz Shah (1397-1422):

- Extended Bahmani rule further into the Deccan and introduced administrative reforms.
- Encouraged trade and commerce, contributing to economic prosperity.

Golden Age Rulers:

Ahmad Shah I (1422-1436):

- Notable for his patronage of art and culture, fostering a thriving cultural scene.
- Facilitated the development of the Dakhni language (early form of Urdu).

Alauddin Ahmad Shah II (1436-1458):

- Continued the cultural and literary advancements initiated by his predecessors.
- Faced internal revolts and external threats during his reign.

Mahmud Gawan (1466 to 1481):

- Sultanate witnessed its zenith.
- Gawan's military campaigns expanded the Sultanate's territory, including the reconquest of Goa from Vijayanagar.

Later Rulers:

Mahmud Shah I (1482-1518):

- Ruled during a period of internal turmoil and external invasions.
- Struggled to maintain unity among the nobility, leading to the weakening of the Sultanate.

Kalim Allah (1518-1527):

- Last ruler of the unified Bahmani Sultanate.
- His reign witnessed escalating conflicts and a fragmented administration.

Fragmentation and Successor States:

- Krishnadeva Raya of the Vijayanagar Empire's military campaigns fractured the Bahmani Sultanate into five smaller states known as the Deccan Sultanates:
- Ahmadnagar Sultanate: Founded by Ahmad Nizam Shah I.
- Bijapur Sultanate: Established by Yusuf Adil Shah.
- Golconda Sultanate: Founded by Quli Qutb Shah.
- Berar Sultanate: Ruled by Fathullah Imad-ul-Mulk.
- Bidar Sultanate: Established by Amir Barid.
- Each of these successor states operated independently, contributing to the cultural, artistic, and political landscape of the Deccan region.
- Battle of Talikota (1565): The conflict between the Deccan Sultanates and the Vijayanagar Empire culminated in the catastrophic Battle of Talikota, resulting in Vijayanagar's downfall.
- Mughal Annexation: Subsequently, the Mughal Empire, notably under Akbar and later Aurangzeb, annexed the Deccan Sultanates into their dominion, marking the end of the Bahmani legacy.
- The Bahmani Sultanate, despite its fragmentation, left a lasting legacy in South India, influencing the region's culture, architecture, and language, and shaping the course of history in the Deccan



Chapter- 2

POLITY & GOVERNANCE

EWS Admissions in Schools

Why in News

The Delhi High Court recently ordered the Delhi government to increase the threshold income for availing EWS reservation in private schools to 5 lakh from the current 1 lakh per annum.

Important Points

Reasons given by the court

- It reasoned that when the minimum wage of an unskilled labourer in the city is 17,494 per month, it is too far-fetched to assume that the total parental income of a child shall be below 1 lakh annually.
- It said, the threshold income of 1 lakh does not precisely reflect the economic hardships faced by families in the contemporary times.
- It said a comparative analysis would signify that the NCT of Delhi has the lowest requisite income criteria as compared to the amount of 8 lakh per annum followed by most of the States.

About EWS Reservation

- The Constitution (103rd Amendment) Act 2019 enables the State (i.e., both the Central and State Governments) to provide reservation to the Economically Weaker Sections (EWS) of the society.
- Whether or not to provide reservation to the EWS or appointment in States is to be decided by the State Government.



103rd Amendment Act

- About: The Parliament amended the Constitution of India (103rd Amendment) Act, 2019 to provide for a 10% reservation in education and government jobs in India for a section of the General category candidates.
- Introduction of Article 15 (6) and Article 16 (6):
 - A. The amendment introduced economic reservation by amending Articles 15 and 16. It inserted Article 15 (6) and Article 16 (6) in the Constitution to allow reservation for the economically backward in the unreserved category.
 - B. Article 15(6):
 1. Up to 10% of seats may be reserved for EWS for admission in educational institutions. Such reservations will not apply to minority educational institutions.
 - C. Article 16(6):
 1. It permits the government to reserve up to 10% of all government posts for the EWS.

Recent EWS judgment (Janhit Abhiyan v Union of India case, 2023):

- In a 3-2 majority, the Supreme Court upheld the 103rd Constitutional Amendment providing EWS reservation.
- Exclusion of the reserved categories from the EWS quota: The EWS judgment had excluded the “poorest of the poor” among the Scheduled Castes, the Scheduled Tribes and the Other Backward Classes from the ambit of 10% quota.
- No breach of the ceiling limit of 50%: The majority 3:2 judgment had held that the EWS quota did not breach the ceiling limit of 50% placed by the Indira Sawhney judgment on reservations.

- It stated that the State can make “special provisions from time to time in the march towards an all-inclusive egalitarian society.
- The court concluded that the 50% ceiling limit, though held attached to the constitutional requirements, was neither “inflexible nor inviolable for all times to come”.
- State’s provision for the reservations: Further reservation by affirmative action by the State cannot be seen as damaging the Basic Structure of the Constitution.
- The judge agreed that a mathematical precision of 50% was difficult to follow in human affairs.

Governor cannot refer re-enacted Bills to President

Why in News

The Tamil Nadu government in the Supreme Court has criticised Governor R.N. Ravi for exhibiting “constitutional obstinacy” by referring ten key Bills re-enacted by the State Assembly to the President for consideration.

Important Points

What’s the issue?

- Recent instances of Governor who is an unelected Head of state or better called as agent of centre in states is withholding some bills in states like Punjab and Tamil Nadu.
- This action was opposed and dissented by respective state legislature. The main contention pertains to the Constitutionality of the action.
- The action also defeats the spirit of the constitution by holding assent indefinitely on a bill/law passed by duly elected State legislature.
- The action of governor contravenes the popular mandate and values of democracy.

Recent Supreme Court’s Views:

- A three-judge Bench headed by Chief Justice of India said that the Governor, having withheld his assent to the Bills in the first instance and cannot now refer the Bills, re-passed by the Tamil Nadu legislature, to the President.
- As mentioned by SC, Article 200 of the Constitution gives the Governor three choices –
- Grant assents to the Bills or withhold assent or reserve them for the consideration of the President.
- In this case, the Governor withheld assent.
- Once he has withheld assent, there is no question of him referring them to the President.
- The CJI has said that the Governor withholds assent, he cannot stultify the Bills.



What is the observation of Supreme Court?

- It Laid down the law that a Governor, in case he withholds assent, should send back a Bill forwarded to him by a State Legislature “as soon as possible” with a message to reconsider the proposed law.
- The expression “as soon as possible” conveyed a “constitutional imperative of expedition”.
- In case, the State Assembly reiterates the Bill “with or without amendments”, the Governor has no choice or discretion, and has to give his assent to it.
- Message of the Governor does not bind the legislature is evident from the use of the expression ‘if the Bill is passed again ...with or without amendments.
- A Governor who chooses to withhold a Bill without doing anything further would be acting in contravention of the Constitution. Because such a course of action would be contrary to fundamental principles of a constitutional democracy based on a Parliamentary pattern.
- The verdict is also a significant boost to Tamil Nadu’s case. The Tamil Nadu Assembly had returned 10 crucial Bills to Governor R.N. Ravi without any amendments. The Governor had withheld assent to the Bills in the first instance.

The role of the Governor in legislature

- Article 200 of the Constitution lays down that when a Bill, passed by a State Legislature, is presented to the Governor for their assent, they have four alternatives:
- He may give assent to the Bill; may withhold assent to the Bill, that is, reject the Bill in which case the Bill fails to become law; may return the Bill (if it is not a Money Bill) for reconsideration of the State Legislature; or may reserve the Bill for the consideration of the President.
- As held by the Supreme Court in various cases including the Shamsheer Singh case (1974), the Governor does not exercise their discretionary powers while withholding assent or returning a Bill to the State Legislature.
- They are required to act as per the advice of the Council of Ministers. The situation of 'withholding assent' may arise in case of a Private Members' Bill (any Member of State Legislature other than a Minister) passed by the State Legislature, which the council of ministers do not want to be enacted into a law. In such an instance, they would advise the Governor to 'withhold assent'.
- However, this is an unlikely scenario as the council of ministers who enjoys a majority in the Legislative Assembly would not allow the passage of such a Bill.
- Secondly, if the incumbent government whose Bill has been passed by the legislature falls or resigns before it is assented to by the Governor, the new council may advise the Governor to 'withhold assent'.
- The Governor must reserve certain Bills, like those which reduce the powers of the High Court, for the consideration of the President. They may also reserve Bills on concurrent list that are repugnant to a Union law based on ministerial advice.
- It is only under rare circumstances that the Governor may exercise their discretion, where they feel that the provisions of the Bill will contravene the provisions of the Constitution and therefore, should be reserved for the consideration of the President.
- It must however be noted that the Constitution does not lay down any time limit within which the Governor is required to make a decision.

Adultery

Why in News

The Parliament Standing Committee on Home Affairs has suggested that the proposed Bharatiya Nyaya Sanhita Bill, 2023 be amended to make adultery a criminal offence again— but on gender-neutral terms.

Important Points

Adultery:

- Adultery can be defined as "An intended sexual contact between two people of opposite gender who are not married to each other under law". In other words Adultery is a physical relationship between a married man and a woman who is not his wife or between a married woman and a man who is not her spouse.
- Adultery is also known as infidelity, philandery, extra marital affair or physical betrayal in marriage. Adultery is different from rape in the sense that adultery is voluntary while rape is not. The consent of both the individuals for a physical relationship is a must for adultery to exist.

What is the Law of Adultery?

- Adultery law in India is defined by the Indian Penal Code Section 497.
- IPC Section 497 states, "Whoever has sexual intercourse with a person who is and whom he knows or has reason to believe to be the wife of another man, without the consent or connivance of that man, such sexual intercourse not amounting to the offence of rape, is guilty of the offence of adultery."
- A man found guilty of adultery "shall be punished with imprisonment of either description for a term which may extend to five years, or with fine, or with both."
- In cases of adultery, the wife shall not be punishable as an abettor. Similarly, an unmarried woman cannot be prosecuted for adultery. The offence of adultery is, according to Section 497, committed by a man against a married man.
- In the event of a man committing adultery by means of sexual intercourse with a married woman or an unmarried woman, this law does not confer any right on the man's wife prosecute the adulterous husband or the woman with whom the husband has indulged in sexual intercourse with.

- The adultery law has been criticised for treating women as property owned by men. Only a man can be a victim or accused/culprit under the existing reading of Section 497 of the IPC.
- The Marriage Laws (Amendment) Act makes an act of adultery valid ground for divorce. Either spouse can seek divorce on the ground of adultery. It states that even a single act of voluntary sexual act by either party to the marriage with any person other than his or her spouse constitutes a ground for divorce for the other spouse.

Legislative History

- In the inception of the Indian Penal Code, marriage among Hindus was deemed sacramental, dissuading penalties for adultery.
- Lord Macaulay, a key drafter, opposed criminalizing adultery, advocating pecuniary compensation for marital issues.
- He acknowledged that given the sacramental nature of marriage in India, the law was not the solution in dealing with marital infidelity.
- Distinguishing between a moral wrong and an offence it was observed by him that “We cannot admit that a Penal code is by any means to be considered as a body of ethics, that the legislature ought to punish acts merely because those acts are immoral, or that because an act is not punished at all it follows that the legislature considers that act as innocent.
- The Law Commission, in 1971, considered criminalization, dissenting voices highlighting changing views on women's status.
- Despite recommendations for gender-neutral provisions, procedural reforms, and acknowledging societal transformation, changes were slow.
- The 2003 Malimath Committee suggested retaining adultery as an offense, emphasizing the preservation of marital sanctity.

Supreme Court declaring Adultery Not a Crime

- A five-judge Constitution Bench of the Supreme Court in its judgment *Joseph Shine v. Union of India* (2018), held that adultery is not a crime and struck it off the IPC.
- It, however, clarified that adultery would continue to remain a civil wrong and a valid ground for divorce.

The inception of the proceedings

- Dates back to 2017 when Joseph Shine, a non-resident Indian, hailing from Kerala, filed PIL under Article 32 of the Constitution, challenging the constitutional validity of the offence of adultery under Section 497 of the IPC read with Section 198(2) of the Cr.P.C.
- The offence imposed culpability on a man who engaged in sexual intercourse with another man's wife and was punishable with a maximum imprisonment of five years. However, the wife who had consented to sexual intercourse with a man, who was not her husband, was exempted from prosecution.
- The provision was also not applicable to a married man if he engaged in sexual intercourse with an unmarried woman or a widow.
- Notably, Section 198(2) of the CrPC empowered only the husband (of the adulterous wife) to file a complaint for the offence of adultery.
- In July 2018, the Centre filed an affidavit in the case arguing that diluting adultery in any form would weaken the institution of marriage and that the ‘stability of a marriage is not an ideal to be scorned’. On September 27, 2018, the Bench pronounced a unanimous ruling in the form of four concurring judgments.

According to the judgements

- Adultery is not a crime if the cuckolded husband connives or consents to his wife's extra-marital affair, thereby treating a married woman as her husband's ‘chattel’.
- Underscoring that adultery is “absolutely a matter of privacy at its pinnacle,”
- If it is treated as a crime, there would be immense intrusion into the extreme privacy of the matrimonial sphere. It is better to be left as a ground for divorce.
- Section 497 made a husband the ‘licensor’ of his wife's sexual choices and that this archaic law does not square with today's constitutional morality. The offence perpetuates the gender stereotype that the ‘third-party male’ has seduced the woman, and she is his victim.
- The criminalisation of adultery subjugated the woman to a position where the law disregarded her sexuality. He reasoned, “Marriage does not mean ceding autonomy of one to the other.

- The ability to make sexual choices is essential to human liberty. Even within private zones, an individual should be allowed her choice.”
- The autonomy of an individual to make his or her choices concerning his/her sexuality in the private sphere should be protected from criminal sanction.
- Adultery although a moral wrong quathe spouse and the family, however, does not result in any wrong against the society at large in order to bring it within the ambit of criminal law.
- Instead highlights that adultery should remain as a ground for divorce if one believes in a conservative framework of marriage. “It is difficult for a woman to live with a man who is cheating on her. But that’s between two private parties.

Parliamentary panel’s recommendations

- In its report, the Committee suggested that adultery be reinstated as a criminal offence, but be made gender-neutral, thereby making both men and women equally culpable under the law. Highlighting the need to protect the institution of marriage, the report stipulates.
- The Committee is of the view that the institution of marriage is considered sacred in Indian society and there is a need to safeguard its sanctity. For the sake of protecting the institution of marriage, this section should be retained in the Sanhita (BharatiyaNyayaSanhita) by making it gender neutral.
- Pointed out that the revoked Section 497 of the IPC “only penalised the married man, and reduced the married woman to be a property of her husband”. The proposed change also seeks to address this deficiency.
- The Committee reasoned that adultery be criminalised in a gender-neutral manner on the ground that it is crucial to safeguard the sanctity of the institution of marriage.

Dissent Note

- Opposition MPs have however refuted the claim by underscoring that it is “outdated to raise marriage to the level of a sacrament” and that the State has no business to enter into the private lives of couples and punish the alleged wrongdoer.
- Adultery should not be a crime. It is an offence against marriage which is a compact between two persons; if the compact is broken, the aggrieved spouse may sue for divorce or civil damages. To raise marriage to the level of a sacrament is outdated. In any event, a marriage concerns only two persons and not society at large.

The Supreme Court declares as unconstitutional the Penal Provision on Adultery

Section 497 of the 158-year-old IPC says

Whoever has sexual intercourse with a person who is and whom he knows or has reason to believe to be the wife of another man, without the consent or connivance of that man, such sexual intercourse not amounting to the offence of rape, is guilty of the offence of adultery

A five-judge Constitution bench was unanimous in holding Section 497 of the Indian Penal Code as unconstitutional and struck down the penal provision

The offence entailed a maximum punishment of 5 years, or with fine, or both

It was manifestly arbitrary and dents the individuality of women

Sec 497 is clear violation of fundamental rights granted in the Constitution and there is no justification for continuation of the provision

Any provision treating women with inequality is not constitutional and it's time to say that husband is not the master of woman

PTI GRAPHICS

Can Parliament make Adultery a crime again? -Legislative overruling of judicial pronouncements

- A ruling of the Supreme Court establishes a precedent and binds the lower courts to follow its dictat. However, the Parliament is well within its scope to overrule judicial rulings, but such legislative action will be considered valid only if the legal basis of the judgment is altered.
- The Supreme Court in *Madras Bar Association v. Union of India*(2021) held that “the test for determining the validity of validating legislation is that the judgment pointing out the defect would not have been passed if the altered position as sought to be brought in by the validating statute existed before the Court at the time of rendering its judgment.
- In other words, the defect pointed out should have been cured such that the basis of the judgment pointing out the defect is removed.
- In September this year, a division bench of the Supreme Court in *NHPC Ltd. v. State of Himachal Pradesh Secretary* reiterated that the legislature is permitted to remove a defect in an earlier legislation, as pointed out by a constitutional court, and that laws to this effect can be passed both prospectively and retrospectively.
- However, where a legislature merely seeks to validate the acts carried out under a previous legislation which has been struck down or rendered inoperative by a Court, by a subsequent legislation without curing the defects in such legislation, the subsequent legislation would also be ultra-vires.

Post Office Bill

Why in News

The Rajya Sabha passed the Post Office Bill to amend the 125-year-old Indian Post Office Act of 1898, which has significant implications for the functioning of the Postal Department in India.

Important Points

Key Highlights of the Bill

Exclusive Privileges

- The bill removes the exclusive rights of the central government in conveying letters by post and issuing postage stamps, potentially allowing for more diversified services and competition in the postal sector.

Prescribed Services

- Instead of explicitly defining the services offered by the Post Office, the bill grants authority to the central government to specify and alter these services as needed. This flexibility might enable the Post Office to adapt to changing demands and technological advancements more efficiently.

Interception of Shipments

- Grounds for intercepting shipments have been expanded to include broader aspects such as the security of the state, friendly foreign relations, public order, emergencies, public safety, and violations of the law.
- This suggests a broader scope for intervention and control in postal services, overseen by officers specifically authorized by the central government.

Director General's Powers

- The Director General of Postal Services gains extensive powers to regulate various aspects of postal services, including determining charges, managing the sale of postage stamps and postal stationery, and overseeing activities crucial for providing postal services.

Examination of Shipments

- The bill eliminates the power of Post Office officers to examine shipments suspected of containing prohibited goods or those liable for duty.
- Instead, these responsibilities are shifted to designated authorities like customs officials, possibly streamlining the process and aligning it more closely with established protocols.



Offences and Penalties

- Most offences and penalties outlined in the existing Indian Post Office Act 1898 are removed, except for instances of non-payment, which can be recovered as arrears of land revenue.
- This shift might indicate a move towards alternate methods of dealing with postal misdemeanours or non-compliance.

Exemptions from Liability

- The bill maintains exemptions for the government and officers from liability for losses or damages to postal articles, provided there's no express liability undertaken by the central government.
- However, it allows the Post Office, instead of the central government, to prescribe liability concerning its services, possibly giving the Post Office more autonomy in handling liability matters.

NCRB 2022 report on crime in India

Why in News

The National Crime Records Bureau (NCRB) has recently unveiled its annual report titled "Crime in India for 2022," providing a comprehensive overview of crime trends across the nation.

Important Points

Overview of the 2022 NCRB Report

- The National Crime Records Bureau (NCRB) released its annual report detailing crime statistics in India for the year 2022. The report covers a broad spectrum of crimes, including those against women, Scheduled Castes (SCs) and Scheduled Tribes (STs), cybercrimes, and more.

Crime Trends and Numbers

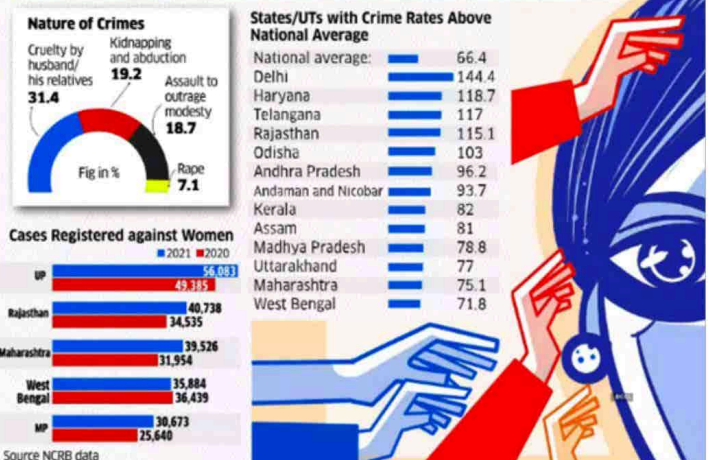
- In 2022, a total of 58,24,946 cognizable crimes were reported, comprising 35,61,379 Indian Penal Code (IPC) crimes and 22,63,567 Special & Local Laws (SLL) crimes. This represented a 4.5% decline from the previous year. The crime rate, measured as crimes registered per lakh population, decreased from 445.9 in 2021 to 422.2 in 2022.

Crimes Against Women

- Crime against women increased by 4% in 2022, with 4,45,256 cases reported. The majority of these cases fell under categories such as 'Cruelty by Husband or His Relatives' (31.4%), 'Kidnapping & Abduction of Women' (19.2%), and 'Assault on Women with Intent to Outrage her Modesty' (18.7%).

Plain Speak

Registered cases of crime against women have risen. Here's a snapshot:



Crimes Against Children:

- Cases of crimes against children showed an increase of 8.7% compared to 2021.
- A majority of these cases related to kidnapping and abduction (45.7%) and 39.7% were filed under the Protection of Children from Sexual Offences Act.

Crime against Senior Citizens:

- Cases of crimes against senior citizens rose by 9.3% to 28,545 cases compared to 26,110 cases in 2021.
- A bulk of these cases (27.3%) related to hurt followed by theft (13.8%) and forgery, cheating, and fraud (11.2%).

Crimes Against SCs and STs:

- The Crime in India report highlighted an overall increase in crimes and atrocities against Scheduled Castes (SC) and Scheduled Tribes (ST) persons.

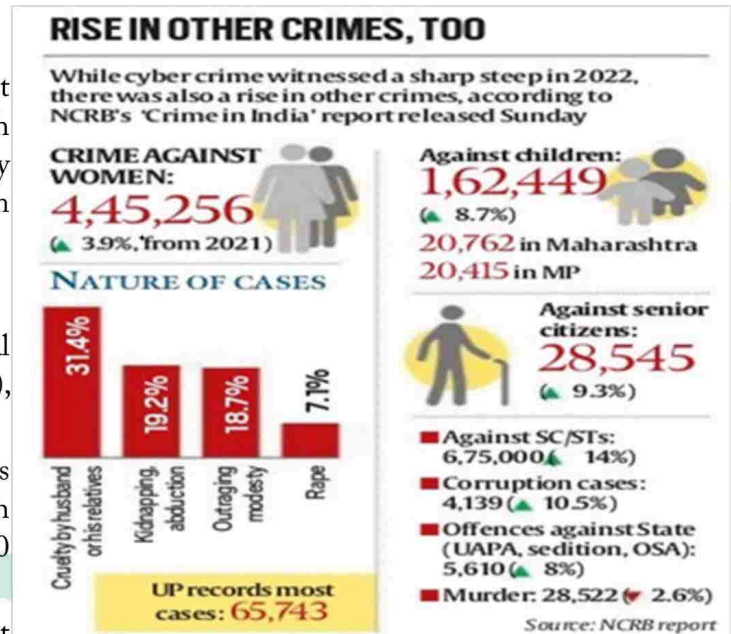
- States like Rajasthan, Madhya Pradesh, Chhattisgarh, and Telangana experienced a surge in such cases in 2022.
- Madhya Pradesh and Rajasthan persist as key contributors, consistently ranking among the top five states with the highest occurrences of crimes and atrocities against SC and ST communities.
- Other states witnessing elevated levels of such offences include Bihar, Uttar Pradesh, Odisha, and Punjab.

Cybercrimes on the Rise

- The reporting of cybercrimes saw a significant increase of 24.4% compared to 2021, with 65,893 cases. Fraud constituted the majority of these cases (64.8%), followed by extortion (5.5%) and sexual exploitation (5.2%).

Rise in Economic Offences:

- Economic offences are categorized into criminal breach of trust, forgery, cheating, fraud (FCF), and counterfeiting.
- FCF accounted for the majority of cases (1,70,901 cases), followed by criminal breach of trust (21,814 cases) and counterfeiting (670 cases).
- The Crime in India report disclosed that government authorities confiscated fake Indian currency notes (FICN) totaling over Rs.342 crore in 2022.



Suicides and Contributing Factors

- The report noted a 4.2% increase in reported suicides in 2022 (1,70,924 suicides) compared to the previous year. Major contributing factors included 'Family Problems (other than marriage-related problems)' (31.7%), 'Marriage-Related Problems' (4.8%), and 'Illness' (18.4%). The male-to-female ratio of suicide victims was 71.8:28.2.

Data Compilation Process

- The NCRB compiles data from police forces across states and Union Territories. The information is entered at the local police station level, validated at district and state levels, and finally by the NCRB.

State-wise Trends

- States and Union Territories with the highest chargesheeting rates under IPC crimes included Kerala (96.0%), Puducherry (91.3%), and West Bengal (90.6%). It's important to note that this indicates the percentage of cases where charges were framed against the accused, not the actual crime incidence.

National Crime Records Bureau:

- NCRB was set up in 1986 to function as a repository of information on crime and criminals to assist the investigators in linking the crime to the perpetrators based on the recommendations of the Tandon Committee, National Police Commission (1977-1981) and the Ministry of Home Affairs (MHA) Taskforce (1985).
- It is part of the MHA and is headquartered in New Delhi.
- It also acts as a "national warehouse" for the fingerprint records of Indian and foreign criminals, and assists in locating interstate criminals through fingerprint search.
- The NCRB has four divisions: Crime and Criminal Tracking Network and Systems (CCTNS), Crime Statistics, Finger Prints, and Training.

NCRB Publications:

- Crimes in India, Accidental Deaths and Suicides, Prison Statistics, and Reports on Missing Women and children in India.
- These publications serve as principal reference points on crime statistics not only for police officers but also for criminologists, researchers, media and policymakers not only in India but abroad as well.

Limitations of Data and Reporting

- The NCRB report acknowledges that the data record registered crime, not the actual occurrence of crime. The 'Principal Offence Rule' and limitations at the local level, including potential underreporting due to various reasons, impact the accuracy of the report.

Bills for women's quota in J&K, Puducherry

Why in News

The Lok Sabha passed two Bills to extend the provisions of the Constitution (106th Amendment) Act – that grants 33% reservation for women in Parliament and State legislatures – to the Union Territories of Puducherry and Jammu and Kashmir.

Important Points

About the bill

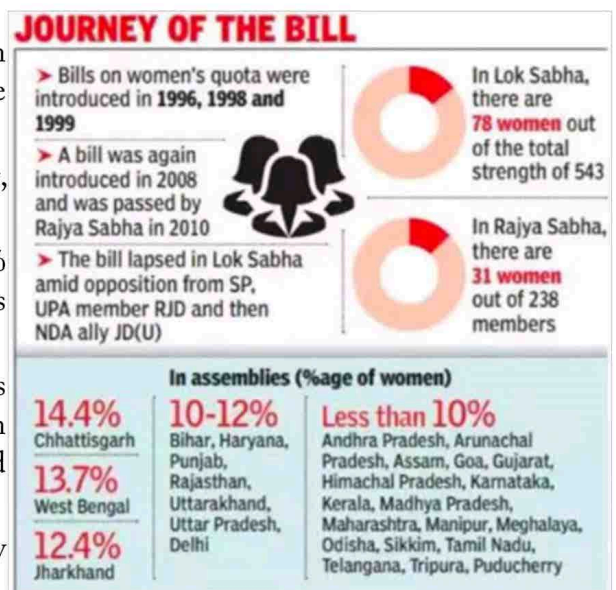
- First introduced in 1996, the Bill has seen several twists and turns, including its passage in the Rajya Sabha in March 2010 but the Congress-led UPA did not bring the Bill in the Lok Sabha for the lack of consensus and inadequate numbers to push it through.
- The Women's Reservation Bill which is called as Nari Shakti Vandan Adhiniyam was passed in September 2023.
- The Constitution (One Hundred and Sixth Amendment) Act, 2023 is the official name of the women's reservation law.

Key features

- Reservation for women: It seeks to reserve 33 per cent of the seats for women in the Lok Sabha, the State legislative assemblies and the Delhi legislative assembly, through the amendment of Article 239AA of the Constitution and the insertion of two new articles — Article 330A and Article 332A.
- This will also apply to the seats reserved for SCs and STs in Lok Sabha and state legislatures.
- Commencement of reservation: The reservation will be effective after the census conducted.
- Based on the census, delimitation will be undertaken to reserve seats for women. The reservation will be provided for a period of 15 years.
- However, it shall continue till such date as determined by a law made by Parliament.
- Rotation of seats: Seats reserved for women will be rotated after each delimitation, as determined by a law made by Parliament.

Need and Purpose

- Proponents of the Bill argue that affirmative action is imperative to better the condition of women since political parties are inherently patriarchal.
- Despite the hopes of the leaders of the national movement, women are still under-represented in Parliament.
- Data show that women MPs account for nearly 15% of the Lok Sabha strength while their representation is below 10% in many State Assemblies.
- According to the Inter-Parliamentary Union, India has a fewer percentage of women in the lower House than its neighbours such as Nepal, Pakistan, Sri Lanka and Bangladesh — a dismal record.
- Reservations will ensure that women form a strong lobby in Parliament to fight for issues that are often ignored.
- Some recent studies on panchayats have shown the positive effect of reservation on empowerment of women and on allocation of resources.



- Reservation of seats for women in local bodies has enabled them to make meaningful contributions
- It seeks to enable greater representation and participation of women as public representatives in law-making processes.

Criticism

- Opponents of reservation for women argue that the idea runs counter to the principle of equality enshrined in the Constitution.
- They say that women will not be competing on merit if there is reservation, which could lower their status in society.
- Reservation of seats in Parliament restricts choice of voters to women candidates.
- Therefore, some experts have suggested alternate methods such as reservation in political parties and dual member constituencies.

Way Forward

- The Women's Reservation Bill may be a step in the right direction but given the delay in its implementation, the gender composition of India's Parliament and state assemblies is unlikely to change anytime soon.
- Further, the onus for driving this political transformation should not fall solely on women but must be shared by systems influenced by both men and women.
- This entails applying a more inclusive perspective that can enhance the quality of policy decisions.
- The intricate and multifaceted challenges of the Indian political landscape necessitate a comprehensive approach — one that incorporates the fundamental principles of equality and inclusion, alongside achieving equal representation for women and other marginalised segments of society.

Suspension of Members of Parliament (MPs)

Why in News

The suspension of 78 Opposition MPs in a single day is a significant event in the Indian Parliament, and it highlights the ongoing challenges in maintaining order and decorum during legislative sessions.

Important Points

Why were the MPs suspended?

- The MPs were suspended for disrupting Parliamentary proceedings during protests related to a security breach in the Parliament.
- In the Lok Sabha, the Opposition demanded a statement from Home Minister Amit Shah, waved placards, and some even climbed onto the Speaker's podium.
- In the Rajya Sabha, the Opposition raised slogans on the security breach, leading to disruptions.

Disruptions in Parliament can be attributed to various reasons:

- Lack of time: MPs may feel they have insufficient time to address important matters.
- Unresponsive government: When the government is perceived as unresponsive, MPs may resort to disruptive tactics.
- Political or publicity purposes: Some disruptions are deliberate and driven by parties seeking political or publicity gains.
- Absence of prompt action: If there's a perception that disruptive MPs face no consequences, it can encourage such behaviour.



Who can suspend MPs, and for How Long?

- The suspension of Members of Parliament (MPs) is a disciplinary action taken against members who violate the rules and decorum of the Parliament.
- Who: The Speaker of the Lok Sabha or the Chairman of the Rajya Sabha has the authority to suspend members.
- The rules and procedures regarding the suspension of MPs are outlined in the Rules of Procedure and Conduct of Business in Lok Sabha and Rajya Sabha.
- Grounds: The grounds for suspension can include unruly behavior, disregard for the rules of the house, or any other actions deemed to be a breach of parliamentary etiquette.
- MPs can be suspended for the remainder of the session, with a maximum period of five days (in Lok Sabha). The House can reinstate a suspended member at any point by passing a motion.

Rules in Lok Sabha

- Rule 374: The Speaker may name a Member if deems it necessary, who disregards the authority of the Chair or abuses the rules of the House by persistently and wilfully obstructing the business thereof.
- Rule 374A: In 2001, Rule 374A was incorporated within the Rule Book. The purpose was to avoid the necessity of moving and adopting a motion for suspension.
- A Member abusing the Rules of the House persistently and wilfully obstructing its business by shouting slogans or otherwise, such Member on being named by the Speaker, stand automatically suspended from the service of the House for five consecutive sittings or the rest of the session, whichever is less.

Rules in Rajya Sabha

- Rule 255: Like the Speaker in Lok Sabha, the Chairman of Rajya Sabha is empowered to direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately from the House.
- Under Rule 256: The Chairman may name a Member who abuses the rules of the house.
- The House may adopt a motion suspending the Member from the service of the House for a period not exceeding the remainder of the session.

Is suspending MPs common practice?

- While it is not uncommon, the number of suspensions has increased in recent years. Since 2019, at least 149 suspensions have occurred, compared to 81 in 2014-19 and 36 in 2009-14.
- Disruptions in Parliament have been a long-standing issue, and efforts have been made to address the root causes.

Can Courts Intervene in a matter of Suspension of MPs?

- Article 122 of the Constitution says parliamentary proceedings cannot be questioned before a court.
- In some cases, however, courts have intervened in the procedural functioning of legislatures.

Restrictions on MPs After Suspension

- Suspended MPs are prohibited from entering the premises of the House during the period of suspension. This means they cannot participate in debates, discussions, or voting.
- Suspended MPs may lose certain parliamentary privileges during the suspension, such as the right to attend committee meetings or participate in other parliamentary activities.
- He will not be eligible to give notice for discussion or submission.
- He loses the right to get a reply to his questions.

Challenges in maintaining order

- Maintaining a balance between enforcing order and respecting democratic values is a challenge for Presiding Officers.
- Disruptions arising from frustration or planned parliamentary offences require different approaches, and finding long-term solutions is crucial for the smooth functioning of Parliament.

Advocates Amendment Bill 2023 passed

Why in News

The Advocates Amendment Bill, 2023, was recently approved by the Lok Sabha during the Winter Session of Parliament.

Important Points

Aims of the Bill:

- This legislative move aims to eradicate the presence of 'touts' in the legal system.
- The Bill involves the repeal of the colonial-era Legal Practitioners Act, 1879, and amendments to the Advocates Act, 1961.

Repeal of Outdated Legislation:

- The Bill marks the end of the Legal Practitioners Act, 1879, a colonial-era law deemed obsolete.
- The repeal is part of the government's broader strategy to eliminate outdated laws and streamline the legal framework.

Reduction of Superfluous Enactments:

- The primary objective of the Advocates Amendment Bill is to reduce the number of redundant laws in the statute book.
- By amending the Advocates Act, 1961, the government aims to create a more contemporary and efficient legal framework.

Response to Societal Asymmetry:

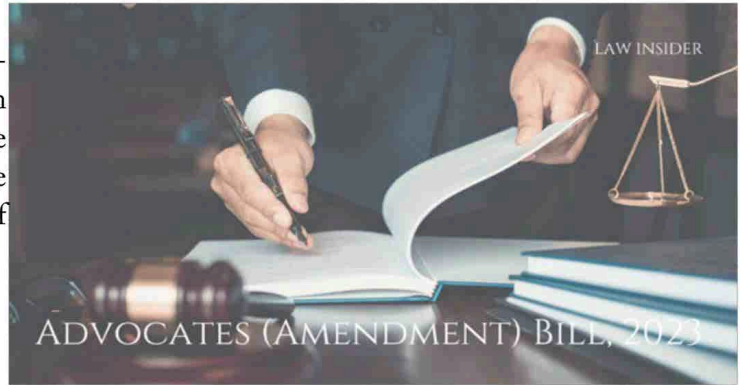
- MPs acknowledged the importance of the Bill in addressing societal imbalances.
- The complexity of the legal system often leaves individuals without proper guidance, leading to the exploitation of people by 'touts.'
- The Bill seeks to rectify this issue by eliminating such exploitation.

Repealed 1879 Act:

- Definition of 'Tout': The now-repealed Legal Practitioners Act, 1879, defined a 'tout' as someone who, in exchange for remuneration, procures the employment of a legal practitioner in any legal business. This definition included individuals frequenting legal institutions for such purposes.

Advocates Act of 1961:

- The Advocates Act of 1961 was enacted post-independence to regulate the legal profession effectively. While repealing a majority of the 1879 Act, certain provisions related to the extent, definitions, and powers to frame lists of 'touts' were retained.



Advocates Amendment Bill, 2023

Introduction of Section 45A

- The Bill introduces a new provision, Section 45A, in the Advocates Act, 1961.
- This section empowers High Courts and district judges to frame and publish lists of 'touts' after providing them with an opportunity to contest their inclusion.

Legal Safeguards

- The new provision ensures that no individual's name is included in the 'touts' list without affording them an opportunity to present their case.
- Authorities can send suspected 'touts' to subordinate courts for inquiry, and only proven cases will be included in the published list.

Penalties for Acting as a Tout

- Section 45A imposes penalties, including imprisonment and fines, for individuals acting as 'touts' while their names are on the published list.
- This provision mirrors Section 36 of the now-repealed 1879 Act.

SC upholds abrogation of Article 370

Why in News

Recently, a five-member Constitution bench of the Supreme Court, headed by Chief Justice D.Y. Chandrachud, unanimously upheld the abrogation of Articles 370 and 35A.

Important Points

Background

- Over the years, there were debates about the special status; with some arguing it impeded the state's integration with the rest of India.
- The Pulwama terror attack in February 2019, which resulted in the death of Indian security personnel, heightened security concerns in the region.
- There were calls for a stronger response to address security challenges.
- As an action taken in favour to this, On August 5, 2019, the Indian government, through a Presidential order, abrogated Article 370, effectively revoking the special status of Jammu and Kashmir.
- The state was also reorganized into two separate Union Territories – "Jammu & Kashmir and Ladakh."

What was all Article 370 about?

- Article 370 of the Indian Constitution granted special autonomy to the region of Jammu and Kashmir.
- The article allowed the state to have its constitution, and its residents enjoyed certain privileges, including exclusive rights over land and property.
- Article 35A: Article 35A, inserted through a Presidential order in 1954, granted special rights and privileges to the residents of Jammu and Kashmir.
- It allowed the state's legislature to define permanent residents and provided them with exclusive rights over jobs and property.

Why there was a need for such an Action?

- The government argued that the move aimed at integrating Jammu and Kashmir fully into the Indian Union and promoting development in the region.

About the Recent Verdict:

- On federalism and Sovereignty: In the apex court's view, following the Instrument of Accession and the issuance of the Proclamation dated November 25, 1949, by which the Constitution of India was adopted, the State of Jammu and Kashmir did not retain any element of sovereignty.
- Article 370 was a feature of asymmetric federalism and not sovereignty.
- The Supreme Court has reserved its verdict on upholding Article 370 by the President and mentioned that, the President has power to abrogate Article 370 if "special circumstances warrant a special solution".
- The Supreme Court also proclaimed that the concurrence of the State government was not required to apply the Indian Constitution to the State of Jammu and Kashmir.
- On President's decision to abrogate Article 370, using the Article itself: It is pertinent to mention that when Jammu and Kashmir's special status was revoked by a Presidential Order in August 2019, the erstwhile State was under President's rule, and it has since been a source of debate whether irreversible decisions could be made in the absence of an elected Legislative Assembly.
- The President in exercise of power under Article 370(3) can unilaterally issue a notification that Article 370 ceases to exist.
- So, concluding thoughts have highlighted that, "Every decision taken by the Centre on behalf of the state during Presidential rule can't be challenged."



Arguments/Answers given for 'Abrogation of Article 370':

President's sole authority:

- The President did not have to secure the concurrence of the Government of the State or Union Government acting on behalf of the State Government under the second proviso to Article 370(1)(d) while applying all the provisions of the Constitution to Jammu and Kashmir because such an exercise of power has the same effect as an exercise of power under Article 370(3) for which the concurrence or collaboration with the State Government was not required.

Declared as a 'Temporary Provision':

- The court held that Article 370 was only a "temporary provision" to ease the accession of the then princely State to the Union at a time of internal strife and war.
- The power of the Parliament or the President to abrogate Article 370 did not cease to exist with the dissolution of the Constituent Assembly of Jammu and Kashmir in 1957.

Power to abrogate Article 370 is not present for J & K Assembly:

- Only the power of the J&K Constituent Assembly to recommend abrogation of Article 370 ceased to exist with its dissolution.
- Also, the power of the President under Article 370 (3) to abrogate Article 370 had continued to prevail. As, when the Constituent Assembly dissolved, only the transitional power recognised in the proviso of Article 370(3), which empowered the Constituent Assembly to make its recommendations, ceased to exist. It did not affect the power held by the President under Article 370 (3).

Arguments in favour of Article 370:

- **Geographical Differences:** Views may differ between regions such as Jammu, Kashmir, and Ladakh, with each having distinct demographic and cultural characteristics.
- **Ethnic and Religious Diversity:** The opinions of different ethnic and religious communities, including Hindus, Muslims, and Buddhists, may vary based on their historical experiences and perceptions.
- **Political Affiliations:** People's political affiliations, whether aligned with mainstream political parties or separatist groups, strongly influence their stance on the abrogation.

Banning Party Name on Religious

Why in News

The Delhi High Court has mentioned that the issues raised in a petition seeking de-registration of political parties having names with caste, religious, ethnic or linguistic connotations and flags resembling the tricolour have to be decided by the Parliament as it is not in the domain of judiciary.

Important Points

- It has referred to political parties such as Hindu Sena, All India Majlis-e-Ittehadul Muslimeen and Indian Union Muslim League as examples of names with religious connotations and said this was "against the spirit" of the Representation of Peoples Act (RPA) and the Model Code of Conduct.
- Also in addition, there are many political parties including the Indian National Congress, which use a flag similar to the national flag, which is also against the spirit of the RPA.
- In its reply filed in 2019, the Election Commission had said that in 2005 it took a policy decision not to register any political party having a name with religious connotations and thereafter, no such party has been registered.
- However, any such party registered before 2005 will not lose its registration for having a name with a religious connotation.

'NO PROVISION TO BAR PARTIES'

➤ **Plea filed in SC seeking that political parties** like Indian Union Muslim League and the All India Majlis-Elttehandul Muslimeen be restrained from using religious names and symbol

➤ **EC tells SC that there is no provision which bars associations with religious connotations to register themselves as political parties**

“ The registered names of those existing political parties which are having religious connotation have become legacy names, as they have been in existence for decades. Whether the names of these political parties may or may not be disturbed is, accordingly, left to the wisdom of this court

– Election Commission

What is an Election symbol?

- An electoral or election symbol is a standardized symbol allocated to a political party.
- They are used by the parties during their campaigning and are shown on Electronic Voting Machines (EVMs), where the voter chooses the symbol and votes for the associated party.
- They were introduced to facilitate voting by illiterate people, who can't read the name of the party while casting their votes.

Provisions under the Election Symbols (Reservation and Allotment) Order, 1968:

- In 1968, the Election Commission (EC) promulgated this order, which provided for specification, reservation, choice and allotment of symbols at elections in Parliamentary and State Assemblies' constituencies.
- It also had provisions regarding the registration and recognition of political parties as state and national parties.
- The Election Symbols Order also provided for resolution of disputes in cases involving splits in recognized parties or merger of two or more political parties.
- Symbols are reserved for political parties and Paragraph 5 of the order distinguishes between a reserved and a free symbol.
- A reserved symbol is one that is allocated to a political party while a free symbol is available to be allocated to non-recognized parties and independent candidates.
- Also, political parties are divided into regional or state and national parties, or registered and unregistered parties.
- Paragraph 6 of this order states the conditions which a party has to fulfill to become a national or a state party.

**Chapter-
3****ENVIRONMENT AND ECOLOGY****Combating Plastic Pollution****Why in News**

The Intergovernmental Negotiating Committee (INC), under the United Nations Environment Programme, had its third round of negotiations to combat plastic pollution.

Important Points

- Under the UN Environment Assembly Resolution 5/14, the INC is responsible for delivering a global plastics treaty by 2025.
- INC countries came together to negotiate the 'zero draft' text developed by the INC's secretariat, Which contained strong options for an international legally binding treaty to end plastic pollution.

What is Plastic?

- Plastic refers to a wide range of synthetic or semi-synthetic materials that use polymers as a main ingredient with their defining quality being their plasticity – the ability of a solid material to undergo permanent deformation in response to applied forces.
- Most modern plastics are derived from fossil fuel-based chemicals like natural gas or petroleum.

Polymers used in Plastics

- The polymers used in plastic production are: Polyethylene terephthalate or PET, High-density polyethylene or HDPE, Polyvinyl chloride or PVC, Low-density polyethylene or LDPE, Polypropylene or PP, and Polystyrene or PS.
- Each of these have different properties and can be identified by their resin identification code (RIC) denoted by symbols found on plastic products.

Data Related to Plastic

- According to UN data, more than 400 million tonnes of plastic is produced every year worldwide, half of which is designed to be used only once.
- Of that, less than 10 per cent is recycled. Consequently, an estimated 19-23 million tonnes end up in lakes, rivers and seas annually.

Concerns of Plastic Pollution

- Slow decomposition rate: Plastics are hard to eradicate due to their slow decomposition rate in natural ecosystems.
- Microplastics: Plastics break down into their smaller units called microplastics. These microplastics find their way across the planet, from the depths of the Pacific Ocean to the heights of the Himalayas.
- Effect on Human Health: BPA or Bisphenol A, the chemical which is used to harden the plastic contaminates food and drinks, causing alterations in liver function, insulin resistance, fetal development in pregnant women, the reproductive system and brain function.
- Marine pollution: The largest collection of plastics and microplastics in the ocean is in the Great Pacific Garbage Patch – a collection of marine debris in the North Pacific Ocean. It floats on the sea surface and ends up clogging the marine animals.
- Climate change: Plastic, which is a petroleum product, also contributes to global warming. If plastic waste is incinerated, it releases toxic fumes and carbon dioxide into the atmosphere, thereby increasing carbon emissions.
- Tourism and Economy: Plastic waste damages the aesthetic value of tourist destinations, leading to decreased tourism-related incomes and major economic costs related to the cleaning and maintenance of the sites.

Global Efforts In Tackling Plastic Waste

- London Convention: The 1972 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter.
- Clean Seas Campaign: The United Nations Environment Programme launched the Campaign in 2017. It became the largest global campaign to raise awareness on plastic pollution and marine litter.
- Basel Convention: In 2019, the Basel Convention was amended to include plastic waste as a regulated material.
- The Convention contains three main entries on plastic wastes in Annex II, VIII and IX of the Convention. The Plastic Waste Amendments of the convention are now binding on 186 States.



India's Efforts In Tackling Plastic Waste

- Extended Producer Responsibility (EPR): The Indian government has implemented EPR, making plastic manufacturers responsible for managing and disposing of the waste generated by their products.
- Plastic Waste Management (Amendment) Rules, 2022: It prohibits manufacture, import, stocking, distribution, sale and use of plastic carry bags having thickness less than 120 microns.
- Swachh Bharat Abhiyan: It is a national cleanliness campaign, which includes the collection and disposal of plastic waste.
- Plastic Parks: India has set up Plastic Parks, which are specialized industrial zones for recycling and processing plastic waste.
- Beach clean-up drives: The Indian government and various non-governmental organizations have organized beach clean-up drives to collect and dispose of plastic waste from beaches.

COP28

Why in News

COP28 President Sultan al-Jaber spoke during the opening session at the COP28 U.N. Climate Summit in Dubai, United Arab Emirates.

Important Points

- The 2023 United Nations Climate Change Conference or Conference of the Parties of the UNFCCC, more commonly referred to as COP28,[1] is the 28th United Nations Climate Change conference, being held from 30 November until 12 December 2023 at Expo City, Dubai.
- The conference has been held annually since the first UN climate agreement in 1992.
- The COP conferences are intended for governments to agree on policies to limit global temperature rises and adapt to impacts associated with climate change.

When and where is COP28?

- The 28th annual UN climate change conference will be held from November 30 to December 12 in Dubai, UAE.
- The conference will include talks and interactive sessions about the future of climate action. It will also feature talks from political, environmental and scientific leaders.

What does COP 28 stand for?

- COP 28 stands for the 28th meeting of the Conference of the Parties (COP) to the UNFCCC. The "parties" are the countries that signed up to the original UN climate agreement in 1992.



What is COP 28's theme and agenda?

- The main objective of Cop every year is to review and assess the implementation of the United Nations Framework Convention on Climate Change (UNFCCC) terms, the Paris Agreement, and the Kyoto Protocol. The latter is a binding treaty agreed in 1997 for industrialised nations to reduce greenhouse gas emissions.
- At Cop28, member states negotiate while also facing their first Global Stocktake (GST). This refers to a scorecard that analyses countries' progress towards the Paris Agreement, with the goal of sparking actionable objectives for climate action plans due in 2025.

Additionally, Cop28 will focus on four themes:

- Fast-tracking the energy transition: a focus on renewable energy, as well as food and agricultural systems.
- Climate finance solutions: aims to prioritise the Global South in adaptation finance and help vulnerable communities rebuild after climate disasters.
- Nature, people, lives, and livelihoods: geared towards food systems, nature-based solutions, and protecting against extreme weather events and biodiversity loss.
- Inclusivity in climate management: a focus on youth involvement and improved communication between different sectors and agencies.

Will COP28 make any difference?

- Critics of previous COPs, including campaigner Greta Thunberg, accuse the summits of "greenwashing" - where countries and businesses promote their climate credentials without making the changes needed.
- But as world leaders gather, the summits offer the potential for global agreements that go beyond national measures.
- For example, the 1.5C warming limit, agreed in Paris at COP21, has driven "near-universal climate action", according to the UN.
- This has helped bring down the level of warming the world can expect - even though the world is still not acting at anywhere near the pace needed to achieve the Paris goals.

Asola Bhatti Wildlife Sanctuary

Why in News

The Delhi High Court is considering staying a forest department 'Walkathon' event in the Asola Bhatti Wildlife Sanctuary.

Important Points

Asola Bhatti Wildlife Sanctuary

- Location: Situated in the southern part of Haryana.
- Spread: Occupies 32.71 sq. km on the Aravalli hill range's Southern Delhi Ridge, bordering Delhi and Haryana.
- Connectivity: Forms a part of Rajasthan's Sariska Tiger Reserve to the Delhi Ridge.
- Vegetation: Classified under Northern Tropical Thorn Forests.
- Plant Adaptations: Features plants with xerophytic characteristics like thorns, wax-coated and succulent leaves.
- Flora: Characterized by the presence of the exotic *Prosopis juliflora* and the native *Diospyros montana*.
- Wildlife Diversity: Home to species such as Golden Jackals, Striped-Hyenas, Indian Crested-Porcupines, Civets, Jungle Cats, various snakes, Monitor Lizards, and Mongoose.



Wildlife Sanctuary:

- A wildlife sanctuary is an area where animal habitats and their surroundings are protected from any sort of disturbance. The capturing, killing and poaching of animals is strictly prohibited in these regions. They aim at providing a comfortable living to the animals.

Importance

- The wildlife sanctuaries are established to protect the endangered species.
- It is quite difficult to always relocate the animals from their natural habitat, therefore, protecting them in their natural environment is advantageous.
- The endangered species are specially monitored in the wildlife sanctuaries. If they reproduce and grow in number while under protection, few specimens can be kept for breeding in the conservation parks for their survival.
- Biologist activities and researches are permitted in the wildlife sanctuaries so that they can learn about the animals living there.
- A few sanctuaries take in injured and abandoned animals and rehabilitate them to health before releasing them in the forest.
- Wildlife sanctuaries preserve the endangered species and protect them from humans and predators.

ALTERRA Fund

Why in News

The UAE announced a US\$30 billion commitment to the newly launched catalytic climate vehicle, ALTERRA.

Important Points

- With this US\$30 billion commitment, ALTERRA becomes the world's largest private investment vehicle for climate change action and will aim to mobilize US\$250 billion globally by 2030.
- It aims to steer private markets towards climate investments and focus on transforming emerging markets and developing economies, where traditional investment has been lacking due to the higher perceived risks across those geographies.
- ALTERRA has been established by Lunate, an independent global investment manager, and is domiciled in the Abu Dhabi Global Market.

Need of ALTERRA:

- By 2030, emerging markets and developing economies will require US\$2.4 trillion every year to address climate change.
- That is why COP28 made fixing climate finance a key pillar of its Action Agenda and has worked to deliver ambitious solutions, including mobilising private markets at scale.

Benefits of ALTERRA:

- ALTERRA provides a transformational solution for attracting private capital.
- Its scale and structure will create a multiplier effect in climate focused investment, making it a vehicle like no other.
- Its launch reflects the COP Presidency's Action Agenda and the UAE's efforts to make climate finance available, accessible and affordable.
- ALTERRA is one of a range of finance-led initiatives launched during COP28 to accelerate the global transition to a low-carbon economy and build climate resilience.

Structure of ALTERRA:

- ALTERRA will have an innovative two-part structure to spur



- new ideas, incentivize policy and regulatory frameworks
- Identify solutions to rapidly deploy capital across the entire value chain of the new climate economy.
- It has a dedicated investment focus on supporting four key priorities that underpin COP28's Action Agenda, namely:
 - o Energy Transition
 - o Industrial Decarbonization
 - o Sustainable Living
 - o Climate Technologies.

ALTERRA and Climate Change:

- In-line with COP28's message of full inclusivity, ALTERRA TRANSFORMATION will also create opportunities to leverage concessional finance to further attract climate investment to Least Developed Countries (LDCs) and Small Island Developing States (SIDS).
- The ALTERRA vehicle will add to the UAE's leading change as a trusted facilitator at the global crossroads between North, South, East and West.
- ALTERRA, in collaboration with BlackRock, Brookfield and TPG as inaugural launch partners, has committed US\$6.5 billion to climate-dedicated funds for global investments, including the Global South.

ALTERRA and India:

- From the vehicle's initial commitment, immediate capital investment has been earmarked for the development of over 6.0 GW of new clean energy capacity in India.
- This includes the construction of 1,200 MW of wind and solar projects that will begin producing clean power by 2025.

Climate Change Performance Index (CCPI) 2024

Why in News

India has been ranked seventh in climate performance during 2022- the report Climate Change Performance Index (CCPI) 2024.

Important Points

Findings:

- India is effectively fourth as no one has occupied the first three ranks in the 'very high' performance category.
- Most developed countries fared poorly compared to last year including the United Kingdom, the United States, Italy and others, showing the emergency of acting to counter climate change has yet not registered with them appropriately.
- Saudi Arabia was at the bottom — 67th — in the performance list, while the host country United Arab Emirates occupied the 65th position.
- CCPI countries must have an emissions peak by 2025 to keep the 1.5°C goal in reach. Moreover, emissions must be halved by 2030 (vs 2020) levels.
- Despite the urgent need to decarbonise all sectors, global greenhouse gases (GHG) have increased in 2022 and atmospheric CO₂ is now 50 per cent higher than pre-industrial levels," read the report.
- India's high population, which automatically reduces its per capita energy use, plays a major role in giving it a high position in climate performance.
- Of the four indices considered, India was ranked 9th in GHG Emissions and 10th in Energy Use among assessed countries; both being prompted by a low per capita benchmark. In Climate Policy too, India was ranked 10th among countries in the list. In Renewable Energy, India is ranked 37th, barely remaining within the 'high' performance category. India was 24th in this category in the preceding year's assessment.
- India receives a high ranking in the GHG Emissions and Energy Use categories, but a medium in Climate Policy and Renewable Energy, as in the previous year. While India is the world's most populous country, it has relatively low per capita emissions. Our data shows that in the per capita GHG category, the country

is on track to meet a benchmark of well below 2°C. While it shows a slightly positive trend in the share of renewable energy, this trend is advancing too slowly,” read the report.

- India is trying to meet its Nationally Determined Contribution (NDC), with clear long-term policies in place that focus on promoting renewable energy (but) India’s growing energy needs are still being met by its heavy reliance on coal, along with oil and gas.
- It added: “This dependence is a major source of GHG emissions and causes severe air pollution, especially in the cities.” India is among the most air-polluted countries of the world.
- Other members of the BASIC group of emerging economies have also done reasonably well in the assessment, besides India.
- China retained the same position — 51st — compared to year back. Brazil improved 15 positions and South Africa slipped one position on the same benchmark.
- Among developed countries, Italy slipped 15 positions in ranking, United Kingdom and France nine positions, Japan eight positions and the United States has been pushed back five positions. Germany and the European Union improved marginally.

CCPI

- The Climate Change Performance Index (CCPI) is a scoring system designed by the German environmental and development organisation Germanwatch to enhance transparency in international climate politics.
- On the basis of standardised criteria, the index evaluates and compares the climate protection performance of 63 countries and the European Union (EU).
- The CCPI was first published in 2005 and an updated version is presented at the UN Climate Change Conference annually.
- Germanwatch publishes the index in cooperation with the NewClimate Institute and Climate Action Network International and with financial support from Barthel Foundation.



Methodology

- In 2017, the underlying methodology of the CCPI was revised and adapted to the new climate policy framework of the Paris Agreement from 2015.
- The CCPI was extended in order to include the measurement of a country’s progress towards the Nationally Determined Contributions (NDCs) and the country’s 2030 targets.

The national performances are assessed based on 14 indicators in the following four categories:

- o GHG emissions (weighting 40%)
- o Renewable energy (weighting 20%)
- o Energy use (weighting 20%)
- o Climate policy (weighting 20%)
- The three categories "GHG emissions", "renewable energy" and "energy use" are each defined by four equally weighted indicators: (1) current level, (2) recent developments (5-year trend), (3) 2 °C compatibility of the current performance, and (4) 2 °C compatibility of 2030 target.
- These 12 indicators are complemented by two indicators, measuring the country's performance regarding its national climate policy framework and implementation as well as regarding international climate diplomacy in the category "climate policy".
- The data for the "climate policy" category is assessed annually in a comprehensive research study. Its basis is the performance rating by climate change experts from non-governmental organisations, universities and think tanks within the countries that are evaluated.
- In a questionnaire, the respondents give a rating on the most important measures of their governments.
- The results are rated as very high, high, medium, low, or very low.

COP28 summit calls for 'transition away' from fossil fuels

Why in News

Negotiators adopt resolution titled Dubai Consensus; the text reflects a compromise between developed and developing countries on emissions.

Important Points

- **Transition away from fossil fuels:** In a historic move, nations gathered in Dubai recently adopted the Dubai Consensus, a resolution aimed at addressing the urgent need to transition away from fossil fuels and achieve net-zero greenhouse gas emissions by 2050.
- **Mitigation:** This resolution, a product of the 28th Conference of Parties (COP 28), marks a significant step toward mitigating climate change, albeit with certain compromises and challenges.

The Dubai Consensus: Transitioning vs. Phase-Out

- The standout clause of the 21-page text "calls on Parties to be transitioning away from fossil fuels in energy systems, in a just, orderly, and equitable manner."
- However, this language represents a compromise, as earlier drafts had called for an outright "phase-out" of fossil fuels.
- The shift from a phase-out to a transitioning approach reflects the delicate balance between developed and developing nations.

The Urgency of Net Zero by 2050

- **Intergovernmental Panel on Climate Change (IPCC):** Scientific assessments, particularly those by the Intergovernmental Panel on Climate Change (IPCC), emphasize that achieving net-zero emissions by 2050 is crucial to limit global temperature rise to 1.5 degrees Celsius by the end of the century.
- **Targets for emission reductions:** The Dubai Consensus acknowledges this imperative, setting targets for emission reductions – 43% of 2019 levels by 2030 and 60% by 2035.

Compromises and Criticisms

- **Extending time limit:** COP 28 witnessed negotiations extending into overtime, with both vulnerable nations and countries with strong fossil fuel dependencies expressing discontent.
- **Shortened agreement:** While some vulnerable nations argued that the agreement did not go far enough to end fossil fuels, others, including Saudi Arabia and Egypt, questioned the actual implementation and delivery of promised funds from developed countries.

Funding Commitments and Loss and Damage

- **Loss and Damage Fund:** Amidst the compromises, COP 28 saw noteworthy successes, including commitments of \$750 million to the Loss and Damage Fund, designed to assist countries dealing with climate disasters.
- Additionally, pledges worth \$85 million were made outside the main COP text to accelerate global decarbonization efforts.

Dilution of Language and Adaptation Challenges

- **Compromises in language:** The final text of the Dubai Consensus reflects compromises in language, toning down references to a 'phase-out' and coal reduction.
- **Shift of Energy:** Notably, for countries like India heavily dependent on coal for energy, the shift from "rapidly phase down" to "accelerating efforts towards the phase-down of unabated coal power" represents a nuanced compromise.

Broken Promises and Carbon Space

- **Broken promises:** One of the key challenges lies in the broken promises of financial support from developed nations to aid developing countries in their transition away from fossil fuels.
- **\$100 billion Commitment:** The failure to meet the 2009 commitment to mobilize \$100 billion annually until 2025 is noted with "deep regret" in the Dubai Consensus.

- Carbon space: Moreover, the concept of carbon space becomes crucial, with developing nations insisting that the remaining capacity should be preserved for their growth.
- Net-zero earlier target: The call for developed countries to reach net-zero earlier (2035-2040) aims to provide developing nations with the necessary carbon space.
- The Dubai Consensus is undoubtedly a historic achievement, signaling a global commitment to address climate change.
- However, the compromises made in the text and the challenges in implementation and funding underscore the complexity of reaching a consensus on such a critical issue.
- As the world strives for a sustainable future, on-going deliberations and actions will be essential to ensure the effective transition away from fossil fuels and the achievement of net-zero emissions by 2050.

Saiga antelope

Why in News

The status of Saiga antelope (*Saiga tatarica*) in the International Union for Conservation of Nature (IUCN) Red List has been changed from critically endangered to near threatened.

Important Points

- The Saiga antelope (*Saiga tatarica* and *S. borealis mongolica*) is a large migratory herbivore of Central Asia found in Kazakhstan, Mongolia, the Russian Federation, Turkmenistan, and Uzbekistan. The saiga generally inhabits open dry steppe grasslands and semi-arid deserts. This antelope has an extremely unusual appearance with an over-sized and flexible nose, the internal structure of which acts like a filter. During the summer it filters out a dust kicked up by the herd and during the winter warms up the freezing air before it is taken into the lungs. In the spring large herds of female saiga gather and migrate to the breeding areas. In the summer the herds break into the smaller groups and from the autumn they gather again to move to the winter grounds. The length of the journeys varies depending on the weather and forage conditions. However, it may reach up to 1,000 km a year. Their migration route typically follows a north-south direction. However, it also has a nomadic pattern.
- The saiga population in the 1990s underwent a catastrophic fall (~95%) in numbers decreasing from more than 1.5 million to 50,000 individuals across its range. Such a drastic decline happened because of poaching. As saiga horns are highly valued in traditional Chinese medicine the illegal trade became more widespread due to the hard economic conditions and impoverishment of the local human population and weaker control after the dissolution of the Soviet Union.
- There are currently five subpopulations of saiga. The largest population inhabits central Kazakhstan (Betpak Dala), the second largest group is found in the Urals in Kazakhstan and Russian Federation, others belong to Kalmykia in the Russian Federation and the Ustyurt Plateau region in southern Kazakhstan and north-western Uzbekistan.
- The population of Mongolian saiga occurs in the west of the country. The current population numbers total about 200,000 saigas in all the subpopulations combined. Poaching persists as a key threat, as demand for saiga horns remains high and they are illegally sold on the black market.
- A rise of mass mortality probably due to diseases (occurring annually from 2010) poses yet another threat. Lastly, the development of extractive industries and related infrastructure development causes fragmentation and degradation of saiga habitats. A prominent feature of the saiga is the pair of closely spaced, bloated nostrils directed downward.
- Other facial features include the dark markings on the cheeks and the nose and the long ears.



- During summer migrations, a saiga's nose helps filter out dust kicked up by the herd and cools the animal's blood. In the winter, it heats up the frigid air before it is taken to the lungs.
- Only males possess horns.
- Saigas form very large herds that graze in semideserts, steppes, grasslands, and possibly open woodlands, eating several species of plants, including some that are poisonous to other animals.
- They can cover long distances and swim across rivers, but they avoid steep or rugged areas.
- Poaching on an industrial scale has contributed significantly to the saiga's dramatic decline, but it is by no means the only factor.
- Habitat loss and fragmentation, catastrophic disease outbreaks and increasingly restricted access to historical migration routes have also taken a heavy toll.

Arctic Report Card 2023

Why in News

As per a recent study, Alaska Indigenous cultures has an important influence of fishing and related activities,

Important Points

- Warmest summer: The year 2023 has etched its mark in history as the Arctic experienced its warmest summer on record, leaving a profound impact on ecosystems and communities across the region.
- Ice Melting: From raging wildfires in Canada to unprecedented melting in Greenland, the signs of climate change are undeniable.

Rising Temperatures and Wildfires in Canada

- Rising temperatures: Canada faced a summer of turmoil as wildfires forced evacuations, fueled by a combination of rising air temperatures and dry conditions.
- Early snowmelt: The Northwest Territories bore witness to early snowmelt, exposing vast areas to intense heat, contributing to a record-low North American snowpack.
- Cascading effects: By November 2023, a staggering 70,000 square miles had succumbed to wildfires, emphasizing the cascading effects of climate change.
- Warming Waters: The Role of the Mackenzie River and Sea Ice Decline
- Mackenzie River and warm water: The mighty Mackenzie River played a pivotal role in the warming trend, carrying warm water into the Beaufort Sea, accelerating sea ice melting and impacting Alaska's coastline.
- Decline of sea ice in Siberia: Similar patterns were observed in western Siberia, amplifying the decline of sea ice in the Kara and Laptev seas north of Russia.
- Rising fall temperatures: The Arctic's diminishing sea ice emerges as a significant contributor to rising fall temperatures, perpetuating a cycle of heat absorption and release.

Subsea Permafrost: A Climate Wild Card

- 2023 Arctic Report Card: The 2023 Arctic Report Card delves into the underexplored realm of subsea permafrost, a hidden danger escalating due to warmer ocean temperatures.
- Subsea permafrost thawing: With vast expanses of subsea permafrost thawing, the release of methane and carbon dioxide poses a serious threat to global warming and ocean acidification.
- Need for research: The report highlights the urgent need for research to gauge the extent and intensity of the potential consequences.



Impacts on Indigenous Communities: Disrupted Lives and Livelihoods

- Indigenous communities: Arctic inhabitants, particularly indigenous communities, are grappling with tangible effects of climate change.

- Shifts in sea ice patterns: Shifts in sea ice patterns, unreliable river ice for travel, and the sinking of infrastructure due to thawing permafrost are disrupting traditional ways of life.
- Western Alaska: The article sheds light on the struggles of Indigenous communities in Western Alaska, where the decline of Chinook salmon jeopardizes cultural practices and food security, underscoring the human dimension of climate change.

Adaptation and Healing: Initiatives in the Face of Change

- Adaptation of Communities: Amid challenges, communities are adapting and initiating efforts to heal their landscapes.
- Sámi reindeer herders and conservationists: In Finland, collaboration between Sámi reindeer herders and conservationists aims to restore degraded reindeer habitat, simultaneously preserving cultural practices and mitigating climate change.

A Call to Action in the Face of Unprecedented Change

- As temperatures in the Arctic soar at a rate three times faster than the global average, the 2023 Arctic Report Card serves as a stark reminder of the risks associated with climate change.
- Beyond statistics, it illuminates the lives and cultures already disrupted by environmental shifts.
- The urgency for collective action to address climate change and protect the Arctic ecosystem has never been more apparent.

Winter Solstice

Why in News

21st December or the Winter Solstice marks the shortest day of the year in the Northern Hemisphere.

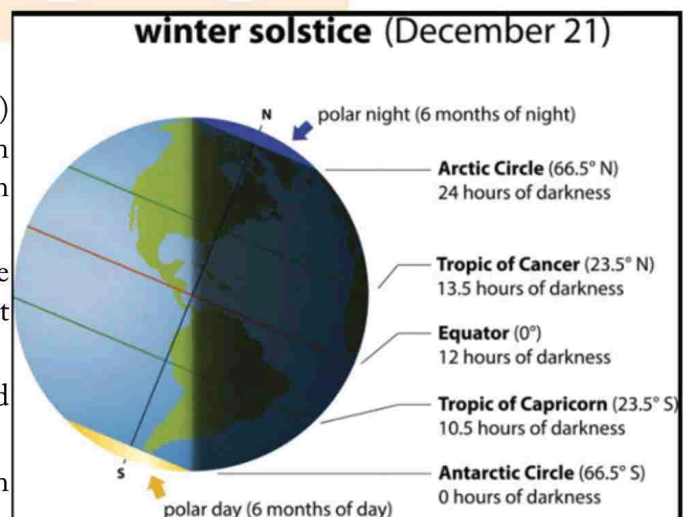
Important Points

About Solstice

- The word's Latin meaning is "stalled sun." It is a twice-yearly natural occurrence that takes place in both the summer and the winter in each hemisphere of the planet.

What is Winter Solstice?

- In the Northern Hemisphere, it is often referred to as the "first day of winter" and the "Hiemal solstice or hibernal solstice."
- It is the shortest day and longest night of the year.
- At this time, the Tropic of Capricorn (23.5° south) is where the Sun shines overhead, with countries in the Northern Hemisphere being the furthest from the Sun.
- The Tropics of Cancer and Capricorn, which are north and south of the Equator, are located at latitudes of 23.5°.
- The Arctic and Antarctic Circles, to the north and south, are at 66.5°.
- A location's latitude indicates how far it is from the Equator.
- On June 21, the Summer Solstice the longest day of the year will occur in the Northern Hemisphere and the shortest day in the Southern Hemisphere, reversing the current scenario.
- According to Vedic tradition, the Surya Siddhanta, which describes the Uttarayana (the time between Makar Sankranti and Karka Sankranti), indirectly acknowledges the Earth's northern migration on the celestial sphere.
- Therefore, the first day of Uttarayana is the Winter Solstice.



Geography behind Solstice

- The tilt of the Earth is the cause of the varying day lengths.
- The tilt of the Earth's rotational axis with respect to its orbital plane is 23.5°.
- Everywhere on the planet experiences a varied length of day because of changes in the duration of sunlight caused by this tilt as well as other factors like Earth's spin and orbit.
- With its tilt towards the Sun for half of the year, the Northern Hemisphere enjoys lengthy summer days with direct sunlight.
- It tilts away from the Sun during the other half of the year, resulting in shorter days.
- The tilt is also the cause of Earth's distinct seasons.
- Seasonal variations in the year are brought about by this phenomenon, which causes the Sun to migrate from the northern to the southern hemisphere and vice versa.

Kunming-Montreal Global Biodiversity Framework (KMGBF)

Why in News

A year has passed since the ambitious Kunming-Montreal Global Biodiversity Framework (KMGBF) was adopted at the Convention on Biological Diversity's (CBD) 15th Conference of Parties (CoP15).

Important Points

Background

- Human activities around the planet have been causing a crisis of biodiversity loss around the globe. This phenomenon has been known as the Holocene extinction, which is the sixth mass extinction event in the earth's history. The decline in nature threatens the survival of a million species and impacts billions of people.
- Due to increasing awareness of the biodiversity crisis, there was pressure from citizens and investors around the world to take action to address the interlinked crises of climate change and biodiversity loss.[4] There is already an international agreement for climate change, the Paris Agreement under the auspices of the United Nations Framework Convention on Climate Change, but until the development of the CBD, there was no similar framework for actions to protect biodiversity to be coordinated internationally.

Kunming-Montreal Global Biodiversity Framework (GBF)

- The Kunming-Montreal Global Biodiversity Framework (GBF) is an outcome of the 2022 United Nations Biodiversity Conference.
- The GBF was adopted by the 15th Conference of Parties (COP15) to the Convention on Biological Diversity (CBD) on 19 December 2022.
- It has been promoted as a "Paris Agreement for Nature".



Goals and Targets

- The GBF contains 4 global goals ("Kunming-Montreal Global Goals for 2050") and 23 targets ("Kunming-Montreal 2030 Global Targets").

The four goals are:

- The integrity, resilience, and connectivity of ecosystems is maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050, and that human-induced extinction of threatened species is halted, and that by 2050, extinction rate and risk of all species are reduced tenfold, and the abundance of native wild species is increased to healthy and resilient levels; and that the genetic diversity within populations of wild and domesticated species is maintained, safeguarding their adaptive potential.
- Biodiversity is sustainably used and managed and nature's contributions to people, including ecosystem

functions and services, are valued, maintained and enhanced, with those currently in decline being restored, supporting the achievement of sustainable development, for the benefit of present and future generations by 2050.

- The monetary and non-monetary benefits from the utilization of genetic resources, and digital sequence information on genetic resources, and of traditional knowledge associated with genetic resources, as applicable, are shared fairly and equitably, including, as appropriate with indigenous peoples and local communities, and substantially increased by 2050, while ensuring traditional knowledge associated with genetic resources is appropriately protected, thereby contributing to the conservation and sustainable use of biodiversity, in accordance with internationally agreed access and benefit-sharing instruments
- Adequate means of implementation, including financial resources, capacity-building, technical and scientific cooperation, and access to and transfer of technology to fully implement the Kunming-Montreal global biodiversity framework are secured and equitably accessible to all Parties, especially developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, progressively closing the biodiversity finance gap of \$700 billion per year, and aligning financial flows with the Kunming-Montreal Global Biodiversity Framework and the 2050 Vision for Biodiversity.

The 23 targets are categorized into three areas as:

- Reducing threats to biodiversity
- Meeting people's needs through sustainable use and benefit-sharing.
- Tools and solutions for implementation and mainstreaming.
- "Target 3" is especially referred to as the "30 by 30" target.
- It succeeds the Strategic Plan for Biodiversity 2011–2020 (including the Aichi Biodiversity Targets).
- It specifies that countries must stop subsidizing activities that destroy wilderness, such as mining and industrial fishing.

Implications

The implementation of the GBF will likely lead to the following effects:

- Mandatory nature-related disclosure of data. Companies will be required to disclose their impacts on biodiversity and the natural world.
- Increasing nature-positive financial flows. Banks and financial institutions will have to invest in projects that restore nature.
- Biodiversity targets will form a mandatory part of corporate governance.
- Central banks and their governing institutions will need to address the risks stemming from nature loss as a core part of their mandates.
- The GBF will enable international policy alignment in terms of protecting nature.
- The GBF is not a legally binding treaty, but it is expected to have a major impact in countries around the world as they endeavor to meet their targets, through the development of new plans and regulations.
- For example, protected areas will be expanded and subsidies for ecologically destructive activities such as fishing will have to be redirected.

Chapter-4

ECONOMY

RBI, Bank of England sign MoU for cooperation in CCIL issue

Why in News

Memorandum of understanding on cooperation and exchange of information related to Clearing Corporation of India Ltd (CCIL) has been signed

Important Points

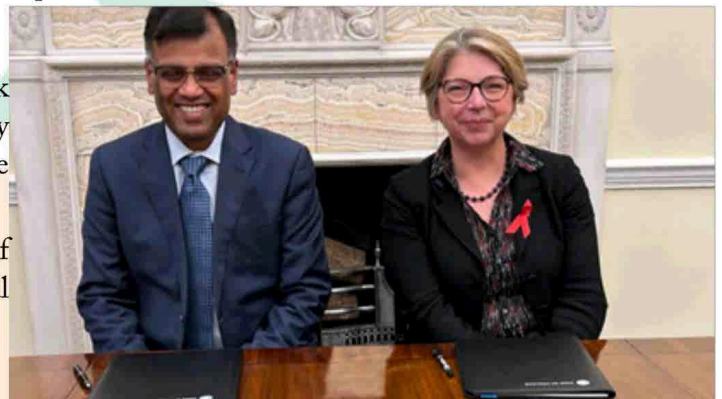
- The Reserve Bank of India (RBI) and the Bank of England (BoE) recently inked a memorandum of understanding (MoU) centered on cooperation and information exchange concerning the Clearing Corporation of India Ltd (CCIL).

CCIL's Role:

- CCIL is a central counterparty (CCP), is crucial for clearing and settlement in transactions related to government securities, foreign exchange, and money markets in India.
- The regulatory oversight for CCIL falls under the purview of the RBI.

Framework for Cooperation

- The signed MoU establishes a framework wherein the BoE relies on the RBI's regulatory and supervisory activities while ensuring the stability of the UK's financial system.
- The agreement underscores the importance of cross-border collaboration for international clearing activities.



CCIL's Recognition Process:

- In January, CCIL applied to the Bank of England for recognition as a third-country Central Counterparty (TC-CCP).
- The MoU facilitates the BoE's assessment of CCIL's application, a prerequisite for UK-based banks to engage in transactions through CCIL.

Implications for UK-Based Lenders:

- The agreement brings relief to UK-based lenders, including Barclays and Standard Chartered, allowing them to continue providing clearing and settlement services to clients in India.

Central Bank Digital Currency (CBDC)

Why in News

According to the Reserve Bank of India (RBI), Central bank digital currency (CBDC) could become a tool for reducing time and cost for cross-border transactions.

Important Points

What are CBDCs?

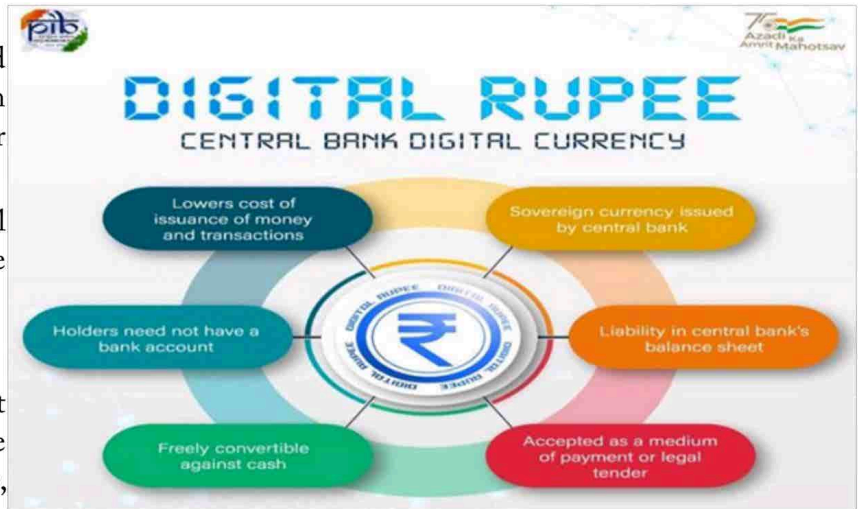
- CBDCs are a form of digital currency issued by a country's central bank.
- They are similar to cryptocurrencies, except that their value is fixed by the central bank and equivalent to the country's fiat currency.
- In India the introduction of CBDC was announced in the Union Budget 2022-23.

Fiat Money

- Fiat money is a government-issued currency that has no backing from a physical commodity like gold or silver.
- It is considered a form of legal tender that can be used to exchange for goods and services.

Need of CBDCs

- Financial Inclusion: People without access to traditional banking can use CBDCs for transactions, payments, and other financial services.
- Efficiency in Payments: CBDCs can streamline and expedite payment processes, reducing transaction costs and settlement times.
- Crisis Response: CBDC can be used as a tool for responding to financial crises or emergencies by providing a means for the central bank to inject liquidity into the economy more quickly.
- Enhancing Cross-Border Payments: CBDC could facilitate faster and more efficient cross-border payments, reducing the reliance on correspondent banks and intermediaries.
- Combat Counterfeit currency: Central banks can implement real-time monitoring of CBDC transactions which allows for immediate detection of any unusual or suspicious activities, helping to prevent counterfeiting.



Concerns of CBDCs

- Digital Illiteracy: The population of India is currently not equipped to deal with digital forms of currency.
- Data Security: The use of CBDCs involves the collection and processing of extensive financial data, raising concerns about data security and the potential for cyber attacks.
- Government Surveillance: CBDCs could provide governments with more extensive tools for monitoring and controlling financial transactions, raising concerns about individual privacy and civil liberties.
- Shield to Crime: If not regulated and monitored properly, it can be used for illicit trading, criminal activities, & organized crimes.
- Operational Risks: The adoption of new technology for CBDCs introduces operational risks, such as system failures, cyber threats, and technical glitches.
- Inclusion Issues: Those without access to digital technology may be excluded from the financial system if CBDCs become the dominant form of currency.
- Legal Uncertainties: The legal status and framework for CBDCs are still evolving, leading to uncertainties regarding issues such as liability, consumer protection, and contract enforcement.

Status of CBDCs

- Global Scenario: The Bahamas, Jamaica, and Nigeria have introduced CBDCs. Other countries like China, USA, UAE, Ghana, Malaysia, Singapore, Thailand have launched it on Pilot basis.
- Indian Scenario: In 2022 the Reserve Bank of India (RBI) launched the first pilot of Digital Rupee- Retail segment (e-R).

RBI to offer cloud storage services

Why in News

The Reserve Bank of India (RBI) is working on establishing a cloud facility for the financial sector in India as it looks to enhance the security, integrity and privacy of financial sector data.

Important Points

Central Bank's New Venture

- The Reserve Bank of India (RBI) is set to enter the domain of cloud services, positioning itself in direct competition with global giants like Amazon, Google, and Microsoft.
- This ambitious move aims to leverage the growing volume of data held by banks and financial entities.
- Cloud services refer to the delivery of computing resources, such as storage, processing power, and applications, over the internet. Users can access and utilize these services remotely, eliminating the need for physical infrastructure and on-site management.



Strategic Rationale

- The RBI's initiative aligns with the government's strategy of establishing 'digital public infrastructure' (DPI).
- Following this approach, the central bank subsidiary will develop the underlying technology, subsequently outsourcing its application development to the private sector.
- This mirrors successful implementations like Aadhaar and United Payments Interface (UPI).

Enhancing Financial Data Security

- The proposed cloud facility for the financial sector seeks to address the escalating volume of data maintained by banks.
- The RBI emphasizes that this initiative will not only enhance data security but also uphold integrity and privacy standards crucial for the financial sector.

Application of Cloud Services in Financial World:

Cloud services find extensive applicability in the finance sector due to several advantages:

- **Cost Efficiency:** Cloud services allow financial institutions to avoid heavy upfront investments in IT infrastructure, reducing capital expenses. They can scale resources up or down based on demand, optimizing costs.
- **Flexibility and Scalability:** Financial organizations often experience fluctuating workloads. Cloud services provide the flexibility to scale resources dynamically, ensuring optimal performance during peak times and efficiency during lulls.
- **Data Security:** Reputable cloud service providers implement robust security measures, often surpassing what individual firms can achieve. This enhances data protection, crucial for sensitive financial information.
- **Collaboration and Remote Access:** Cloud services facilitate seamless collaboration among teams, enabling remote work capabilities. This is especially important in the financial sector, where accessibility and collaboration are paramount.
- **Innovation and Time-to-Market:** Cloud services offer tools and platforms for innovation, allowing financial institutions to quickly deploy new services, products, and applications, reducing time-to-market.
- **Disaster Recovery and Business Continuity:** Cloud providers typically have redundant data centers and robust disaster recovery mechanisms. This ensures that financial organizations can recover data swiftly and maintain operations even in the face of unexpected events.
- **Regulatory Compliance:** Many cloud service providers adhere to stringent security and compliance standards. Leveraging such services can assist financial institutions in meeting regulatory requirements effectively.
- **Analytics and Big Data:** Cloud services provide powerful analytics tools and storage capabilities, enabling financial organizations to process and analyze large volumes of data efficiently. This is crucial for deriving valuable insights from financial data.

- Customer Experience: Cloud-based applications contribute to a smoother customer experience by ensuring accessibility and responsiveness, enhancing customer satisfaction in the digital era.

RBI to bring digital loan aggregators under regulation

Why in News

The Reserve Bank of India (RBI) has decided to bring digital loan aggregators under a comprehensive regulatory framework to increase transparency in their operations.

Important Points

Web Aggregators:

- Web aggregators bring together loan offers from multiple lenders on an electronic platform; borrowers can then pick and choose the best available loan option.

Need for Regulation:

- Digital lenders have been accused of charging high interest rates and using illegal recovery measures.
- There are hundreds of unauthorised digital lenders which are outside the RBI's purview.

Comprehensive Regulatory Framework:

Present Classification:

- The digital lending universe is classified into three groups: Entities regulated by the RBI and permitted to carry out lending business; entities authorised to carry out lending as per other statutory/regulatory provisions but not regulated by RBI; and entities lending outside the purview of any statutory/regulatory provision.
- The central bank's regulatory framework is focused on the digital lending ecosystem of RBI's regulated entities and the lending service providers engaged by them to extend various permissible credit facilitation services.
- Entities falling in the second category, the respective regulator or controlling authority may consider formulating or enacting appropriate rules and regulations on digital lending based on the recommendations of WGD (working group on digital lending).
- For the entities in the third category, the WGD has suggested specific legislative and institutional interventions for consideration by the Central Government to curb the illegitimate lending activity being carried out by such entities.



Prospects of Regulating Digital Lenders by a Central Bank

- Consumer Protection: Regulation ensures that digital lenders adhere to guidelines that protect consumers from predatory lending practices, ensuring fair treatment and transparency.
- Financial Stability: Oversight by a central bank contributes to the overall stability of the financial system by preventing excessive risk-taking and promoting responsible lending practices.
- Risk Mitigation: Regulations help mitigate risks associated with digital lending, reducing the likelihood of financial crises and protecting both borrowers and lenders.
- Data Privacy and Security: Regulatory frameworks can include measures to safeguard borrower data, ensuring privacy and security in the digital lending process.
- Market Integrity: Regulations contribute to maintaining the integrity of the digital lending market, preventing fraudulent activities and ensuring fair competition among lenders.

Cons of Regulating Digital Lenders by a Central Bank

- **Innovation Impact:** Overregulation may stifle innovation in the digital lending sector, hindering the development of new and efficient financial technologies.
- **Compliance Costs:** Stringent regulations can impose high compliance costs on digital lenders, especially smaller players, potentially limiting their ability to operate or compete.
- **Market Entry Barriers:** Excessive regulations might create barriers to entry for new digital lenders, reducing competition and limiting choices for consumers.
- **Adaptability Challenges:** Traditional regulatory frameworks may struggle to keep pace with rapidly evolving digital lending technologies, leading to challenges in effective oversight.
- **One-Size-Fits-All Approach:** Regulatory frameworks may not cater to the diverse business models and risk profiles within the digital lending ecosystem, resulting in a one-size-fits-all approach that may not be optimal.

Monetary Policy Committee

Why in News

The Reserve Bank of India's recent decision to maintain the repo rate at 6.5%, marks the fifth consecutive time the Monetary Policy Committee has chosen to keep it unchanged.

Important Points

- The period from 2020 to 2023 has been characterized by substantial instability. This volatility could encompass economic, social, or geopolitical factors that have impacted India's economic landscape. Despite the volatility, India's Gross Domestic Product (GDP) growth is projected at a robust 7% for the current year. This growth indicates the economy's resilience amid challenges.
- The RBI has made significant progress in curbing inflation. Core inflation, which excludes volatile food and energy prices, has been steadily declining. This suggests that the monetary policy measures implemented by the RBI are effective. However, caution is advised due to uncertainty surrounding food prices.



MPC Alertness

- The Monetary Policy Committee (MPC) remains vigilant. They are ready to take necessary actions to ensure that inflation is maintained at the target rate of 4%. This might involve adjustments in monetary policy tools as per the evolving economic situation.
- The RBI actively manages liquidity levels in the financial system in line with the objectives of monetary policy. Adequate liquidity is crucial for economic stability and growth.
- The RBI is proactively monitoring and addressing signs of stress in various sectors and financial institutions.
- The Current Account Deficit (CAD) is anticipated to be manageable and easily financed. This indicates a reasonable balance in the country's trade and financial transactions with the rest of the world.
- India's foreign exchange reserves stand at a substantial US \$640 billion. These reserves act as a buffer against global economic shocks and provide stability to the country's external position.
- The RBI maintains a cautious stance, emphasizing the need for an actively disinflationary policy while expressing optimism about the resilience of India's economy. The trajectory of inflation and growth in the coming months will play a crucial role in shaping future monetary policy decisions.

Monetary Policy Committee:

- The Monetary Policy Committee (MPC) is a committee constituted by the Central Government and led by the Governor of RBI.
- Monetary Policy Committee was formed with the mission of fixing the benchmark policy interest rate (repo rate) to restrain inflation within the particular target level.
- The RBI governor controls the monetary policy decisions with the support and advice of the internal team and the technical advisory committee.

Use of Monetary Policy

- Monetary Policy is the process of regulating the supply of money in an economy by the monetary authority of the country.
- The Monetary Policy, generally, adjusts the inflation rates or interest rates to sustain the price stability and to maintain the predictable exchange rates with foreign currencies.
- The Reserve Bank of India is the central banking authority of India, which controls the monetary policy in conjunction with the central government's developmental agenda.
- The Reserve Bank of India is authorized to make monetary policy under the Reserve Bank of India Act, 1934.
- Monetary policy is either contractionary or expansionary and is often seen separate from the fiscal policy which deals with taxation, spending by government, and borrowing.
- When the total money supply is increased rapidly than normal, it is called an expansionary policy, while a slower increase or even a decrease of the same refers to a contractionary policy.

Objectives of Monetary Policy

The major four objectives of the Monetary Policy are mentioned below:

- To stabilize the business cycle.
- To provide reasonable price stability.
- To provide faster economic growth.
- Exchange Rate Stability.

Structure of the Monetary Policy Committee

- Monetary Policy Committee (MPC) was constituted as per Section 45ZB under the RBI Act of 1934 by the Central Government. The first meeting of MPC was conducted on 3rd October 2016 in Mumbai.
- The committee determines the policy interest rate required to achieve the inflation target.
- The MPC is required to meet at least four times in a year.
- The quorum for the meeting of the MPC is four members.
- Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote.
- Once every six months, the Reserve Bank is required to publish a document called the Monetary Policy Report to explain the sources of inflation and the forecasts of inflation for 6-18 months ahead.

Goldilocks effect

Why in News

The RBI has revised the current fiscal year's growth forecast to 7%, citing recovery in domestic demand, global economic improvement, and vaccination progress. However, inflationary risks, driven by supply-side factors, pose a threat to the Goldilocks Effect, with the RBI warning that inflation may persist above its target range of 2-6%.

Important Points

- The Reserve Bank of India (RBI) has released its latest monetary policy report, which forecasts a robust economic recovery for the country in the current fiscal year. The central bank expects the gross domestic product (GDP) to grow by 7 per cent in 2021-22, up from the contraction of 7.3 per cent in the previous year.

- The RBI also warns of the risks posed by inflation, which has been persistently above the target range of 2-6 per cent for several months. The report cites supply-side disruptions, rising commodity prices, higher fuel taxes and demand pressures as the main factors behind the inflationary pressures. The RBI expects inflation to remain elevated in the near term, before moderating gradually towards the second half of the year.
- The RBI's outlook reflects the delicate balance between supporting growth and containing inflation, which is often referred to as the Goldilocks Effect. The Goldilocks Effect is a situation where the economy is neither too hot nor too cold, but just right for optimal growth and low inflation.



Goldilocks effect

- The Goldilocks effect refers to a situation in which a balance or middle ground is considered ideal or optimal.
- The Goldilocks effect is often used to describe situations where something is neither too much nor too little, but just right for a particular purpose or desired outcome. This concept is applied in various fields such as science, economics, technology, and environmental studies.
- Examples of the Goldilocks effect in different contexts:
- Astronomy: In the search for habitable exoplanets, scientists look for planets located in the "habitable zone" around a star, neither too close nor too far. This zone allows for the right conditions to support liquid water, a key ingredient for life as we know it.
- Economics: In monetary policy, central banks often aim for an inflation rate that is neither too high nor too low. This moderate level of inflation is considered optimal for economic growth and stability.
- Technology: The Goldilocks principle is applied in designing user interfaces and experiences. For example, when adjusting the size of buttons or text, designers aim for a size that is not too big or too small but just right for ease of use.
- Biology: Enzymes and other biological processes often function optimally within a specific range of conditions, such as temperature and pH. Deviating too much from this optimal range can lead to reduced efficiency or complete dysfunction.
- The concept underscores the idea that there is often an ideal middle ground between extremes, and finding that balance can lead to optimal outcomes in various fields and disciplines. It highlights the importance of moderation and balance in achieving the best results in different situations.

Crypto-Asset Intermediaries (CAIs)

Why in News

The Financial Stability Board (FSB) has expressed concerns about crypto-asset intermediaries (CAIs), particularly multi-function crypto-asset intermediaries (MCIs), in its latest report.

Important Points

- Crypto-asset intermediaries (CAIs) are businesses that facilitate the exchange, trading, and storage of crypto-assets. They play a crucial role in the crypto-asset ecosystem, providing services to both retail and institutional investors.

Key Highlights of the Report released by the Financial Stability Board (FSB)

Cross-Border Cooperation and Information Sharing

- The FSB emphasizes the need for enhanced cross-border cooperation and information sharing among local authorities to regulate and address gaps in the operations of multi-function crypto-asset intermediaries (MCIs) on a global scale.
- The report highlights potential risks associated with MCIs, especially those that combine different activities within the platform. It specifically references the collapse of FTX in November 2022 as an example of such risks.



Traditional Financial Landscape v/s MCI

- MCIs are defined as individual firms or groups of affiliated firms that offer a range of crypto-based services, products, and functions, primarily focused on operating trading platforms. Examples include Binance, Bitfinex, and Coinbase.
- Unlike the traditional financial landscape where different entities provide various functions, MCIs combine multiple functions within the same entity. The report notes that this can lead to conflicts of interest and may impact market integrity, investor protection, and financial stability.
- MCIs generate revenue primarily through transaction fees from trading-related activities, particularly involving self-issued crypto assets. These platforms aim to become "one-stop shops" for various crypto-based services, such as prepaid debit cards and lending.

Risk Management and Transparency

- The report observes that most MCIs are not transparent about their corporate structure, often being privately held. Limited publicly disclosed information is available, with press coverage, court filings, and regulatory actions being the primary sources.
- The lack of transparency is suggested to be intentional, possibly to limit understanding of vulnerabilities, economic models, and activities, thereby evading regulatory oversight.
- The report highlights poor risk management practices among MCIs, which may make it easier for insiders to engage in misconduct. Insufficient transparency could hide risks related to governance and profitability until negative shocks occur.

Spillover Effects

- The report notes that, based on available evidence, the threat to global financial stability and the real economy from the failure of an MCI is presently considered "limited."
- Recent experiences with the failure or closure of "crypto-asset-friendly" banks reveal concentrated deposit exposures to firms relying on crypto assets. An example cited is Silvergate Bank, which had to wind down operations after the FTX collapse and a subsequent loss of confidence in crypto assets.

GST Rate Rationalisation

Why in News

The ministerial group on GST rate rationalisation, dormant since the BJP's electoral setback in Karnataka in May, has been reinstated. The move suggests a renewed focus on simplifying the GST structure and revising its multiple rates.

Important Points

Background

- In India, the idea of adopting GST was first suggested by the AtalBihari Vajpayee Government in 2000.
- The state finance ministers formed an Empowered Committee (EC) to create a structure for GST, based on their experience in designing State VAT.

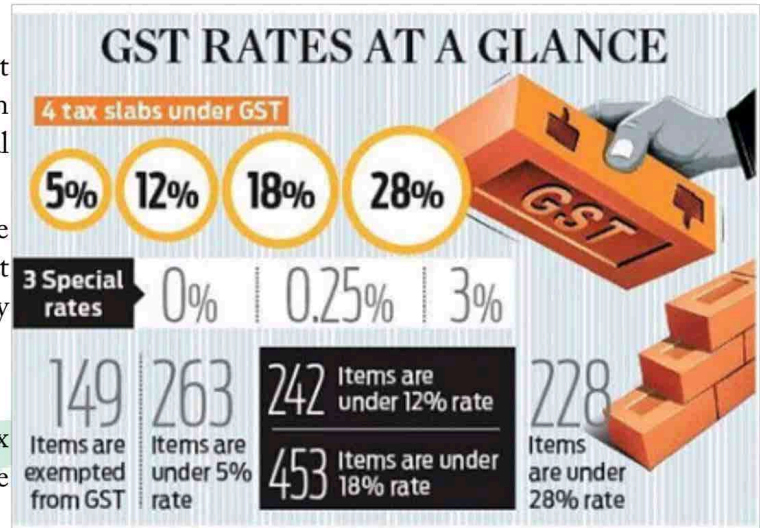
- In 2002, the Vajpayee government formed a task force under Vijay Kelkarto recommend tax reforms.
- In 2005, the Kelkar committee recommended rolling out GST as suggested by the 12th Finance Commission.

What is GST?

- GST was introduced through the 101st Constitution Amendment Act, 2016.
- It is one of the biggest indirect tax reforms in the country.
- It was introduced with the slogan of 'One Nation One Tax'.

Objectives:

- Mitigate the double taxation, cascading effect of taxes, multiplicity of taxes, classification issues etc., and has led to a common national market.
- The GST that a merchant pays to procure goods or services (i.e. on inputs) can be set off later against the tax applicable on supply of final goods and services.
- The set off tax is called input tax credit.
- The GST avoids the cascading effect or tax on tax which increases the tax burden on the end consumer.



Levied on:

- The GST has subsumed indirect taxes like excise duty, Value Added Tax (VAT), service tax, luxury tax etc.
- It is essentially a consumption tax and is levied at the final consumption point.

Tax structure under GST:

- Central GST to cover Excise duty, Service tax etc.
- State GST to cover VAT, luxury tax etc.
- Integrated GST (IGST) to cover inter-state trade.
- IGST per se is not a tax but a system to coordinate state and union taxes.
- It has a 4-tier tax structure for all goods and services under the slabs- 5%, 12%, 18% and 28%.

What is the Significance of GST?

- **Create a Unified Common Market:** Help to create a unified common national market for India. It will also give a boost to foreign investment and "Make in India" campaign.
- **Streamline Taxation:** It will harmonize the laws, procedures and rates of tax between Centre and States and across States.
- **Increase Tax Compliance:** Provide improved environment for compliance as all returns are to be filed online, input credits to be verified online, encouraging more paper trail of transactions at each level of supply chain;

Reconstituted Ministerial Group

- Former Karnataka CM Basavaraj Bommai led the original group, which had stalled post-election defeat.
- Karnataka's revenue minister Krishna Byre Gowda is included, with UP Finance Minister Suresh Kumar Khanna as the new convenor.

Complex GST Structure

- Despite four main slabs (5%, 12%, 18%, 28%), numerous rates exist, complicating compliance.
- Urgent need for simplification expressed by tax experts and industry leaders.

Revenue Stability and Policy Shift

- GST revenues at a robust 1.6 lakh crore.

- Resumption of rate rationalisation indicates a policy shift.
- Multiple rates lead to compliance issues, urging policymakers to simplify for industry, revenue department, and investor certainty.

Terms of Reference and Future Considerations:

- GoM to review tax slab rates, recommend changes for required resources.
- Consideration of GST Compensation Cess's future after March 2026.

Industry Calls for Reform:

- Industry leaders advocate a three-slab GST structure for business ease.
- GST Compensation Cess under review, as suggested by CII president R Dinesh.

Role of GST Council

- The GST Council is a joint forum of the Centre and the states.
- It was set up by the President as per Article 279A (1) of the amended Constitution

Members:

- The members of the Council include the Union Finance Minister (chairperson), the Union Minister of State (Finance) from the Centre.
- Each state can nominate a minister in-charge of finance or taxation or any other minister as a member.

Functions:

- The Council, is meant to “make recommendations to the Union and the states on important issues related to GST, like the goods and services that may be subjected or exempted from GST, model GST Laws”.
- It also decides on various rate slabs of GST.
- Discourage Tax evasion: Uniform SGST and IGST rates will reduce the incentive for evasion by eliminating rate arbitrage between neighbouring States and that between intra and inter-state sales.
- Reduce Corruption: Greater use of IT will reduce human interface between the taxpayer and the tax administration, which will go a long way in reducing corruption.
- Boost Secondary Sector: It will boost export and manufacturing activity, generate more employment and thus increase GDP (Gross Domestic Product) with gainful employment leading to substantive economic growth.

What are the issues associated with GST?

- Multiple Tax Rates: Unlike many other economies which have implemented this tax regime, India has multiple tax rates. This hampers the progress of a single indirect tax rate for all the goods and services in the country.
- New Cesses crop up: While GST scrapped multiplicity of taxes and cesses, a new levy in the form of compensation cess was introduced for luxury and sin goods. This was later expanded to include automobiles.
- Trust Deficit: The Union government's authority to levy and appropriate cess revenues for it without sharing them with the states has lent credence to the wisdom of guaranteed compensation for states.
- It turned out to be prescient as GST failed to live up to its economic promises and states' revenues were protected through this guarantee.
- Economy outside GST purview: Nearly half the economy remains outside GST. E.g. petroleum, real estate, electricity duties remain outside GST purview.
- The complexity of tax filings: The GST legislation requires the filing of the GST annual returns by specified categories of taxpayers along with a GST audit. But, filing annual returns is a complex and confusing one for the taxpayers. Apart from that, the annual filing also includes many details that are waived in the monthly and quarterly filings.
- Higher Tax Rates: Though rates are rationalised, there is still 50 % of items are under the 18 % bracket.
- Apart from that, there are certain essential items to tackle the pandemic that was also taxed higher.
- For example, the 12% tax on oxygen concentrators, 5% on vaccines, and on relief supplies from abroad.

NCRPS

Why in News

The Securities and Exchange Board of India (SEBI) proposes reducing the face value of non-convertible debentures (NCDs) and non-convertible redeemable preference shares (NCRPS) from Rs 1 lakh to Rs. 10,000.

Important Points

- The Securities and Exchange Board of India (SEBI) has proposed significant changes to the issuance of non-convertible debentures (NCDs) and non-convertible redeemable preference shares (NCRPS) to enhance the participation of non-institutional investors in the corporate bond market and to manage associated risks.

Key points from the SEBI proposal

Reduced Face Value

- SEBI has suggested permitting companies to issue NCDs and NCRPS with a face value of Rs. 10,000, as opposed to the existing system of Rs. 1 lakh face value.
- The rationale behind this is to make the securities more accessible to non-institutional investors by reducing the entry barrier imposed by the high face value.

Risk Mitigation Measures

- To safeguard the interests of non-institutional investors, SEBI proposes that these NCDs and NCRPS should be "plain vanilla" instruments with a simple structure. They should not have complex features such as credit enhancements or structured obligations.
- The issuer must appoint a merchant banker to conduct due diligence for the issuance and disclosures should be made in the private placement memorandum.



Online Bond Platforms (OBPs)

- The proposal aligns with the introduction of a regulatory framework for online bond platforms. SEBI notes that a substantial portion of investors on these platforms comprises non-institutional investors.
- The reduction in face value is seen as a measure to further increase participation, especially among non-institutional investors.

Previous Face Value Reduction

- SEBI had already reduced the face value of debt securities and NCRPS from Rs. 10 lakh to Rs. 1 lakh in October 2022. This move was intended to encourage non-institutional investors to participate in the corporate bonds market.

Investor Participation

- The paper highlights that during the period from July to September 2023, non-institutional investors subscribed to 4% of the total amount raised, compared to the general average of less than 1%.
- SEBI attributes this increase in participation to the earlier reduction in face value and the mainstreaming of online bond platforms.

QR Code for Listed NCDs

- Issuers with listed outstanding NCDs are proposed to include a QR code in the offer document.
- Scanning the QR code would open a web link to the audited financials for the last three financial years and stub period financials on the stock exchange's website.

Non-Convertible Redeemable Preference Shares (NCRPS)

- NCRPS are a type of financial instrument that combines features of both equity and debt.
- Unlike convertible preference shares, NCRPS cannot be exchanged for equity shares (common stock) in the issuing company.
- They have a fixed redemption date, meaning the issuer must buy them back at a predetermined price. This offers a guaranteed return on investment, similar to a bond.
- The holders have priority over common shareholders in terms of dividend payments. This means they receive dividends before common shareholders receive any. However, remember that dividends are not guaranteed and depend on the company's profitability.
- NCRPS can be beneficial for investors seeking fixed income and some downside protection while offering companies a way to raise capital without diluting ownership.

Logistics Ease Across Different State (LEADS) 2023

Why in News

The Ministry of Commerce & Industry has released the 5th edition of “Logistics Ease Across Different States (LEADS) 2023” report.

Important Points

Logistics Ease Across Different States (LEADS) Index

- Logistics is the management of the flow of resources such as cargo, documents, information and funds through a range of activities and services between points of origin and destination.
- LEADS was conceived on the lines of the Logistics Performance Index of World Bank in 2018.
- The index is a composite indicator to assess international trade logistics across states and Union territories. It is based on a stakeholders’ survey conducted by Deloitte for the ministry of commerce and industry.

Performance highlights from LEADS 2023

Coastal Group

- Achievers: Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu
- Fast Movers: Kerala, Maharashtra
- Aspirers: Goa, Odisha, West Bengal

Landlocked Group

- Achievers: Haryana, Punjab, Telangana, Uttar Pradesh
- Fast Movers: Madhya Pradesh, Rajasthan, Uttarakhand
- Aspirers: Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand

North-East Group

- Achievers: Assam, Sikkim, Tripura
- Fast Movers: Arunachal Pradesh, Nagaland
- Aspirers: Manipur, Meghalaya, Mizoram

Union Territories

- Achievers: Chandigarh, Delhi
- Fast Movers: Andaman & Nicobar, Lakshadweep, Puducherry
- Aspirers: Daman & Diu/ Dadra & Nagar Haveli, Jammu & Kashmir, Ladakh



Issues with Logistics sector in India

- **Lack of Technology Adoption:** Slow adoption of advanced technologies, such as Internet of Things (IoT), RFID (Radio-Frequency Identification), and automation. The lack of technological integration can result in manual processes, errors, and increased costs.
- **Infrastructure Bottlenecks:** Inadequate infrastructure, especially in terms of roads, ports, and last-mile connectivity, along with poor road conditions and congestion can lead to delays and increased costs.
- **Higher logistics costs:** India's expenditure on logistics costs amounts to approximately 13-14% of its Gross Domestic Product (GDP), which is considerably higher than the global average of around 8%.
- **Inefficient Warehousing:** Inefficiencies in warehousing, such as outdated infrastructure, lack of automation, and inadequate storage capacity, contribute to higher logistics costs.
- **Limited Modal Choice:** Overreliance on road transport and limited use of alternative modes such as rail and coastal shipping contribute to higher logistics costs.

Steps taken by Government of India

- **Grant of Infrastructure status to Logistics sector:** The government has granted infrastructure status to the logistics sector, enabling the industry to access cheaper finances.
- **PM Gati Shakti's initiative:** It is a National Master Plan for multimodal connectivity, to reduce logistics costs and boost the economy by 2024-25.
- **National Logistics Policy (NLP):** In 2022, NLP 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. The policy aims to reduce logistics costs from the current 14-18% of GDP to 8% by 2030, aligning with global best practices.
- **Dedicated Freight Corridors (DFCs):** The government is working on the construction of dedicated freight corridors such as the Eastern Dedicated Freight Corridor and the Western Dedicated Freight Corridor.
- **Bharatmala Pariyojana:** This is a flagship road and highways development program aimed at improving connectivity across the country. The project includes the development of economic corridors, inter-corridors, and feeder routes.
- **Sagarmala Project:** This initiative focuses on promoting port-led development to reduce logistics costs for domestic and export-import trade. It includes the development of ports, coastal shipping, and inland waterways.

Needs to be done

- **Digitalisation:** It enables the digitisation of documents and transactions, reducing paperwork and improving the overall efficiency of logistics operations.
- **Data analytics:** It can provide valuable insights into supply chain performance, allowing for better decision-making and optimisation of routes, inventory management, and resource allocation.
- **Technology upgradation:** Technologies such as barcode scanning, RFID, and real-time tracking can significantly enhance tracking and tracing capabilities, improving operational efficiency and reducing costs.
- **Warehouse efficiency:** Improved inventory accuracy, reduced warehouse stock, and optimized on-shelf stock availability, can enhance overall warehouse efficiency.
- **At a time when India is increasingly pitching itself as a possible alternative to China,** greater competitiveness in logistics could help the country fend off the challenge from competitors such as Vietnam and Indonesia and improve overall manufacturing competence.

Inflation in India

Why in News

Recently, RBI in an article discussed the Supply and Demand side factors which primarily influenced inflation in India.

Important Points

- Inflation is a multifaceted economic phenomenon which affects consumer purchasing power, investment decisions, interest rates, and the dynamics of international trade.
- While moderate inflation is considered a normal feature of a healthy economy, excessive or unpredictable inflation can pose significant challenges.

Inflation:

- Inflation is a rise in prices, which can be translated as the decline of purchasing power over time.
- The rate at which purchasing power drops can be reflected in the average price increase of a basket of selected goods and services over some period of time.
- The rise in prices, which is often expressed as a percentage, means that a unit of currency effectively buys less than it did in prior periods.
- Inflation can be Cost-Push Inflation or Demand-Pull Inflation.



Cost-Push Inflation

- Cost-push inflation means prices have been “pushed up” by increases in the costs of any of the four factors of production—labor, capital, land, or entrepreneurship—when companies are already running at full production capacity.
- Aggregate supply is the total volume of goods and services produced by an economy at a given price level. When the aggregate supply of goods and services decreases because of an increase in production costs, it results in cost-push inflation.
- Example: Categories such as vegetables, oils and fats, milk, eggs, pulses, and sugar frequently experience supply-side constraints.

Demand-Pull Inflation

- Demand-pull inflation occurs when there is an increase in aggregate demand, categorized by the four sections of the macroeconomy: households, businesses, governments, and foreign buyers.
- Increase in government spending and depreciation of local exchange rates can increase aggregate demand, thus the prices are raised.
- Depreciation of local exchange rate, raises the price of imports and reduces the price of exports. As a result, the purchasing of imports decreases while the buying of exports by foreigners increases. This raises the overall level of aggregate demand.
- Items like non-alcoholic beverages, personal care products, and health-related goods are mainly affected by demand-side factors.

Effects of a rise in the inflation rate

- Economic growth: Inflation could lead to economic growth as it can be a sign of rising demand.
- Increased unemployment: Inflation could further lead to an increase in costs due to workers' demand to increase wages to meet inflation. This might increase unemployment as companies will have to lay off workers to keep up with the costs.
- Reduced Purchasing Power: Consumers can buy fewer goods and services with the same amount of money, leading to a decrease in their standard of living.
- Impact on Savings: Inflation erodes the real value of money over time. People holding onto cash or low-interest savings accounts may see the purchasing power of their savings decrease.
- Weak Currency: Inflation weakens the currency of the country. The falling value of currency makes imports expensive and burdens the forex of the country.

Methods to control inflation:

- **Monetary Policy Tools:** Adjusting interest rates and Open market operations are used to control inflation.
- **Interest Rates:** Central banks use interest rates as a tool to control inflation. By raising interest rates, they aim to reduce borrowing and spending, which can help cool down the economy and prevent excessive inflation.
- **Open Market Operations:** Central banks can also influence inflation by buying or selling government securities in the open market. Selling securities can reduce the money supply, while buying them can increase it.
- **Fiscal Policy:** It includes reduced government spending and adjusting tax policies.
- **Higher taxes** can reduce disposable income and spending, helping to cool down the economy.
- **Supply-Side Policies:** It includes productivity improvements and labour market reforms to control inflation.
- **Exchange Rate Policies:** A stable exchange rate can help control inflation by influencing the prices of imported goods. A stronger currency makes imports cheaper, helping to curb inflation.
- **Inflation Targeting:** Central banks set a specific inflation target and adjust monetary policy to achieve and maintain that target. This provides transparency and helps anchor inflation expectations.
- **Macroprudential Policies:** These policies focus on addressing risks in the financial system that may contribute to inflationary pressures. Measures may include setting limits on credit growth or implementing regulations to prevent excessive risk-taking by financial institutions.

RBI tightens norms for lenders investing in AIFS

Why in news

The Reserve Bank of India (RBI) has issued new directives to banks and non-banking financial companies (NBFCs) regarding their investments in Alternative Investment Funds (AIFs).

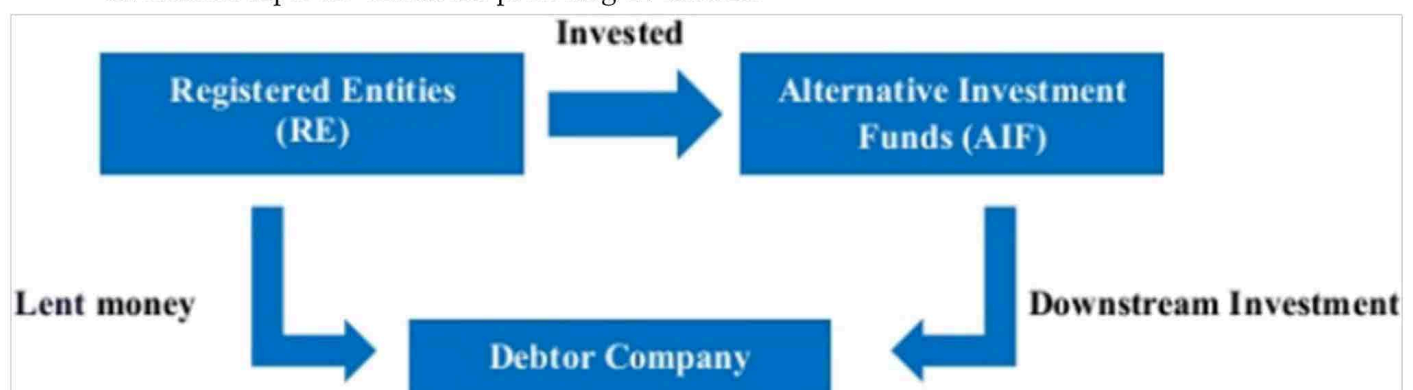
Important Points

The RBI's Objective:

- The directive aims to tighten oversight and mitigate risks associated with certain investment structures, potentially preventing evergreening or other financial vulnerabilities. Financial institutions must ensure compliance by reviewing and restructuring existing investments within the given timelines.

Restrictions on Investments in AIFs with Downstream Investments

- Banks and NBFCs are prohibited from making investments in AIFs that have downstream investments, either directly or indirectly, in a debtor company of the bank. The term "debtor company" refers to any company to which the regulated entities (banks and NBFCs) currently have or previously had a loan or investment exposure within the preceding 12 months.



Addressing Evergreening Concerns

- The RBI aims to address concerns related to "evergreening" through this route. Evergreening typically involves extending new credit to borrowers to cover their interest payments on existing debts.

Regulatory Concerns on Certain Transactions

- The RBI has noted certain transactions where regulated entities substitute direct loan exposure to borrowers with indirect exposure through investments in units of AIFs. The notice suggests that such transactions may raise regulatory concerns.

Liquidation of Investments

- If a bank or NBFC is already invested in an AIF that makes a downstream investment in a debtor company, the bank must liquidate its investment in the AIF within 30 days from the date of such downstream investment or within 30 days from the date of the circular, whichever is applicable.

Provision and Capital Deduction

- If banks or NBFCs are unable to liquidate their investments within the prescribed time limit, they are required to make 100% provision on such investments. Additionally, investments by banks in the subordinated units of any AIF with a 'priority distribution model' shall be subject to full deduction from the bank or NBFC's capital funds.

Alternative Investment Funds (AIFs)

- Alternative Investment Funds (AIFs) in India are a category of pooled investment funds regulated by the Securities and Exchange Board of India (SEBI).
- AIFs are distinct from traditional mutual funds and are designed for sophisticated investors seeking higher returns and willing to take on higher risks.

Types of AIFs

- Category I AIFs: These include funds that invest in startups, early-stage ventures, social ventures, SMEs, infrastructure, or other sectors as specified by SEBI. These funds get certain tax benefits.
- Category II AIFs: This category includes funds that don't fall under Category I or III and are not leveraged or employ complex trading strategies. Private equity, debt funds, real estate funds, etc., fall under this category.
- Category III AIFs: Hedge funds and funds using complex trading strategies for short-term returns come under this category. They can use leverage and derivatives extensively.

Features

- SEBI regulates AIFs to ensure investor protection and market stability.
- AIFs cater to sophisticated investors like high net-worth individuals, institutional investors, and certain qualified individuals or entities.
- AIFs typically involve higher risks compared to traditional investment avenues like mutual funds.
- They can be structured as trusts, companies, or limited liability partnerships (LLPs).
- Minimum investment amounts for AIFs are generally higher than mutual funds, making them accessible primarily to affluent investors.
- AIFs might have lock-in periods, restricting withdrawal or redemption for a specified duration.

Benefits

- AIFs offer exposure to diverse asset classes and investment strategies.
- Due to their focus on alternative assets, AIFs aim for higher returns compared to traditional investment options.
- They are managed by experienced fund managers and professionals specializing in alternative investments.

Challenges

- AIFs involve higher risks due to their investment in alternative and less liquid assets.
- Many AIFs have lock-in periods, limiting investors' ability to withdraw funds.
- Frequent regulatory changes can impact the functioning and structure of AIFs.

Chapter- 5

SCIENCE AND TECHNOLOGY

Genome Sequencing

Why in News

The UK has announced the completion of half a million whole-genome sequences, almost 0.7% of its population.

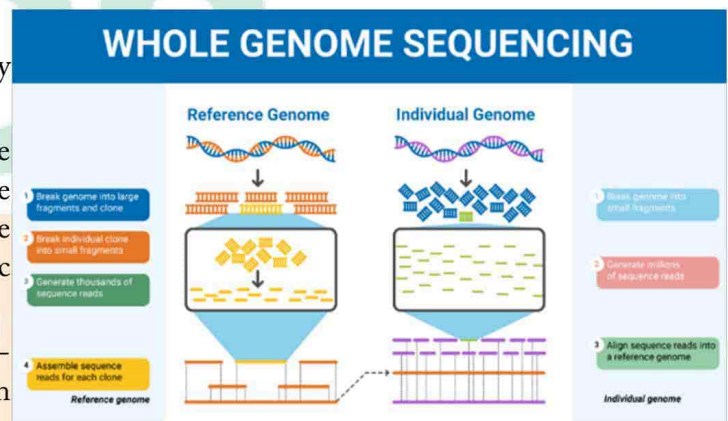
Important Points

Population genomics

- It is the large-scale application of genomic technologies to study populations of individuals.
- For example, population genomics research can be used to study human ancestry, migrations and health.
- Genomics has undergone a revolutionary shift with the advent of technologies that have significantly improved throughput and reduced the cost of whole-genome sequencing, giving rise to population-scale genome-sequencing programmes .

Purpose and Benefits

- Population-scale genome efforts have significantly diverse objectives.
- Many programmes take advantage of a unique population composition to understand disease prevalence and biomarkers for diseases, and use that to inform the discovery of novel therapeutic targets.
- Other efforts seek to build scalable public-health initiatives where genomic data is used in decision-making and medical care.
- The long-term impact of population-scale genomics extends beyond individual health, shaping comprehension of human evolution, migration patterns, and adaptation to diverse environments.



Progress and Various Developments

- The deCODE initiative: An early effort to use large-scale population genetic studies was initiated in Iceland by deCODE genomics in 1996, with most of the Icelandic population enrolling for genetic studies in around a decade's time.
- The deCODE effort considerably improved understanding of the genetics of diseases and the utility of such data in risk assessment.
- It also laid the groundwork to integrate medical records and people's genealogies, resulting in new drugs and therapeutics.
- 100K Genome' project: the UK's '100K Genome' project aimed to bring genomics into routine healthcare.
- Diversity Human Genome Initiative: A recent initiative by the pharmaceutical companies has even planned to sequence more than five lakh individuals of African ancestry through the Diversity Human Genome Initiative.
- All US programme: It will collect genetic information of a million people with funding from the National Institutes of Health.
- The European Union recently launched the '1+ Million Genomes' initiative.
- A 'Three Million African Genomes' is also currently in the works, as is the Emirati genome programme's scheme to sequence more than a million samples (more than 400,000 have already been completed).

Scenario in Asia

- The GenomeAsia project, led by multiple partners across the continent, plans to sequence a lakh whole genomes from diverse populations.
- IndiGen: A pilot programme for population genomes in India named IndiGen provided an early view of more than a thousand genomes of individuals from cosmopolitan areas in India.
- It also yielded some clues to the landscape of many treatable genetic diseases and variants of clinical significance, including the efficacy and toxicity of drugs and the prevalence of rare disorders.
- GenomeIndia initiative: A larger programme to sequence 10,000 whole genomes from diverse population groups is in the works under the GenomeIndia initiative.

Issues and Challenges

- Just as population-scale programmes open new doors, they also confront new challenges, especially with regard to the ethics of and the access to these genomes, and the discoveries that build on them.
- There are also significant concerns regarding the equitable representation and access to the fruits of discoveries (e.g. over-representation of certain ethnic groups in population-scale data sets).

What should be done?

- Countries like the U.S. have proactively created regulatory frameworks to prevent the misuse of genetic data, such as to prevent insurance and employment discrimination, using the terms of the Genetic Information Non-discrimination Act.
- Together with a growing body of evidence as to the data's usefulness, it is entirely possible that a significantly large number of humans around the world will have their whole genome sequenced in their lifetimes in the coming decade as well as a similarly significantly large number of people being able to access information derived from sequencing data for routine diagnostic workups and to newborns for diseases.

X-Ray Polarimeter Satellite

Why in News

The launch of India's first X-Ray Polarimeter Satellite (XPoSat) by the Indian Space Research Organisation (ISRO) marks a significant milestone in the country's space exploration endeavors, particularly in the realm of X-ray astronomy.

Important Points

Overview

- Investigating X-Ray Polarization: XPoSat aims to explore and measure the polarization of intense X-ray sources in the energy band of 8-30 keV.
- Comprehensive Studies: It will conduct simultaneous observations of temporal, spectral, and polarization features of bright X-ray sources.
- Observation Period: The spacecraft will observe X-ray sources during its transit through the Earth's shadow (eclipse period).

Payloads

- POLIX (Polarimeter Instrument in X-rays):
 - Function: Measuring polarimetry parameters (degree and angle of polarization) in the medium X-ray energy range of 8-30 keV from astronomical sources.
 - Development: Designed by the Raman Research Institute (RRI), Bengaluru, with support from various ISRO centers.
- XSPECT (X-ray Spectroscopy and Timing):
 - Function: Providing spectroscopic information within the energy range of 0.8-15 keV.
 - Development: Developed by the U.R. Rao Satellite Centre (URSC), ISRO.

Orbit and Duration

- **Orbit:** The XPoSat spacecraft is designated to operate from a Low Earth Orbit (non-sun synchronous orbit of approximately 650 km altitude and low inclination of around six degrees).
- **Mission Life:** Expected to be approximately five years.



Significance of XPoSat Mission

- **Advancing X-ray Astronomy:** XPoSat's focus on X-ray polarization adds a novel dimension to X-ray astronomy studies in India, supplementing existing imaging, time-domain studies, and spectroscopy.
- **Scientific Anticipation:** The mission generates excitement within the scientific community due to its potential to provide valuable insights into the nature and behavior of cosmic X-ray sources.

About X-ray polarimetry

- It is a branch of astronomy that focuses on measuring and analyzing the polarization of X-ray photons emitted by celestial objects.
- It aims to understand the physical properties of high-energy astrophysical sources, such as black holes, neutron stars, pulsars, and active galactic nuclei (AGN), by studying the polarization characteristics of X-ray emissions.

Basics of Polarimetry:

- **Polarization:** Polarization refers to the orientation of oscillation of electromagnetic waves. In the context of X-rays, polarization describes the direction in which the electric field associated with the X-ray wave oscillates.
- **Polarimetry Instruments:** X-ray polarimeters are specialized instruments designed to detect and measure the polarization state of X-ray photons from celestial sources. They typically use devices such as gratings, analyzers, or other technologies capable of discerning the polarization of X-rays.

Significance:

- **Revealing Astrophysical Phenomena:** X-ray polarimetry helps unravel the mysteries of various astrophysical objects and phenomena by providing unique information not obtainable through traditional imaging or spectroscopy alone.
- **Probing Magnetic Fields:** Polarized X-rays carry information about the magnetic fields present in celestial objects. Studying the polarization of X-ray emissions helps in understanding the geometry and strength of these magnetic fields.
- **Investigating Emission Mechanisms:** Analyzing the polarization of X-rays aids in identifying the emission mechanisms at work in high-energy astrophysical sources, shedding light on the nature of particle acceleration and radiation processes.

Techniques and Challenges:

- **Instrumentation Development:** Creating sensitive and precise X-ray polarimeters is a significant challenge due to the faint and complex nature of X-ray signals. Advanced technological innovations are required to develop instruments capable of detecting and measuring X-ray polarization accurately.
- **Data Analysis:** Analyzing polarized X-ray data necessitates sophisticated algorithms and computational techniques to interpret the measurements and derive meaningful information about celestial objects.
- **Observational Challenges:** Obtaining high-quality polarimetric data in the space environment involves dealing with background noise, instrumental effects, and calibration issues.

Applications and Impact:

- **Black Hole and Neutron Star Studies:** Polarimetry aids in understanding the extreme conditions near black holes and neutron stars, providing insights into their accretion processes, magnetic fields, and relativistic effects.

- Active Galactic Nuclei (AGN): Investigating the polarization of X-ray emissions from AGN helps unravel the mechanisms behind their intense radiation and jet formations.
- Cosmological Insights: Polarimetry of cosmic X-ray background radiation can offer insights into the universe's early stages and evolution, providing valuable cosmological information.

Gajraj Software

Why in News

In a bid to prevent train-elephant collisions, Railway Ministry announced the development of 'Gajraj'.

Important Points

- 'Gajraj', is an indigenous software utilising optical fibre cable (OFC) to alert the locomotive pilot of any suspicious activity on or near rail tracks.

Functionality

- "Using AI and OFC, the software triggers alerts upon detecting any questionable movement within 200 metres of the tracks.
- Vibrations caused by elephant movement alongside the rails create variations in the optical signals carried by the OFC, signalling a potential threat.
- The software identifies these signal disruptions as signs of movement, specifically detecting the presence and distinguishing between elephants, other animals, and humans."
- The software has the capability to discern the type of movement and the number of animals present at a given site.
- Alerts generated by the system reach the locomotive pilot, control room personnel, and the section station master upon detecting any movement.



Urgency of the Initiative

- Railway Ministry data revealed 45 elephant fatalities due to train accidents in the past three years.
- Over the past decade, about 200 elephants lost their lives due to collisions with trains, posing a significant threat to both wildlife and railway operations.
- Recently, a tragic collision involving a goods train claimed the lives of three elephants, including a mother and her two calves, in Alipurduar district, West Bengal.

Implementation

- The AI-based 'Gajraj' software, successfully tested in Assam, is set to be deployed across 700 km of elephant corridors in multiple states within the next eight months, at an estimated cost of Rs 181 crore.

Significance

- Gajraj Suraksha, which is a kind of Intrusion Detection System or IDS, is based on an AI algorithm and claims to detect 99.5 per cent of potential collisions, providing a much-needed solution to this longstanding issue.
- One of the key advantages of this technology is its cost-effectiveness. On a vast network spanning 700 kilometres of railway tracks, the implementation cost is estimated at Rs 181 crores, making it a viable and scalable solution for Indian Railways.
- The Indian Railways plans to deploy this solution across all elephant corridors in the country in the next 8 months.
- The introduction of this indigenous technology marks a significant step forward in the efforts to protect wildlife and enhance the safety of railway operations.
- As India continues to grapple with the delicate balance between modern infrastructure and environmental conservation, innovations like the Gajraj Suraksha, showcase the potential for technology to mitigate the impact on the country's rich biodiversity.

Dark Pattern

Why in News

Recently, the government has banned 13 "dark pattern" sites on e-commerce platforms under guidelines by CCPA.

Important Points

Guidelines:

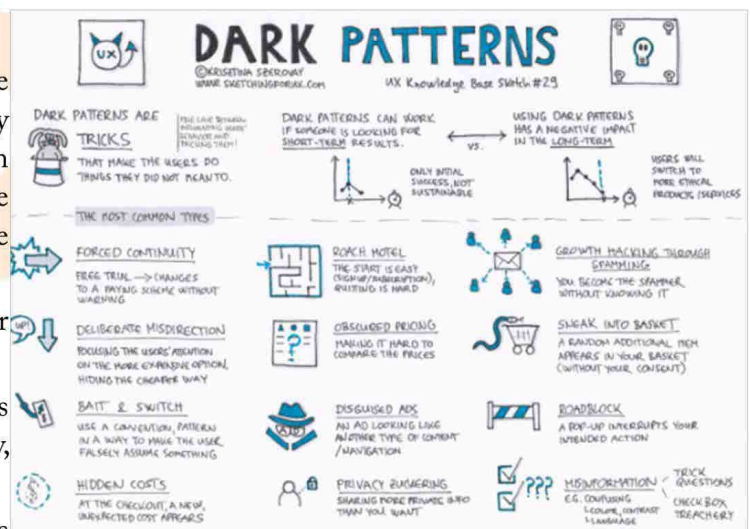
- These patterns deceive or manipulate
- They include false urgency, basket sneaking, and forced action.
- The guidelines ensure clarity for buyers, sellers, marketplace and regulators, defining what are unacceptable as unfair trading practices.
- The guidelines are applicable to all platforms offering goods and services in India, and even advertisers and sellers.
- Resorting to dark patterns will amount to misleading advertisement or unfair trade practice or violation of consumer rights.

What do the guidelines say?

- The penalty will be imposed as per the provisions of the Consumer Protection Act.
- The ministry has defined 13 deceptive practices that will be treated as 'dark patterns' and these include;
- Creating false urgency by creating an artificial sense of scarcity,
- basket sneaking, where the inclusion of additional items such that the total amount payable by the user is more than the amount payable for the product as well as subscription trap.
- Forced Action: Manipulating users into sharing more personal information than intended.

What are dark patterns and its types?

- Dark patterns, also known as deceptive patterns, refer to strategies employed by websites and apps to make users perform actions they did not intend to or discourage behaviors that are not advantageous for the companies.
- The term was coined by Harry Brignull, a user experience (UX) designer, in 2010.
- These patterns often exploit cognitive biases and employ tactics such as false urgency, forced actions, hidden costs etc.
- They can range from overtly noticeable tricks to more subtle methods that users may not immediately recognize.



Types of Dark Patterns:

The Consumer Affairs Ministry has identified nine types of dark patterns being used by e-commerce companies:

- **False Urgency:** Creates a sense of urgency or scarcity to pressure consumers into making a purchase or taking an action;
- **Basket Sneaking:** Dark patterns are used to add additional products or services to the shopping cart without the user's consent;
- **Confirm Shaming:** Uses guilt to make consumers adhere; criticises or attacks consumers for not conforming to a particular belief or viewpoint;
- **Forced Action:** Pushes consumers into taking an action they may not want to take, such as signing up for a service in order to access content;

- Nagging: Persistent criticism, complaints, and requests for action;
- Subscription traps: Easy to sign up for a service but difficult to quit or cancel; option is hidden or requires multiple steps;
- Bait & Switch: Advertising a certain product/ service but delivering another, often of lower quality;
- Hidden costs: Hiding additional costs until consumers are already committed to making a purchase;
- Disguised ads: Designed to look like content, such as news articles or user-generated content.

FjordPhantom

Why in News

The emergence of FjordPhantom represents a significant threat in the landscape of Android malware.

Important Points

Overview of FjordPhantom Android Malware

- Distribution Channels: FjordPhantom uses sophisticated social engineering tactics, posing as a legitimate banking app. It spreads through email, SMS, and messaging apps, targeting users in Southeast Asia, particularly Indonesia, Thailand, and Vietnam.
- Unique Technique - Virtualization: FjordPhantom utilizes virtualization, an innovative and previously unseen method among malware. It creates a virtual environment within devices, enabling the malware to operate stealthily and evade detection.
- Infiltration of Banking Apps: This malware is specifically designed to infiltrate banking applications, injecting malicious code to bypass security measures and carry out information theft and manipulation of user interactions within the app.

Strategies Employed by FjordPhantom

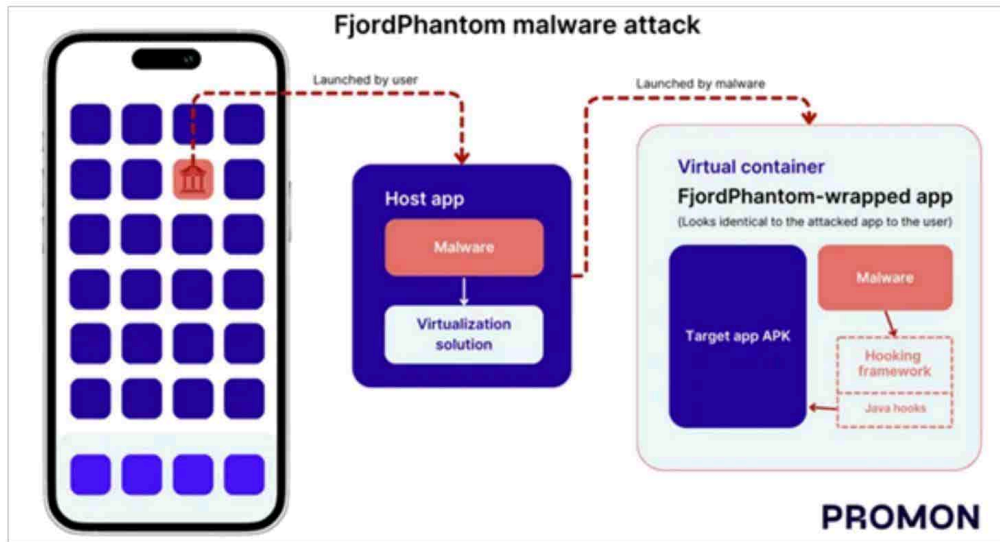
- Access Service Bypass: Steals information from the app's screen without detection.
- Root Detection Evasion: Hides Google Play Services presence to avoid security checks.
- Dialog Box Suppression: Conceals warnings that could alert users to malicious activities.
- Extensive Data Logging: Monitors user activity and app behavior for exploitation.

Measures to Protect Against FjordPhantom

- Download from Trusted Sources: Only download apps from reputable sources, avoiding untrusted websites and marketplaces.
- Keep Security Software Updated: Ensure your mobile security software is up-to-date with the latest version.
- Exercise Caution: Be careful with suspicious messages and links, refraining from clicking on unknown attachments.
- Prompt Reporting: If there's suspicion of infection, report it immediately to Promon and your financial institution for swift action.

About Malware

- Malware, short for malicious software, refers to any software specifically designed to disrupt, damage, or gain unauthorized access to a computer system or network.
- It's a broad term encompassing various types of harmful software that cybercriminals use to compromise devices, steal data, or cause harm to users or organizations.



Types of Malware:

- **Viruses:** Malicious code that attaches itself to legitimate programs and spreads when these programs are executed.
- **Worms:** Self-replicating malware that spreads across networks and devices, often exploiting security vulnerabilities.
- **Trojans:** Disguised as legitimate software, Trojans deceive users into executing them, allowing attackers to gain unauthorized access or steal sensitive information.
- **Ransomware:** Encrypts files or locks users out of their systems, demanding payment (usually in cryptocurrency) to restore access.
- **Spyware:** Secretly collects user information or monitors activities without consent, often for advertising or data theft.
- **Adware:** Displays unwanted advertisements and often comes bundled with legitimate software.
- **Botnets:** Networks of infected computers controlled remotely to perform coordinated tasks, like launching DDoS attacks or sending spam.
- **Rootkits:** Conceals malicious software within a system, allowing attackers to gain privileged access and control.

Malware Distribution Methods:

- **Phishing:** Sending deceptive emails or messages to trick users into downloading malware or revealing sensitive information.
- **Drive-by Downloads:** Infecting a device by visiting a compromised or malicious website.
- **Malvertising:** Distributing malware through online advertisements on legitimate websites.
- **Software Vulnerabilities:** Exploiting security weaknesses in software or operating systems to install malware.

Impact of Malware:

- **Data Theft:** Malware often aims to steal personal, financial, or confidential information.
- **Financial Loss:** Ransomware attacks can lead to significant financial losses for individuals and organizations.
- **Disruption of Services:** Malware can render systems inoperable, causing downtime for businesses or individuals.
- **Privacy Breaches:** Spyware and other types of malware invade user privacy by collecting sensitive information without consent.
- **Identity Theft:** Stolen personal data can be used for identity theft, leading to various fraudulent activities.

Protection and Prevention:

- **Antivirus/Anti-malware Software:** Regularly updated security software helps detect and remove malware.

- Firewalls: Act as a barrier between a trusted internal network and untrusted external networks, preventing unauthorized access.
- Regular Updates and Patching: Keep software, operating systems, and applications updated to fix vulnerabilities.
- User Awareness: Educating users about safe browsing habits, avoiding suspicious links or downloads, and recognizing phishing attempts.
- Backup Systems: Regularly back up data to prevent data loss in case of a malware attack.

GNoME

Why in News

Google DeepMind researchers have achieved a groundbreaking milestone in materials science by leveraging artificial intelligence to predict the structures of over 2 million new materials.

Important Points

- This development marks a significant leap forward in accelerating materials discovery, with vast implications for various sectors such as renewable energy, battery research, semiconductor design, and computing efficiency.

Importance and Impact

- The breakthrough significantly increases the catalogue of known 'stable materials' by tenfold.
- Stable materials, particularly inorganic crystals, are pivotal in modern technological applications like computer chips and batteries due to their reliability and durability.
- Out of the 2.2 million materials identified, Google DeepMind has published a list of 381,000 predicted stable crystal structures.
- These predictions serve as a crucial starting point for further exploration and development in material science and technology.

Significance in Technological Development

The discovery of stable materials holds immense importance in advancing various technological sectors. For instance:

- Solid electrolytes, which could potentially replace liquid electrolytes in Li-ion batteries, require stability, specific conduction properties, and non-toxicity.
- Ongoing research in developing new compounds akin to graphene could revolutionize electronics and superconductors, demanding stable materials.
- Google DeepMind's AI-led breakthrough streamlines the materials discovery process by employing filters to identify materials that meet specific criteria, potentially delving into atomic-level predictions.



Working Mechanism of GNoME (Graph Networks for Materials Exploration)

- GNoME, the AI tool developed by Google DeepMind, functions as a state-of-the-art graph neural network model. Its operational methodology includes:
- Training using "active learning," which enables the model to predict materials with greater precision over time by incorporating new data.
- Utilization of two pipelines: a structural pipeline, simulating known crystals' structures, and a compositional pipeline, taking a randomized approach based on chemical formulas.
- Evaluation of outputs using established computational methods like Density Functional Theory (DFT) to assess materials' stability.

Advantages of AI in Materials Discovery

- Traditional materials discovery methods involve extensive trial and error, making the process resource-intensive and time-consuming.
- AI-driven prediction significantly accelerates the discovery of stable materials, providing a more efficient and less labor-intensive means of identifying suitable materials for various technological applications.

Google Gemini

Why in News

Google Gemini is a novel multimodal general AI model introduced by Google, positioned as a versatile and powerful tool.

Important Points

- This AI model has been developed from scratch, marking it as a collaborative effort by diverse teams within Google.
- The aim is to create an AI that feels less like a conventional software and more like a useful and intuitive assistant.

Key Features and Capabilities of Gemini

- **Multimodal Nature:** Gemini distinguishes itself by its multimodal capability, enabling it to process and comprehend various data formats, including text, code, audio, images, and videos.
- **Enhanced Power:** Google claims that Gemini Ultra, the largest model, surpasses existing benchmarks in language model research on 30 out of 32 academic benchmarks. It excels in massive multitask language understanding (MMLU) across 57 subjects, demonstrating superior problem-solving abilities.
- **Code Generation:** Gemini is designed to understand, explain, and generate high-quality code across popular programming languages like Python, Java, C++, and Go.



Gemini Sizes and Functionality

- **Ultra, Pro, and Nano Models:** Google introduces Gemini in three distinct sizes catering to different complexities and applications.
- **Ultra:** Targeted for highly intricate tasks, currently available to select customers, developers, and safety experts for initial testing and feedback.
- **Pro:** Meant for scaling across a broad range of tasks, available on Bard for regular users and accessible to developers and enterprise customers through the Gemini API.
- **Nano:** Focused on on-device operations, already integrated into Pixel 8 Pro devices and soon available for Android developers through AICore on Android 14.

Availability and Rollout Strategy

- While Gemini Ultra is undergoing trust and safety checks and limited to select users, it's expected to be rolled out to developers and enterprise clients early next year.
- Gemini Pro is accessible on Bard for everyday users and via Google AI Studio or Google Cloud Vertex AI for developers and enterprise customers.
- Gemini Nano is already operational on Pixel 8 Pro devices and will soon be accessible to Android developers.

Integration and Impact on Google Services

- Google plans to integrate Gemini across various services, including Search, Ads, Chrome, and Duet AI, aiming for enhanced user experiences.
- Initial experiments with Gemini in Google Search indicate faster and improved Search Generative Experience (SGE) with reduced latency and enhanced quality.

Addressing Concerns

- Acknowledgment of potential issues related to factuality and hallucinations in the AI model.
- Google's efforts to improve accuracy in responses and implementing additional safety protocols to address concerns like bias, toxicity, cyber-offense, persuasion, and autonomy.

Comparison with ChatGPT 4

- Initial observations suggest that Gemini holds an edge over ChatGPT 4 in terms of flexibility, video processing capabilities, and offline device functionality.
- Gemini's current accessibility for free contrasts with ChatGPT 4, which is available to paid users.

Introduction to AI Models

- Artificial Intelligence (AI) models are algorithms or systems designed to simulate human-like cognitive processes, enabling machines to perform tasks that typically require human intelligence.
- These models utilize large datasets, sophisticated algorithms, and computational power to learn, reason, and make decisions.

Significance of AI Models:

AI models have revolutionized numerous industries by enabling automation, prediction, and data analysis at unprecedented scales. Their significance lies in:

- Enhancing efficiency and accuracy in tasks like data analysis, pattern recognition, language processing, and decision-making.
- Powering innovations in healthcare, finance, manufacturing, autonomous vehicles, and various other sectors.
- Enabling personalized user experiences, recommendation systems, and natural language understanding.

Types of AI Models:

Machine Learning (ML):

- Subfield of AI that enables systems to learn and improve from experience without explicit programming.
- Types include supervised learning, unsupervised learning, reinforcement learning, and semi-supervised learning.

Deep Learning:

- Subset of ML that uses neural networks with multiple layers to extract intricate patterns from data.
- Widely used in image and speech recognition, natural language processing, and autonomous systems.

Natural Language Processing (NLP):

- AI model focused on understanding and processing human language.
- Applications include language translation, sentiment analysis, chatbots, and text summarization.

Computer Vision:

- AI models enabling computers to interpret and understand visual information.
- Used in image recognition, object detection, facial recognition, and medical image analysis.

Applications of AI Models:

- Healthcare: Diagnosis assistance, drug discovery, personalized medicine, and predictive analytics.
- Finance: Fraud detection, algorithmic trading, risk assessment, and customer service.
- Manufacturing: Process optimization, predictive maintenance, quality control, and supply chain management.
- Autonomous Systems: Self-driving cars, drones, robotics, and smart home devices.

Challenges and Ethical Considerations:

Bias and Fairness:

- AI models can inherit biases from training data, leading to unfair outcomes.
- Ensuring fairness and mitigating biases remains a challenge.

Privacy and Security:

- Concerns over data privacy, unauthorized access, and potential misuse of AI-powered systems.

Transparency and Accountability:

- Understanding the decision-making process of AI models and holding them accountable for their actions.

Future Prospects and Developments

- Explainable AI (XAI):** Focuses on making AI models more interpretable and transparent to enhance trust and accountability.
- Federated Learning:** A privacy-preserving approach where AI models are trained across decentralized devices without centralizing data.
- Quantum Computing and AI:** Potential synergy between quantum computing and AI for solving complex problems.

GPAI Summit 2023

Why in News

The Global Partnership on Artificial Intelligence (GPAI) - an alliance of 29 member countries, has unanimously adopted the New Delhi declaration.

Important Points

- The declaration underscored the need to mitigate risks arising from the development and deployment of AI systems, and promote equitable access to critical resources for AI innovation.

What is the Global Partnership on Artificial Intelligence (GPAI)?

- It is an international initiative established to guide the responsible development and use of artificial intelligence (AI) in a manner that respects human rights and the shared democratic values of its members.
- The partnership was first proposed by Canada and France at the 2018 44th G7 summit, and officially launched in (June) 2020.
- Started with 15 member countries, today GPAI has grown into an alliance of 29 member countries.
- It includes countries like India, the United States, the UK, France, Japan, Canada, etc.
- China, a major tech superpower, is not part of the multilateral grouping.
- GPAI is hosted by Organisation for Economic Co-operation and Development (OECD).



Objectives of the GPAI:

- It is a multi-stakeholder initiative which aims to bridge the gap between theory and practice on AI by supporting cutting-edge research and applied activities on AI-related priorities.
- It brings together engaged minds and expertise from science, industry, civil society, governments, international organisations and academia to foster international cooperation.

What is the New Delhi Declaration?

- It promises to position GPAI at the front and centre of shaping the future of AI in terms of both innovation and creating collaborative AI between partner nations to create applications in healthcare, agriculture, etc.
- All GPAI members had also agreed that the group would lead global conversations on shaping the future of AI governance as well as keeping it safe and trusted.

- GPAI will be an inclusive movement that will increasingly focus on including countries from the Global South and making available the benefits of AI, its platforms and solutions to all of the people.
- Like-minded countries will have to move faster to ensure that by the time all GPAI countries meet next year in Korea, there are definitive granular regulations that all nations have around AI.
- GPAI will now have to be more granular and get down to defining the contours of the rules that will define how users interact with AI.
- The declaration acknowledged the need to harness new opportunities and mitigate the risks arising from the development and deployment of AI.
- **This includes -**
 - o Concerns around misinformation and disinformation,
 - o Unemployment,
 - o Lack of transparency and fairness,
 - o Protection of intellectual property and personal data, and
 - o Threats to human rights and democratic values.
- The declaration also acknowledged the need for equitable access to resources, which must be considered, accounted for, or addressed in order for societies to benefit from and build competitive AI solutions.

Significance of the New Delhi Declaration:

- This was the first time the group's members were meeting after generative AI platforms like ChatGPT and Google Bard burst into the scene, propelling conversations around AI into the mainstream.
- GPAI members also agreed to support AI innovation in the agriculture sector as a new "thematic priority".
- India was pushing for the inclusion of agriculture as a priority sector in AI innovation.
- This is essential for implementing resilient agricultural practices that increase productivity and production.
- The development of and access to risk-proportionate trustworthy AI applications is essential for ensuring sustainable food production systems and strengthening capacity for mitigation and adaptation to climate change.

Significance of the New Delhi Declaration for India:

- This is a significant win for India, which has batted for a collaborative approach towards building AI systems as it looks to push its model of digital public infrastructure (DPI) across the world.
- Access to computing capabilities from member nations will also boost New Delhi's plans of building a sovereign AI system, crucial for countering dominance from a handful of foreign companies in the space.

India's Evolving Space Economy

Why in News

Space is becoming an important component of the India's economy with Space Startups attracting private investment amounting to more than Rs.1, 000 crore.

Important Points

India's Space Sector

- India's space sector is globally recognized for cost-effective satellite building, and it advocates for peaceful and civilian use of outer space.
- ISRO has an exceptional success rate and is the 6th largest space agency globally.
- India has over 400 private space companies and ranks fifth globally in terms of the number of space companies.

Recent developments include;

- Setting up the Defence Space Agency (DSA).
- Expanding satellite manufacturing capabilities, which are expected to reach USD 3.2 billion by 2025.
- ISRO launched SAMVAD, a student outreach program to encourage space research among young minds.

Challenges:

However, the space sector faces major challenges as well including:

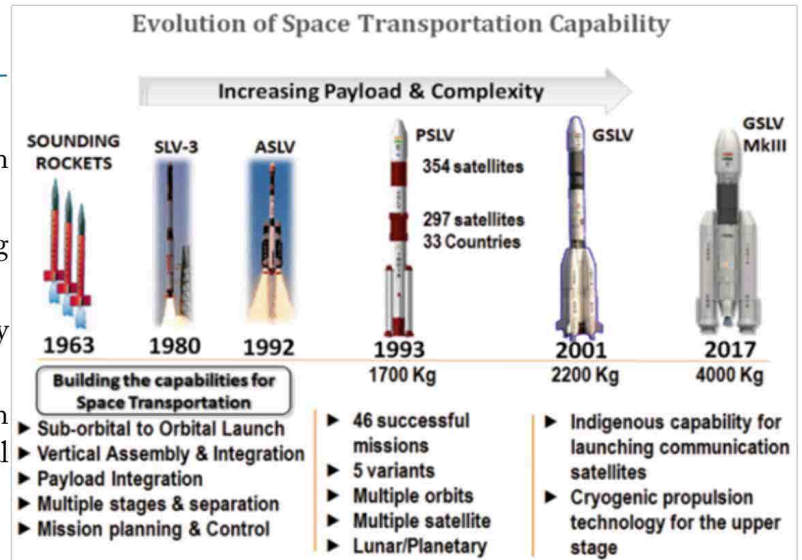
- lack of regulations on commercialisation which could lead to monopolisation
- rising space debris from increasing expeditions
- China's rapid growth in the space industry and potential weaponization
- Increasing global trust deficit creating an environment of suspicion and potential conflict

About Space sector and Economy:

- Private Investment Soars: Robust private interest is evident as space startups attract over Rs. 1,000 crore in FY.
- Exponential Growth Projection: India's current space economy at 8 billion dollars may reach 100 billion dollar by 2040, aligning with global projections.
- Strategic Reforms and Startups: PM Modi's reforms lead to a surge in Space startups from 1 to 190 in four years, transforming India's space landscape.
- Cost-Effective Space Mission: India's cost-effective approach with Chandrayaan-3 at Rs. 600 crore versus Russia's Rs. 16,000 crore underscores leveraging intellectual resources.
- Global Recognition and Achievements: India's space missions gain global acclaim, showcasing advancements and affirming competence in space technology.
- Inclusive Approach: PM Modi's inclusive space policies unlock the potential of India's youth, validating Dr. Vikram Sarabhai's vision.
- Applications in Diverse Sectors: Space technology integrates into sectors like agriculture, disaster management, and healthcare, demonstrating pervasive impact.
- Women Leading Space Projects: Women take the forefront in leading significant space projects, marking a paradigm shift in space exploration.
- Upcoming Projects: Gaganyaan's unmanned test with 'Vyommitra' anticipates human spaceflight capability, highlighting India's trajectory towards manned space missions. The Deep Sea Mission adds a unique dimension.
- Strategic Shift in Space Leadership: Recognition of India's evolving space leadership and economic contribution positions it strategically in the global space arena.

Indian Space Policy, 2023:

- The Indian Space Policy 2023 is a comprehensive set of guidelines that outlines the roles and responsibilities of different entities in the Indian space sector.
- Research & Development: The policy aims to keep India at the cutting edge of space research and development. ISRO, the Indian Space Research Organisation, has been tasked with focusing on applied research, technology development, and human spaceflight capabilities.
- Efficient collaboration between public and private sector: The policy outlines a strong emphasis on sharing technologies, products, processes, and best practices with New Generation Entities (NGEs) and Government companies.
- Privatising: The policy permits non-government entities to undertake end-to-end activities in the space sector through the establishment and operation of space objects, ground based assets and related services such as communication, remote sensing and navigation.
- Democratizing Data for All: Data with a Ground Sample Distance (GSD) of 5 meters and higher will be made freely accessible on a timely basis.



- This initiative promises to empower researchers, industries, and the general public with valuable information for various applications. In contrast, data with a GSD of less than 5 meters will be available for free to Government entities and at fair pricing for NGEs.
- Focus on human spaceflight capabilities: ISRO will work on developing the necessary technologies, infrastructure, and ecosystem for sustained human presence in space. This ambitious goal promises to propel India into the ranks of spacefaring nations. Additionally, the policy emphasizes the development of a collaborative framework for scientific research in multidisciplinary domains related to human space activities.
- Celestial Prospecting and In-situ Resource Utilization: ISRO is set to undertake studies and missions focused on in-situ resource utilization, celestial prospecting, and other aspects of extra-terrestrial habitability. This forward-looking approach will help India pave the way for future space exploration and utilization of resources beyond Earth.
- Applicability: This policy is applicable to any space activity to or from Indian Territory or within the jurisdiction of India, including the area to the limit of its exclusive economic zone.

Norovirus

Why in News

Norovirus cases have been on the rise in the UK in recent weeks, with numbers being 60% higher than the same time last year.

Important Points

About Norovirus

- Norovirus is a highly contagious virus notorious for causing gastroenteritis, resulting in symptoms like vomiting, diarrhoea, abdominal cramps, nausea, muscle aches, headache, fever, and sometimes chills.
- It is commonly referred to as the "stomach flu" or "winter vomiting bug," but it is important to note that norovirus is distinct from influenza and specifically causes gastrointestinal issues.

Nature of Norovirus

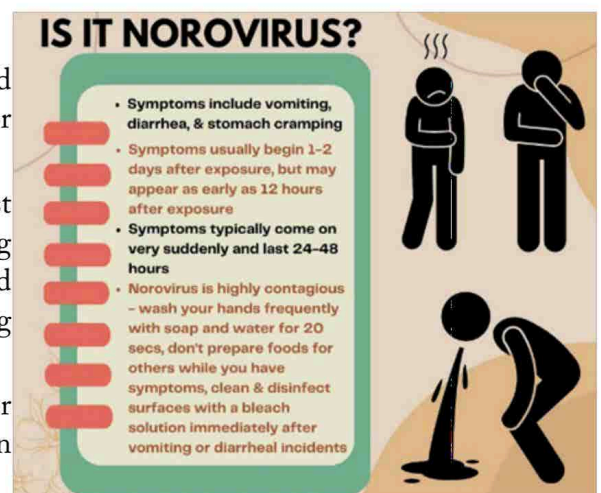
- Norovirus exists in numerous strains, and individuals can experience multiple infections in their lifetime due to the diversity of these strains.
- It's highly contagious and easily transmitted from person to person, primarily through:
- Contaminated Surfaces: The virus can persist on surfaces like doorknobs, countertops, or objects touched by an infected person. Contact with these surfaces and subsequent hand-to-mouth actions can lead to infection.
- Contaminated Food and Water: Norovirus can contaminate food and water during preparation or handling by an infected individual, leading to widespread outbreaks if consumed by others.

Symptoms of Norovirus Infection

- The typical onset of symptoms occurs within one to two days after exposure to the virus.
- Gastrointestinal Distress: Vomiting and diarrhoea are hallmark symptoms. These can be severe, leading to dehydration due to the loss of fluids.
- Nausea, Abdominal Pain, and Fever: Patients often experience nausea, cramping abdominal pain, accompanied by a fever, headaches, and body aches.

Transmission Routes

- Person-to-Person Contact: Close contact with infected individuals, especially through exposure to their vomit or stool, is a primary transmission route.
- Contaminated Surfaces and Objects: The virus can persist on surfaces and objects for an extended period, making transmission possible through touching contaminated surfaces and then touching the face or consuming contaminated food without proper hand hygiene.
- Contaminated Food and Water: Consumption of food or water contaminated during preparation or handling by an infected person can result in infection.



- Aerosolized Vomit or Stool: Even the air around an area contaminated with vomit or stool can potentially spread the virus.

Treatment

- There is no specific antiviral treatment for norovirus.
- There is no currently available vaccine for norovirus.
- Resting, managing symptoms, and ensuring adequate hydration to prevent dehydration are the primary focus.
- Individuals are advised to avoid certain foods and activities until they recover. Severe cases might necessitate hospitalization for intravenous fluids to prevent dehydration.

Prevention

- Frequent handwashing with soap and water is paramount in preventing infection.
- Thoroughly cleaning and disinfecting surfaces, especially in areas where infected individuals have been present.
- Ensuring proper cooking of food, particularly shellfish, and careful washing of fruits and vegetables before consumption.
- Limiting contact with sick individuals helps minimize transmission.

Complications

- Norovirus infections are typically short-lived and resolve within a few days. However, for vulnerable populations such as young children, the elderly, and immunocompromised individuals, there's a higher risk of dehydration and complications, making the illness potentially more severe.

Ketamine

Why in News

In recent years, ketamine has become a subject of widespread debate for its increased use in treating depression and serious mental health issues. While some experts and patients lauded it as lifesaving, others criticized it as addictive.

Important Points

- Matthew Perry died from the acute effects of the anesthetic ketamine, according to the results of an autopsy on the 54-year-old “Friends” actor released.
- The report says coronary artery disease and buprenorphine, which is used to treat opioid use disorder, also contributed. The amount of ketamine detected “would be enough to make him lose consciousness and lose his posture and his ability to keep himself above the water.”

About Ketamine

- Ketamine is a dissociative anaesthetic hallucinogen that has been used as an anaesthetic for animals since the 1960s and was later approved for human use by the US Food and Drug Administration.
- It is known for creating a feeling of detachment from pain and the environment. In recent years, ketamine has gained attention for its potential therapeutic effects in treating depression and other serious mental health issues, especially in cases where traditional therapies have not been effective.



Methods of Consumption

- Mental illness patients usually take ketamine through an IV, nasal spray or tablet once or twice a week for six to eight weeks (some might need it for longer).
- When it comes to recreational purposes, it is consumed by snorting a white crystalline powder.
- Ketamine can also be injected or smoked

Effects of Ketamine

- Some patients undergoing ketamine treatment report positive experiences, describing it as a "reset button for the brain." During treatment sessions, individuals may have pleasant visualizations and a sense of detachment, leading to a reduction in the perceived weight of daily problems.
- Ketamine affects brain receptors that traditional antidepressants do not target, leading to a psychedelic-like experience. This aspect is considered by many to be integral to the drug's therapeutic effect.

Safety Considerations

- When used for medicinal purposes and in the right doses, some doctors argue that ketamine can be safe and effective in treating mental illnesses.
- There are concerns about potential addiction and health risks, especially when taken chronically in high doses. Chronic use may lead to severe bladder damage, and there are indications that abuse could result in cognitive impairment.
- There is limited research on prolonged ketamine treatment and its safety. Additionally, there is a lack of literature on addiction and abuse among medical users.
- The safety and efficacy of ketamine, especially in non-medical settings, remain topics of ongoing research and debate. When used under medical supervision, ketamine can be a valuable tool for anaesthesia and potentially for certain mental health conditions, but its recreational use poses significant health risks.

Hydrogen Cyanide

Why in News

Scientists have found hydrogen cyanide — a key molecule in the creation of life — in the oceans of Saturn's icy moon Enceladus, according to a new study based on data from the National Aeronautics and Space Administration's (NASA) Cassini spacecraft.

Important Points

- **Study Details:** The research utilized data obtained from the Cassini spacecraft, which investigated plumes of gas, water, and ice ejected from Enceladus' surface.
- **Detection of Hydrogen Cyanide:** Scientists identified hydrogen cyanide along with other compounds like methanol, ethane, and oxygen in the plumes of water vapor, indicating a diverse and dynamic ocean chemistry beneath Enceladus' icy surface.
- **Hydrogen cyanide (HCN)** is a highly toxic, colorless, and extremely flammable gas with a faint, bitter almond-like odor in its pure form.
- It is a deadly chemical compound that poses serious health hazards to humans and animals.

Significance for Life Formation

- **Chemical Energy:** This discovery suggests that the oceans beneath Enceladus' frozen crust possess more chemical energy than previously assumed, potentially supporting the formation and survival of complex organic compounds essential for life.
- **Supporting Habitability:** Enceladus has long been known for harboring organic molecules and compounds crucial for life. This finding strengthens the notion of the moon's potential habitability.

Implications for Astrobiology

- **Building Blocks of Life:** Hydrogen cyanide is recognized as a fundamental molecule in the creation of biological building blocks, and its presence on Enceladus indicates the possibility of processes conducive to life.
- **Complex Biomolecule Formation:** The discovery offers insights into the potential pathways for the formation of complex biomolecules crucial for sustaining life.



About Enceladus

Physical Characteristics:

- **Size and Composition:** Enceladus is a relatively small moon with a diameter of about 310 miles (500 kilometers). It is composed largely of water ice, making it one of the brightest objects in the solar system.
- **Surface Features:** Its surface is marked by deep fissures, cracks, and a lack of impact craters in some regions, indicating geological activity and ongoing changes.

Subsurface Oceans:

- **Discovery:** Enceladus gained attention for its subsurface oceans, confirmed by observations showing water vapor and icy plumes erupting from its south polar region.
- **Hydrothermal Activity:** These plumes suggest the existence of hydrothermal vents beneath the icy surface, potentially providing a suitable environment for life to thrive.

Potential for Life:

- **Organic Compounds:** Data from NASA's Cassini spacecraft revealed the presence of complex organic compounds and molecules, including hydrogen cyanide, in Enceladus' plumes, enhancing the moon's potential habitability.
- **Habitable Zone:** The existence of liquid water and potential energy sources within Enceladus' subsurface ocean positions it within the habitable zone, raising the possibility of supporting microbial life.

Exploration Missions:

- **Cassini-Huygens Mission:** The Cassini spacecraft, a collaboration between NASA, ESA, and ASI, provided extensive data on Enceladus, including flybys and observations of its plumes. The Huygens lander explored Saturn's moon Titan but didn't visit Enceladus.

Properties of Hydrogen Cyanide

- **Chemical Formula:** HCN (one carbon atom, one nitrogen atom, and one hydrogen atom)
- **Physical State:** Colorless gas with a faint, bitter almond-like odor (odor threshold varies among individuals)
- **Solubility:** Highly soluble in water, forming hydrocyanic acid (HCN dissolved in water is also referred to as prussic acid)
- **Flammability:** Highly flammable and combustible in air

Sources and Production

- **Natural Occurrence:** Hydrogen cyanide can be found naturally in certain plants, such as in the seeds of some fruits like apricots, peaches, and almonds.
- **Industrial Production:** Synthesized through various methods including Andrussow process (ammonia, natural gas, and oxygen), as well as through the hydrolysis of cyanide salts.

Uses of Hydrogen Cyanide

- **Chemical Manufacturing:** It serves as a precursor for many chemical compounds used in plastics, pharmaceuticals, dyes, and pesticides.
- **Fumigation:** Used in pest control, particularly for exterminating rodents and insects.

Health Effects and Toxicity

- **Toxicity:** Hydrogen cyanide is highly toxic and can be lethal even in small quantities. It interferes with cellular respiration by inhibiting the body's ability to use oxygen, leading to suffocation.
- **Symptoms of Exposure:** Inhalation or ingestion can cause dizziness, headache, nausea, rapid breathing, convulsions, loss of consciousness, and ultimately death.
- **Inhibition of Cellular Respiration:** Hydrogen cyanide inhibits cytochrome c oxidase in mitochondria, disrupting the electron transport chain and cellular respiration, leading to metabolic asphyxiation.
- **Biodegradation:** Hydrogen cyanide can break down in the environment through microbial degradation and photochemical reactions.
- **Toxicity to Aquatic Life:** It poses a threat to aquatic organisms, especially in high concentrations.

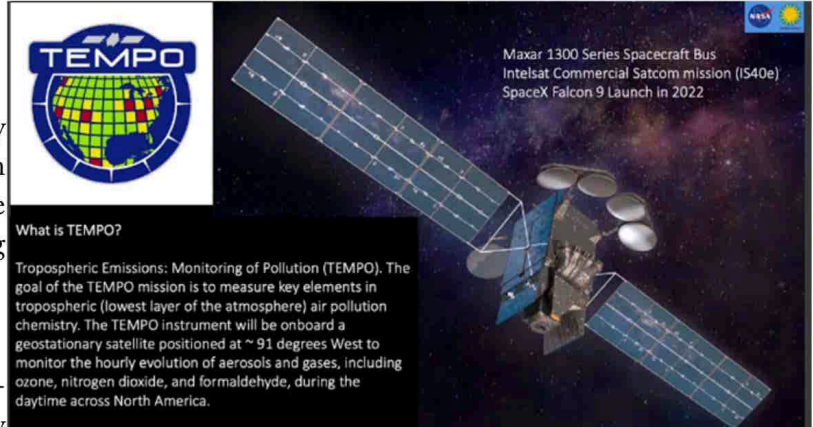
Detection and Safety Measures

- **Detection Methods:** Specialized equipment like gas detectors or chemical test kits are used to detect hydrogen cyanide gas.
- **Safety Measures:** Workers in industries where HCN is used must follow strict safety protocols, including wearing protective gear and working in well-ventilated areas.
- **First Aid:** Immediate medical attention is crucial if exposure to hydrogen cyanide occurs. Artificial respiration and administration of specific antidotes like hydroxocobalamin may be necessary.

TEMPO Satellite

Why in News

NASA's new satellite to hourly measure air pollution hourly has shown significant progress and now the space agency officials are already thinking about ways to extend its life.



Important Points

- TEMPO is NASA's first Earth-observation satellite in geostationary orbit and has developed further from previous polar-orbiting satellites provided daily observations to provide 10 to 12 daily scans.

Mission and Objectives

- **Purpose:** TEMPO is a space-based ultraviolet-visible spectrometer designed to monitor air pollution across greater North America.
- **Measurements:** It provides high-resolution, hourly data on atmospheric pollutants like ozone, nitrogen dioxide, and formaldehyde.

Instrumentation and Operation

- **Spectrometer Design:** TEMPO's ultraviolet-visible spectrometer measures reflected sunlight from the Earth's atmosphere and dissects it into 2,000 component wavelengths.
- **Geostationary Host:** Hosted as a payload on a commercial geostationary communication satellite, TEMPO maintains a constant view of North America.
- **Coverage Area:** Scans the region from the Pacific Ocean to the Atlantic Ocean and from the Alberta oil sands to Mexico City.

Constellation and Collaborations

- **Geostationary Constellation:** TEMPO contributes to a constellation of pollution-monitoring assets, including ESA's planned Sentinel-4 and South Korea's Geostationary Environment Monitoring Spectrometer (GEMS).
- **Partnerships:** Developed as a collaboration between NASA and the Smithsonian Astrophysical Observatory.

Integration and Launch

- **Host Satellite:** TEMPO resides on the Intelsat 40e satellite, built by Maxar Technologies, responsible for payload integration.
- **Launch Date:** It was sent aloft in April and built by Ball Aerospace.

Program

- **Earth Venture-Instrument Program:** TEMPO is NASA's inaugural Earth Venture-Instrument (EVI) mission.
- **EVI's Role:** Part of NASA's Earth System Science Pathfinder (ESSP) program office, supporting innovative, low-cost missions driven by scientific research and applications.
- **Competitive Selection:** Selected through competitive solicitations, EVI missions address various areas of Earth science.

Other Earth Venture Missions

- Nature of Missions: EVI missions are characterized as small-sized, competitively selected orbital missions or instrument missions of opportunity.
- Examples: Include missions like NASA-ISRO Synthetic Aperture Radar (NISAR), Surface Water and Ocean Topography (SWOT), ICESat-2, and others like Gravity Recovery and Climate Experiment Follow On (GRACE-FO), Cyclone Global Navigation Satellite System (CYGNSS), and Ecosystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS), among others.

Future Prospects

- Extended Lifespan Goals: While initially planned for a 20-month operation, NASA and Intelsat are aiming for an extended functionality of 10-15 years for TEMPO.
- Precursor for Future Missions: TEMPO's success sets the stage for NOAA's enhanced Atmospheric Composition Instrument, slated for a mid-2030s launch.

mRNA

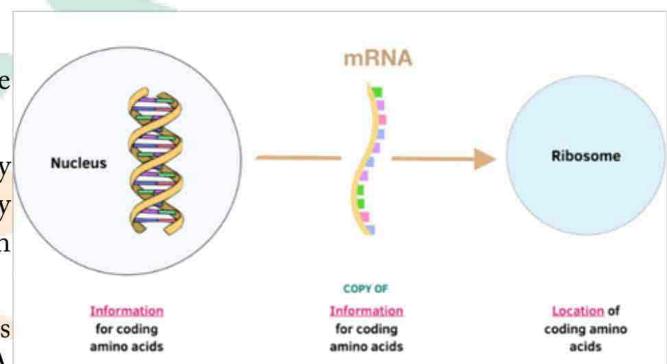
Why in News

mRNA (messenger RNA) technology has emerged as a groundbreaking platform in the realm of personalized medicine, showcasing the ability to be easily customized for effective and tailored therapies with minimal side effects.

Important Points

Understanding the Basics of mRNA:

- At its core, mRNA is a scalable and versatile molecule that plays a vital role in cellular functions.
- Unlike traditional drugs, mRNA is inherently present within the human body, with cells naturally creating mRNAs to serve as instructions for protein synthesis.
- When cells need to produce specific proteins essential for various functions, they rely on mRNA as the messenger carrying the genetic code or recipe for protein creation.



Why mRNA Makes Excellent Medicine:

- The unique qualities of mRNA make it an ideal candidate for therapeutic applications.
- Scientists can manipulate mRNA to create powerful medicines that address diverse cellular issues.
- Since the language of mRNA consists of four nucleotides, scientists can easily decipher the codes and understand the instructions for protein synthesis.
- Mutations in the DNA can disrupt these instructions, leading to diseases, and mRNA medicines offer a way to correct or replace these faulty instructions.
- The production of mRNA treatments is not only scalable but also consistent.
- Unlike traditional drugs that require distinct manufacturing methods for each compound, the process of creating mRNA remains the same for all types.
- This uniformity simplifies the production process, making it akin to mastering a basic recipe and allowing for endless variations.
- Moreover, the transient nature of mRNA within cells allows for easy dosage adjustments based on changing patient needs.
- As cells naturally destroy mRNA when it is no longer required, the flexibility in altering doses ensures that treatments can be fine-tuned to accommodate dynamic health conditions.

mRNA Vaccines and Beyond:

- The mRNA technology gained significant recognition with the development of COVID-19 vaccines by Moderna and Pfizer-BioNTech, marking the first FDA-approved mRNA-based medicines.
- These vaccines demonstrated the adaptability of mRNA-based therapies, enabling quick adjustments to target new viral variants.
- Beyond COVID-19, ongoing clinical trials explore mRNA-based vaccines for diseases such as seasonal flu, herpes, respiratory syncytial virus, and more.

mRNA in Disease Treatment:

- Expanding beyond vaccines, mRNA holds promise in treating diseases like cancer.
- Some mRNA cancer treatments operate as vaccines, training the immune system to specifically target cancer cells.
- By leveraging the mutational landscape of cancer cells, mRNA cancer vaccines can be personalized to match individual patients' specific cancer mutations.
- Clinical trials employing personalized mRNA approaches for cancers like pancreatic cancer are currently underway.
- The potential applications of mRNA-based medicine extend to various diseases where correcting protein synthesis holds the key to effective treatment.
- Ongoing research explores the use of mRNA in heart disease, neurodegenerative disorders, bone loss, and other conditions, offering hope for future protein replacement therapies.

The Future Landscape of mRNA-Based Medicine:

- The future holds promise for treating diseases arising from incorrect protein synthesis.
- Early studies show encouraging signs in areas such as wound healing for diabetic patients and addressing rare genetic disorders like propionic acidaemia.
- The ability to easily customize and produce mRNA positions it as a transformative force in personalized medicine.
- With ongoing advancements and a deeper understanding of mRNA's capabilities, this technology stands poised to revolutionize medical treatments, offering effective and tailored therapies with fewer side effects.

Key points about mRNA (messenger RNA) technology:

- **Biological Molecule:** mRNA, or messenger RNA, is a type of biological molecule found in cells.
- **Information Carrier:** It carries genetic information from DNA to the cellular machinery responsible for protein synthesis.
- **Protein Synthesis:** mRNA provides the instructions for the cell to make specific proteins, crucial for various cellular functions.
- **Scalability:** The ability to easily customize and produce mRNA in the laboratory makes it scalable for various applications.
- **Medicinal Potential:** Scientists can create artificial mRNA to serve as a basis for developing new medicines and therapies.
- **Personalized Medicine:** mRNA's customizable nature allows for the development of personalized and targeted therapies, minimizing side effects.
- **Flexibility in Recipe:** The language of mRNA consists of nucleotides, and scientists can manipulate the mRNA "recipe" to create different proteins or address specific cellular issues.
- **Temporary Nature:** mRNA is not permanent within cells; it is naturally destroyed after its purpose is fulfilled. This characteristic allows for easy adjustments to medication doses.
- **Vaccine Development:** mRNA technology has been successfully used in the development of vaccines, such as the COVID-19 vaccines from Moderna and Pfizer-BioNTech.
- **Future Applications:** Beyond vaccines, ongoing research explores the potential of mRNA in treating various diseases, including cancer, heart disease, neurodegenerative disorders, and more.

Coastal Erosion in India

Why in News

Over one-third of India's coastline is vulnerable to erosion, as per a study by the National Centre for Coastal Research (NCCR).

Important Points

Coastal erosion

- Coastal erosion is the wearing away of the coastal land and loss of beach, shoreline, or dune material as a result of natural or coastal processes or human-induced influences.
- Extent: At global scale, it is estimated that 70% of sandy shorelines worldwide were eroding. Regional scale estimates exist for Europe (27%), the US East coast barrier beaches (86%) South east Asia Islands (33%).
- Processes: There are four main processes of coastal erosion. These are corrasion, abrasion, hydraulic action and attrition.
- Landforms: Coastal erosion leads to the formation of a range of landforms which largely depend on the material that forms the cliff.
- More resistant material such as chalk leads to the formation of classic coastal landforms such as arches, caves, stacks and stumps.
- Where there is a combination of hard and soft material this leads to the formation of bays and headlands.



Causes of Coastal Erosion

- Sea level rise: As sea level rises, the shoreline moves inland, eroding the land in its path.
- Storm surges: Storm surges are large waves that can be generated by hurricanes, typhoons, and other storms. These waves can cause extensive damage to coastal areas, including erosion.
- Wave action: Waves constantly pound against the shoreline, eroding the land over time. The strength of the waves is determined by the wind speed, the distance, and water depth.
- Longshore currents: Longshore currents are currents that flow parallel to the shoreline. These currents can erode the shoreline by carrying away sand and other sediments.
- Human activities: Human activities such as dam construction, sand mining, and coastal development can disrupt the natural processes that help to protect coastlines from erosion.

Coastal erosion mitigation measures

- Beach nourishment: Beach nourishment is the process of adding sand to a beach to restore its natural shape and size.
- Seawalls and revetments: Seawalls and revetments are structures that are built along the shoreline to protect it from erosion.
- Breakwaters: Breakwaters are structures that are built offshore to break the waves before they reach the shoreline. This can help to reduce erosion by reducing the energy of the waves.
- Vegetative buffers: Vegetative buffers are areas of vegetation that are planted along the shoreline to help protect it from erosion. Vegetation can help to bind the soil and reduce the impact of waves.

- Artificial reefs: Recreation of the coral reefs colonies to dissipate wave energy by wave breaking and protect coasts also augment the amount of sea life such as fish, algae, barnacles, corals, oysters, and cause shoreline to accrete.

Government Initiatives to conserve coastal areas

- Coastal Regulation Zone (CRZ) notification, 2019: To conserve and protect coastal stretches and marine areas, and to ensure livelihood security to fisherfolk and other local communities.
- The notification also provides for No Development Zones (NDZ) along various categories of coastal areas to protect India's coastline from encroachment and erosion.
- Coastal Zone Management Plan (CZMP): It includes mapping of erosion prone areas and preparation of a shoreline management plan for identified eroding stretches.
- The Ministry of Environment, Forest & Climate Change has delineated the hazard line for the entire coast of the country.
- Indian National Centre for Ocean Information Services (INCOIS) has estimated Coastal Vulnerability Index (CVI) for the Indian coastline.
- Under 15th Finance Commission, the recovery and reconstruction window of National Disaster Response Fund (NDRF) for Rs. 1000 crore is earmarked for resettlement of displaced people affected by erosion.

National Centre for Coastal Research (NCCR)

- Mandate: To carry out all multidisciplinary research under the central domain: Marine Pollutions, Coastal processes and Hazards, Coastal Habitats and Ecosystem and Capacity Building and Training.
- Mission: To offer scientific and technical support to coastal communities and stakeholders for integrated and sustainable use of resources towards the socio-economic benefit of the society.
- Research Areas: Earth, Atmosphere & Environment Sciences
- Parent Ministry: Ministry of Earth Sciences (MoES)
- Headquarters: Chennai, Tamil Nadu

Caste based violence

Why in News

A youth in Andhra Pradesh was kidnapped and assaulted driven by caste based violence.

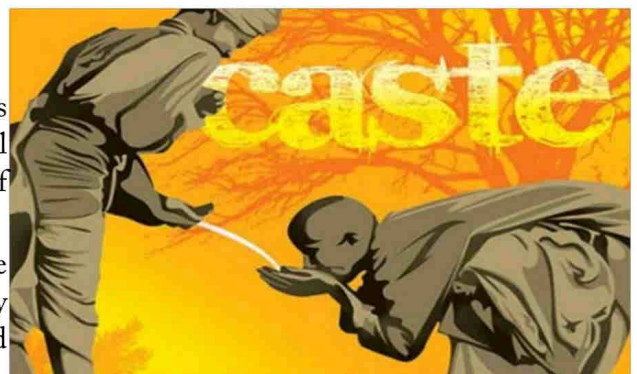
Important Points

Atrocities abound

- Discrimination and violence against Dalits are common with the caste hierarchy condemning them to the bottom of the social ladder.
- Despite laws to protect the Scheduled Castes (SC), abuse is frequently reported from across the country.
- In Andhra Pradesh alone, 2,014 crimes against SCs were recorded in 2021, of which 33 were murders and 49 were cases of rape of minor girls.
- The State recorded a conviction rate of 5.3% and 13.8% in terms of disbursal of relief within seven days.
- Shunned by many in society who call them 'untouchable', Dalits, particularly in villages, are discriminated against, denied access to land, forced to work in degrading conditions like in scavenging, and routinely abused, even killed, sometimes at the hands of the police and at times by people of upper castes.
- This entrenched form of societal segregation, often described as hidden apartheid, has led to the complete isolation of many villages along caste lines.
- The prevalence of caste-based violence in Indian society is a complex issue rooted in historical, social, and economic factors.

Historical Legacy:

- The caste system, deeply ingrained in Indian history, has assigned social roles based on birth. This hierarchical structure has led to discrimination and oppression of certain castes.
- Untouchability: The practice of untouchability, where certain castes were considered impure and socially ostracized, has contributed to a sense of hierarchy and discrimination.



Social Inequality:

- **Economic Disparities:** Caste-based economic disparities have created imbalances in access to resources, education, and opportunities. Certain castes have historically been marginalized and economically disadvantaged.
- **Education Gap:** Limited access to quality education for marginalized castes has perpetuated social inequality, hindering upward mobility and reinforcing stereotypes.

Political Exploitation:

- **Vote Bank Politics:** Some politicians exploit caste identities to consolidate vote banks. This not only perpetuates divisions but also creates a political environment where caste-based issues are used for electoral gains.
- **Reservation Policies:** While reservation policies were introduced to address historical injustices, they have also sometimes led to tensions between different castes, as some may perceive these policies as favoring certain groups over others.

Social Norms and Customs:

- **Inter-Caste Marriages:** Resistance to inter-caste marriages is still prevalent in many communities. Social norms against marrying outside one's caste contribute to the persistence of caste identities.
- **Social Stigma:** Certain castes face social stigma, affecting their self-esteem and societal standing. This can lead to frustration and, in some cases, violence.

Lack of Awareness:

- **Ignorance and Stereotypes:** Lack of awareness and perpetuation of stereotypes about different castes contribute to prejudice and discrimination. Educational and awareness campaigns are essential to challenge these biases.

Legal and Judicial Challenges:

- **Legal Framework:** While India has laws against caste-based discrimination, the enforcement of these laws faces challenges. Cases often take a long time to be resolved, and the legal process itself can be intimidating for victims.
- **Caste-Based Crimes:** Crimes specifically targeting individuals based on their caste identity, known as "caste-based crimes" or "atrocities," persist. These crimes can range from verbal abuse to physical violence.

Justice delayed and denied

- Failure to prosecute perpetrators of horrific caste atrocities has emboldened the perpetrators.
- Low conviction rates are a reflection of how cases under the SC/ST (Prevention of Atrocities) Act are registered and pursued.
- Prosecutors and judges fail to faithfully pursue complaints brought forth by Dalits, which is evidenced by the high rate of acquittals in such cases.

World Malaria Report 2023

Why in News

The 2023 World Malaria Report, recently released by the World Health Organization (WHO), sheds light on the alarming malaria situation in India and globally.

Important Points

- The recently released World Malaria Report shows that the number of cases and deaths due to the mosquito-borne infection India have continued to decline.

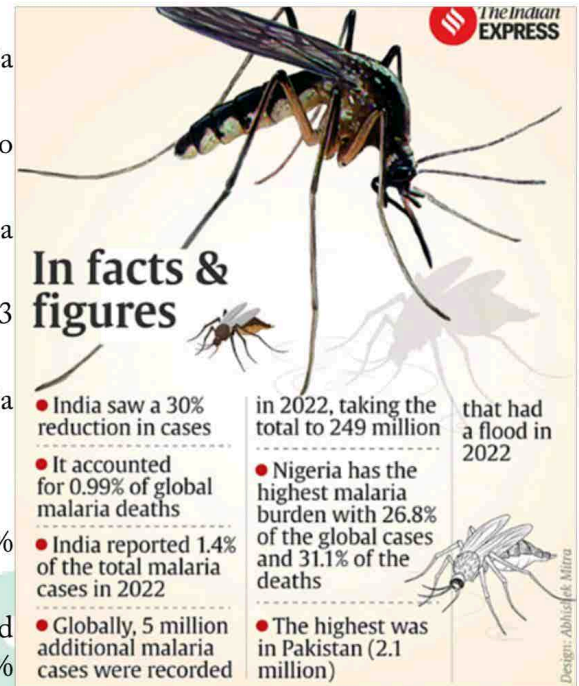
Global Malaria Overview:

- The 2023 World Malaria Report reveals a global surge with an estimated 249 million cases in 2022, surpassing pre-pandemic levels.
- Covid-19 disruptions, drug resistance, humanitarian crises, and climate change pose threats to the global malaria response.

- Twenty-nine countries accounted for 95% of malaria cases globally.
- Four countries, Nigeria (27%), the Democratic Republic of the Congo (12%), Uganda (5%), and Mozambique (4%), accounted for almost half of all malaria cases globally.

India's Malaria Scenario:

- In 2022, India accounted for a staggering 66% of malaria cases in the WHO South-East Asia Region.
- Plasmodium vivax, a protozoal parasite, contributed to almost 46% of cases in the region.
- Despite a 55% reduction in cases since 2015, India remains a significant contributor to the global malaria burden.
- India faces challenges, including a surge in cases in 2023 linked to unseasonal rainfall.
- India and Indonesia accounted for about 94% of all malaria deaths in the WHO South-East Asia Region.



Regional Impact:

- Africa bears the highest malaria burden, accounting for 94% of cases and 95% of global malaria deaths in 2022.
- The WHO South-East Asia Region, including India, managed to contain malaria over the last two decades, with a 77% reduction in cases and deaths since 2000.

Climate Change and Malaria:

- Climate change emerges as a major driver, affecting malaria transmission and overall burden.
- Changing climate conditions enhance the sensitivity of the malaria pathogen and vector, facilitating its spread.
- WHO emphasizes the substantial risk climate change poses to malaria progress, necessitating sustainable and resilient responses.

Global Eradication Goals:

- WHO aimed to reduce malaria incidence and mortality rates by 75% in 2025 and 90% in 2030.
- The world is off-track, with a 55% gap for 2025 incidence reduction and 53% for fatality rate reduction.

Challenges in Malaria Eradication:

- Funding gaps for malaria control increased from USD 2.3 billion in 2018 to USD 3.7 billion in 2022.
- Research and development funding hit a 15-year low at USD 603 million, raising concerns about innovation and progress.

Malaria Vaccine Advancements and Achievements:

- The report emphasizes notable progress in malaria prevention through the phased introduction of the WHO-recommended malaria vaccine, RTS,S/AS01, in African nations.
- Rigorous evaluations in Ghana, Kenya, and Malawi reveal a significant decrease in severe malaria and a 13% reduction in early childhood deaths, affirming the vaccine's effectiveness.
- This achievement, combined with existing interventions like bed nets and indoor spraying, forms a comprehensive strategy, leading to improved overall outcomes in these regions.
- In October 2023, WHO recommended a second safe and effective malaria vaccine, R21/Matrix-M.
- The availability of two malaria vaccines is expected to increase supply and make broad-scale deployment across Africa possible.

Call for Action:

- WHO emphasizes the need for a substantial pivot in the fight against malaria, calling for increased resources, strengthened political commitment, data-driven strategies, and innovative tools.
- Sustainable and resilient malaria responses aligning with climate change mitigation efforts are deemed essential for progress.

What is Malaria?

- Malaria is a life-threatening mosquito borne blood disease caused by plasmodium parasites.
- There are 5 Plasmodium parasite species that cause malaria in humans and 2 of these species – *P. falciparum* and *P. vivax* – pose the greatest threat.
- Malaria is predominantly found in the tropical and subtropical areas of Africa, South America as well as Asia.
- Malaria is spread by the bite of an infected female *Anopheles* mosquito.
- The mosquito becomes infected after biting an infected person. The malaria parasites then enter the bloodstream of the next person the mosquito bites. The parasites travel to the liver, mature, and then infect red blood cells.
- Symptoms of malaria include fever and flu-like illness, including shaking chills, headache, muscle aches, and tiredness. Notably, malaria is both preventable and curable.

The Initiatives Related to Malaria**Global:****WHO's Global Malaria Program(GMP):**

- The WHO's GMP is responsible for coordinating WHO's global efforts to control and eliminate malaria.
- Its work is guided by the "Global technical strategy for malaria 2016–2030" adopted by the World Health Assembly in May 2015 and updated in 2021.
- The strategy sets the target of reducing global malaria incidence and mortality rates by at least 90% by 2030.

Malaria Elimination Initiative:

- Spearheaded by the Bill and Melinda Gates Foundation, this initiative focuses on eradicating malaria through diverse strategies such as treatment accessibility, mosquito population reduction, and technology development.

E-2025 Initiative:

- The WHO launched the E-2025 initiative in 2021. The initiative aims to stop the transmission of malaria in 25 countries by 2025.
- The WHO has identified 25 countries that have the potential to eradicate malaria by 2025.

India:

- National Framework for Malaria Elimination 2016–2030: Aligned with WHO's strategy, aims to eliminate malaria across India by 2030 and maintain malaria-free zones.
- National Vector-Borne Disease Control Programme: Addresses various vector-borne diseases, including malaria, through prevention and control measures.
- National Malaria Control Programme (NMCP): To combat devastating effects of Malaria, the NMCP was launched in 1953 built around three key activities - insecticidal residual spray (IRS) with DDT; monitoring and surveillance of cases; and treatment of patients.
- High Burden to High Impact (HBHI) Initiative: Initiated in four states (West Bengal, Jharkhand, Chhattisgarh, and Madhya Pradesh) in 2019, focusing on malaria reduction through insecticidal net distribution.
- Malaria Elimination Research Alliance-India (MERA-India): Established by the Indian Council of Medical Research (ICMR), collaborates with partners on malaria control research.

Factors responsible to increase Malaria:

- **Climate Change Boosts Malaria Risks:** Rising temperatures due to climate change expand areas suitable for malaria transmission, especially in the Himalayan belt.
- **Extreme Weather Impacts:** Extreme weather events, like heavy rainfall, can indirectly worsen malaria by hindering healthcare access; better planning is crucial.

Challenges for India:

- **Vivax Malaria Predicament:** Vivax malaria, constituting over 40% of cases in India, poses a challenge due to its recurring nature hiding in the liver.
- **Incomplete Treatment Issue:** Treating vivax malaria requires a 14-day therapy, but many stop medication once symptoms alleviate, hindering complete recovery.

Organ Donation in India

Why in News

The National Organ and Tissue Transplantation Organisation (NOTTO) has ordered an inquiry into 'cash for kidney' racket allegations.

Important Points

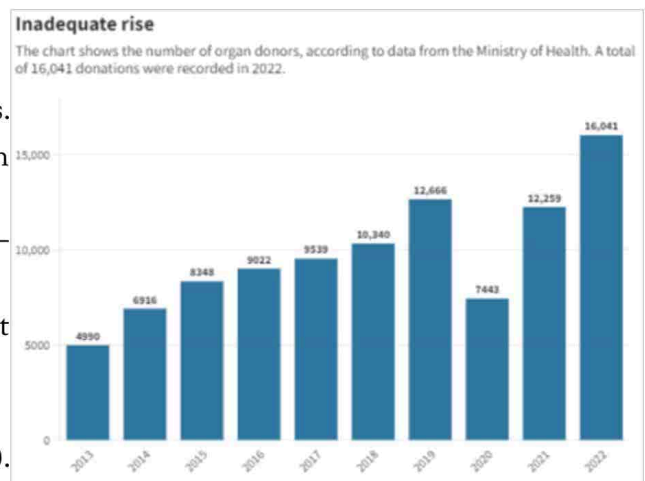
- **Organ Transplantation/ Donation** is a surgical procedure in which an organ/s, tissue or a group of cells are removed from one person and surgically transplanted into another person.
- In India, the organ transplantation is one of the lowest in comparison with the western nations.
- According to the Health Ministry's data, the number of donors (including deceased) only grew from 6,916 in 2014 to about 16,041 in 2022.

Importance of Organ Donation

- **Saving Lives:** Organ donation saves lives by providing individuals suffering from organ failure with a chance for a healthier and longer life.
- **Addressing Organ Shortages:** There is a global shortage of organs available for transplantation. Organ donation helps address this shortage and increases the pool of organs available for those in need.
- **Promoting Human Solidarity:** It is a selfless act that transcends cultural, racial, and geographical boundaries, bringing people together in a shared commitment to saving and improving lives.
- **Raising Awareness:** Organ donation initiatives help raise awareness about the importance of donation and transplantation.
- **Legal and Ethical Considerations:** Organ donation is often guided by legal and ethical frameworks that prioritize the autonomy and consent of donors.

Issues

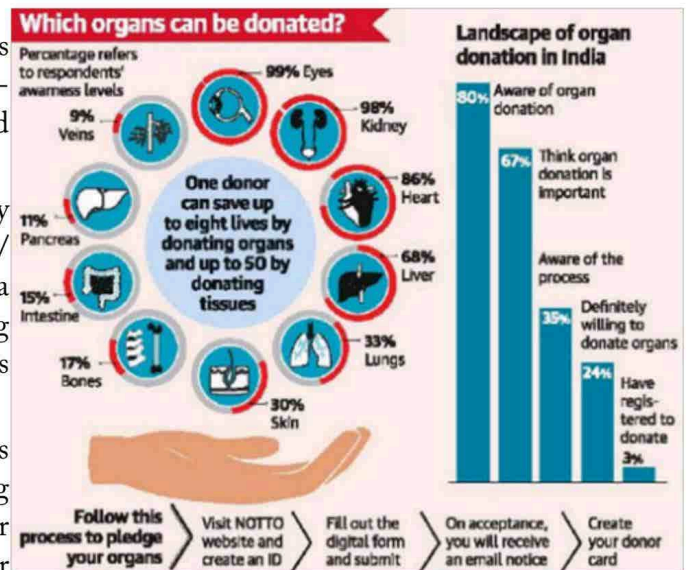
- **High Burden (Demand Versus Supply gap).**
- **Poor Infrastructure** especially in Govt. sector hospitals.
- **Lack of Awareness** of the concept of Brain Stem Death among stakeholders.
- **Poor Awareness and attitude** towards organ donation—Poor Deceased Organ donation rate.
- **Lack of Organized systems** for organ procurement from deceased donors.
- **Prevention and Control** of Organ trading.
- **High Cost** (especially for uninsured and poor patients).



India's Law Related to Organ Donation

- **Transplantation of Human Organs Act 1994:** It is aimed at regulation of removal, storage and transplantation of human organs for therapeutic purposes and for prevention of commercial dealings in human organs.

- It allows living donations, in most cases, from close relatives such as parents, siblings, children, spouse, grandparents, grandchildren.
- Altruistic donations from distant relatives, in-laws, or long-time friends are allowed after additional scrutiny to ensure there is no financial exchange.
- For donations from unrelated persons, documents and photographic evidence showing their long-term association or friendship have to be submitted along with all other documents.
- Penalty: Offering to pay for organs or to supply organs for payment, initiating/ negotiating/ advertising for such an arrangement, looking for a person to supply organs, and abetting in preparing false documents is punishable by jail up to 10 years and a fine of up to Rs 1 crore.
- The government has announced a series of steps to promote organ donations, including doing away with the domicile rule; removal of age bar for registration of recipients; removal of fee for registration for transplant; easing rules on withdrawal of life support (passive euthanasia); facilitation of organ transport across the country; special casual leave for organ donors etc.
- Checking on the illegal trade of organs through robust law implementation need to be done.



About National Organ and Tissue Transplant Organisation (NOTTO)

- It is a National level organization set up under the Directorate General of Health Services, Ministry of Health and Family Welfare.
- Functions: National Network division of NOTTO function as apex centre for All India activities of coordination and networking for procurement and distribution of Organs and Tissues and registry of Organs and Tissues Donation and Transplantation in the country.

DRESS Syndrome

Why in News

The Indian Pharmacopoeia Commission (IPC) has alerted about mefenamic acid (Mefal), a commonly used painkiller, due to potential Drug Reactions with Eosinophilia and Systemic Symptoms (DRESS) Syndrome based on Adverse Drug Reactions (ADRs) analysis from the PvPI database.

Important Points

- Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) Syndrome is a severe and potentially life-threatening hypersensitivity reaction that can occur as a response to various medications.

DRESS Syndrome

Onset and Symptoms

- Symptoms typically appear around 2 to 8 weeks after starting the medication.
- Symptoms include fever, rash (morbilliform rash - measles-like), facial swelling, and lymph node enlargement.
- Besides skin symptoms, organs like the liver, lungs, or kidneys can be affected, leading to more severe complications.

Causes

- DRESS Syndrome can be triggered by a wide array of drugs, although some medications are more commonly associated, including antiepileptic drugs, antibiotics, allopurinol (used for gout), and NSAIDs (like Mefenamic acid).
- Unlike immediate allergic reactions, symptoms of DRESS Syndrome appear after a few weeks of initiating the drug.



Diagnosis

- Diagnosis is based on clinical symptoms and a temporal association with starting a new medication.
- Eosinophilia (an increase in a type of white blood cells called eosinophils) and abnormal liver or kidney function tests might be observed.

Treatment of DRESS Syndrome

- The primary and crucial step in managing DRESS Syndrome is stopping the medication responsible for the reaction.
- Depending on the severity, organ involvement might require specialized care.
- Topical steroids for skin involvement and systemic steroids (oral or intravenous) might be needed in severe cases to dampen the immune response.
- Close monitoring of organ function and blood tests during and after treatment is essential.

Prognosis and Follow-up

- Recovery can take weeks to months. The average recovery time is about six to nine weeks.
- While most patients recover well, there's a possibility of developing autoimmune diseases later on. Thus, ongoing monitoring might be necessary.

Prevention and Precautions

- Since predicting who might develop DRESS Syndrome is challenging, it's advisable to use caution with medications and report any adverse reactions promptly to healthcare providers.
- Only take over-the-counter painkillers or any medication under the guidance of a healthcare professional, especially if there's a history of adverse drug reactions.
- DRESS Syndrome, while rare, emphasizes the importance of cautious medication usage and close monitoring of adverse drug reactions to ensure patient safety. Early recognition and prompt intervention play a crucial role in managing this condition.

E-cigarettes

Why in News

The World Health Organisation (WHO) said that e-cigarettes are not effective for quitting tobacco at the population level, and there is an urgent need to control to minimise health harms to the population.

Important Points

About e-cigarettes

- E-cigarettes, also known as Electronic Nicotine Delivery Systems (ENDS), and sometimes Electronic Non-nicotine Delivery Systems (ENNDS).
- They produce an aerosol by heating a liquid (e-liquids) that usually contains nicotine—the addictive drug.
- These are known by many different names. They are sometimes called 'e-cigs', 'e-hookahs', 'mods', 'vape pens', 'vapes', 'tank systems', and 'electronic nicotine delivery systems (ENDS)'.
- Using an e-cigarette is sometimes called 'vaping'.

Are e-cigarettes less harmful than regular cigarettes?

- Both tobacco products and ENDS pose risks to health.
- E-cigarette aerosol generally contains fewer toxic chemicals than the deadly mix of more than 7,000 chemicals in smoke from regular cigarettes.

Regulations and Monitoring

- WHO regularly monitors and reviews the evidence on ENDS and health and offers guidance to governments.
- The WHO has added that e-cigarettes have been allowed on the open market and aggressively marketed to young people.
- 34 countries have banned the sale of e-cigarettes;
- 88 countries have no minimum age at which e-cigarettes can be bought;

How e-cigarettes work



- 74 countries have no regulations in place for e-cigarettes.
- It releases the biennial WHO Report on the Global Tobacco Epidemic, which tracks the status of the tobacco epidemic and interventions to combat it and other relevant resources.
- In India: The possession of e-cigarettes and similar devices is a violation of the Prohibition of Electronic Cigarette Act (PECA) 2019.

Global Status Report on Road Safety

Why in News

The Global Status Report on Road Safety by the World Health Organization (WHO) provides a comprehensive assessment of road traffic deaths worldwide and the progress made in reducing them.

Important Points

Key Highlights of the Report

- **Global Reduction in Deaths:** There's been a 5% decrease in global road traffic deaths per year, totalling over 1.19 million annually. Although it's a positive trend, the numbers remain alarmingly high.
- **Youth and Children at Risk:** Road accidents are the primary cause of death for individuals aged 5 to 29 years.
- **India's Scenario:** India has experienced an increase in road crash deaths from 2018 to 2021, with 1,53,792 deaths in 2021 compared to 1,50,785 in 2018.
- **Progress and Challenges:** While some countries have seen a reduction in road traffic deaths, disparities exist. Low and middle-income countries, despite having a minimal share of the world's vehicles, account for 90% of road traffic deaths.
- **Vulnerable Road Users:** Over half (53%) of road traffic fatalities are vulnerable road users, including pedestrians, motorcyclists, cyclists, and users of micro-mobility devices.
- **Infrastructure and Safety Standards:** There are concerns about inadequate road infrastructure, lack of pedestrian safety measures, and gaps in laws related to risk factors such as speeding, drunk driving, and vehicle safety features.
- **Legislative Gaps and Recommendations:** Only a small number of countries meet WHO's best practices for road safety laws. The impending doubling of the global motor vehicle fleet by 2030 emphasizes the urgent need for improved legislation and infrastructure to prevent road traffic deaths.



Road Safety in India

- India faces a complex road safety landscape due to its rapid economic growth and the resultant surge in vehicle ownership. This growth brings convenience and progress, yet it also intensifies challenges in ensuring safety on the roads.

Challenges

High accident rates

- Despite having only 1% of the world's vehicles, India contributes to 11% of global road traffic deaths, resulting in approximately 1.5 lakh lives lost annually.
- The disproportionate number of fatalities in relation to the number of vehicles suggests a pressing issue with road safety in India.

Vulnerable road users

- Pedestrians, cyclists, and motorcyclists are at a higher risk due to inadequate infrastructure and insufficient awareness.
- Incomplete or poorly designed roads may not account for the safety of those not in motorized vehicles, leading to a higher incidence of accidents involving vulnerable road users.

Speeding and reckless driving

- Disregarding traffic rules and exceeding speed limits is a major contributor to accidents.
- Behavioural issues, such as reckless driving, significantly contribute to the overall road safety problem.

Inadequate infrastructure

- Poor road conditions, lack of proper lane markings, and inadequate signage contribute to safety risks.
- Infrastructure plays a crucial role in ensuring safe road usage, and deficiencies in these aspects can lead to accidents.

Drunken driving

- Despite legal prohibitions, driving under the influence of alcohol or drugs is a serious concern.
- Despite regulations, the prevalence of driving under the influence poses a considerable threat to road safety.

Weak enforcement

- Insufficient traffic monitoring and lax enforcement of road safety laws hamper progress.
- Even with regulations in place, a lack of effective enforcement diminishes the impact of these laws, allowing for a more lenient approach to road safety.

Steps to address these challenges

Stricter laws and enforcement

- The Motor Vehicles (Amendment) Act 2019 imposed harsher penalties for traffic violations, aiming to deter dangerous driving.
- Strengthening legal consequences for violations can act as a deterrent and promote safer driving practices.

Focus on vulnerable road users

- Initiatives like building dedicated cycling lanes and pedestrian walkways prioritize their safety.
- Targeted infrastructure improvements can protect those at higher risk, creating a safer environment for pedestrians and cyclists.

Road safety awareness campaigns

- Promoting responsible driving habits and educating the public about traffic rules is crucial.
- Informing the public about safe driving practices and rules can contribute to a culture of responsible behaviour on the roads.

Investing in infrastructure

- Upgrading roads, installing proper signage and lighting, and implementing intelligent traffic management systems can significantly improve safety.
- Infrastructure enhancements can directly address some of the challenges posed by inadequate roads and signage.

Technological advancements

- Utilizing technology like driver assistance systems and advanced traffic monitoring can enhance safety measures.
- Implementing technology in road safety measures can provide real-time monitoring and assistance, contributing to safer road conditions.

Chapter- 7

INTERNATIONAL RELATION

Golan Heights

Why in News

India has voted in favour of a draft resolution in the UN General Assembly that expressed deep concern over Israel not withdrawing from the Golan Heights

Important Points

Golan Heights

- It is a rocky plateau in southwestern Syria, about 60 kilometers (40 miles) south of Damascus.
- The Jordan River and the Sea of Galilee border it on the west, Mount Hermon on the north, the seasonal Wadi Al-Ruqqd River on the east, and the Yarmk River on the south.
- At its broadest point, the Golan measures approximately 44 miles (71 kilometers) from north to south and 27 miles (43 kilometers) from east to west.
- It is somewhat boat-shaped and covers 1,150 square km.



Why is the Golan Heights a source of contention?

- Syria controlled the Golan Heights until 1967.
- During the Six-Day War in 1967, Israel took the majority of the territory, occupying it and annexing it in 1981.
- After annexing the Golan, Israel offered citizenship to the Druze, but the majority declined and continued to identify as Syrians.
- Another 20,000 Israeli settlers live there as well, many of whom work in agriculture and tourism.
- Israel's unilateral acquisition was not accepted internationally, and Syria wants the region to be returned.
- Syria attempted to reclaim the Heights during the 1973 Middle East conflict but was unsuccessful.
- Since Israel and Syria signed a peace treaty in 1974, the Golan Heights has been generally peaceful.
- Israel and Syria had their highest-level discussions in 2000 to discuss the probable return of the Golan Heights and a peace accord.
- However, the negotiations failed, and subsequent talks also failed.

Why do the countries claim the Golan Heights?

- Both sides want the Golan's abundant water and naturally productive land.
- Furthermore, given Syria's civil conflict, Israel views the plateau as a buffer zone between Israeli communities and the instability in Syria.
- Israel is also concerned that Iran is attempting to permanently position itself on the Syrian side of the border to launch strikes on Israel.
- Notably, Iran is a supporter of Syrian President Bashar al-Assad.
- Syria, for its part, insists that the part of the Golan held by Israel remains an occupied territory and thus demands its return.

What is the current UN arrangement there?

- A United Nations Disengagement Observer Force (UNDOF) is stationed in camps and observation posts along the Golan.
- This is supported by military observers of the United Nations Truce Supervision Organization (UNTSO).
- Between the Israeli and Syrian armies is a 400-square-km “Area of Separation”.
- This is often called a demilitarized zone in which the two countries’ military forces are not permitted under the ceasefire arrangement.
- The Separation of Forces Agreement of 1974 created two lines of separation.
- Behind the Alpha Line to the west of the area of separation, Israeli military forces must remain.
- Behind the Bravo Line to the east of the area of separation, Syrian military forces must remain.
- Extending 25 km beyond the “Area of Separation” on both sides is an “Area of Limitation”.
- Here, there are restrictions on the number of troops and the number and kinds of weapons that both sides can have.
- There is one crossing point between the Israeli and Syrian sides.
- Until the Syrian civil war broke out in 2011, this was used mainly by UN forces, a limited number of Druze civilians, and for the transportation of agricultural produce.

Strategic Importance

- There are more than 30 Israeli settlements in the Golan.
- The settlements are considered illegal under international law, although Israel disputes this.
- About 20,000 Syrians and 20,000 Israelis live in the Golan.
- The Syrian capital, Damascus, can be seen from the top of the Golan Hills.
- When it rains here, its water goes to the Jordan River, which supplies water in dry areas. It is believed that this water supplies one-third of Israel's water.
- Apart from this, the land here is very fertile, which is very good for farming.

Need to look for

- Draft resolution: The draft resolution ‘The Syrian Golan’ was put to vote at the UN General Assembly, under the agenda item ‘The situation in the Middle East’.
- Voting on resolution: The resolution, presented by Egypt, secured adoption through a recorded vote, garnering 91 in favor, eight against, and 62 abstentions.
- Supporting countries: In addition to India, countries that supported the resolution included Bangladesh, Bhutan, China, Malaysia, Maldives, Nepal, Russia, South Africa, Sri Lanka, and the United Arab Emirates.
- Countries against the resolution: Australia, Canada, Israel, the UK, and the US voted against it.
- Israel’s failure: The resolution expressed deep concern over Israel’s failure to withdraw from the Syrian Golan Heights in violation of Security Council and General Assembly resolutions.
- No adherence to UNSC resolution 497: The resolution affirmed that Israel had not adhered to Security Council resolution 497 (1981).
- The resolution asserted that the Israeli decision made on December 14, 1981, is deemed null and void and holds no validity. It urged Israel to revoke this decision.
- Resolution on Israeli settlements: The resolution emphasized the illegitimacy of Israeli settlement construction and other activities in the Syrian Golan Heights occupied since 1967.
- It called for Israel’s withdrawal from the entire occupied Syrian Golan under relevant Security Council resolutions.

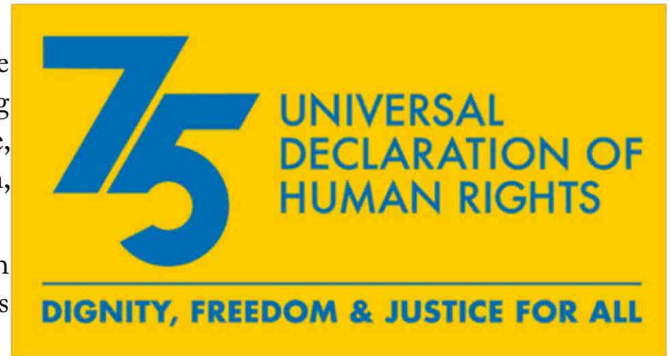
75th anniversary of Universal Declaration of Human Rights

Why in News

10 December 2023 marks the 75th anniversary of the Universal Declaration of Human Rights (UDHR).

Important Points

- Human Rights Day: It is the day on which the United Nations General Assembly adopted the Universal Declaration of Human Rights in 1948.
- The UDHR document enshrines the inalienable rights that everyone is entitled to as a human being – regardless of race, color, religion, sex, language, political or other opinion, national or social origin, property, birth or other status.
- Common standard: UDHR was adopted to establish a common standard of fundamental human rights that should be universally protected and respected.
- It was a response to the atrocities and human rights violations that occurred during World War II, particularly the Holocaust.



Achievement of UDHR

- The declaration is not a treaty and is not legally binding in itself, but the principles it sets out have been incorporated into many countries' laws and it is viewed as the basis for international human rights law.
- Fundamental to other treaties: It is recognized as having inspired and paved the way for more than 70 human rights treaties at global and regional levels, according to the U.N.
- Social Justice: It inspired the decolonization movement and the anti-apartheid movement. It also led to the freedom fighters all around the world to raise their voice against gender issues, LGBTIQ+ issues, and racism.

What are Human Rights?

- Human rights are rights that are inherent to all human beings, regardless of nationality, ethnicity, gender, religion, or any other status.
- These rights are considered universal, inalienable, and indivisible, forming the foundation for human dignity, equality, and justice.
- Human rights are different from the Civil rights that are created and defined by laws within a specific nation.
- Civil rights are legal rights granted and protected by a government, and they may change over time as laws are amended or updated.

Significance of Human Rights

- Inherent Dignity: Human rights affirm the inherent dignity of every individual.
- Equality and Non-Discrimination: They strive to ensure that all individuals have equal opportunities and are treated with fairness and without prejudice.
- Protection from Abuse: Human rights provide a framework for holding governments, institutions, and individuals accountable for actions that violate these rights, promoting justice and accountability.
- Global Standards: International human rights agreements and treaties establish a global standard for how individuals should be treated, fostering a sense of shared responsibility for upholding these standards.
- Human Dignity in Crisis: In times of crisis, human rights provide a foundation for responding to emergencies in a way that upholds human dignity and prevents further harm.

Major concerns related to human rights

Civil and Political Rights Violations:

- Freedom of Expression: Restrictions on freedom of speech, press, and assembly can limit individuals' ability to express their opinions and participate in civic activities.
- Political Repression: Authoritarian regimes may suppress political opposition, restrict political freedoms, and engage in arbitrary arrests and detentions.

Social and Economic Injustice:

- **Poverty:** Lack of access to basic resources such as food, clean water, and healthcare can lead to widespread poverty, violating the right to an adequate standard of living.
- **Inequality:** Discrimination and unequal distribution of resources can contribute to social and economic disparities.

Discrimination and Marginalization:

- **Gender Inequality:** Women often face discrimination in various aspects of life, including employment, education, and access to healthcare.
- **Racial and Ethnic Discrimination:** Racism and ethnic discrimination persist in many societies, leading to social exclusion and inequality.

Lack of Access to Education:

- **Education Disparities:** Limited access to quality education, especially for marginalized groups and in conflict zones, can hinder the realization of the right to education.

Migration and Refugee Rights:

- **Refugee Rights:** Displaced persons may face violations of their human rights, including inadequate living conditions, lack of access to healthcare, and restricted freedom of movement.
- **Safeguards to Protect Human Rights**

Global Initiatives:

- **UN Human Rights Council:** It is an inter-governmental body created by the United Nations General Assembly in 2006 to protect human rights around the globe.
- **Office of the High Commissioner for Human Rights (OHCHR):** The World Conference on Human Rights in Vienna, Austria in 1993 led to the Vienna Declaration and Programme of Action.
- It called for the establishment of the Office of the High Commissioner for Human Rights (OHCHR) and the post of the High Commissioner for Human Rights.
- **Global Alliance of National Human Rights Institutions (GANHRI):** It brings together and supports national human rights institutions (NHRIs) to promote and protect human rights.
- **Paris Principles:** These principles were adopted at the 1st international workshop on national institutions for the promotion and protection of human rights held in Paris in 1991.
- It was also endorsed by the General Assembly of the United Nations by its Regulations 48/134 of 1993.
- The Paris Principles provide international benchmarks against which NHRIs can be accredited by the GANHRI.

Indian Initiatives:

- **Constitutional Safeguards:** Fundamental rights, Directive Principles of State Policy etc.
- **Legal Safeguards for Women:** Dowry Prohibition Act, the Protection of Women from Domestic Violence Act, and laws addressing sexual offenses like the Criminal Law (Amendment) Act, 2013.
- **Children's Rights & SC Atrocities:** The Juvenile Justice (Care and Protection of Children) Act, 2015, and the Protection of Children from Sexual Offences (POCSO) Act, 2012
- **National Human Rights Commission (NHRC):** It is a statutory public body constituted in 1993 to protect human rights.

Article 99 of the UN Charter

Why in News

Amid Israel's ongoing military attacks on the Gaza Strip United Nations Secretary-General Antonio Guterres has invoked Article 99 of the UN Charter.

Important Points

UN Charter

- The UN Charter is the founding document of the United Nations.
- Based on the powers conferred through it, the UN can take action on a wide variety of issues.
- The Charter is considered an international treaty, meaning UN Member States are “bound by it”. However, in practice, there is little that member countries can be forced to do.

What is Article 99?

- It's a special power, and the only independent political tool given to the secretary-general in the UN Charter.
- It allows him to call a meeting of the Security Council on his initiative to issue warnings about new threats to international peace and security and matters that are not yet on the council's agenda.
- In Article 99, the charter states, “the Secretary-General may bring to the attention of the Security Council any matter which in his opinion may threaten the maintenance of international peace and security”.
- Now Guterres will have the right to speak at the Security Council, without having to be invited to speak by a member state, as is usually the case.
- It is seen as a discretionary power.
- According to the UN, the President of the Security Council is under the obligation to call a meeting of the Council if the Secretary-General brings to the attention of the Council any matter under Article 99.

When has Article 99 been invoked in the past?

- The provision has been rarely invoked.
- Past examples include the upheaval in the Republic of the Congo in 1960 following the end of Belgium's colonial rule and a complaint by Tunisia in 1961 against France's naval and air forces launching an attack.
- So, it's only been invoked four times in the past — in the Congo (1960), East Pakistan (1971), Iran (1979) and Lebanon (1989).
- July 1960: Congo — Then Secretary-General Dag Hammarskjöld requested an urgent meeting with the council on “a matter which, in my opinion, may threaten international peace and security”, after the Congolese government requested the UN provide military assistance to protect against Belgian forces.
- December 1971, East Pakistan — On Wednesday, UN Spokesperson Stephane Dujarric referred to the time when then Secretary-General U Thant cited Article 99 to seek the Security Council's intervention in the war in what was then known as East Pakistan, and is now Bangladesh. It is unclear whether U Thant's reference to Article 99 represented a full invocation of the rule.
- December 1979, Iran — Austrian diplomat Kurt Waldheim, as secretary-general in the late 1970s, used Article 99 on December 4, 1979 when 52 Americans were held hostage by Iranian fighters at the US Embassy in Tehran after the Islamic Revolution in Iran.
- August 1989, Lebanon — Secretary-General Javier Perez de Cuellar used it to call for a ceasefire in Lebanon's escalating civil war.
- The article was initially designed as a preventative tool, a bit like a warning system. Its use was meant to deter conflicts from escalating, but as in the war on Gaza, the article has also been used after conflicts had already escalated.
- “The fact that this tool has not been used since 1989 does resonate diplomatically and symbolically here in New York,” Daniel Forti, a senior analyst on UN advocacy and research at the International Crisis Group, told Al Jazeera.

ISRAEL- GAZA WAR

What is Article 99 of the UN Charter about?

UN Secretary-General Antonio Guterres made a rare move on Wednesday, invoking Article 99 to formally warn the Security Council of the global threat from Israel's war on Gaza.

ARTICLE 99

“The secretary-general may bring to the attention of the UNSC any matter which, in his opinion, may threaten the maintenance of international peace and security.”

If in agreement

The UNSC will have additional powers to ensure that the ceasefire resolution is implemented, including

- the power to impose sanctions, and
- deployment of an international force.

WHEN WAS IT LAST INVOKED?



1960 - CONGO

Secretary-General Dag Hammarskjöld

The Congolese government requested the UNSC to provide UN military assistance to protect against Belgian forces.



1979 - IRAN

Secretary-General Kurt Waldheim

The UNSC called for the release of 52 Americans held hostage by Iranian militia at the US embassy in Tehran and restoring diplomatic immunity.



1989 - LEBANON

Secretary-General Javier Perez de Cuellar

It was used to call for a ceasefire in Lebanon's escalating civil war.

Source: Al Jazeera | December 7, 2023



Has it brought peace before?

- The use of Article 99 has had mixed results in the past, though it has never really brought peace.
- That's because the secretary-general's intervention does not "fundamentally change the political calculation of the Security Council's most powerful members".
- In 1960, for instance, the invocation of the article led to the Security Council adopting Resolution 143, calling for Belgium to begin troop withdrawal.
- It also sent UN peacekeeping forces to facilitate this. But the Congolese war continued, Prime Minister Patrice Lumumba was assassinated, and the country's crisis would deepen in the years that followed.
- The Security Council similarly called for the release of American hostages in 1979, and Waldheim was authorised to "take all appropriate measures" to make that happen. But the hostages were held for 444 days, with two killed. The rest were released only after the Algiers Accords were signed in 1981.
- The Security Council also called on all sides in Lebanon to work towards a ceasefire in 1989, after Article 99 was last used. But the conflict continued.
- In the case of the current conflict, the US has so far firmly opposed a ceasefire resolution at the Security Council, and there is little evidence that Washington's position has changed.

How has Guterres invoked Article 99 this time?

- In his letter to the UNSC President, Guterres spoke of the "appalling human suffering, physical destruction and collective trauma across Israel and the Occupied Palestine Territory."
- Guterres said that he has repeatedly condemned the October 7 Hamas attacks on Israel that led to the deaths of more than 1,200 people, and called for the release of more than 130 people still held captive.
- He added that since the start of Israel's military operation, more than 15,000 have been killed, with nearly 40 per cent being children.
- The collapse of the healthcare system, difficulties in extending humanitarian relief, and issues of displacement have been pointed to – as a result of the "constant bombardment by the Israel Defense Forces".
- Guterres urged the members of the Security Council to press to avert a humanitarian catastrophe.
- He appealed for a humanitarian ceasefire to be declared. This is urgent. The civilian population must be spared from greater harm.
- With a humanitarian ceasefire, the means of survival can be restored, and humanitarian assistance can be delivered in a safe and timely manner across the Gaza Strip.

Can Article 99 end the conflict?

- Considered the UN's most powerful body, the 15-member Security Council is tasked with maintaining international peace and security. If it chooses to act on Guterres's advice and adopt a ceasefire resolution then yes. It will have additional powers at its disposal to ensure the resolution is implemented, including the power to impose sanctions or authorize the deployment of an international force.
- But it doesn't give Guterres any powers to force the Security Council to adopt a resolution.
- Also, to be adopted, a resolution needs at least nine votes in favor and no vetoes by the five permanent members – the United States, Russia, China, France or Britain.
- However, it is unlikely that the vote will see permanent members' unanimous support.
- Also, because of the veto at the Security Council, the only way the Security Council can adopt a substantive resolution on this issue is for each of the five permanent members to choose not to veto it.
- China, Russia, the US, the UK, and France – hold this veto power.
- And the US and Britain have expressed support for Israel's military actions since October 7.

International Maritime Organisation (IMO)

Why in News

India was re-elected to the International Maritime Organisation (IMO) Council with the highest tally at elections held at its Assembly in London for the 2024-25 biennium.

Important Points

- India's re-election reflects the government's commitment to enhancing India's diverse contributions to global maritime operations.

What is the International Maritime Organisation (IMO)?

- The IMO is a specialised agency of the United Nations responsible for regulating shipping.
- It was established following agreement at a UN conference held in Geneva in 1948 and came into existence 10 years later, meeting for the first time in 1958.
- Headquartered in London, United Kingdom, IMO currently has 175 Member States and three Associate Members.
- India joined the IMO in 1959 and the IMO currently lists India as among the 10 states with the largest interest in international seaborne trade.

The IMO's primary purpose is to develop and maintain a comprehensive regulatory framework for shipping and its mandate includes:

- o Maritime safety,
- o Environmental concerns,
- o Legal matters,
- o Technical co-operation,
- o Maritime security and
- o The efficiency of shipping.
- In other words, its role is to create a level playing-field so that ship operators do not have to compromise on safety, security, and environmental performance in order to address financial difficulties.
- This approach also encourages innovation and efficiency.



Governance of IMO

- IMO is governed by an assembly of members which meets every two years.
- The Assembly is responsible for approving the work programme, voting the budget and determining the financial arrangements of the organisation.
- It also elects the organisation's 40-member council at these meetings for the next two-year period
- The council is the executive organ of IMO and is responsible (under the Assembly) for supervising the work of the organisation.
- Between sessions of the Assembly, the council performs the functions of the Assembly, except that of making recommendations to governments on maritime safety and pollution prevention.
- Significance of Shipping Industry and Role Played by IMO
- Shipping is a truly international industry, and it can only operate effectively if the regulations and standards are themselves agreed, adopted and implemented on an international basis.
- IMO is the forum at which this process takes place.
- Shipping is the most efficient and cost-effective method of international transportation, facilitating over 80% of global trade and helping to create prosperity among nations and peoples all over the world.
- IMO measures cover all aspects of international shipping - including ship design, construction, etc. - to ensure that this vital sector remains safe, environmentally sound, energy efficient and secure.
- Through IMO, the Member States, civil society and the shipping industry are already working together to ensure a continued and strengthened contribution towards a green economy and growth in a sustainable manner.
- IMO is actively working towards the 2030 Agenda for Sustainable Development and the associated SDGs.

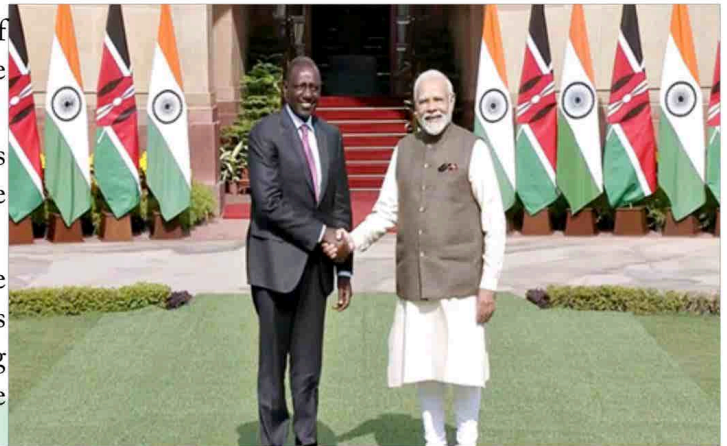
India-Kenya

Why in News

India has extended a \$250 million Line of Credit for modernisation of agriculture in Kenya.

Important Points

- Kenyan President William Samoei Ruto is on a three-day state visit to India.
- India and Kenya looked to boost defence, maritime and connectivity ties as Prime Minister Narendra Modi held talks with visiting President William Ruto.
- PM Modi announced a new \$250 million line of credit to help the east African country improve its agriculture sector.
- The two countries also signed five agreements and issued a vision document for maritime cooperation in the Indian Ocean.
- Looking to intensify defence cooperation, the leaders agreed to continue working towards expanding training exchanges, including deputation of Indian experts, in Kenyan defence institutions.
- PM Modi said both sides will carry out joint military exercises and will collaborate on counter-terror projects.



India-Kenya Bilateral Relationship

- India established the office of Commissioner for British East Africa resident in Nairobi in 1948.
- Following Kenyan independence in December 1963, a High Commission was established in Nairobi, capital of Kenya.
- India has had an Assistant High Commission in Mombasa, coastal city in southeastern Kenya.
- Vice President Dr. S Radhakrishnan visited Kenya in July 1956.
- The State visit of PM Narendra Modi to Kenya in 2016 gave a new impetus to bilateral partnership.

Bilateral Trade:

- An India-Kenya Trade Agreement was signed in 1981, under which both countries accorded Most Favored Nation status to each other.
- As a follow-up to the Agreement, the India-Kenya Joint Trade Committee (JTC) was set up at Ministerial level in 1983.
- A bilateral Double Taxation Avoidance Agreement (DTAA) was signed in 1989.
- Revised DTAA was signed in July 2016 and came into force in 2017.

Exports:

- In 2021, India exported \$2.55B to Kenya.
- The main products that India exported to Kenya are Refined Petroleum (\$504M), Packaged Medicaments (\$253M), and Semi-Finished Iron (\$149M).
- During the last 26 years the exports of India to Kenya have increased at an annualized rate of 9.46%, from \$243M in 1995 to \$2.55B in 2021.

Imports:

- In 2021, Kenya exported \$107M to India.
- The main products that Kenya exported to India were Dried Legumes (\$42.8M), Carbonates (\$20.5M), and Tea (\$11.7M).

Development Cooperation:

- India offers development assistance to Kenya in the form of loans and credit.
- This includes a loan of Rs. 50 million to Government of Kenya in 1982 and Lines of Credit by EXIM Bank to Industrial Development Bank Capital Ltd.

Social Ties:

- About 80,000 to 100,000 people in Kenya are of Indian origin.
- This makes Kenya the African country with the largest Indian community after South Africa.
- The Kenyan government in 2017, recognized the Indian descent as the 44th tribe in the country.
- India is the third largest source (other than neighbours) of inbound tourists to Kenya.
- There are about 3,500 Kenyan students currently studying in 50 Institutions throughout India.

Europe agrees landmark AI regulation deal

Why in News

Europe has reached a provisional deal on landmark European Union rules governing the use of Artificial intelligence.

Important Points

Background

- Data science and artificial intelligence legislation began with the General Data Protection Regulation (GDPR) in 2018.
- GDPR act in the European Union is not only about AI, but it does have a clause that describes the 'Right to explanation' for the impact of artificial intelligence.

Later on, 2021's AI Act in Europe classifies AI systems into three categories:

- Systems that create an unacceptable amount of risk must be banned
- Systems that can be considered high-risk need to be regulated
- Safe applications, which can be left unregulated
- Other Similar regulations: Canada enacted the Artificial Intelligence and Data Act (AIDA) in 2022 to regulate companies using AI with a modified risk-based approach.
- Unlike the AI Act, AIDA does ban the use of AI even in critical decision-making functions. However, the developers must create risk mitigation strategies as a backup plan.

About the Deal:

- With the recent deal, the EU moves toward becoming the First Developed Country to enact laws governing AI.
- The deal was held between EU countries and European Parliament members.

The deal comprises of:

- o Drawing up technical documentation,
- o Complying with EU copyright law and
- o Disseminating detailed summaries about the content used for training.
- o Procedure for High-impact foundation models with systemic risk will have to;
- o Conduct model evaluations,
- o Assess and mitigate systemic risks,
- o Conduct adversarial testing,
- o Report to the European Commission on serious incidents,
- o Ensure cyber security and
- o Report on their energy efficiency.
- For Government's Use: Governments can only use real-time biometric surveillance in public spaces in cases of victims of certain crimes, prevention of genuine, present, or foreseeable threats, such as terrorist attacks, and searches for people suspected of the most serious crimes.

Prohibited Activities:

- The agreement bans cognitive behavioural manipulation,
- The untargeted scrapping of facial images from the internet or CCTV footage,
- Social scoring and biometric categorisation systems to infer political, religious, philosophical beliefs, sexual orientation and race.

Need for such regulation:

- Unlimited Access: Easy access to such power is risky.
- Job Loss: AI, like generative AI, might mess up jobs.
- Biased Results: AI can be unfair. It learns from biased data and makes unfair choices.
- Social Spying and Fakes: It can copy voices and faces perfectly and leads to generate fake videos and photos.
- AI in Wars: Stopping the race for AI weapons is crucial for peace.



AI Regulation in India

- India has taken a slightly different approach to the growth and proliferation of AI.
- While the government is keen to regulate generative AI platforms like ChatGPT and Bard, there is no plan for a codified law to curb the growth of AI.
- IT Minister Ashwini Vaishnaw recently stated that the NITI Aayog, the planning commission of India, issued some guiding documents on AI.
- These include the National Strategy for Artificial Intelligence and the Responsible AI for All report.
- While these documents list good practices and steer towards a vision for responsible AI, they are not legally binding.

River City Alliance

Why in News

Recently, the National Mission for Clean Ganga (NMCG) signed a Memorandum of Common Purpose (MoCP) with the Mississippi River Cities and Towns Initiative (MRCTI), representing 124 cities/towns along the Mississippi River in the United States.

Important Points

- The RCA is a cooperative effort of the Ministries of Jal Shakti (MoJS) and Housing and Urban Affairs (MoHUA), to connect river cities and focus on sustainable river development.
- The Alliance focuses on three primary themes: networking, capacity building, and technical support.
- The Alliance began with 30 member cities in November 2021 and has since grown to 110 river cities across India and one overseas member city from Denmark.

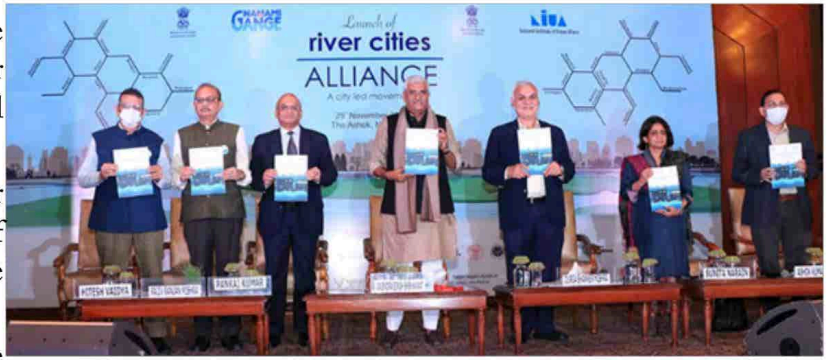
Objective

- The RCA aspires to encourage online knowledge sharing for Indian cities interested in learning innovative methods and approaches to urban river management.
- It would also provide international cities with the opportunity to learn about experiences in Indian cities that may apply to their situations.

Significance

- It will allow cities to learn from each other's achievements and failures while also connecting people to rivers.

- It has the potential to play a critical role in connecting communities with their rivers, and it can serve as a model for all cities in the Basin and beyond.
- It will provide an opportunity for municipal administrators and their staff to adopt innovative initiatives while learning and inspiring one another.
- It allows towns to increase governance features for river cities and improves their liveability to attract external economic investments, access state-of-the-art knowledge and frameworks, and serve as the location for unique demonstration projects.



Suggestions

- Cities should be in charge of revitalizing their rivers.
- It must be done with a developmental and facilitative perspective as well as a regulatory mindset.
- There is a need for a framework for integrating urban built form, landscape, and the urban water cycle.
- Cities have been regarded as substantially responsible for the deterioration of rivers and will thus need to play an important role in rejuvenation initiatives as well.
- There is a need to include river-sensitive practices in urban development.

Related Initiatives

- **Namami Gange Programme:** It is an Integrated Conservation Mission to accomplish the twin objectives of effective abatement of pollution and conservation and rejuvenation of the National River Ganga.
- **Ganga Action Plan:** It was the first River Action Plan that was taken up by the Ministry of Environment, Forest and Climate Change in 1985, to improve the water quality through the interception, diversion, and treatment of domestic sewage.
- **National River Ganga Basin Authority (NRGBA):** It was formed by the Government of India in the year 2009 under Section 3 of the Environment Protection Act, 1986.
- **Clean Ganga Fund:** In 2014, it was formed to clean up the Ganga, set up waste treatment plants, and conservation of biotic diversity of the river.
- **Bhuvan-Ganga Web App:** It ensures the involvement of the public in monitoring of pollution entering into the river Ganga.
- **Ban on Waste Disposal:** In 2017, the National Green Tribunal banned the disposal of any waste in the Ganga.

Conference on Disarmament

Why in News

Foreign Secretary Vinay Kwatra, UN discussed about India's presidency of the Conference on Disarmament.

Important Points

- The Conference on Disarmament (CD) is a multilateral disarmament forum. It was established by the international community to negotiate arms control and disarmament agreements based at the Palais des Nations in Geneva.

Important Points

History

- The Conference was first established in 1979 as the Committee on Disarmament as the single multilateral disarmament negotiating forum of the international community.
- It was renamed the Conference on Disarmament in 1984.

Agenda behind its Formation

The Conference was created with a permanent agenda, also known as the "Decalogue", which includes the following topics:

- Nuclear weapons in all aspects
- Other weapons of mass destruction
- Conventional weapons
- Reduction of military budgets
- Reduction of armed forces
- Disarmament and development
- Disarmament and international security
- Collateral measures; confidence building measures; effective verification methods concerning appropriate disarmament measures, acceptable to all parties
- Comprehensive programme of disarmament leading to general and complete disarmament under effective international control
- Additionally, all decisions of the body must be agreed upon by consensus according to the rules and procedures of the conference.



Meeting Sessions

- The Conference meets annually in three separate sessions in Geneva.

Relationship with the United Nations

- The Conference is formally independent from the United Nations.
- However, while it is not formally a UN organization, it is linked to it in various ways.
- First and foremost, the Director-General of the United Nations Office at Geneva serves as the Secretary-General of the Conference.
- Furthermore, while the Conference adopts its own rules of procedure and agenda, the United Nations General Assembly can pass resolutions recommending specific topics to the Conference.
- Finally, the Conference submits a report of its activities to the General Assembly yearly, or more frequently, as appropriate.
- The Conference on Disarmament Secretariat and Conference Support Branch of the United Nations Office for Disarmament Affairs, based in Geneva, provides organizational and substantive servicing to the Conference on Disarmament, the single multilateral disarmament negotiating forum of the international community.

Work of the Conference

- Initially, the Conference and its predecessors were successful in meeting their mandate.
- They were instrumental in drafting numerous arms control agreements: most importantly:
 - the Treaty on the Non-Proliferation of Nuclear Weapons (1968),
 - the Biological Weapons Convention (1972),
 - the Chemical Weapons Convention (1993) and
 - the Comprehensive Nuclear-Test-Ban Treaty (1996).

Membership

- Members countries of the Conference on Disarmament
- The conference is currently composed of 65 formal members, representing all areas of the world, as well as all known nuclear-weapon states.
- Additionally, members are organized into several informal regional groups to facilitate their preparation for, and representation in the plenary meetings of the Conference.
- India is a member.

Maldives Ends Pact with India on Hydrographic Survey

Why in News

The Maldives government has decided to not renew an agreement with India that allowed India to conduct hydrographic surveys in Maldivian waters.

Important Points

- The agreement was signed in 2019 when President Ibrahim Solih was in power.
- The new government of President Mohamed Muizzu recently requested that India should pull out its military personnel deployed in the country.

Hydrographic Survey Pact

- Hydrographic surveys are carried out by ships, which use methods such as sonar to understand the various features of a water body.
- These surveys help map out water depth, the shape of the seafloor and coastline, the location of possible obstructions, and physical features of water bodies, to ensure the efficiency and safety of maritime transportation.
- So far, three joint hydrographic surveys have been undertaken – in 2021, 2022, and 2023.
- The surveys were done to generate updated Navigational Charts/ Electronic Navigational Charts of the areas, which would help sectors such as Tourism, Fisheries, Agriculture, etc.
- The survey is in line with India's policy of supporting the Maldives to set up Hydrographic facilities within the Maldives National Defence Force (MNDF).

India's other Such Surveys

- India's oldest Hydrographic Survey ship, INS Sandhayak undertook more than 200 major hydrographic surveys along the Western and Eastern coasts of the Indian peninsula, and the Andaman Sea, as well as surveys in neighbouring countries including Sri Lanka, Myanmar, and Bangladesh.
- Indian survey ships have assisted Kenya, Mauritius, Mozambique, Maldives, Oman, Seychelles, Sri Lanka and Tanzania in the past.

Reasons for Not Renewing the Agreement

- Change of Regime: It has to do with the change of regime in the country as the previous President Solih was seen as being more favourable to India, but his successor Mohamed Muizzu is being seen as more pro-China.
- Influence of China: While the Maldives has traditionally been a part of India's sphere of influence, in recent decades China has sought to project its power aggressively in the Indian Ocean, including through massive investments in infrastructure projects under Belt and Road Initiative (BRI).
- Change in Foreign Policy: During the election campaign, Muizzu said agreements with foreign countries must be terminated unless their presence was beneficial to the Maldives which was seen as a reference to India.

Brief on India and Maldives Relations

- Early Diplomatic Ties (1965-1978): The Maldives gained independence from the British in 1965, and established diplomatic relations with India.
- India was one of the first countries to recognize the Maldives as an independent nation.
- Strategic Importance: The Maldives is strategically located in the Indian Ocean, and its stability and security are of interest to India.
- Economic Cooperation: India and Maldives signed a trade agreement in 1981, which provides for the export of essential commodities.
- India-Maldives bilateral trade crossed the USD 300 million mark for the first time in 2021.
- India emerged as Maldives' 3rd largest trade partner in 2021.
- Defense and Security Cooperation: Since 1988, defence and security has been a major area of cooperation between India and Maldives.



- A comprehensive Action Plan for Defence was also signed in 2016 to consolidate defence partnership.
- Capacity Building/Training: India provides the largest number of training opportunities for Maldivian National Defence Force (MNDF), meeting around 70% of their defence training requirements.
- Tourism: In 2023, India is the leading source market for Maldives with a 11.8% market share.
- In March 2022, India & Maldives agreed for an open skies arrangement which will further improve connectivity between two countries.
- Like any relationship, India-Maldives ties have faced challenges, including political changes within the Maldives.
- However, the countries have demonstrated resilience and an ability to navigate through such challenges.

Colombo Security Conclave (CSC)

Why in News

- The emergence of the Colombo Security Conclave (CSC) represents a significant development in the Indian Ocean region, focusing on enhancing security cooperation among its member nations.

Important Points

- Formed through trilateral meetings involving India, Maldives, and Sri Lanka in 2011, the CSC aims to address critical security challenges and promote cooperation in the Indian Ocean.
- The recent NSA meeting in December 2023, presided over by India's National Security Adviser Ajit Doval, reflects the CSC's commitment to fostering a secure and stable Indian Ocean region.
- This meeting, attended by Mauritius, Sri Lanka, Bangladesh, and Seychelles as observers, highlighted the CSC's proactive approach to regional challenges, despite the absence of the Maldives due to domestic political changes.



Evolution and Expansion

- Initially initiated as trilateral meetings, the CSC faced a temporary suspension between 2014 and 2020 due to strained relations between India and the Maldives.
- However, it was re-established and rebranded in 2020, expanding to include Mauritius as a member, with Bangladesh and Seychelles participating as observers, potentially joining as full members.

Objectives and Pillars

- The CSC operates at the National Security Advisor (NSA) level, focusing on key areas such as maritime security, countering terrorism, cybersecurity, and addressing transnational crimes.
- Its agenda encompasses five significant pillars, including:
 - o Maritime safety and security.
 - o Countering terrorism and radicalization.
 - o Combating trafficking and transnational organized crime.
 - o Cybersecurity and protection of critical infrastructure and technology.
 - o Humanitarian assistance and disaster relief.

Operationalization and Exercises

- The CSC operationalizes its objectives through regular security-focused exercises.
- These exercises cover a broad range of areas including maritime search and rescue, cybersecurity, coastal security, and anti-terrorism measures.
- Notably, joint exercises involving India, Sri Lanka, and Maldives were conducted under the CSC's framework, showcasing collaborative efforts in enhancing security.

Ajit Doval's Perspectives and Institutionalization

- Indian NSA Ajit Doval, during the March 2022 meeting, emphasized the need for a 'concrete roadmap' and a 'defined charter of objectives' to formalize cooperation.
- He advocated for focused efforts on addressing drug trafficking and transnational organized crime.
- Moreover, the CSC seeks to establish a structured framework by proposing the involvement of coast guard heads and the formation of joint working groups to address specific challenges.

Changing Dynamics and India's Strategic Vision

- The CSC's trajectory underscores the evolving dynamics of the Indian Ocean.
- India's initiative to expand the CSC to include Mauritius, Seychelles, and Bangladesh signifies its evolving strategic vision in the region.
- As a traditional regional power, India views the CSC as an opportunity to strengthen its leadership and contribute significantly to the region's security architecture.

Navigating the China Factor:

- China's growing presence in the Indian Ocean, evident through initiatives like the Belt and Road Initiative (BRI) and maritime infrastructure projects, has contributed to the CSC's resurgence.
- Beijing's investments, naval capabilities, and strategic interests in the region are perceived by India as an attempt to curb its influence and secure critical sea lines.
- Despite concerns, India acknowledges that several regional nations don't view China as a direct threat, leading the CSC to focus on multiple pillars of cooperation to address shared challenges like maritime security, counterterrorism, cyber threats, and humanitarian aid.

Operationalizing the CSC's Agenda:

- The CSC has made tangible progress in enhancing regional security by investigating terror financing, addressing narcotics trafficking, combating cybercrime, and promoting maritime safety.
- The institution has organized conferences on coastal security and engaged in collaborations on counterterrorism, law enforcement, and cybersecurity.
- However, the CSC remains susceptible to domestic political shifts within member nations, as evident from the Maldives' absence, indicating the complex interplay of national interests, nationalism, and international alignments within these democracies.

Challenges

- The CSC faces challenges concerning its expansion and coordination with existing multilateral groups in the Indian Ocean.
- It also aims to insulate itself from domestic political changes, highlighting the need for better institutionalization within participant countries.
- Additionally, to ensure a more concentrated focus on maritime concerns within the CSC, India might consider establishing bilateral maritime security dialogues with each CSC member country.

Chapter- 8

GOVERNMENT SCHEME

Ayushman Arogya Mandir

Why in News

The Indian government has decided to rename the existing Ayushman Bharat Health and Wellness Centres (AB-HWCs) as 'Ayushman Arogya Mandir' with the tagline 'Arogyam Parmam Dhanam'. This means "Health is the greatest wealth" in Sanskrit.

Important Points

- The Ayushman Bharat Health and Wellness Centres (AB-HWCs) have been instrumental in reshaping India's healthcare approach, focusing on holistic wellness and preventive care.
- Rename AB-HWCs as 'Ayushman Arogya Mandir' is part of a strategic initiative by the Union Government to further emphasize the integration of healthcare services and the shift from treating illnesses to promoting overall wellness.

Renaming Initiative

- The AB-HWCs are being rebranded as 'Ayushman Arogya Mandir' with the tagline 'Arogyam Parmam Dhanam', signifying the value of health as the foremost wealth.
- This rebranding aims to align with the vision of Ayushman India and emphasize the holistic nature of healthcare, transcending the traditional healthcare model focused solely on treating diseases.
- The Union Health Ministry has urged all States and Union Territories to complete this rebranding process by the end of 2023.



Implementation Guidelines

- The centres are instructed to retain the National Health Mission (NHM) logo in the rebranded centres, ensuring continuity in identification.
- In regions where scripts other than Devanagari (Hindi) or English are used, the full title can be translated into the state language(s), while the tagline should be transliterated into the respective state language(s).
- The proposed funds required for renaming each existing facility have been estimated at 3,000 per centre.

Operational Procedure

- States are mandated to upload new photographs of these rebranded primary health facilities onto the AB-HWC portal once the rebranding is completed.
- Currently, India has over 1.6 lakh AB-HWCs, aimed at providing comprehensive primary healthcare services, including maternal and child health services, essential drugs, diagnostic services, and screenings for various health conditions.

Impact and Objectives

- The AB-HWCs have successfully shifted the healthcare paradigm from illness-centric to wellness-focused, embodying a preventive healthcare approach.
- These centres aim to bring healthcare closer to people's homes, ensuring access to essential services like screenings for chronic diseases and maternal and child health services.

- The renaming initiative represents a strategic effort to reinforce the significance of holistic health and preventive care within India's healthcare infrastructure. It aligns with the government's vision to create a robust healthcare system focused not just on treating diseases but also on promoting wellness at the grassroots level.

PM JANMAN

Why in News

The Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) is an initiative approved by the Union Cabinet specifically designed to cater to the critical requirements of Particularly Vulnerable Tribal Groups (PVTGs), focusing on their welfare and empowerment.

Important Points

About PM JANMAN

- The Union Cabinet chaired by the Prime Minister has approved Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) to uplift the Particularly Vulnerable Tribal Groups (PVTGs).
- The scheme will have a total outlay of Rs.24,104 crore, with the Centre and the States sharing the cost in a ratio of 64:36.
- The PM-JANMAN scheme is in line with the Budget announcement of 2023-24, in which the Finance Minister had proposed to launch a Pradhan Mantri PVTG of Development Mission to improve the socio-economic conditions of the PVTGs.
- The Mission will aim to provide basic amenities and services to all PVTG households and habitations, such as safe housing, clean drinking water and sanitation, improved access to education, health and nutrition, road and telecom connectivity, and sustainable livelihood opportunities.
- The Mission will be implemented in the next three years under the Development Action Plan for the Scheduled Tribes (DAPST), with an allocation of Rs.15,000 crore.
- India has a Scheduled Tribe (ST) population of 10.45 crore as per the 2011 census, out of which 75 communities located in 18 States and the Union Territory of Andaman and Nicobar Islands have been categorized as PVTGs. These PVTGs are among the most marginalized and vulnerable sections of society, facing multiple challenges and deprivations in various fields.



The PM-JANMAN scheme will focus on 11 critical interventions through 9 Ministries including the Ministry of Tribal Affairs. These interventions are:

- **Housing:** To provide safe and dignified housing to all PVTG households under Pradhan Mantri Awas Yojana-Gramin (PMAY-G).
- **Drinking water and sanitation:** To ensure universal coverage of piped water supply and individual household toilets under Jal Jeevan Mission (JJM) and Swachh Bharat Mission-Gramin (SBM-G).
- **Education:** To enhance access to quality education for PVTG children through residential schools, hostels, scholarships, bridge courses, e-learning platforms and special coaching under Samagra Shiksha Abhiyan (SSA) and other schemes.
- **Health and nutrition:** To improve health outcomes and nutritional status of the PVTG population through dedicated mobile medical units, health camps, immunization drives, supplementary nutrition programmes, Anganwadi centres and other schemes.
- **Road connectivity:** To connect all PVTG habitations with all-weather roads under Pradhan Mantri Gram Sadak Yojana (PMGSY).

- **Telecom connectivity:** To provide mobile connectivity and internet access to all PVTG habitations under BharatNet and other schemes.
- **Livelihood opportunities:** To promote sustainable livelihoods for PVTG households through skill development, self-help groups, micro-enterprises, value addition, market linkages and other schemes.
- **Land rights:** To secure land rights and titles for PVTG households under the Forest Rights Act (FRA) and other laws.
- **Social security:** To provide social protection and insurance to PVTG households under Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY) and other schemes.
- **Cultural preservation:** To preserve and promote the rich cultural heritage and identity of PVTGs through documentation, dissemination, festivals, awards and other schemes.
- **Institutional support:** To strengthen the institutional mechanisms for planning, monitoring, evaluation and convergence of the PM-JANMAN scheme at various levels.

Importance

- The PM-JANMAN scheme is expected to bring about a transformational change in the lives of the PVTGs by addressing their specific needs and aspirations. The scheme will also contribute to the vision of Sabka Saath Sabka Vikas Sabka Vishwas aur Sabka Prayas.

GIAN scheme

Why in News

After brief discontinuation during the COVID period, the Ministry of Education to restart the fourth phase of the Global Initiative of Academic Networks (GIAN)-to rope in eminent scholars from across the world to teach at Indian universities.

Important Points

- After an eight-year journey, including a brief pause during COVID, the Ministry of Education is preparing to resume the fourth phase of the Global Initiative of Academic Networks (GIAN).
- This initiative aims to bring in distinguished scholars worldwide to teach at Indian universities.
- The National Institute of Educational Planning and Administration (NIEPA), after evaluating the scheme, recommended its continuation.

Global Initiative for Academic Networks (GIAN)

- GIAN is a flagship initiative by the Ministry of Education (MoE), Government of India designed to foster collaboration and enhance the quality of education and research in Indian academic institutions.
- Launched in 2015, the primary objective of the GIAN scheme is to provide an opportunity for students and faculty to interact with the best academic and industry experts from all over the world.
- The GIAN initiative aimed at tapping the talent pool of scientists and entrepreneurs internationally to encourage their engagement with the institutes of Higher Education in India.
- To augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.



The eligibility criteria for joining the GIAN scheme are as follows:

- Faculty members of Indian institutions of higher education.
- Scientists and entrepreneurs from abroad.

Objectives:

- To enhance the presence of esteemed international faculty in Indian academic institutions. Offer opportunities for our faculty to acquire and exchange knowledge and advanced teaching skills.
- Enable our students to access expertise and insights from distinguished international faculty.
- Establish pathways for potential collaborative research ventures with international scholars. Create top-notch course materials in specialized domains, available in both video and print formats, for broader use by students and educators.
- Document and cultivate innovative pedagogical approaches in emerging subjects of national and global significance.

Present Status of GIAN Scheme

- Since the initiation of the GIAN program, the Central government has allocated a substantial Rs 126 crore towards supporting foreign faculty. These funds cover travel expenses and honorariums for teaching.
- Notably, each foreign faculty member receives USD 8,000 (~Rs7 lakh) for a week-long course and USD 12,000 (~ Rs12 lakh) for a two-week course.

Distribution of Courses Across Educational Institutions:

- Of the delivered courses, 39% took place in IIT campuses, with the second-largest share occurring in National Institute of Technology (NIT) campuses.
- The distribution also included State Universities, Indian Institutes of Information Technology (IIITs), Indian Institute of Sciences (IISc), Indian Institutes of Science Education and Research (IISERs), management institutes, Central universities, and All India Council of Technical Education's engineering colleges.

PM-DevINE Scheme

Why in News

The Union Ministry for the Ministry of Development of North Eastern Region provided recent updates on the Prime Minister's Development Initiative for North Eastern Region (PM-DevINE).

Important Points

The Genesis of PM-DevINE:

- The PM-DevINE scheme as a Central Sector scheme, was introduced as a part of the Union Budget 2022-23.
- The Cabinet granted approval for the PM-DevINE scheme on 12th October 2022 with a total scheme outlay of 6,600 crore for the 4 years period from 2022-23 to 2025-26 (remaining years of the 15th Finance Commission period).
- It has been granted 100% Central funding, ensuring that resources are directly allocated to the development initiatives.
- It will be implemented by Ministry of Development of North-East Region.

Objectives of PM-DevINE:

- **Infrastructure Development:** In line with the spirit of PM GatiShakti, PM-DevINE aims to fund infrastructure projects in a cohesive manner, ensuring seamless connectivity and accessibility across the NER.
- **Supporting Social Development Projects:** Recognizing the unique needs and challenges of the NER, the scheme endeavors to support social development projects that address critical issues and improve the overall quality of life for the region's inhabitants.



- Empowering Youth and Women: PM-DevINE seeks to create livelihood opportunities specifically targeting the youth and women of the NER, enabling them to participate actively in the region's development and progress.

Budget Allocation:

- The scheme received an initial allocation of Rs. 1500 crore in the Union Budget 2022-23.
- Over the 4-year period from 2022-23 to 2025-26, which aligns with the remaining years of the 15th Finance Commission period, the scheme has an overall outlay of Rs. 6,600 crore.
- A state-wise, project-wise list of projects approved during FY 2022-23 has been laid out, with each project tailored to address the specific needs of the respective states.

PM-USHA scheme

Why in News

The Union Education Minister urges Odisha CM to implement the PM-USHA scheme, aiming to enhance higher education accessibility and quality in underserved areas.

Important Points

- PM-USHA is a centrally sponsored scheme aimed at enhancing higher education in India.
- It's a continuation of the Rashtriya Uchchatar Shiksha Abhiyan (RUSA) and aligns with the vision set by the National Education Policy (NEP) of 2020. The primary objectives include improving access, equity, and excellence in higher education, especially in underserved regions.

Key Components of PM-USHA

- The scheme prioritizes areas with low Gross Enrolment Ratio (GER), SC/ST population, and regions affected by left-wing extremism. These areas are identified as focus districts to address educational disparities.
- PM-USHA aims to establish new higher education institutions and upgrade existing ones to improve infrastructure, faculty quality, and overall educational standards.
- It emphasizes implementing reforms such as multiple entry-exit options, an academic bank of credits, the National Higher Education Qualifications Framework (NHEQF), and integrating Indian knowledge systems into the curriculum.



Odisha's Role and Pending MoU

- The Union Education Minister has urged Odisha's Chief Minister to implement the PM-USHA scheme in the state.
- The scheme requires states/UTs to sign a Memorandum of Understanding (MoU) with the Centre for its implementation. This MoU outlines responsibilities, planning, implementation, and monitoring mechanisms.
- Odisha's signing of the MoU is crucial to ensure the state doesn't miss out on the benefits of the scheme, including grants-in-aid, as the process for submissions has already begun through a dedicated portal.

Long-term Vision and Funding

- The scheme is approved till March 31, 2026, with a substantial outlay of Rs 12,926 crores.
- Its long-term vision aligns with NEP 2020, focusing on holistic educational development, bridging educational gaps, and fostering excellence across higher education institutions.

Implications and Benefits for Odisha

- Implementation of PM-USHA in Odisha can potentially lead to the establishment of new educational institutions, improvements in existing infrastructure, faculty development, and aligning the state's higher education system with national reforms.
- By addressing disparities and focusing on underserved regions, it aims to enhance access to quality higher education for students in Odisha.
- The PM-USHA scheme represents a concerted effort by the Central government to transform higher education by addressing gaps and disparities. Its implementation in Odisha holds the promise of improving the state's higher education landscape and providing enhanced opportunities for students across various regions.

Green Credit Scheme

Why in News

Prime Minister Narendra Modi launched an initiative focusing on generating Green Credits through plantation on degraded wasteland.

Important Points

During a high-level event at the ongoing climate talks - COP28 in Dubai (UAE), he highlighted that the Green Credits Initiative surpasses the commercial nature of carbon credits.

What are Carbon Credits?

- Carbon credits, also known as carbon offsets, are permits that allow the owner to emit a certain amount of carbon dioxide or other greenhouse gases.
- One credit permits the emission of one ton of carbon dioxide or the equivalent in other greenhouse gases.
- Companies that pollute are awarded credits that allow them to continue to pollute up to a certain limit, which is reduced periodically.
- Meanwhile, the company may sell any unneeded credits to another company that needs them.
- Private companies are thus doubly incentivized to reduce greenhouse emissions:
 - First, they must spend money on extra credits if their emissions exceed the cap.
 - Second, they can make money by reducing their emissions and selling their excess allowances.



What is Green Credits Initiative?

- In a landmark announcement at the COP28 (1st December 2023), the Indian PM launched the 'Green Credit Initiative,' a pathbreaking program aimed at reshaping global environmental policies.
- He also launched the official portal of the Green Credit Initiative at COP28.

Features of Green Credits Initiative

- This initiative involves creating an inventory of degraded wastelands, which can be utilised for planting by individuals and organisations.
- Participants undertaking environmentally positive actions will receive tradable green credits.
- The entire process, from registration to plantation, verification, and issuance of green credits, will be digitised.
- The portal will collect ideas, knowledge, and experiences related to tree planting and environmental conservation.
- This platform aims to influence global policies, practices, and the demand for green credits.
- The Green Credits Initiative mirrors the Green Credit Programme launched by the Union government in October, 2023.

About Green Credit Programme

- To take ahead the 'LiFE' - 'Lifestyle for Environment' movement announced by the Prime Minister in 2021, the Ministry of Environment, Forest and Climate Change introduced Green Credit Programme (GCP) in 2023.
- GCP is an innovative market-based mechanism designed to incentivize voluntary environmental actions across diverse sectors, by various stakeholders like individuals, communities, private sector industries, and companies.
- The GCP's governance framework is supported by an inter-ministerial Steering Committee.
- The Indian Council of Forestry Research and Education (ICFRE) serves as the GCP Administrator, responsible for program implementation, management, monitoring, and operation.

The GCP will cover 8 types of activities:

- Tree plantation which is meant to promote activities for increasing the green cover across the country.
- Water management is meant to promote water conservation, water harvesting, and water use efficiency or water savings, including treatment and reuse of wastewater.
- Sustainable agriculture is meant to promote natural and regenerative agricultural practices and land restoration to improve productivity, soil health, and nutritional value of food produced.
- Waste management is meant to promote circularity, sustainable and improved practices for waste management, including collection, segregation, and environmentally sound management.
- Air pollution reduction is meant to promote measures for reducing air pollution and other pollution abatement activities.
- Mangrove conservation and restoration, which is meant to promote measures for conservation and restoration of mangroves.

In its initial phase, the GCP focuses on two key activities:

- o Water conservation and
- o Afforestation
- Draft methodologies for awarding Green Credits have been developed and will be notified for stakeholder consultation.
- The Green Credit Registry and trading platform, being developed by ICFRE along with experts, would facilitate the registration and thereafter, the buying and selling of Green Credits.

NAFIS

Why in News

The Minister of State for Home Affairs highlighted the significance of the National Automated Fingerprint Identification System (NAFIS) in the Rajya Sabha.

Important Points

- The National Automated Fingerprint Identification System (NAFIS) in India stands as a pivotal component of law enforcement, revolutionizing criminal identification and investigation through its multifaceted functionalities and advanced features.

Foundation of NAFIS

- NAFIS acts as a centralized repository, housing an extensive database of fingerprints and palm prints collected from individuals primarily during their interaction with law enforcement agencies, such as upon arrest or during the immigration process.
- Each person is assigned a unique National Fingerprint Number (NFN) that serves as their distinct identifier within the system.

Operational Aspects

- When an individual is arrested or has their prints recorded during immigration proceedings, these prints are promptly captured and entered into the NAFIS database. This initiates the creation of a digital record linked to their unique NFN.

- In instances where fingerprints are recovered from a crime scene, NAFIS employs an automated comparison process. It scans the database for potential matches, aiding investigators by providing leads for further examination and analysis.
- NAFIS extends its functionality beyond India's borders by being interoperable with fingerprint databases of other nations, facilitating cross-border investigations.

Key Features

- **Centralized Database:** NAFIS consolidates fingerprint data from all states and Union Territories in India, enabling seamless access and cross-matching across the nation.
- **Speed and Accuracy:** The automated fingerprint matching system swiftly and accurately provides results, expediting investigations and enhancing their reliability.
- **Scalability:** Designed to handle vast volumes of fingerprint data, NAFIS can readily expand to accommodate the growing influx of criminal records.
- **Security Measures:** Robust security protocols safeguard sensitive data within NAFIS, ensuring protection against unauthorized access or breaches.

Benefits and Impact

- **Enhanced Criminal Identification:** NAFIS significantly bolsters law enforcement agencies' ability to identify criminals, resulting in increased arrest rates and convictions.
- **Crime Solving:** It plays a pivotal role in solving crimes by furnishing investigators with critical leads, effectively reducing crime rates and fortifying public safety.
- **Identity Theft Prevention:** By offering a secure means to verify individuals' identities, NAFIS actively combats identity theft and fraudulent activities.
- **Operational Efficiency:** NAFIS streamlines the criminal identification process, saving valuable time and resources for law enforcement agencies.

Future Prospects

- **Integration with other Databases:** Potential integration with additional crime databases, such as DNA databases, could provide a more comprehensive view of criminal activities.
- **Advancements in Matching Algorithms:** Continuous development of new algorithms could further enhance the speed and accuracy of fingerprint matching.
- **Expansion into Biometric Technologies:** NAFIS might broaden its scope to encompass other biometric technologies like iris recognition and facial recognition, amplifying its identification capabilities.

Interest Equalisation Scheme

Why in News

The Union Cabinet sanctioned an extra Rs 2500 Cr to extend the Interest Equalisation Scheme until June 30, 2024, aiding exporters in specific sectors and MSMEs to access competitive pre and post-shipment export credit.

Important Points

- The scheme serves as a crucial support mechanism for exporters, fostering growth and competitiveness in sectors vital to India's economic landscape.
- Its impact extends beyond financial assistance, aiming to generate employment and fortify India's position in the global export market.

About the Interest Equalisation Scheme

- An announcement from the Union Cabinet regarding the approval of additional funds for the Interest Equalisation Scheme, aimed at supporting exporters in various sectors, especially MSMEs.
- The scheme provides benefits in the form of interest equalization on pre and post-shipment credit to enhance competitiveness in the international market.

Objectives and Targets

- The scheme aims to bolster the competitive edge of Indian exporters, particularly those in identified sectors and MSMEs, by providing them with access to credit at affordable rates.
- Extended till June 30, 2024, with an additional allocation of Rs 2500 Crore for this period.

Beneficiaries and Rates

- Eligible for an interest equalisation rate of 2% on pre and post-shipment Rupee export credit for products listed in these 410 tariff lines.
- Enjoy a higher interest equalisation rate of 3% regardless of the specific tariff lines they belong to.

Execution and Oversight

- The Reserve Bank of India (RBI) oversees the implementation of the scheme through various Public and non-public Sector banks.
- Oversight by the Directorate General of Foreign Trade (DGFT) and RBI through collaborative mechanisms ensures effective execution.

Evolution of the Scheme

- Commenced on April 1, 2015, originally planned for five years but extended multiple times, including a year-long extension during the COVID-19 pandemic.
- Initially, the scheme lacked a fund limit and extended benefits without capping individual exporters. However, it was later revised to cap benefits at Rs 10 Crore per annum per Import Export Code (IEC).

Impact and Rationale

- Reports, such as the one conducted by IIM Kashipur, suggest a positive correlation between the scheme and increased export growth.
- Focus on labour-intensive sectors and MSMEs to spur employment opportunities.
- By ensuring competitive credit rates, the scheme intends to enhance the international competitiveness of Indian exports.

KrishiUdan Scheme

Why in News

Recently, 58 Airports are included under the scheme.

Important Points

- KrishiUdan Scheme was launched in August 2020 on international and national routes to assist farmers in transporting agricultural products to help improve their value realization.
- KrishiUdan Scheme 2.0 was announced on 27 October 2021 mainly focusing on transporting perishable food products from the hilly areas, North Eastern States and tribal areas.
- The scheme primarily covers 25 airports focusing on North Eastern, Hilly and Tribal region besides 33 airports in other regions/areas.
- In order to facilitate and incentivise movement of agri-produce by air transportation, waiver of Landing charges, Parking charges, etc. are provided under the scheme for Indian freighters by Airports Authority of India (AAI) and Ministry of Defence at selected airports under the Scheme.
- Krishi Udan Scheme is a convergence scheme where eight Ministries/Departments namely Ministry of Civil Aviation, Department of Agriculture & Farmers' Welfare, Department of Animal Husbandry and Dairying, Department of Fisheries, Ministry of Food Processing Industries, Department of Commerce, Ministry of Tribal Affairs, Ministry of Development of North-Eastern Region would leverage their existing schemes to strengthen the logistics for transportation of Agri-produce. There is no specific budget allocation under Krishi Udan Scheme.;
- The main objective of the Krishi Udan Scheme 2.0 is to increase share of air carriage in the modal mix for transportation of Agri-produce, which includes horticulture, fishery, livestock and processed products. The scheme assists farmers in transporting agriculture products so that it improves their value realisation.

- Krishi Udan scheme is to provide air transportation and logistics support for perishable agri-produce as per the need. Leveraging the existing schemes of the 8 Ministries as mentioned above, the producers can utilise the services available at 58 airports listed under the scheme considering the demand.
- The Scheme aims to ensure seamless, cost-effective, time bound, air transportation and associated logistics for all Agri-produce originating especially from North-East, hilly and tribal regions of the country. Few successful examples are air transportation of 'King Chillies, Burmese Grapes & Assamese Lemon' from Gauwahati, 'Jackfruit' from Tripura and 'Litchi' from Darbhanga.

PM Vishwakarma Scheme

Why in News

The PM Vishwakarma Scheme, launched by the Indian government has received significant interest with over 21.15 lakh applications received within two and a half months, according to data from the Ministry of Skill Development and Entrepreneurship.

Important Points

- The scheme aims to provide skill-upgradation training and support to artisans and craftspeople.

Applications by State

- Karnataka led with 6.28 lakh applications, followed by West Bengal (4.04 lakh), Assam (1.83 lakh), Uttar Pradesh (1.53 lakh), and Andhra Pradesh (1.21 lakh).
- Fifteen states, including Haryana, Kerala, Chhattisgarh, Himachal Pradesh, Uttarakhand, and northeastern states, had less than 10,000 applications each.

Applications by Occupation

- o Tailors (darzi) accounted for 43% of the applications (9.13 lakh).
- o Masons (mistri) constituted 22% (4.72 lakh).
- o Carpenters (suthar) made up 9% (1.86 lakh).
- o Basket-makers and barbers (naai) each contributed 4%.

Vetting Process

- Applications are being vetted at three levels—by village committees, district, and state levels.
- As of December 1, 17,758 candidates from 21 states are ready to undergo training.

Training and Financial Support

- Selected Candidates will undergo basic training (five to seven days) and advanced training (15 days) with a stipend of Rs500 per day.
- The budget envisaged for the scheme from FY 2023-24 to FY 2027-28 is 13,000 crore.

Master Trainers and Training Program

- In November, a five-day training program was held for 41 master trainers under the scheme across 10 states.
- Master trainers will teach various skills to barbers, tailors, masons, carpenters, doll and toy makers, and blacksmiths.

Financial Incentives

- After training, artisans will receive a tool kit incentive of 15,000 to purchase modern tools.
- Collateral-free loans at lower interest rates (approximately 8%) up to 1 lakh will be provided, along with an additional 2 lakh for setting up businesses.
- Artisans will be trained to upgrade their digital and financial skills to facilitate transactions and track earnings
- The scheme aims to modernize traditional skills and create market linkages for individuals working in 18 trades and crafts. The target is to cover six lakh beneficiaries in FY 2023-24, with a focus on providing comprehensive support, training, and financial assistance to promote the growth of traditional artisans and craftspeople.

Three sub-schemes under the RAMP programme launched

Why in News

The Union Minister for MSME has launched three sub-schemes under the aegis of the RAMP programme namely, MSME Green Investment and Financing for Transformation Scheme (MSE GIFT Scheme), MSE Scheme for Promotion and Investment in Circular Economy (MSE SPICE Scheme) MSE Scheme on Online Dispute Resolution for Delayed Payments.

Important Points

- The Ministry exchanged Memorandum of Understanding (MoUs) with the implementing agencies SIDBI (for MSME GIFT and MSME SPICE schemes) and with National Informatics Centre Services Inc. (for NICSI) for MSE ODR scheme.



About the Schemes:

- The MSME Green Investment and Financing for Transformation Scheme (MSME GIFT Scheme): It intends to help MSMEs adopt green technology with interest subvention and credit guarantee support.
- The MSE Scheme for Promotion and Investment in Circular Economy (MSE SPICE Scheme): It is the first ever scheme in the Government to support circular economy projects which will be done through credit subsidy and will lead to realising the dream of MSME sector towards zero emissions by 2070.
- The Support for Commercialisation of IP Programme (MSME – SCIP Programme) will enable the innovators in the MSME sector to commercialize their IPR.
- The MSE Scheme on Online Dispute Resolution for Delayed Payments: It is a first of its kind scheme to synergise legal support with modern IT tools and Artificial Intelligence to address the incidences of delayed payments for Micro and Small Enterprises.
- The National MSME Council has been set up by the Ministry to work as an administrative and functional body of the World Bank supported RAMP Programme to oversee inter-Central Ministerial/Departmental co-ordination, Centre State synergies and advise / monitor progress on the reforms mandated in the MSME sector.

RAMP programme:

- It is a World Bank assisted Central Sector Scheme, supporting various CoronaVirus Disease 2019 (Covid) Resilience and Recovery Interventions of the Ministry of Micro, Small and Medium Enterprises (MoMSME).

Aimed at:

- Improving access to market and credit
- Strengthening institutions and governance at the Centre and State
- Improving Centre-State linkages and partnerships
- Addressing issues of delayed payments and greening of MSMEs
- Components: Important component of RAMP is preparation of Strategic Investment Plans (SIPs), in which all states/UTs will be invited.
- The SIPs would include an outreach plan for identification and mobilisation of MSMEs under RAMP, identify key constraints and gaps, set milestones and project the required budgets for interventions in priority sectors including renewable energy, rural & non-farm business, wholesale and retail trade, village and cottage industries, women enterprises etc.
- The overall monitoring and policy overview of RAMP would be done by an apex National MSME Council.
- The council will be headed by the Minister for MSME, including representation from various Ministries and supported by a secretariat.

Jal Jeevan Mission (JJM)

Why in News

The Minister of State for Jal Shakti presented details on the progress of the Jal Jeevan Mission (JJM) in the Lok Sabha.

Important Points

Progress under the Jal Jeevan Mission (JJM)

- **Schools' Water Supply:** The JJM aims to provide tap water supply in schools, including girls' schools, Anganwadi centres, and tribal residential schools, for drinking, cooking mid-day meals, and handwashing. Over 90.55% (9.23 lakh) of schools now have access to potable tap water.
- **Toilets in Schools:** Under the Swachh Vidyalaya Initiative launched in 2014, separate toilets for boys and girls were constructed in government elementary and secondary schools. Around 4.17 lakh toilets (2.26 lakh boys' and 1.91 lakh girls' toilets) were built or made functional in government schools, with 95.5% of government schools having boys' toilets and 97.4% having girls' toilets as per the UDISE+ 2021-22 data.
- **Rural Household Water Supply:** Since the initiation of JJM in August 2019, substantial progress has been made in providing tap water connections to rural households. Out of 19.24 Crore rural households, approximately 13.85 Crore (72%) now have tap water connections, which is a significant increase from the 3.23 Crore households at the start of JJM.
- **Service Delivery Standards:** Under JJM, the minimum service delivery has been set at 55 litres per capita per day (lpcd), with states having the flexibility to enhance this based on the availability of clean drinking water.
- **Implementation Support:** The government is actively involved in supporting the states and UTs in the planning, implementation, and monitoring of JJM. This includes joint discussions, annual action plans, capacity-building workshops, online monitoring systems (JJM-IMIS), financial management (PFMS), operational guidelines, and more.



Jal Jeevan Mission

- Water is essential for life, but millions of people in rural India lack access to safe and adequate drinking water. To address this challenge, the government of India launched the Jal Jeevan Mission (JJM) on August 15, 2019, with the aim of providing Functional Household Tap Connections (FHTC) to every rural household by 2024.

What is the Jal Jeevan Mission?

- JJM is a flagship program of the Ministry of Jal Shakti that envisages the supply of 55 litres of water per person per day to every rural household through FHTC. The mission also covers the provision of FHTC to schools, Anganwadi centres, health centres, gram panchayat buildings and other community buildings.
- The mission is based on a community approach to water and involves extensive Information, Education and Communication (IEC) as a key component. JJM seeks to create a 'Jan Andolan' (people's movement) for water, making it everyone's priority and responsibility.
- The mission focuses on rainwater harvesting, groundwater recharge, water conservation and management of household wastewater for reuse in agriculture.
- JJM aims to create local infrastructure for these purposes and converge with other central and state government schemes to achieve its objectives of sustainable water supply management across the country.

- The fund-sharing pattern between the Centre and states is 90:10 for Himalayan and North-Eastern States, 50:50 for other states, and 100% for Union Territories.

Why is the Jal Jeevan Mission important?

- India has 17% of the world population, but only 4% of freshwater resources. Depleting groundwater levels, overexploitations deteriorating water quality, climate change, etc. are major challenges to providing potable drinking water. It is an urgent requirement for water conservation in the country because of the decreasing amount of groundwater level.
- According to the National Rural Drinking Water Programme (NRDWP) data, only 18.33% of rural households had access to piped water supply as of August 2019. The rest depended on various sources such as hand pumps, wells, tanks, etc., which are often contaminated or unreliable.
- JJM addresses this gap by ensuring universal access to clean water across rural households. This will have multiple benefits such as:
 - Improving health and hygiene of rural people by reducing water-borne diseases.
 - Enhancing socio-economic development of rural areas by providing livelihood opportunities and reducing drudgery of women and children.
 - Promoting environmental sustainability by reducing groundwater depletion and pollution.
 - Strengthening local governance and community participation by empowering gram panchayats and village water and sanitation committees.

Some of the initiatives taken under JJM include:

- Launching a dedicated online portal for monitoring the progress and performance of JJM at various levels.
- Conducting regular review meetings with state officials and district collectors to ensure timely implementation and fund utilization.
- Providing technical assistance and capacity-building support to state and district officials through national-level agencies such as the National Institute of Rural Development and Panchayati Raj (NIRDPR), National Water Academy (NWA), etc.
- Organizing awareness campaigns and competitions on water conservation and management among school children, youth and women groups.
- Encouraging innovation and best practices in water supply systems such as solar-powered pumps, sensor-based smart meters, etc.

What are the challenges and way forward for the Jal Jeevan Mission?

- Lack of adequate human resources and institutional capacity at state and district levels to plan, execute and monitor JJM activities.
- Delay in fund release and utilization by some states due to procedural issues or lack of convergence with other schemes.
- Inadequate availability and quality of water sources in some regions due to geographical or climatic factors.
- Low awareness and participation of rural communities in water conservation and management practices.
- Difficulty in ensuring operation and maintenance of water supply systems and infrastructure in the long run.

To overcome the challenges and achieve the vision of JJM, the following steps are suggested:

- Strengthening the coordination and collaboration among various stakeholders such as central and state governments, gram panchayats, village water and sanitation committees, NGOs, etc.
- Enhancing the capacity and accountability of state and district officials through regular training, mentoring and performance appraisal.
- Streamlining the fund flow and expenditure mechanism by simplifying the guidelines and procedures and ensuring timely release and utilization of funds.
- Improving the water availability and quality by adopting scientific methods of source identification, development and protection.
- Increasing the awareness and involvement of rural communities by conducting effective campaigns and incentivizing their participation in water conservation and management activities.
- Ensuring the sustainability of water supply systems by establishing proper operation and maintenance mechanisms and involving local communities in their ownership and management.

Chapter- 9

MISCELLANEOUS

Sam Manekshaw

Why in News

Sam Manekshaw, India's beloved war general and the country's first Field Marshal, is now the subject of a biopic, Sam Bahadur.

Important Points

- "Sam Bahadur" is a revered nickname for Field Marshal Sam Manekshaw, one of India's most celebrated military commanders.
- His leadership during critical moments in India's history, especially during the 1971 Indo-Pak war, earned him respect and admiration from the nation.

Early Life and Education

- Sam Hormusji Framji Jamshedji Manekshaw was born on April 3, 1914, in Amritsar, Punjab (now in Pakistan), into a Parsi family.
- He attended the Sherwood College in Nainital and later joined the Indian Military Academy (IMA) in Dehradun.



Military Career

- Manekshaw was commissioned into the British Indian Army in 1934 and served with distinction in various campaigns during World War II.
- He was one of the few officers to be selected for the first post-independence batch of the Indian Army officers in 1947.
- Manekshaw quickly rose through the ranks due to his exceptional leadership, tactical acumen, and bravery.

Key Roles and Achievements

- During the 1962 Sino-Indian War, he served as the Director of Military Operations (DMO) and played a crucial role in handling logistics and planning.
- In 1969, he was appointed as the 8th Chief of the Army Staff (COAS) of the Indian Army.
- His most notable moment came during the 1971 Indo-Pak War when he orchestrated one of the most decisive victories in military history.
- Manekshaw's strategic brilliance and meticulous planning led to the creation of Bangladesh following the surrender of Pakistan's forces in East Pakistan (now Bangladesh) in December 1971.
- He was honored with the rank of Field Marshal, the highest rank in the Indian Army, in recognition of his exemplary service and leadership.

Leadership Style and Personality

- Manekshaw was known for his wit, humor, and straightforwardness. His charismatic personality earned him the respect and admiration of his troops and colleagues.
- He was a compassionate leader who cared deeply for the welfare of his soldiers.

Later Life and Legacy

- After retiring from the army in 1973, Manekshaw remained a revered figure and continued to be a voice of wisdom on military and national matters.

- He lived a simple life and was known for his humility and integrity.
- Field Marshal Sam Manekshaw passed away on June 27, 2008, at the age of 94, leaving behind an enduring legacy as one of India's greatest military leaders.

Honors and Recognition

- Manekshaw received numerous awards and honors, including the Padma Vibhushan, the Padma Bhushan, and the Military Cross for his distinguished service.

Pressmud

Why in News

Pressmud, a residual byproduct in the sugar industry, fosters green energy via anaerobic digestion, empowering Indian sugar mills to boost revenue through biogas and compressed biogas (CBG) production.

Important Points

- India has become a significant player in the global sugar economy, surpassing Brazil as the leading sugar producer and ranking as the second-largest sugar exporter worldwide.
- The expansion of the ethanol biofuel sector has not only strengthened the sugar industry but also improved the financial standing of sugar mills.



Pressmud as a Resource

- Pressmud, also known as filter cake or press cake, is the residual byproduct of sugar production. It has gained attention for its potential to produce green energy, specifically as a feedstock for generating biogas through anaerobic digestion, which can then be purified into compressed biogas (CBG).

Advantages of Pressmud as Feedstock for CBG:

- **Simplified Supply Chain:** Pressmud's use eliminates complexities in feedstock supply when compared to other sources like agricultural residue.
- **Single Source:** It is obtained from one or two sugar mills, simplifying sourcing compared to multiple farmers or producers.
- **Consistent Quality:** Unlike municipal solid waste, pressmud's quality remains relatively consistent, avoiding issues like inorganic material damaging digesters.
- **Cost Efficiency:** The cost of pressmud is comparatively lower than other potential feedstocks.

Challenges Associated with Pressmud Utilization

- **Increasing Costs:** The recognition of pressmud's value has led to a substantial increase in its price, creating competition with other uses like fertilizers, composting, and fuel for brick kilns.
- **Storage and Decomposition:** Storing pressmud for year-round use in CBG plants poses challenges due to its gradual decomposition, leading to breakdowns in organic compounds, which can increase production costs.

Regional Production and Mill Operations

- Uttar Pradesh and Maharashtra contribute significantly to sugarcane cultivation, and a large portion of the sugarcane production comes from these states. The number of operational sugar mills in India and their production output, alongside the potential pressmud quantity, is highlighted.

Potential of CBG Generation and Necessary Interventions:

- Given the quantity of pressmud available, there's significant potential to generate CBG. However, several interventions are needed for effective utilization.

- **Policy Implementation:** States with high CBG potential should implement bioenergy policies to streamline project approvals and offer incentives.
- **Economic Stability:** Mechanisms to control pressmud prices and encourage long-term agreements between sugar mills and CBG plants are essential for economic stability.
- **Technological Development:** Research on storage technologies to prevent methane emissions and minimize gas loss is crucial.
- **Training and Education:** Training sessions for operators and stakeholders to understand CBG plant operations and feedstock handling are necessary.

Empowering Disability Inclusion in India

Why in News

The idea of empowerment and inclusion regarding Disability needs an orientation shift to provide more fruitful. From 'For' to 'By'.

Important Points

'For' and 'By':

- "For" is often used when a person is receiving something and "By" is to "identify the agent performing an action".
- This difference is crucial when it comes to disability inclusion, as the approach is completely different if it is "by" persons with disabilities being a part of the process and not "for" them, without them in the process.

Why?

- Ensuring inclusive opportunities and employment in rural areas is imperative, considering the majority of persons with disabilities reside in these regions.

Disability as a Multifaceted Challenge:

- Disability, as a complex amalgamation of social, economic, and gender vulnerabilities, demands nuanced approaches for equitable solutions.
- Globally, 1.3 billion people grapple with disabilities, with 80% residing in developing countries and 70% in rural areas.
- The existing systems often perpetuate exclusion, leading to heightened instances of poverty, limited educational access, and social and economic discrimination.
- **The Significance of 'By' in Disability Inclusion:**
- Understanding the linguistic nuances, the term 'by' in disability inclusion signifies the active participation of persons with disabilities in the process, a departure from the passive 'for' them approach.
- This distinction is pivotal for fostering genuine inclusion.



The Economic Imperative of Inclusion:

- The International Labour Organization (ILO) underscores that integrating persons with disabilities into the economy can contribute to a global GDP boost of 3% to 7%.
- Despite the ideal of equal opportunities, the current employment landscape falls short, reinforcing stereotypes and hindering access to the job market.
- The current employment scenario is limited, providing fewer jobs for persons with disabilities and perpetuating stereotypes that create further barriers for people with disabilities to access the labour market.
- It is also in direct contravention of the United Nations Convention on the Rights of Persons with Disabilities,

which advocates changing attitudes and perceptions towards persons with disabilities and viewing inclusion from a social development dimension.

- Disability inclusion is rooted in assuring the rights of persons with disabilities and recognising the economic benefits of inclusion.

Challenges Amplified in Rural Areas:

- In India, governmental initiatives, such as the Unique ID for Persons with Disabilities (UDID) card, exist.
- However, awareness and last-mile connectivity remain crucial, especially in rural areas where challenges are exacerbated.
- Persons with disabilities in rural settings often face limited educational and employment opportunities and are viewed through a charitable lens, undermining their agency.

The Role of the Private Sector:

- Acknowledging the pivotal role of the private sector, a robust legal framework alone is insufficient.
- Engaging companies and building their confidence in hiring and retaining workers with disabilities is essential.
- Collaboration with employers' federations and trade unions further enhances the potential for promoting disability inclusion.

The SPARK Project:

- The collaboration between ILO, IFAD, and the Women's Development Corporation in Maharashtra manifests in the SPARK project.
- This initiative empowers persons with disabilities by training them as Disability Inclusion Facilitators (DIFs), fostering awareness, and breaking down barriers.
- The project has successfully instigated a positive shift in attitudes at societal and administrative levels.

Towards Social Justice:

- The goal of social justice necessitates the inclusion of persons with disabilities in all facets of development, starting with rural areas.
- Evidence underscores the bidirectional link between disability, poverty, nutrition, and hunger, emphasizing the need for inclusive opportunities and employment in rural regions.
- Amid historical marginalization and a setback in achieving Sustainable Development Goals, a profound commitment to prioritizing the voices and needs of persons with disabilities is paramount in global development agendas.

ESMA

Why in News

The Odisha government invoked the Orissa Essential Services (Maintenance) Act (ESMA) on December 6, 2023, to prohibit strikes by paramedical staff in the state.

Important Points

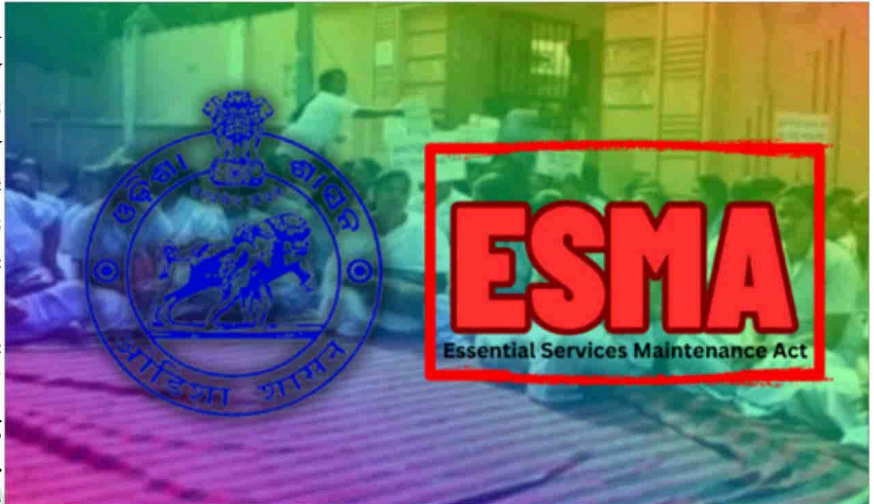
- The Odisha Government has invoked the Orissa Essential Services (Maintenance) Act (ESMA), which prohibits strikes by paramedical staff, including nurses, pharmacists, technicians, and Class III and IV employees in the Health Department. This move aims to ensure that medical services are not disrupted.
- According to the State Health Department, the order imposing ESMA and prohibiting strikes will be in force for six months from December 6.
- The decision to invoke ESMA is to prevent strikes in the form of work stoppages by employees associated with medical services in the state, ensuring uninterrupted healthcare services for the population.
- The prohibition order covers staff working at municipality hospitals, ESI hospitals, Acharya Harihar Regional Cancer Centre in Cuttack, Regional Spinal Injury Centre in Cuttack, jail hospitals, and police hospitals.

Essential Services Maintenance Act (ESMA)

- The Essential Services Maintenance Act (ESMA) is a pivotal legislation enacted in 1968 to safeguard the delivery of essential services crucial for public welfare and national security.
- Initially, different states had their versions of this Act, causing disparities in its implementation. ESMA aimed to standardize and create a uniform framework across the nation.

Key Features of ESMA

- **Prohibition of Strikes:** ESMA grants the government the authority to forbid strikes in essential services for a specified duration, typically around six months. This can be enforced through notifications issued by the central or state government.
- **Defining Essential Services:** The Act defines "essential services" as those vital for maintaining public order, safety, and health. This encompasses services like transportation, communication, power generation and distribution, banking, and sanitation.
- **Penalties for Violations:** Individuals or groups participating in strikes in essential services can face imprisonment or fines. Additionally, property used for organizing or supporting such strikes can be confiscated as per the Act.



Significance of ESMA

- **Continuity of Essential Services:** ESMA plays a critical role in ensuring the uninterrupted functioning of essential services during periods of labour disputes. This prevents disruptions that could significantly inconvenience the public.
- **Promotion of Industrial Peace:** By providing a structured framework for resolving disputes through negotiation and arbitration, ESMA fosters dialogue between employers and employees. This promotes industrial peace and stability.
- **Protection of Public Interest:** ESMA prioritizes the public interest over the right to strike in crucial sectors, safeguarding citizens' basic needs and well-being.

Steps Taken

- **Invocation of ESMA:** The Indian government has invoked ESMA on multiple occasions to prevent strikes in various essential sectors like transport, healthcare, and banking.
- **Amendments:** The Act has undergone several amendments to update the definition of essential services and adapt to changes in the industrial landscape.
- **Labour Reforms:** India has implemented labour reforms aimed at improving working conditions and addressing employee grievances, reducing the necessity for strikes and encouraging negotiation.

Challenges Associated with ESMA

- **Potential for Misuse:** Critics argue that the Act might be misused by the government to suppress legitimate labour rights, stifling workers' voices.
- **Impact on Industrial Relations:** The prohibition of strikes could negatively impact healthy industrial relations, fostering an environment of fear among workers.
- **Effectiveness:** Some doubt ESMA's effectiveness in preventing strikes, suggesting that it might drive workers toward more disruptive forms of protest.

Potential Way Forward

- Promoting Collective Bargaining: Encouraging effective dialogue and collective bargaining between employers and workers could address concerns without resorting to strikes.
- Independent Dispute Resolution: Establishing robust and independent dispute resolution mechanisms could facilitate fair and timely resolutions, preventing conflicts from escalating.
- Addressing Underlying Issues: Prioritizing improvements in working conditions, wage disparity, and worker safety could mitigate labour unrest and promote industrial peace.
- Reviewing the Act: Regular reviews of ESMA are essential to ensure its relevance and effectiveness in a changing industrial and labour landscape.

Green Voyage2050 Project

Why in News

India has been chosen as the pioneering country for the International Maritime Organization (IMO) Green Voyage2050 Project.

Important Points

- Green Voyage2050 Project, a significant initiative aimed at assisting developing nations in reducing greenhouse gas (GHG) emissions from ships.
- This project marks a crucial step towards a cleaner and more sustainable future for the maritime transportation sector.
- This announcement showcases India's significant role in combating greenhouse gas emissions within the maritime industry, especially through its involvement in the International Maritime Organization (IMO) Green Voyage2050 Project.



About Green Voyage2050 Project

- The primary aim of this project is to assist developing nations in reducing greenhouse gas (GHG) emissions specifically from ships.
- India, as a signatory to the International Convention for the Prevention of Pollution from Ships (MARPOL), has implemented its regulations concerning carbon emissions on Indian ships. These regulations emphasize enhanced energy efficiency and yearly carbon intensity reduction.

National Centre of Excellence for Green Ports and Shipping (NCoEGPS)

- India has set up its first NCoEGPS to provide policy, regulatory support, and technology adoption for Green Shipping, aimed at achieving carbon neutrality and promoting a circular economy in the shipping sector.
- The centre involves collaborations between the Ministry of Ports, Shipping and Waterways, port authorities, Cochin Shipyard Limited, and The Energy & Resources Institute (TERI).

Measures for Ships Not Meeting Carbon Intensity Reduction

- This initiative allows Indian ships to use sustainable biofuels and blends as a cost-effective option.
- A digital system is operational to monitor fuel consumption during various ship operations, ensuring efficient utilization.

Key Takeaways

- India's involvement in such projects demonstrates collaboration among various stakeholders, including public and private entities, to tackle maritime emissions.
- The establishment of the NCoEGPS indicates a commitment to shaping policies and regulations conducive to greener maritime practices.

- Initiatives like waste heat recovery systems, electric hybrid tugs, and biofuel usage showcase the country's focus on adopting and promoting innovative technologies for sustainable shipping.

Anarcho-Capitalism

Why in News

Javier Milei's victory in Argentina's presidential elections has brought the term “anarcho-capitalism” into the spotlight, sparking debates around its principles and feasibility.

Important Points

- Anarcho-capitalism is a political philosophy that advocates for the abolition of the state and the provision of law and order through private companies in a free market.
- The ideology has gained attention, particularly with figures like Javier Milei winning the presidential elections in Argentina.

How Anarcho-Capitalism Works:

Private Provision of Services

- Traditional free-market advocates believed that some services, like police and courts, could only be provided by the state. Anarcho-capitalists challenge this idea, asserting that private companies in a free market can offer policing and legal services more efficiently.

Competition in the Market

- Anarcho-capitalists argue that, similar to how private companies offer goods and services more efficiently than the government, competition in the market for policing and legal services would lead to higher quality and lower prices.

Customer Accountability

- In an anarcho-capitalist society, individuals would pay private police and courts for protection and dispute resolution. Advocates argue that customer patronage would ensure accountability, as dissatisfied customers could switch to competing services.

Criticisms of Anarcho-Capitalism

Feasibility and Conflict

- Critics argue that having multiple private firms provide police and legal services within a single region could lead to disagreement and conflict, with armed private entities protecting their paying clients, potentially causing chaos.



Bias toward the Rich

- Critics contend that anarcho-capitalism might favour the rich, as those with more financial resources could potentially manipulate private police and courts to escape justice, leaving the poor without protection.

Anarcho-Capitalist Responses to Criticisms

Cooperation and Common Rules

- Anarcho-capitalists argue that private police and courts, seeking long-term profits, would likely cooperate and agree to common rules to avoid costly conflicts. Cooperation would be necessary to prevent a situation where one firm defends a criminal against another firm's client.

Market Dynamics and Justice for the Poor

- Anarcho-capitalists assert that private firms, reliant on broad societal patronage, would not disproportionately favour the rich. They argue that the poor might have better chances of obtaining justice in a competitive market, where firms seek to satisfy the demands of a larger customer base.
- The debates around anarcho-capitalism involve fundamental questions about the role of the state, the feasibility of private provision of essential services, and the potential implications for social justice.
- While anarcho-capitalists emphasize the efficiency and accountability of private markets, critics raise concerns about conflict, inequality, and the practical challenges of implementing such a system.

Pantoea Tagorei

Why in News

Recently, a team of researchers from Kolkata's Visva-Bharati has identified a new species of bacteria which has been named *Pantoea Tagorei* in homage to Nobel Laureate Rabindranath Tagore.

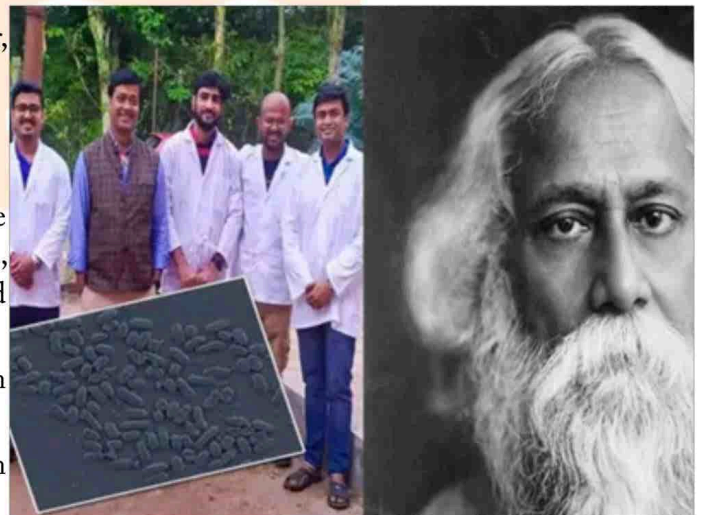
Important Points

About *Pantoea Tagorei*:

- It was discovered from soil samples collected in the Jharia coal mines.
- Characteristics
- It has unique properties beneficial for plant growth.
- It not only solubilizes potassium but also replenishes nitrogen and solubilizes
- The team has conducted experiments by introducing this bacterium to farmers, who have expressed satisfaction with the positive results.
- Significance: This bacteria marks a significant stride toward fostering environmentally friendly agricultural methods.

Key facts about Rabindranath Tagore:

- He was a world-renowned poet, litterateur, philosopher and Asia's first Nobel laureate.
- He was born in Kolkata on May 7, 1861.
- He was popularly known as Bard of Bengal, and
- He introduced new prose and verse forms and the use of colloquial language into Bengali literature, thereby freeing it from traditional models based on classical Sanskrit.
- He was highly influential in introducing Indian culture to the West and vice versa.
- Awards: In 1913 he became the first non-European to receive the Nobel Prize for Literature
- He was awarded a knighthood in 1915, but he repudiated it in 1919 as a protest against the Amritsar (Jallianwala Bagh) Massacre.
- Visva Bharati University, which was known as Shantiniketan founded by Rabindranath Tagore.
- Rabindranath Tagore wrote India's national anthem, *Jana Gana Mana*.
- Tagore's most notable work of poetry is *Gitanjali: Song Offerings*, for which he received the Nobel Prize in Literature in 1913.



National Geoscience Data Repository Portal

Why in News

The Union Ministry of Mines is to launch the National Geoscience Data Repository (NGDR) Portal on a ceremony in New Delhi.

Important Points

About National Geoscience Data Repository Portal

- It is an extensive web-based tool for geospatial data access, sharing, and analysis in India.
- The Geological Survey of India (GSI) and the Bhaskaracharya Institute of Space Applications and Geoinformatics (BISAG-N) led the NGDR effort.
- It is a major step towards democratising important geoscience data, giving academics and industry stakeholder's unparalleled access to priceless resources.

Key Facts about Geological Survey of India

- The primary goal of the Geological Survey of India (GSI), founded in 1851, was to locate coal reserves for the railways.
- As time has gone on, GSI has not only expanded into a national repository for geoscience data needed in a variety of sectors, but it has also gained recognition as a reputable geoscientific organisation worldwide.
- Its primary responsibilities include mineral resource evaluation and the creation and upgrading of national geoscientific data.
- The main responsibility of GSI is to provide current, unbiased, and objective geological expertise as well as geoscientific information of all types, with an emphasis on the demands of business, society, and policymakers.
- The GSI also places a strong emphasis on the methodical recording of all surface and subsurface geological processes in India and its offshore regions. The firm uses the newest and most economical tools and approaches to carry out this task through geological, geophysical, and geochemical studies.
- The Ministry of Mines' affiliated office is called GSI.
- Head Office: Kolkata
- Its state unit offices are dispersed throughout nearly every state in the nation, and its six regional offices are situated in Lucknow, Jaipur, Nagpur, Hyderabad, Shillong, and Kolkata.



About BISAG-N

- Ministry: MeitY, Government of India. (Indian Bureau of Mines)
- At present, BISAG is a state agency of the Department of Science and Technology Government of Gujarat, located at Gandhinagar, Gujarat.
- Bhaskaracharya National Institute for Space Applications and Geo-informatics [BISAG (N)] is an Autonomous Scientific Society registered under the Societies Registration Act, of 1860.
- Objective: to undertake technology development & and management, research & and development, facilitate National and international cooperation, capacity building and support technology transfer & and entrepreneurship development in the area of geo-spatial technology.
- BISAG has implemented GIS and geospatial technologies for major Ministries and almost all States.
- For this purpose, geo-spatial science (GIS Remote Sensing, Image Processing, Photogrammetry, GPS, Cell Phone etc.), Information Science Systems (MIS, Database, ERP, Project Management, Web, Artificial Intelligence etc.) and Mathematics Science Systems (Geometry, Fluid, Mechanics, Trigonometry, Algebra etc.) have been integrated in-house by BISAG.

Gyanvapi mosque case

Why in News

The Gyanvapi mosque case centres on the complex ownership and historical claims surrounding the Gyanvapi mosque in Varanasi, situated right next to the iconic Kashi Vishwanath temple.

Important Points

- Hindu petitioners assert that the Gyanvapi mosque stands on the original site of an ancient Hindu temple dedicated to Lord Shiva, demolished by Mughal emperor Aurangzeb in the 17th century to build the mosque. They seek permission for worship within the mosque compound.
- The Anjuman Intezamia Masjid Committee, managing the Gyanvapi mosque, contends it's been a mosque for centuries and the Places of Worship Act, 1991, prohibits changing the religious character of any place of worship existing as of August 15, 1947.

The Places of Worship Act 1991

- The Places of Worship Act, 1991 is a law enacted by the Parliament of India 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, the day India attained independence.
- The Act was passed in the aftermath of the Babri Masjid demolition in 1992, which sparked communal riots across the country. The Act aimed to preserve communal harmony and respect the sentiments of all religious communities in India.



The main features of the Act are:

- It bars the conversion of any place of worship, such as a temple, mosque, church, gurudwara, or monastery, into a place of worship of a different religious denomination or sect.
- It declares that the religious character of a place of worship existing on August 15, 1947 shall continue to be the same as it was on that day.
- It abates any pending legal proceedings regarding the conversion of the religious character of any place of worship before August 15, 1947, and prohibits any new suits or appeals on this matter.
- It exempts certain places from its purview, such as ancient monuments and archaeological sites covered by another law, places of worship that have been settled or resolved by mutual agreement or court verdicts, and the Ram Janmabhoomi-Babri Masjid site in Ayodhya, which is subject to a separate legislation.
- It prescribes penalties for violating the provisions of the Act, including imprisonment for up to three years and a fine.

The significance of the Act is:

- It seeks to uphold the secular fabric of India and protect the rights and interests of all religious communities.
- It aims to prevent further disputes and conflicts over places of worship that may disturb the public order and peace.
- It reflects the commitment of the Indian state to respect the historical and cultural legacy of various faiths and their places of worship.

The challenges faced by the Act are:

- It has been challenged in the Supreme Court by some petitioners who claim that it violates their fundamental rights to religion, equality, and judicial review. They contend that the Act is arbitrary, discriminatory, and unconstitutional.
- It has been questioned by some critics who argue that it ignores the historical injustices and encroachments suffered by some religious groups before August 15, 1947. They assert that the Act denies them the opportunity to reclaim and restore their places of worship.

- It has been opposed by some groups who demand that certain places of worship be converted or reclaimed by their respective communities. They allege that the Act favours one community over others and undermines their religious sentiments.

The way forward for the Act is:

- To uphold the validity and sanctity of the Act as a legislative measure to safeguard the secular ethos and pluralistic culture of India.
- To ensure the effective implementation and enforcement of the Act by the authorities and prevent any violations or attempts to alter the status quo of places of worship.
- To promote dialogue and reconciliation among different religious communities and foster mutual respect and tolerance for their beliefs and practices.

All-India Judicial Service (AIJS)

Why in news

The creation of an All-India Judicial Service (AIJS) is a complex issue that involves considerations of diversity, efficiency, linguistic diversity, federalism, and judicial independence.

Important Points

All-India Judicial Service (AIJS)

- The judiciary is one of the pillars of democracy and plays a vital role in upholding the rule of law, protecting the rights of citizens, and delivering justice.

<p>THE BIG PICTURE</p> <p>Law ministry has based its proposal on an earlier recommendation from a chief ministers' conference in 2013</p> <p>MOVE COMES ON THE BACK OF REPEATED ASSERTIONS BY UNION LAW MINISTER RAVI SHANKAR PRASAD CALLING FOR THE CREATION OF AN ALL-INDIA JUDICIAL SERVICE</p>	<p>Such a service has also been envisaged in Article 312 of the Constitution</p> <p>As of now, there are states with judicial services but concern has been over those finally finding their way into higher judiciary</p>	 <p>Creation of such a service, according to govt officials, will bring a much more professional, better crop of judicial officers</p>
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- The Indian judiciary faces many challenges such as pendency of cases, lack of diversity, shortage of judges, and varying standards of recruitment and training. To address these issues, the idea of creating an All-India Judicial Service (AIJS) has been proposed and debated for several decades.
- The AIJS is a proposed service that would recruit judges at the level of additional district judges and district judges for all states through a centralized examination conducted by the Union Public Service Commission (UPSC).
- The AIJS would be similar to other all-India services such as the Indian Administrative Service (IAS) or the Indian Police Service (IPS).
- The constitutional provision for creating the AIJS is given in Article 312 of the Constitution of India, which empowers the Parliament to create one or more all-India services common to the Union and the States in the national interest. However, such a service cannot include any post inferior to that of a district judge, as defined in Article 236.

What is the background and status of the AIJS proposal?

- The idea of creating the AIJS was first recommended by the Law Commission of India in its 14th report on reforms in judicial administration in 1958. Since then, several committees, commissions, and experts have supported and reiterated the need for establishing the AIJS. Some of them are:
- The Chief Justices' Conference in 1961

- The Constitution (Forty-second Amendment) Act, 1976
- The Law Commission's 77th report in 1978 and 116th report in 1986
- The Supreme Court's judgment in the All India Judges Association v/s Union of India case in 1992
- The First National Judicial Pay Commission headed by Justice Shetty in 1999
- The Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice in 2006
- The National Commission to Review the Working of the Constitution in 2012
- The President of India's inaugural address at the Supreme Court's Constitution Day celebration in 2023
- Despite these recommendations, the AIJS has not been implemented yet due to various reasons such as opposition from some states and high courts, lack of consensus among stakeholders, legal and administrative hurdles, and political will.

What are the benefits and challenges of creating the AIJS?

- Improving the quality and efficiency of justice delivery by attracting meritorious candidates through a transparent and competitive selection process.
- Enhancing the diversity and representation of marginalised groups such as women, SCs, STs, OBCs, etc. in the judiciary by providing reservations and incentives.
- Reducing the pendency and backlog of cases by filling up vacancies faster and ensuring adequate judicial strength across states.
- Promoting uniformity and standardisation of recruitment, training, service conditions, and career progression of judges across states.
- Facilitating judicial mobility and exchange of best practices among states by allowing inter-state transfers and deputations.
- Strengthening judicial independence and accountability by reducing political interference and ensuring performance appraisal

Some critics of the AIJS point out various challenges and drawbacks such as:

- Violating the federal structure and autonomy of states by centralising judicial recruitment and administration.
- Undermining the authority and role of high courts in supervising and controlling subordinate courts.
- Disregarding local laws, languages, customs, and traditions by appointing judges from outside states.
- Creating resentment and demotivation among existing judicial officers who may lose their seniority or promotion prospects.
- Facing legal obstacles such as amendments to Articles 233 and 234 which deal with state-level appointments of district judges.
- Lacking clarity on various aspects such as reservation policy, eligibility criteria, syllabus, examination pattern, training modules, etc.

Electronic Soil

Why in News

A newly developed eSoil that stimulated root systems helped barley seedlings grow an average of 50 percent more in a new study.

Important Points

- eSoil is a low-power bioelectronic growth substrate that can electrically stimulate the root system and growth environment of plants.
- This novel substrate is not only environmentally friendly, being derived from cellulose and a conductive polymer called PEDOT, but also offers a low energy, safe alternative to previous methods that required high voltage and non-biodegradable materials.
- Significance: This research promotes more effective and sustainable development while increasing the variety of crops that can be grown hydroponically.

Hydroponics

- In hydroponics, plants are grown without soil, requiring only water, nutrients and a substrate – something for their roots to attach to.
- This closed system allows water to be recirculated, ensuring that each seedling receives exactly the nutrients it needs.
- As a result, very little water is used and all the nutrients remain in the system.
- To maximise the use of space, hydroponics also allows vertical production in huge towers.
- Crops currently grown in this way include lettuce, herbs and some vegetables.
- Hydroponics is not usually used to grow grains other than animal feed.
- In this paper, the scientists show that barley seedlings can be grown hydroponically and that electrical stimulation improves the plants' growth rate.



1. INDIA'S MOONSHOT

- In the 1960s, amidst global space competition, India launched its space program for scientific research.
- Over 50 years, it prioritized self-sufficiency, developing key technologies and achieving autonomy in designing launch vehicles and satellites.
- Despite challenges in electronics, ISRO now stands among the top five global space agencies, excelling in Earth observation, communication, navigation, and planetary exploration.

Space transportation system

- ISRO has developed a unique space transportation system, capable of launching payloads from 500 kg to 8000 kg into various Earth orbits using four operational launch vehicles.
- The PSLV, ISRO's reliable workhorse, offers cost-effective solutions with quick turnaround times.
- Its versatility lies in launching multiple satellites in a single flight, adjusting orbits, and hosting research on its PS4 orbital platform.
- LVM3, India's versatile and reliable launch vehicle, successfully completed complex missions like Chandrayaan and OneWeb commercial launches.
- It is a top choice for global commercial markets, offering capacities of 4t for LEO and 6t for GEO payloads since its first test flight.

Small Satellite Launch Vehicle

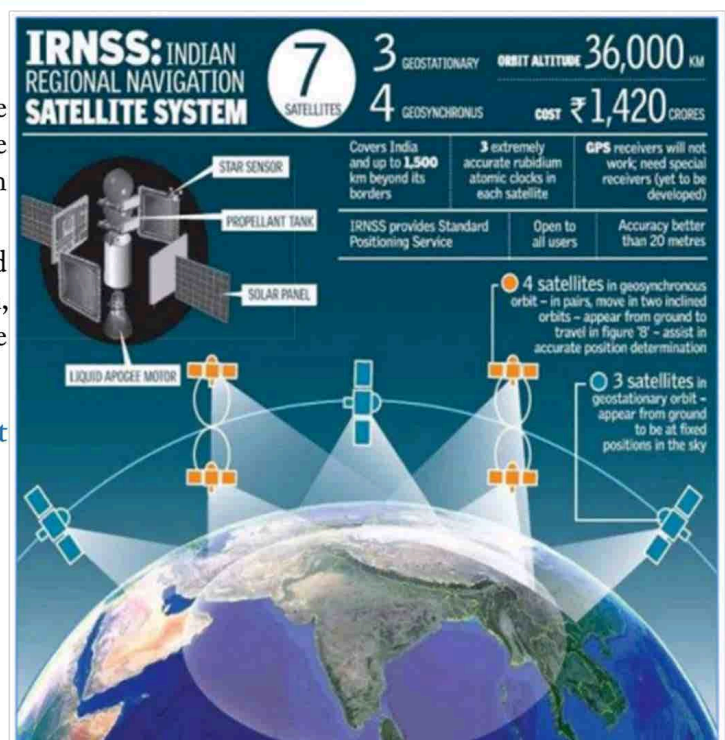
- ISRO's recently introduced Small Satellite Launch Vehicle (SSLV) addresses the growing demand for small satellite launches.
- Developed rapidly, it showcases ISRO's prowess in cutting-edge technologies, including sensors and guidance systems.
- The success of missions like Mars Orbiter and Chandrayaan-3 is credited to ISRO's exceptional capabilities.
- The SSLV is characterized by its cost-effectiveness, quick turnaround time for launches, and the ability to carry multiple payloads on a single mission.

Navigation Satellite System

- The Indian Regional Navigation Satellite System (IRNSS), with an operational name of NaviC stands for NAVigation with Indian Constellation.
- It provides accurate real-time positioning and timing services over India and the region, extending approximately 1500 km around the Indian Mainland.

The variety of services offered by NaviC aid in different applications like:

- o vehicle tracking and fleet management
- o location-based services
- o integrated into mobile phones
- o terrestrial navigation aid for travellers
- o time dissemination
- o disaster management



Mars Orbiter Mission

- Mars Orbiter Mission (MOM), India's first interplanetary mission to planet Mars was launched onboard PSLVC25 in November, 2013.
- ISRO has become the fourth space agency to successfully send a spacecraft to Mars orbit.
- Though the designed mission life is 6 months, MOM completed 7 years in its orbit on Sept 24, 2021.

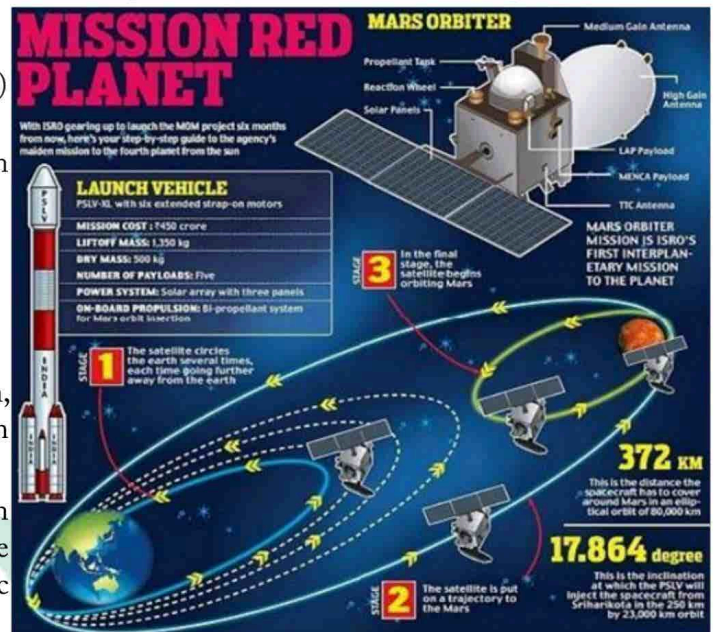
MOM carries following five scientific payloads:

- o Thermal Infrared Imaging Spectrometer (TIS)
- o Methane Sensor for Mars (MSM)
- o Mars Exospheric Neutral Composition Analyzer (MENCA)
- o Lyman Alpha Photometer (LAP)

Chandrayaan mission series

1. Chandrayaan-1

- Chandrayaan-1, India's first mission to Moon, was launched successfully in October, 2008 from SDSC SHAR, Sriharikota.
- The spacecraft was orbiting around the Moon at a height of 100 km from the lunar surface for chemical, mineralogical and photo-geologic mapping of the Moon.
- The spacecraft carried 11 scientific instruments built in India, USA, UK, Germany, Sweden and Bulgaria.

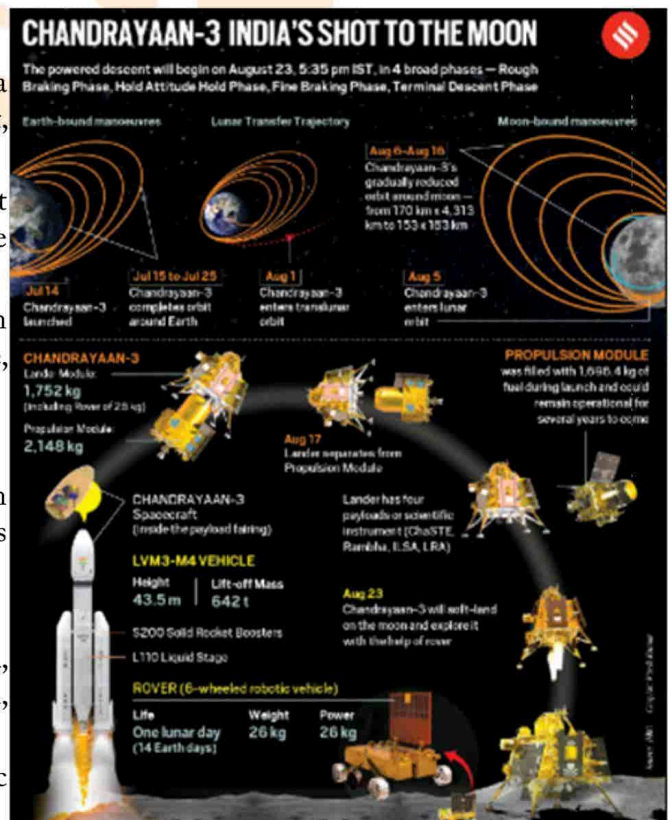


2. Chandrayaan-2

- India launched Chandrayaan-2 in July, 2019, with an Orbiter, Lander, and Rover.
- While the soft landing was unsuccessful, the Orbiter continues to operate, conducting unique experiments, such as an L-band SAR and a large area X-ray spectrometer.
- Ongoing observations have now extended for five years.

3. Chandrayaan-3

- Chandrayaan-3, launched in July, 2023, achieved a soft landing near the Moon's South Pole in August, 2023.
- The Chandrayaan-3 mission set out to prove that a soft-landing and roving capabilities could be accomplished on the Moon.
- Chandrayaan-3 is a three-component mission consisting of a Propulsion Module, a Lander Module, and a Rover Module.



Aditya-L1 mission

- The Aditya-L1 mission, developed by the Indian Space Research Organisation (ISRO), represents India's first space-based
- observatory dedicated to studying the Sun.
- Aditya-L1's mission is to explore the solar corona, photosphere, chromosphere, and solar wind, providing insights into the
- Sun's radiation, heat, particle flow, and magnetic fields.
- The primary goal is to enhance our understanding of the Sun's behavior and its impact on Earth.



2. INDIA'S GROWING STATURE: A RISING POWER

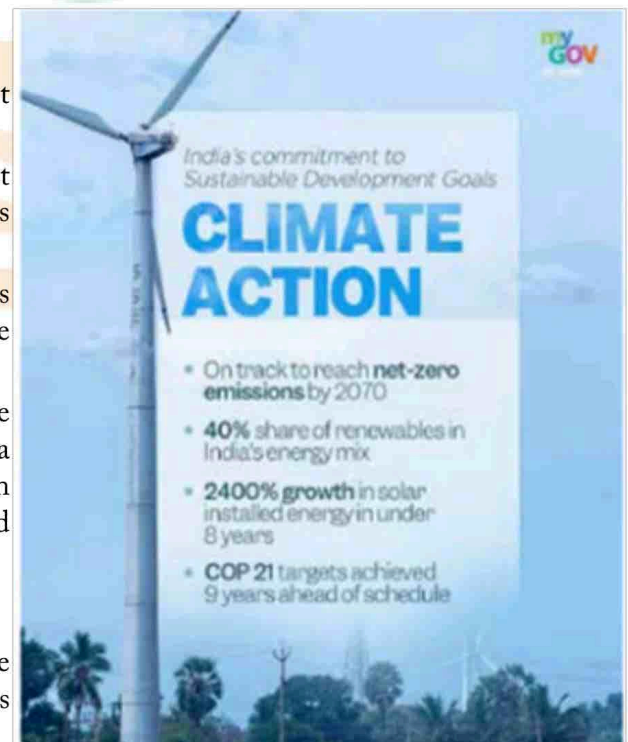
- India's growing stature as a rising power is a multifaceted phenomenon that spans economic, geopolitical, and cultural dimensions.
- India has been experiencing robust economic growth for several decades.
- The post-Covid recovery phase, which ought to have seen the global community come together, is instead witnessing deep divisions.
- The country's large and diverse economy has made it one of the fastest-growing major economies in the world.

Indian Leadership

- India's G20 presidency has marked a significant milestone in its global leadership role.
- With, India taking the presidency for the first time, it is steering discussions and initiatives among the world's major economies to address complex challenges.
- During the presidency, India is focusing on various issues like inclusive growth, digital innovation, climate resilience, and equitable global health access.
- One example, based on the G20 motto of 'One Earth One Family One Future' and the philosophy of Vasudhaiva Kutumbakam, is the inclusion of the African Union (AU) into the G20 at the New Delhi Summit, hinged on India's strong advocacy of 'leaving none behind'.

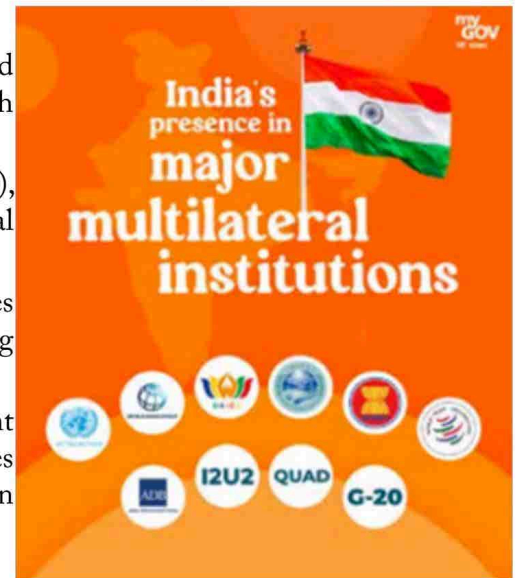
Positive outcome of G20

- The significant progress in enhancing the representativeness of the G20 structure underscores India's position as a genuine ally to the Global South.
- The favorable results outlined in the G20 New Delhi Leaders' Declaration align closely with numerous initiatives undertaken by the Indian government in recent years.
- Apart from the vaccine assistance programme during the pandemic, it is pertinent to mention initiatives like:
 - International Solar Alliance (ISA)
 - Coalition for Disaster Resilient Infrastructure (CDRI)
 - Indo-Pacific Oceans Initiative (IPO)
 - Infrastructure for Resilient Island States (IRIS)



Mission LiFE and Climate Crisis

- India has emerged as a leader in addressing climate change and environmental degradation by emphasizing a unique approach beyond conventional methods.
- Through initiatives like Mission LiFE (Lifestyle for Environment), India advocates for individual behaviour as a key element in global climate action.
- This mission has evolved into the G20 High-Level Principles on Lifestyles for Sustainable Development, promoting environmentally-friendly lifestyles worldwide.
- Notably, India is the only G20 nation to surpass its Paris Agreement Goals ahead of the 2030 target, earning recognition from figures like US Special Presidential Envoy for Climate Change John Kerry, who commended India as a global leader in clean energy.



Clean Energy

- India has announced ambitious targets for 2030, including installing 500 gigawatts of renewable energy capacity and reducing the emission intensity of its economy by 45 per cent.
- India expressed its intention to intensify its climate action by presenting an updated Nationally Determined Contributions (NDC).
- This update is a step towards India's long-term goal of reaching net zero emissions by 2070.
- India has entered bilateral clean energy partnerships with the EU, Japan, and the US, notably revamping the US-India Strategic Clean Energy Partnership (USISCEP) with the US.
- The partnership focuses on enhancing energy security, promoting innovation, scaling up clean energy technologies, and implementing technical solutions across five key pillars which includes:
 - Responsible Oil and Gas Pillar
 - Power and Energy Efficiency Pillar
 - Renewable Energy Pillar
 - Sustainable Growth Pillar
 - Emerging Fuels and Technologies



Resilient Supply Chains

- In December 2021, a \$10 billion production-linked incentive (PLI) scheme was announced by the government of India to boost chip manufacturing.
- In March 2022, the Union Cabinet approved the Semicon India program for semiconductor and display manufacturing.
- India aims to be a major player in the global semiconductor supply chains, leveraging its substantial design talent pool and hosting R&D centers of the top 25 semiconductor design companies.
- The trilateral Supply Chain Resilience Initiative, involving Australia and Japan, addresses the supply chain crisis by promoting diversification away from China.
- This initiative aims to coordinate efforts and incentives for supply chain resilience.

Digital Infrastructure

- India has become a rapidly growing digital economy, spurred by the Digital India initiative launched in July, 2015.

- The mission is aimed at empowering the nation digitally.
- It has led to a significant surge in mobile ownership and focuses on enhancing internet accessibility and affordability while improving digital infrastructure nationwide.
- In 2021, India led with 48 billion realtime digital transactions, surpassing China by three times and major economies by seven times.
- India's digital initiatives, including UIDAI and Aadhaar, attract global interest in linking India's vast population seamlessly.



International Year of Millets

- In March 2021, the United Nations declared 2023 as the International Year of Millets, proposed by the Government of India with support from 72 countries.
- Millets, vital in semi-arid regions, offer superior nutrition and resilience to challenging climates, enhancing food security globally.
- The International Year of Millets 2023 is an opportunity to raise awareness of the multiple benefits of millets, from nutrition and health to environmental sustainability and economic development.

3. REDEFINING MOBILITY: TRANSFORMING LANDSCAPE OF TRANSPORT SECTOR

- An efficient and coordinated transportation system is crucial for a country's economic growth.
- The Ministries of Shipping and Road Transport and Highways formulate and implement policies for transport development, excluding railways and civil aviation.
- The current system includes rail, road, coastal shipping, and air transport, with significant growth in network expansion and output.

Roads

- The Ministry of Road Transport and Highways was formed in 2009 by bifurcating the erstwhile Ministry of Shipping, Road Transport and Highways into two independent ministries.
- It serves as the primary authority for creating and overseeing rules, regulations, and laws pertaining to road transport and transport research.
- India's road network has grown 59% to become the second-largest in the world in the last nine years. India has nearly 64 lakh km of total road network and the National Highways network alone stood at 145,240 km in 2022-23 compared to 91,287 km in 2013-14.

Bharatmala Pariyojana

- Bharatmala Pariyojana is a new umbrella program for the highways sector that focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions like development of Economic Corridors, Inter Corridors and Feeder Routes, National Corridor Efficiency Improvement, Border and International connectivity roads, Coastal and Port connectivity roads and Green-field expressways.
- The Pariyojana envisages the development of about 26,000 km length of economic corridors, which, along with the Golden Quadrilateral



(GQ) and North-South and East-West (NS-EW) Corridors are expected to carry majority of the freight traffic on roads.

- The programme envisages development of Ring Roads/bypasses and elevated corridors to de-congest the traffic passing through cities and enhance logistic efficiency, etc.

Green National Highways Corridor Project

- The Green National Highways Corridor Project was launched in 2016.
- The project includes upgradation of about 781 km of various national highways passing through Rajasthan, Himachal Pradesh, Uttar Pradesh, and Andhra Pradesh.
- The project is being run with World Bank aid.

The objectives of the project include:

- o To evolve a policy framework for plantation along national highways
- o To reduce the impact of air pollution and dust as trees and shrubs are known to be natural sinks for air pollutants
- o To reduce the impact of ever-increasing noise pollution caused due to increase in the number of vehicles
- o To arrest soil erosion at the embankment slopes; etc.

National Highways Authority of India

- The National Highways Authority of India (NHAI) was set up under the NHAI Act, 1988.
- It oversees the National Highways Development Project (NHDP) and manages 50,329 km of national highways for development and maintenance.
- Its objective is to ensure transparent and competitive contract awards, high-quality project implementation, and maintenance for optimal user comfort in the highway system.
- The national highway network, including expressways, spans 132,499 km, comprising only 1.7% of total road length.
- Despite this, highways and expressways handle 40% of the country's road traffic.



PM GatiShakti Plan

- The Prime Minister launched PM Gati Shakti - National Master Plan for Multi-modal Connectivity, essentially a digital platform to bring 16 Ministries including Railways and Roadways together for integrated planning and coordinated implementation of infrastructure connectivity projects.
- The multi-modal connectivity will provide integrated and seamless connectivity for movement of people, goods and services from one mode of transport to another.
- It will facilitate the last mile connectivity of infrastructure and reduce travel time for people.

Some of the Important features of the PM GatiShakti include:

- **Comprehensiveness:** A centralized portal will integrate existing and planned initiatives from various Ministries and Departments, enhancing visibility and sharing critical data for comprehensive project planning and execution.
- **Prioritization:** Different Departments will be able to prioritize their projects through cross-sectoral interactions.

- Optimization: The National Master Plan aids ministries in identifying project gaps and choosing optimal routes for cost-effective and timely transportation of goods.
- Synchronization: PM Gati Shakti aims to eliminate silos and enhance coordination among Ministries and Departments, addressing delays in project planning and implementation by synchronizing activities across different layers of governance.
- Analytical: The plan offers centralized data with GIS-based spatial planning and over 200 analytical layers, providing enhanced visibility for the executing agency.
- Dynamic: Through the GIS platform and satellite imagery, Ministries can now regularly monitor crosssectoral project progress, aiding in identifying vital interventions for updating the master plan.



Parvatmala Pariyojana

- Parvatmala Pariyojana—National Ropeways Development Programme is being implemented for the development of ropeways to improve accessibility and convenience for passengers and to promote tourism.
- Along with hilly areas, ropeways are being developed as alternative mode of transportation in congested urban areas e.g., those of Varanasi, Ujjain.

National Registry of Vehicle and License Records

- The Ministry has enacted transformative policies for citizens in the transport sector, introducing the Transport Mission Mode Project.
- This initiative has automated RTO operations, established a consolidated transport database, and implemented citizen-centric applications.
- Key applications include Vahan, managing vehicle services nationwide, and Sarathi, overseeing driving licenses and related activities.
- These applications are operational in over 1,000 RTOs across 13 States/UTs, integrating with Aadhaar for biometric authentication and eKYC.
- The system allows the use of virtual documents like driving licenses and registration certificates through DigiLocker.

e-Tolling

- National Electronic Toll Collection (NETC) programme, the flagship initiative of Ministry of Road Transport and Highways, has been implemented on pan- India basis in order to ensure seamless movement of traffic through fee plazas and increase transparency in collection of user fee using FASTag.
- The National Payment Corporation of India (NPCI) is the Central Clearing House.

Railways

- The Indian Railways, established in 1853, has evolved into a vast network of 7,308 stations covering 68,043 km. With 13,215 locomotives, 74,744 passenger vehicles, and 3,18,896 wagons, it plays a crucial role in the country's economic and social development.
- The network, spanning 17 Zones, facilitates transportation for freight, passengers, tourism, pilgrimage, and education.
- The majority of the route is electrified, showcasing its remarkable growth and impact since its modes beginning.

Vande Bharat Express

- The Vande Bharat Express, formerly known as Train 18, is a semi-highspeed, electric multiple unit train operated by Indian Railways.
- In 2019, it was renamed as Vande Bharat Express to highlight the fact that it was manufactured entirely in India.

- It began its operations in 2019 when the first of its kind was flagged off between New Delhi-Kanpur-Prayagraj-Varanasi route.
- The latest route between Secunderabad and Visakhapatnam is the eighth in series which was inaugurated recently.
- Vande Bharat 2.0 kicked off with Gandhinagar to Mumbai route in 2022.
- By September 2023, 50 Vande Bharat trains were running across the country.

Maritime Development

- India has a long coastline of about 7,517 km, spread across its western and eastern shores, including islands.
- This extensive coastline serves as a crucial natural resource for the nation's trade.
- With 12 major ports and around 200 non-major ports, India's shipping industry has been a key player in the country's transportation sector.
- Maritime transport handles a significant portion of India's trade, accounting for 95% by volume and 68% by value.
- The Sagarmala flagship program by the Ministry of Ports, Shipping, and Waterways further aim to foster port-led development in India.
- Leveraging the extensive coastline, potentially navigable waterways, and strategic maritime location, the program seeks to cut logistics costs for both EXIM and domestic trade with minimal infrastructure investment.



THE NEW VANDE BHARAT EXPRESS

India's second indigenously built engine-less train will ply between Delhi and Katra

Key Features

- Engine-less self-propelled train
- All air-conditioned chair car service; 16 coaches
- Stone-pelting protection on windows
- CCTV surveillance; GPS based information system; WiFi

Vande Bharat VS Shatabdi

Train Type	Speed
Shatabdi Express	130 kmph
Vande Bharat	160 kmph (Potential)

Inland Water Transport

- India has a 14,500 km inland waterway network, offering a fuel-efficient and eco-friendly transport option.
- The Inland Waterways Authority of India (IWAI) was established in 1986 to regulate and develop waterways.
- Currently, inland water transport constitutes less than 2% of total cargo movement.
- With 111 National Waterways designated under the National Waterways Act, 2016, the government aims to decongest road and rail transport.
- The Jal Marg Vikas Project (JMVP), aided by the World Bank, focuses on enhancing capacity along the Haldia—Varanasi stretch of the Ganga-Bhagirathi-Hooghly River system.

Civil Aviation

- Air transport is one of the critical infrastructures for the equitable development of a country
- India operates a wide-ranging network of international flights and currently has Air Services Agreement with 116 countries.
- As of October, 2023, India has open sky arrangements with 24 countries.
- The Regional Connectivity Scheme (RCS) - Ude Desh ka Aam Naagrik (UDAN) was introduced in the National Civil Aviation Policy (NCAP) 2016.
- Its primary goal is to enhance regional air connectivity by making it affordable for the public.
- The scheme also provides Viability Gap Funding (VGF) to bridge the financial gap between the cost of airline operations and expected revenues on such routes.
- UDAN aims to connect unserved and underserved airports by reviving existing air strips and airports across the country.

Various other initiatives of Civil Aviation:

- o GPS Aided Geo Augmented Navigation (GAGAN): GAGAN, a collaboration between the Airports Authority of India and the Indian Space Research Organization, enhances GPS accuracy for aviation precision approaches. It was operational since 2015, it ensures reliable signals around the clock.

- o Krishi Udan 2.0: Krishi Udan 2.0, launched in 2021, offers full charge waivers for landing, parking, and navigation at selected airports, prioritizing regions like North East, hills, tribal areas, and islands. The scheme aims to facilitate efficient and cost-effective air transportation for agricultural produce from these regions, covering 58 airports nationwide.
- o Sugamya Bharat Abhiyan: In 2015, the Union Government launched the Accessible India Campaign (AIC), also known as Sugamya Bharat Abhiyan, under the Department of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice & Empowerment. It aims at enhancing accessibility, creating awareness and sensitization for the creation of a universal barrierfree environment for the disabled.

4. INDIA'S INDUSTRY SECTOR

- Industry and Manufacturing is emerging as an integral pillar in the country's economic growth.
- The Indian manufacturing industry generated 16-17% of India's GDP pre-pandemic and is projected to be one of the fastest growing sectors.
- Manufacturing has emerged as one of the high growth sectors in India.
- India has the capacity to export goods worth US\$ 1 trillion by 2030 and is on the road to becoming a major global manufacturing hub.

PM GatiShakti

- PM GatiShakti, initiated in 2021, aims to enhance logistics efficiency, cut costs, and eliminate interdepartmental silos by integrating planning and infrastructure development efforts across various agencies.
- PM GatiShakti has broadly two components to achieve integration, synchronization, prioritization, and optimisation.
- First, the development of GIS-based technology platform called National Master Plan, wherein everything is linked from roads to railways, from aviation to agriculture, various ministries and departments.
- Secondly, is establishing a three-tier institutional arrangement to integrate efforts of diverse ministries and departments for synchronized development of multimodal infrastructure and economic zones.



National Logistics Policy

- The National Logistics Policy (NLP), launched in 2022, provides a comprehensive framework for the logistics sector, aligning with the PM GatiShakti National Master Plan.
- The NLP aims to enhance efficiency, streamline processes, regulate, develop skills, integrate logistics in education, and adopt technology for a resilient, sustainable, and trusted logistics ecosystem, fostering accelerated and inclusive growth.
- The vision is to create a technologically enabled, cost-efficient logistics system.

Foreign Direct Investment Policy

- The Department for Promotion of Industry and Internal Trade (DPIIT) oversees the formulation of Foreign Direct Investment (FDI) policy in India.
- DPIIT manages data on inward FDI based on RBI remittances.
- To boost FDI, a liberal policy allows up to 100% FDI under the automatic route in most sectors.
- Since the abolishment of the Foreign Investment Promotion Board (FIPB) in June 2017, FDI approval processes have been simplified.

- Ministries/departments now handle the processing and approval of FDI applications under the existing FDI Policy and FEMA.

Make in India

- The 'Make in India' initiative was launched in 2014 to facilitate investment, foster innovation, build best-in-class infrastructure, and make India a hub for manufacturing, design, and innovation.
- The 'Vocal for Local' initiative promotes Indian manufacturing globally, emphasizing "Make in India for the World."
- With achievements in 27 sectors under Make in India 2.0, it focuses on 15 manufacturing and 27 service sectors.
- The Department of Commerce handles service sector plans, while investment outreach involves ministries, state governments, and Indian Missions abroad to boost international cooperation and attract both domestic and foreign investments.

Production Linked Incentive Scheme

- In line with India's vision of 'Atmanirbhar,' Production Linked Incentive (PLI) schemes for 14 key sectors, with an outlay of Rs 1.97 lakh crore.
- The scheme aims to boost manufacturing and exports.
- PLI schemes focus on attracting investments in core competency sectors, fostering cutting-edge technology, and making Indian companies globally competitive to integrate with global markets and value chains.

EXCLUSIVE INVESTMENT FORUM **INVEST INDIA.GOV.IN**

Production Linked Incentive Scheme (PLI) for Large Scale Electronics Manufacturing

- Incentive:** 4% to 6% on incremental sales (over base year) of goods manufactured in India
- Target Segments:** Mobile phones and specified electronic components
- Eligibility:** Subject to thresholds of incremental investment and incremental sales of manufactured goods
- Tenure of the Scheme:** Five years subsequent to the base year as defined (FY19-20)

Startup India

- Startup India initiative was launched in 2016.
- The initiative aims to foster entrepreneurship and promote innovation by creating an ecosystem conducive to startup growth.
- The initiative strives to provide an impetus to the entrepreneurial setup across three major pillars i.e.,
 - simplification and handholding
 - funding support and incentives
 - industry-academia partnership and incubation
- The objectives of the scheme include accelerating innovation-driven entrepreneurship and mobilizing larger equity like resources for startups.

Heavy Industries

- The Ministry of Heavy Industries promotes the development and growth of automobile, capital goods and heavy electrical equipment sectors and administer 29 Central Public Sector Enterprises (CPSEs) engaged in manufacturing, consultancy and contracting services and four autonomous organisations.
- Heavy Electrical Equipment Industry (HEI) caters to the needs of the energy sector and other industrial sectors.
- In 2021, the Department of Public Enterprises was shifted to Ministry of Finance.

Micro, Small and Medium Enterprises

- The MSME sector is a dynamic force in the Indian economy, contributing significantly to employment and industrializing rural areas.
- It plays a vital role in reducing regional imbalances and promoting equitable distribution of income and wealth.
- The Ministry of Micro, Small & Medium Enterprises aims to foster growth and development in this sector.

- The primary responsibility of promotion and development of MSMEs is of the state governments.
- The Indian MSME sector, comprising over six crore enterprises, is a dynamic force, contributing 27% to the GDP, 44% to exports, and employing over 11.10 crore people.
- The Ministry of MSME also launched Udyam Assist Platform in January, 2023 to bring Informal Micro Enterprises under the formal ambit of MSMEs.

Udyam Registration Portal

- To facilitate MSME registration process in accordance with the revised MSME definition, the Ministry of MSME launched Udyam Registration Portal in July, 2020.
- The registration process is free of cost, paperless and digital.
- The portal has linkages with Government e-Marketplace (GeM), Income Tax, GST, TReDs and NCS (National Career Service) portals.

Khadi and Village Industries Commission

- The Khadi and Village Industries Commission (KVIC) is a statutory organization under the Ministry of MSME, established to promote and develop Khadi and Village Industries (KVI) for rural employment and economic strengthening.
- It operates under an Act of Parliament, amended in 1987 and 2006, focusing on sustainable non-farm employment opportunities with low per capita investment in decentralized rural sectors.

Textiles

- The Indian textiles industry is one of the largest in the world, with a large raw material base and manufacturing strength across the value chain.
- The textile industry, deeply connected to agriculture, culture, and traditions, produces versatile products suitable for both domestic and export markets.
- The Handlooms, handicrafts, and small-scale power loom units provide significant employment in rural and semi-urban areas.
- The textile industry contributes to 7 per cent of industry output in value terms of 2 per cent of India's GDP and to 15 per cent of the country's export earnings.

Steel

- The Ministry of Steel oversees the planning and development of the iron and steel industry, including essential inputs like iron ore and manganese ore.
- Crude steel production and capacity have steadily increased since 2013-14, making the industry a crucial driver of industrial development in the country.
- India's crude steel capacity has steadily risen to 142 MT at present following which India has become the world's second-largest producer of crude steel, surpassing Japan.
- A robust domestic steel industry is vital for a developing economy, serving as a key input in construction, infrastructure, automotive, capital goods, defense, rail, and other major sectors.

Fertilisers

- The Department of Fertilisers comes under the ambit of the Ministry of Chemicals and Fertilisers.
- The Department's primary goal is to ensure the timely availability of affordable fertilizers to maximize agricultural production in the country.
- Its functions encompass planning, promoting, and developing the fertilizers industry, as well as monitoring production, import, distribution, and managing financial assistance through subsidies for both indigenous and imported fertilizers

Chemicals and Petro-chemicals

- The Department of Chemicals and Petrochemicals was under the Ministry of Industry until 1989, when it was brought under the Ministry of Petroleum and Chemicals.
- The Department is entrusted with the responsibility of planning, development and regulations of the chemicals, Petro-chemicals and pharmaceutical industry sector.

Pharmaceuticals

- The Indian pharmaceutical industry is the world's third-largest by volume.
- Total Annual Turnover of Pharmaceuticals industry is Rs 3,79,450 crore for 2022- 2023.
- In the last nine years, the sector has grown steadily by CAGR of 64 per cent (as per total pharma export).
- Total exports of pharmaceuticals are to the tune of Rs 1,94,254 crore and total imports of pharmaceuticals are to the tune of Rs 56,391 crore for 2022-23 (for bulk drugs, drug intermediates, drug formulations, and biologicals).

Indian Bureau of Mines

- The Indian Bureau of Mines, founded in March 1948, operates under the Ministry of Mines.
- It is a scientific organization with statutory duties for the conservation and systematic exploitation of various mineral resources, excluding coal, petroleum, natural gas, atomic minerals, and minor minerals.
- It also undertakes scientific, techno-economic, and research-oriented studies in various aspects of mining, geological studies, ore beneficiation and environmental studies.



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