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SPECIAL PROVISIONS FOR TRIBALS

Context: Climate activist Sonam Wangchuk was detained on the Delhi border as he led a group of protesters to petition the Central government for the inclusion of Ladakh in the Sixth Schedule of the Constitution among other demands for autonomy to the region

Background: -

- Similar demands have been raised in Arunachal Pradesh and Manipur.

What is Asymmetrical Federalism?

- It's refers to a system where certain States or areas have more autonomy and special provisions than others.

- The Indian Constitution provides different levels of autonomy to some States/regions, unlike a symmetrical federation (e.g., the U.S. or Australia), where all States have equal powers.

- Examples in India: Areas/states under Fifth and Sixth Schedules.

History of the Fifth and Sixth Schedules

- **Pre-British Era:** Tribal populations had control over their lands and were mostly autonomous under earlier Muslim rulers.

- **British Era**: British policies affected tribal rights, especially through restrictive forest laws, leading to discontent and various tribal rebellions. Eg: Kol rebellion (1831-32), Santhal revolt (1885), Munda Rebellion (1899-1900) and Bastar rebellion (1911).

- **Post-Rebellion Policies**: After tribal revolts, the British adopted an isolationist policy, creating 'excluded' and 'partially excluded' areas in the Government of India Act, 1935.

- **The Fifth and Sixth Schedules** have been modelled on the basis of these provisions which allowed 'partially excluded' and 'excluded' areas under the Government of India Act, 1935.

Fifth Schedule:

- The Fifth Schedule is **applicable to what are officially called 'scheduled areas'** that are declared by the President.

- The guiding norms for declaring an area as a 'scheduled area' include preponderance of tribal populations, compactness of area, a viable administrative unit like a district or block, and economic backwardness.

- **At present 10 States have such 'scheduled areas.'**

- **Tribes Advisory Councils (TAC)**: Set up to advise on the welfare of Scheduled Tribes (ST).

- The Governor, subject to the approval of the Central government, shall make regulations for the allotment and transfer of lands among the members of the STs.

- The Governor shall also regulate the businesses of money-lenders in 'scheduled areas.' The Governor may direct that a particular act of Parliament or State legislature shall not apply or apply with modifications to such 'scheduled areas.'

Sixth Schedule:
- **Applicable to:** Tribal areas in Assam, Meghalaya, Mizoram, and Tripura. There are 10 such 'tribal areas' at present in these four States. Autonomous District Councils (ADC) are formed in these 'tribal areas.'

- The ADC shall have **powers to make laws** with respect to the use and management of land, regulate shifting cultivation, inheritance of property, marriage and divorce, social customs etc. These laws take effect after being approved by the Governor. For all such matters, the laws by the State legislature will not be applicable in these 'tribal areas' unless extended by the ADC.

- The ADCs are **empowered to establish and manage primary schools, dispensaries, roads and waterways in the districts.** They can assess and collect land revenue and impose taxes on profession, trade etc. They can grant licences or leases for the extraction of minerals.

- These areas have more executive, legislative, judicial, and financial powers than Fifth Schedule areas.

Special Provisions for Northeastern States
- Apart from the Fifth and Sixth Schedules, **there are special provisions applicable to many of the northeastern States under Part XXI of the Constitution.**

- These are contained in Articles 371A (Nagaland), 371B (Assam), 371C (Manipur), 371F (Sikkim), 371G (Mizoram) and 371H (Arunachal Pradesh).

Are Further Reforms Needed?
- **Autonomy on Paper vs. Practice:** The regulations made by the Governor in 'scheduled areas' are subject to approval by the Central government. Similarly, the laws made by ADCs in 'tribal areas' are subject to the approval of the Governor of the State. When different parties are in power at the Centre, State as well as ADC, political differences affect the autonomy of these areas.

- **Unnotified Areas**: Many tribal areas across India are not notified as scheduled areas , denying them constitutional protections.

- **125th Constitutional Amendment bill:** Pending in Rajya Sabha, it aims to grant more powers to Autonomous District Councils (ADCs).

- **Growing Demand for Inclusion**: Arunachal Pradesh, Manipur Hill Areas, and Ladakh have expressed interest in being included under the Sixth Schedule.

- **Forest Rights Act, 2006**: The recognition of tribal forest rights should be ensured across the country, including Fifth and Sixth Schedule areas.

Source: The Hindu

EMPOWERING LOCAL BODIES FOR EFFECTIVE URBAN GOVERNANCE

Context: In August-September, heavy rains impacted cities across Gujarat, especially Vadodara, where flooding, power outages, and waste-filled streets crippled the city. While residents criticized the Vadodara Municipal Corporation, the local body worked tirelessly to mitigate the damage, underscoring the crucial role of urban local bodies (ULB's).

Background: -

- ULBs include Municipal Corporations, Municipalities, and Nagar Panchayats. They are responsible for urban governance and providing essential services like waste management, sanitation, and urban planning.

Historical Context:

- **Pre-colonial:** Informal governance structures which varied based on the city's primary activities (religious town or trading town).

- **Colonial Era:** British established city institutions like Improvement Trusts (e.g., in Bombay, Calcutta) for urban sanitation.

- **First Municipal Body:** Established in Madras (1687), followed by Bombay and Calcutta. The improvement trusts were tasked with the responsibility of cleaning up the city and ensuring that epidemics were prevented.

- **Lord Ripon's Resolution:** In 1882, Lord Ripon (often called as father of local self-government in India) introduced the resolution for local-self governments, thereby laying the foundations of a democratically elected municipal government to manage cities.

Post-Independence Evolution:

- After independence, municipal corporations continued to evolve but faced major obstacles with a growing population and limited infrastructure. They were heavily reliant on their respective state governments for financial and operational support.

- **74th Constitutional Amendment Act (1992):**
  - Gave constitutional recognition to ULBs as the third tier of governance.
  - **Part IX-A:** Details the composition, roles, and powers of ULBs.
  - **12th Schedule:** Lists 18 functions devolved to ULBs (e.g., urban planning, public health).
  - The amendment mandated elections every five years, with municipal councillors elected from local constituencies (wards). While the elected mayor serves as the ceremonial head, real executive power rests with the municipal commissioner, a state-appointed bureaucrat.

Challenges Faced by ULBs:

- **Financial Constraints**: ULBs lack sufficient revenue sources. Property taxes and state government funding are the primary revenue streams. Initiatives like municipal bonds remain rare due to lack of expertise.

- **Political Autonomy**: Mayors have limited executive power compared to municipal commissioners. State governments often exert control through funding and legislative changes (e.g., Bihar Municipality Amendment Bill, 2024).

- **Personnel and Expertise Shortage:** ULBs face low state capacity, with a significant shortage of urban planners and technical experts (1 planner per 75,000 people). Indian cities will need 3 lakh planners by 2031.

International Comparison:
- Global Cities: Mayors in cities like London and New York have significant power over policies, including housing, transportation, and infrastructure.

- Example: London's Mayor controls Transport for London (TfL). TfL is responsible for improving mobility and accessibility in London. It is also in charge of implementing the Mayor's sustainable transport plan whereby 80 per cent of trips in London shall be on foot, cycle or public transport by 2040.

The Way Forward:
- **Greater Financial Autonomy**: ULBs should raise revenue through market measures (bonds, securities) and user charges (parking fees, congestion charges).

- **Participatory Budgets**: Allow residents to decide how taxes are used, increasing local problem-solving.

 Source: Indian Express

SCUTTLING PEOPLE'S RIGHT TO INFORMATION

Context: There is a severe backlash against the Right to Information (RTI) Act, which has just entered its 20th year, and those who use it.

Background: -
- From exposing corruption in the delivery of basic rights to bringing to light the truth behind the opaque electoral bonds scheme, the RTI Act has been used by citizens to hold power to account.

Key takeaways

Vacant Posts & Dysfunctional Commissions:
- Governments are scuttling the RTI Act by not appointing information commissioners.
- A 2023-24 report of the **Satark Nagrik Sangathan**, a citizens group that campaigns for transparency in government functioning, shows that:
  - o **Seven out of 29 information commissions** across the country were defunct in 2023-24.
  - o **Jharkhand's commission** has been non-functional for over four years, Tripura's for three years, and Telangana's for 1.5 years.
  - o **Maharashtra's commission** has over 1 lakh pending cases, and six out of 11 commissioner posts are vacant.
  - o **Central Information Commission (CIC) has eight out of 11 posts vacant.**
  - o More than 4 lakh appeals and complaints are pending in information commissions across India.

Ineffective Appointments:
- Most commissioners appointed are retired officials or those with political ties, often reluctant

to act against violations of transparency.

- **The report by Satark Nagrik Sangathan** shows that commissions did not impose penalties in 95% of the cases where penalties could be imposed. This failure sends a signal that violating the law will not invite consequences. This destroys the framework of incentives and disincentives built into the RTI Act, promotes a culture of impunity, and exasperates applicants who seek information.

Regressive Amendments:

- **2019 Amendments**: Empowered the central government to control tenure, salaries, and post-retirement benefits of commissioners, reducing the autonomy of information commissions.

- **Digital Personal Data Protection Act, 2023:** It included a provision to amend the RTI law to exempt all personal information from disclosure. The RTI Act of 2005 provided for protection of the privacy through section 8(1)(j). In order to invoke this section to deny personal information, at least one of the following grounds had to be proven: information sought had no relationship to any public activity or public interest; or information sought was such that it would cause unwarranted invasion of privacy, and the information officer was satisfied that there is no larger public interest that justified disclosure. The DPDP Act amended section 8(1)(j) to expand its purview and exempt all personal information from the ambit of the RTI Act. It also deleted a key provision in the law, which gave citizens a right to information at par with MPs and MLAs.

Threats to RTI Activists:

- Nearly 100 people have been killed for using the RTI Act, and many more have been assaulted or threatened, according to Transparency International India data.

- The Whistleblowers Protection Act, passed in 2014, remains non-operational due to a lack of implementation rules.

Erosion of Democracy:

- The RTI Act has played a crucial role in redistributing power and reshaping the government-citizen relationship.

- Any erosion of the RTI Act, through inaction or regressive amendments, is a direct threat to the democratic framework.

Source: The Hindu

ARTICLE 142

Context: The Supreme Court on Monday (October 14) refused to entertain a PIL seeking directions under Article 142 to include sexual offences against men, trans persons and animals under the newly enacted Bharatiya Nyaya Sanhita (BNS).

Background:

- Article 142 of the Indian Constitution holds great significance in the context of the judiciary's power and its relationship with the legislative and executive branches.

About Article 142

- Article 142(1) states that the **Supreme Court (SC)** may pass any order necessary to do "complete justice" in any matter pending before it. This gives the SC wide discretionary powers to ensure

justice is served, even in situations where existing laws might be insufficient or silent.

- Article 142(2) provides the SC the authority to secure the attendance of persons, production of documents, and punishment for contempt of its orders.

Judicial Activism and Judicial Overreach
- **Judicial Activism**: Article 142 is often cited as a tool for the judiciary to correct injustices when the law falls short, reflecting its activist role. The judiciary, using Article 142, has sometimes stepped into domains traditionally handled by the legislature and executive, leading to debates around separation of powers.

- **Judicial Overreach**: Critics argue that in certain instances, the SC's use of Article 142 encroaches upon the functions of the other branches of government.

Key Judicial Pronouncements
- **Union Carbide Case (1989)**: Article 142 was invoked to finalize the compensation for the Bhopal gas tragedy victims, bypassing procedural delays to deliver justice.

- **Ayodhya Verdict (2019):** The SC used Article 142 to ensure a peaceful resolution to the Ayodhya land dispute, by granting the disputed land to a trust and allocating alternate land to the Muslim litigants.

- **Coal Block Allocation Case (2014):** In this case, the SC invoked Article 142 to cancel over 200 coal block allocations that were found to be illegal.

Complete Justice: The Broad Scope
- The phrase "complete justice" allows the SC to go beyond the limitations of statutory law. For example, in cases involving environmental protection, Article 142 has been used to enforce strict norms even when explicit legislation was not in place.

- While the power under Article 142 is extraordinary, the SC has noted that it must be exercised with caution. It should not contradict or bypass existing laws unless there are compelling reasons to do so.

Criticism and Debate
- **Undemocratic Power**: Some legal scholars argue that the broad powers under Article 142 may undermine parliamentary sovereignty, as the judiciary can effectively create law in certain situations.

- **Ambiguity in the Term "Complete Justice":** The lack of a clear definition of "complete justice" leaves significant room for interpretation, which has been both praised for flexibility and criticized for the potential for misuse.

Source: Live law

INTER-PARLIAMENTARY UNION (IPU)

Syllabus:
- **Prelims - POLITY**

Context: Lok Sabha Speaker Om Birla, is leading the Indian Parliamentary Delegation at the 149th Assembly

of the Inter-Parliamentary Union (IPU).

Background: -

- The 149th IPU Assembly will take place from 13-17 October 2024 in Geneva under the overarching theme of "Harnessing science, technology and innovation for a more peaceful and sustainable future."

About Inter-Parliamentary Union (IPU)

- The IPU is the global organisation of national parliaments.

- It was founded in 1889 as the first multilateral political organisation in the world, encouraging cooperation and dialogue between all nations.

- **It is headquartered in Geneva, Switzerland.**

- Currently, the IPU comprises of 180 national Parliaments and 15 regional parliamentary bodies carrying the objectives of promoting democracy and helping parliaments develop into stronger, younger, greener, more gender-balanced and more innovative institutions.

- **Slogan**: For democracy. For everyone.

- **Vision** : A world where every voice counts, where democracy and parliaments are at the service of the people for peace and development.

- **Mission**: IPU promote democratic governance, institutions and values, working with parliaments and parliamentarians to articulate and respond to the needs and aspirations of the people. IPU work for peace, democracy, human rights, gender equality, youth empowerment, climate action and sustainable development through political dialogue, cooperation and parliamentary action.

- **The Cremer-Passy Prize, named after the IPU's founders, William Randall Cremer and Frédéric Passy,** is awarded every year to sitting parliamentarians who make an outstanding contribution to the defence and promotion of the IPU's objectives, as well as those "who contribute to a more united, peaceful, sustainable and equitable world."

Source: New Indian Express

FIVE EYES

Context: Five Eyes supports Canada in spat with India.

Background: -

- Citing alleged involvement in the killing of Hardeep Singh Nijjar, Canada has expelled six Indian diplomats. In a tit-for-tat move, India too expelled six Canadian diplomats.

About Fiver Eyes

- **It's an intelligence-sharing alliance consisting of five countries:** United States, United Kingdom, Canada, Australia, and New Zealand.
- The alliance was initially formed during World War II for **sharing signals intelligence (SIGINT)** and

has since evolved into a broader intelligence cooperation framework.
- It is based on the UKUSA Agreement, a multilateral agreement for cooperation in intelligence activities, particularly concerning signals intelligence.

Key Features:
- **Intelligence Sharing**: The Five Eyes share a wide range of intelligence, including military, political, security, and cyber intelligence.
- **Scope**: Initially focused on the Soviet Union during the Cold War, the Five Eyes now addresses global security threats such as terrorism, cybercrime, and state-sponsored espionage.
- **Technology and Surveillance:** The alliance members operate extensive signals intelligence infrastructure and conduct joint surveillance operations on potential security threats worldwide.

Historical Background:
- **The UKUSA Agreement was formalized in 1946**, primarily between the United States and the United Kingdom. Over time, the agreement was expanded to include Canada (1948), Australia, and New Zealand (both in 1956).

- The Five Eyes network became central during the Cold War in monitoring and intercepting Soviet communications.

- In the post-Cold War period, it expanded its scope to cover threats like terrorism, nuclear proliferation, and cybersecurity.

Source: The Hindu

SECTION 6A OF CITIZENSHIP ACT, 1955

Context: In a 4:1 majority ruling, a five-judge Bench headed by Chief Justice of India D.Y. Chandrachud upheld the constitutional validity of Section 6A of the Citizenship Act, 1955 (1955 Act).

Background: -
- Section 6A was added in 1985 following the signing of the Assam Accord between the Rajiv Gandhi government and the All Assam Students' Union (AASU), after a six-year-long agitation against the entry of migrants from Bangladesh into Assam.

What does Section 6A of the Citizenship Act provide?
- A key element of the Assam Accord was determining who is a foreigner in the state. Clause 5 of the Assam Accord states that January 1, 1966 shall serve as the base cut-off date for the detection and deletion of "foreigners" but it also contains provisions for the regularisation of those who arrived in the state after that date and up till March 24, 1971.Section 6A was inserted into the Citizenship Act to facilitate this.

- All persons of "Indian origin" who entered the state before January 1, 1966 and have been "ordinarily resident" in Assam ever since "shall be deemed to be citizens of India". Additionally, it provides that anyone who entered and resided in Assam after January 1, 1966 but before March 24, 1971 who has been "detected to be a foreigner" would have the opportunity to register themselves according to rules made by the Central Government.

- Following such registration, they would be granted the rights of citizens. Those entering after March 24, 1971, would be considered illegal immigrants.

Why was Section 6A challenged?

- The petitioner claim that the cut-off date provided in Section 6A is discriminatory and violates the right to equality (Article 14 of the Constitution) as it provides a different standard for citizenship for immigrants entering Assam than the rest of India — which is July 1948.

What did the court decide?

- The majority opinion held that Parliament has the power to grant citizenship under different conditions so long as the differentiation is reasonable.

- As the migrant situation in Assam was unique in comparison to the rest of India at the time, it was justified to create a law to specifically address it and doing so would not violate the right to equality under Article 14. CJI Chandrachud pointed out that the impact of immigration in Assam was higher in comparison to other states so "singling out" the state is based on "rational considerations".

- Court also held that the petitioners did not provide any proof to show that the influx of migrants affected the cultural rights of citizens already residing in Assam. Article 29(1) gives citizens the right to 'conserve' their language and culture. CJI stated that "Mere presence of different ethnic groups in a state is not sufficient to infringe the right guaranteed by Article 29(1)".

- Justice Pardiwala in his dissenting opinion, held that the provision was unconstitutional and suffered from "temporal unreasonableness" as it does not prescribe a time limit for detecting foreigners and determining whether they were citizens.

What were the arguments in defence of Section 6A?

- The Centre on the other hand has relied on Article 11 of the Constitution which gives Parliament the power "to make any provision with respect to the acquisition and termination of citizenship and all other matters relating to citizenship". It argued that this gives Parliament the power to make laws on citizenship including for a "particular object" without violating the right to equality.

- Other respondents argued that if Section 6A is struck down a large swathe of residents will be rendered "stateless" and be considered foreigners. They also argued that the demographic pattern of the state changed in response to geo-political events even before Section 6A was introduced and that Assam has long since been a multi-lingual and diverse state.

Source: Indian Express

CABINET COMMITTEES

Context: A week after the Union Agriculture Minister decided to assign additional charge of Managing Director, National Agricultural Cooperative Marketing Federation of India Ltd (NAFED), to an Agriculture Ministry official, the Appointments Committee of the Cabinet (ACC) entrusted charge of the post to an official of the Ministry of Cooperation.

Background: -

- The ACC, chaired by Prime Minister Narendra Modi, has Amit Shah, Union Minister of Home Affairs and Cooperation, as its only other ministerial member. It is responsible for appointing senior officials to key positions in the Central government, public sector undertakings and autonomous bodies.

Cabinet Committees:

- They are **extra-constitutional and the Rules of Business** provide for their establishment.
- **The Prime Minister** sets up these committees with selected members of the Cabinet and assigns specific functions to these committees.
- The Prime Minister may change the number of committees, and modify the functions assigned to them.
- **The membership of each committee varies from three to eight.** Usually, only Cabinet ministers are members of these committees. However, it is not unheard of for non-Cabinet ministers to be members or special invitees to committees.
- If the Prime Minister himself is a member of any such committee, he acts as the head of that committee.
- The committees resolve issues and formulate proposals for the consideration of the Cabinet and make decisions on matters assigned to them. The Cabinet is empowered to review such decisions.
- **There are eight Cabinet committees at present** — the Appointments Committee of the Cabinet, Cabinet Committee on Economic Affairs, Cabinet Committee on Political Affairs, Cabinet Committee on Investment and Growth, Cabinet Committee on Security, Cabinet Committee on Parliamentary Affairs, Cabinet Committee on Employment & Skill Development, and Cabinet Committee on Accommodation.

Issues/Challenges of the Cabinet Committees:

- Due to overlapping mandates, there are delays, inefficiency, and conflict between committees as they fight for control over proposals leading to delayed decisions.

- There is a lack of expertise in committees leading to poorly informed decisions with unintended consequences that can lead to long-term policy ramifications.

- Committees may prioritize short-term gains over long-term strategic planning due to political considerations.

- The decisions made by committees in secrecy lead to the erosion of trust and hinder the legislature from holding committees accountable.

Source: Indian Express

INTERNATIONAL RELATIONS

ASSOCIATION OF SOUTHEAST ASIAN NATIONS (ASEAN)

Context: Prime Minister Narendra Modi on Thursday said he looked forward to the deliberations with world leaders as he arrived in Laos for a two-day visit to attend the ASEAN-India and East Asia summits.

Background: -
- Modi will participate in the 21st ASEAN-India and the 19th East Asia summits.

About ASEAN
- **Established: August 8, 1967, in Bangkok, Thailand** through the signing of the ASEAN Declaration (Bangkok Declaration).
- **Founding Members**: Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
- Current Membership: 10 countries - Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.
- **Secretariat: Jakarta, Indonesia**.

Objectives:
- To accelerate economic growth, social progress, and cultural development in the region.
- To promote regional peace and stability through respect for justice, rule of law, and adherence to the principles of the United Nations Charter.
- To promote active collaboration and mutual assistance in areas of common interest.

Key Principles: motto is "One Vision, One Identity, One Community".
- Non-interference in the internal affairs of member states.
- Peaceful settlement of disputes.
- Respect for sovereignty and territorial integrity.
- Promotion of a zone of peace, freedom, and neutrality.

Key Initiatives and Agreements:
- **ASEAN Free Trade Area (AFTA):** Launched in 1992 to promote trade liberalization among member states.
- **ASEAN Economic Community (AEC):** Established in 2015 to integrate member states into a single market and production base.
- **Regional Comprehensive Economic Partnership (RCEP):** A mega trade agreement involving ASEAN countries and five dialogue partners (China, Japan, South Korea, Australia, New Zealand; India opted out of RCEP).
- **ASEAN Regional Forum (ARF):** Platform for dialogue on security issues in the Asia-Pacific.

Significance:
- **Economic Powerhouse**: ASEAN collectively forms one of the world's largest economies, with diverse markets and significant trade relations.
- **Strategic Importance**: Located at the crossroads of major global sea routes, the region is critical for international trade and maritime security.
- India-ASEAN Relations: India has a strong strategic and economic partnership with ASEAN under the "Act East Policy" focusing on enhancing connectivity, trade, and security cooperation.

Challenges:

- Internal Diversity: Wide variations in political systems, economic development, and internal policies among ASEAN members.
- Balancing Superpowers: ASEAN must navigate the competing influences of China and the United States in the region.

India-ASEAN Engagements:
- India became a sectoral dialogue partner of ASEAN in 1992 and a full dialogue partner in 1996.
- **Trade in Goods Agreement (AITIGA):** The AITIGA was signed in Bangkok in 2009, and entered into force on January 1, 2010.
- **Trade in Services Agreement:** The ASEAN-India Trade in Services Agreement was signed in November 2014
- Investment Agreement: The ASEAN-India Investment Agreement was signed in November 2014.

Source: The Hindu

U.S. PRESIDENT ELECTION

Context: The United States is all set to elect the country's next President in its 2024 general election, scheduled for November 5, 2024.

Background: -
- The U.S. votes for its President on the first Tuesday of November, every four years. The candidates are required to meet certain criteria to be eligible to contest, and the process itself starts months, or even years in advance.

Key takeaways
- According to the U.S. Constitution, a candidate must be a natural-born citizen, 35 years of age or older, and a resident of the U.S. for 14 years to be eligible to contest.

- The U.S. Presidential election process is a complex and multi-step system that involves several stages, including primaries, caucuses, national conventions, general elections, and the final decision through the Electoral College.

Step 1: Primaries and Caucuses
- **Primaries and Caucuses** — help in the selection of delegates who will represent the people at the upcoming conventions. These are simply two ways that people help states and political parties choose presidential nominees.

- **Caucuses**: It's a stage at which party members select the best candidate through a series of discussions and votes. It's a meeting of local members of a political party to select delegates to the national party convention. A caucus is said to be a substitute for primary elections. A delegate is defined as a person authorised to represent others as an elected representative to a political party conference.

- **Primary**: In this, party members vote for the best candidate that will represent them in the general election. Most states hold primaries six to nine months before a presidential election. Primary voters choose their preferred candidate anonymously by casting secret ballots.

Step 2: National Conventions
- **National Party Conventions:** After the primaries and caucuses, each party holds a National Convention where delegates formally nominate their candidate for president. During the convention, the candidate who has secured a majority of delegates through the primaries and

caucuses is officially declared the party's nominee. The nominee then selects a vice-presidential running mate.

Step 3: Presidential general election

- In general elections, people in every state across the US vote for one President and Vice President. The candidates' names will be listed on the general election ballot.

- When people cast their vote, they are actually voting for a group of people known as electors. Each candidate running for President in your State has their own group of electors (known as a slate). When you vote for a Presidential candidate you are actually voting for your candidate's
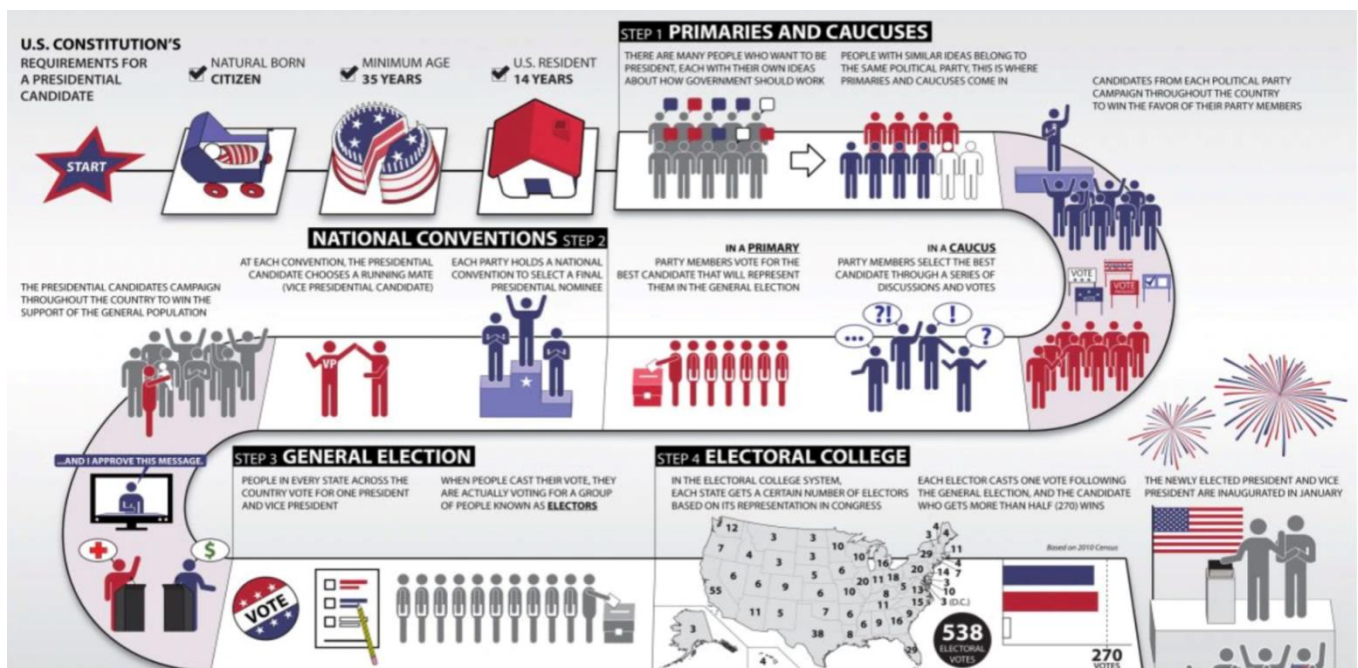
preferred electors.

Step 4 : The electoral college

- The electoral college is the last step in the election of the President. The President is not elected through the popular vote cast by citizens, but through the electoral college process.

- There are 538 electors in the electoral college who indirectly choose the U.S. President. Each State gets the same number of electors as its members of Congress, both House and Senate.

- Selecting electors is a two- step process: first, the parties choose potential electors in States before the election. Then, voters in each State select their electors by casting ballots during the general election. However, this happens even though the names of potential electors may or may not appear on the ballot alongside the name of the presidential candidate. So, a voter is actually picking an elector and not the President directly when they cast their vote in the general election.

- The way the Electoral College works is that whoever wins the popular vote in a state uaually gets all the Electoral College votes from that state. So if Trump wins the popular vote in North Carolina, for example, he'll get all of the Electoral College votes from that state, which is 15 electoral votes. A candidate needs at least 270 electors' votes to win the presidential election.

- While the general election takes place in November and a projected winner is announced soon

after, the electoral college casts their votes in mid-December. The U.S. Congress counts the electoral votes in early January. The new President's term begins January 20, which is also called Inauguration Day.

Source: The Hindu

BRICS SUMMIT

Context: BRICS Summit began in Kazan on Tuesday. This is the first summit that will be taking place after the first-ever expansion of BRICS in January this year.

Background: -

- For India, it is especially significant as Prime Minister Narendra Modi could meet China's President Xi Jinping here, soon after the two countries agreed on a disengagement along the LAC.

GDP in trillions of US dollars

China $17.96tn
India $3.39tn
Russia $2.24tn
Brazil $1.92tn
Saudi Arabia $1.92tn
Egypt $0.48tn
South Africa $0.41tn
Ethiopia $0.31tn
United Arab Emirates $0.51tn
Iran $0.39tn
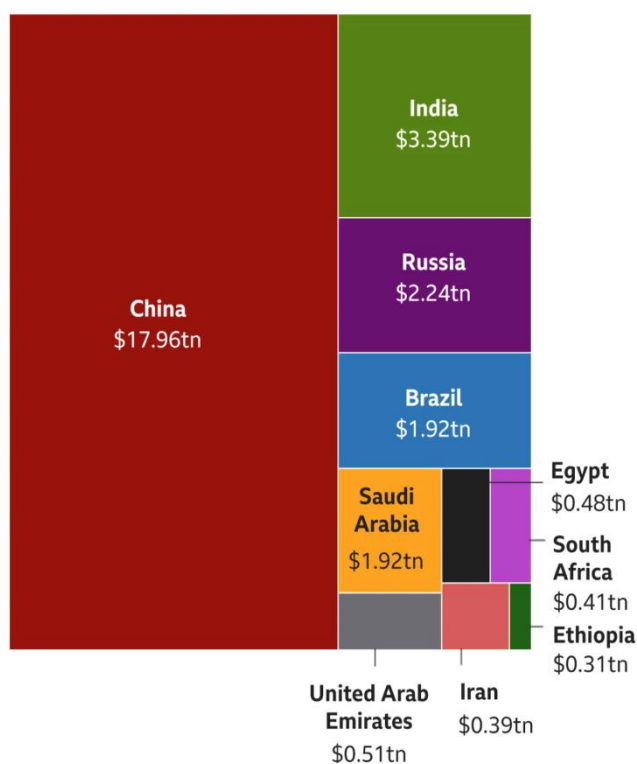
Key takeaways

- **BRICS stands for Brazil, Russia, India, China, and South Africa.**
- **Formation**: The BRIC countries held their first formal summit in 2009 in Yekaterinburg, Russia. South Africa joined the group in 2010, leading to the acronym "BRICS".
- **Expansion**: In 2024, BRICS expanded to include Egypt, Ethiopia, Iran, and the United Arab Emirates, making it a ten-member organization.

Objectives and Goals:

- **Economic Cooperation:** BRICS aims to enhance economic cooperation among member states through trade, investment, and financial collaboration.
- **Political Stability:** The organization promotes political stability and mutual support among its members.
- **Global Influence:** BRICS seeks to provide a counterbalance to Western-dominated global institutions like the IMF and World Bank.

Key Initiatives:

- **New Development Bank (NDB):** Established in 2014, the NDB aims to finance infrastructure and sustainable development projects in BRICS and other emerging economies.
- **Contingent Reserve Arrangement (CRA):** This mechanism provides short-term liquidity support to BRICS countries facing balance of payments crises.
- **BRICS Pay:** A blockchain-based payment system designed to facilitate cross-border transactions without relying on the US dollar.

Source: The Hindu

ECONOMY

INDEX OF INDUSTRIAL OUTPUT (IIP) AND INDEX OF CORE INDUSTRIES (ICI)

Context: Output levels in India's core sectors slipped to a nine month low in August, even as year on year growth slipped 1.8%, marking the first contraction in three and a half years.

Background:

- The Index of Core Industries (ICI), which constitutes about 40% of the broader index of India's industrial output (IIP), stood at 155.8 in August, marking a third consecutive month of sequential decline.

About Index of Industrial Production (IIP)

- The Index is a key **measure used in India to gauge the growth and performance of various industrial sectors over time.** It tracks changes in the production volume across different sectors of the economy, providing insights into the overall industrial health of the country.

- It is compiled and published monthly by the **Central Statistical Organisation (CSO)** six weeks after the reference month ends.

Key Features of the IIP:

- **Base Year:** The IIP is calculated with reference to a base year, **which was last updated to 2011-12.** The base year serves as the point of comparison to measure growth in industrial output.

- **Sectors Covered: The IIP comprises three major sectors**:

  o **Manufacturing**: This sector constitutes about 77.6% of the total weight of the index, reflecting the importance of manufacturing in India's economy.

  o **Mining**: Accounts for 14.37% of the IIP's weight.

  o **Electricity**: Comprises 7.99% of the IIP's weight.

- **Use-Based Classification:**

  o Primary goods: Basic goods used in the production process.

  o Capital goods: Goods used for further production (e.g., machinery, tools).

  o Intermediate goods: Goods used as inputs in other products.

  o Infrastructure/Construction Goods: Goods used in infrastructure projects and construction, like steel and cement.

  o Consumer Durables: Final goods that have a long-term use, such as refrigerators, washing machines, and vehicles.

  o Consumer Non-Durables: Final goods for short-term use, like food items, beverages, and textiles.

About Index of Core Industries (ICI)

- The Index is a **crucial economic indicator** that measures the performance of eight core industries in India. These industries are **fundamental to the economy and have a significant impact on overall industrial performance.**

- **The ICI includes the following eight core industries:**
    - Coal (weight: 10.33%)
    - Crude Oil (weight: 8.98%)
    - Natural Gas (weight: 6.88%)
    - Refinery Products (weight: 28.04%)
    - Fertilizers (weight: 2.63%)
    - Steel (weight: 17.92%)
    - Cement (weight: 5.37%)
    - Electricity (weight: 19.85%)
- **Weightage**: The ICI tracks the performance of eight core industries, which together account for around 40.27% of the IIP.
- **Base Year:** The base year for the ICI is 2011-12, which is the same as the base year for the IIP.
- ICI for a reference month is released with a time lag of one month on the last day of the next month, which is about twelve days prior to the release of IIP for the reference month.
- **The ICI is released by the Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry.**

Source: The Hindu

CURRENT ACCOUNT DEFICIT (CAD)

Context: India's current account deficit (CAD) widened marginally to $ 9.7 billion (1.1% of GDP) in Q1:2024-25 from $8.9 billion (1.0% of GDP) in Q1:2023-24 according to data released by the Reserve Bank of India (RBI)

Background: -
- The widening of CAD on a year-on-year (y-o-y) basis was primarily due to a rise in merchandise trade deficit to $ 65.1 billion in Q1:2024-25 from $56.7 billion in Q1:2023-24

About Current Account Deficit (CAD)
- The CAD is a **key economic indicator reflecting a country's international trade and financial health.**
- It occurs when a country's **total imports of goods, services, and transfers exceed its total exports. A CAD means the country is a net borrower from the rest of the world.**

Components of the Current Account:
- Trade Balance (Exports - Imports of Goods)
- Services Balance (Exports - Imports of Services, e.g., IT, tourism)
- Income Account (investment income)
- Net Transfers (One-way transfers like foreign aid, remittances)
- When the sum of the above components is negative, it results in a Current Account Deficit.

Reasons for CAD:
- High imports relative to exports and increased foreign borrowing or payments, like interest on foreign loans.
- Structural issues, such as a lack of competitiveness in exports, over-reliance on imports, and an

undervalued services sector.

Implications of CAD:

- **Depreciation Pressure on Currency**: A large CAD can weaken the domestic currency as demand for foreign currency increases to pay for imports.
- **Inflationary Pressures:** A weak currency can make imports expensive, driving up domestic inflation.
- **Dependence on Foreign Capital**: Countries with a CAD often need to attract foreign investment or borrow from external sources, which can increase external debt.
- **Impact on Foreign Exchange Reserves:** A persistent CAD can deplete foreign reserves, leading to a balance of payments crisis if not managed effectively.

Factors Affecting CAD:

- **Crude Oil Prices:** India, being a major importer of oil, is significantly affected by global oil price fluctuations.
- **Gold Imports**: High demand for gold in India contributes to a widening CAD.
- **Export Competitiveness:** India's performance in sectors like IT services, textiles, and pharmaceuticals helps reduce the CAD, but manufacturing exports need more focus.
- **Global Economic Conditions**: A global slowdown can reduce demand for India's exports, worsening the CAD.

Measures to Control CAD:

- **Boosting Exports**: Encouraging sectors like manufacturing, agriculture, and services can help improve the trade balance.
- **Reducing Non-Essential Imports**: Policies to curb gold imports or incentivize the domestic production of goods (such as the Make in India initiative) can help.
- **Promoting Foreign Investment**: Attracting more Foreign Direct Investment (FDI) can provide the necessary capital inflows to cover a CAD.
- **Diversifying Energy Sources**: Reducing dependency on imported oil by promoting renewable energy can mitigate the impact of global oil price fluctuations.

Source: The Hindu

DIGITAL PERSONAL DATA PROTECTION ACT

Context: Recently, the union minister for Agriculture and Farmers 'Welfare and Rural Development launched the AgriSURE Scheme in New Delhi.

Background: -

- This scheme is part of the government's broader efforts to empower farmers and boost the agricultural sector, ensuring increased production, reduced costs, and better prices for farmers.

About AgriSURE - Agri Fund for Start-ups & Rural Enterprises (AgriSURE)

- **Fund is an innovative fund** which is a pioneering step toward revolutionizing the agricultural landscape in India.

- The Fund is a **financial initiative aimed at supporting agricultural start-ups** and rural enterprises in India.

- It is a **collaborative initiative between the Ministry of Agriculture and Farmers Welfare and the**

National Bank for Agriculture and Rural Development (NABARD).

- Financial assistance through a blended capital **fund of ₹750 crore.** It provides **both equity and debt support** to agritech start-ups and agripreneurs.

- It targets high-risk, high-impact activities across the agriculture value chain.

- **AgriSURE** Fund is registered as a Category-II Alternative Investment Fund (AIF) with SEBI.

Objectives:

- **Investment-Friendly Climate:** Create an environment conducive to investment for start-ups in agriculture and allied activities.
- **Growth Acceleration:** Accelerate the growth of start-ups within the agricultural ecosystem.
- **Capital Commitments:** Increase and sustain capital commitments to sector-specific AIFs.
- **Encouraging Entrepreneurs:** Support young entrepreneurs with innovative, technology-driven ideas.
- **Employment Opportunities:** Create additional employment opportunities for rural and urban youth.
- **Youth Retention and Encouragement:** Retain and encourage youth in agriculture.
- **Investment Attraction:** Attract more investment into the agri and rural start-up ecosystem.

Target Beneficiaries:

- The fund aims to support about 85 start-ups by the end of its life, with variable ticket sizes of up to ₹25 crore.

- **Beneficiaries include start-ups in sectors like** agritech, food processing, animal husbandry, fisheries, supply chain management, farm mechanisation, biotechnology, waste management, renewable energy, and more.

Source: PIB

ANNUAL SURVEY OF INDUSTRIES (ASI)

Context: The Annual Survey of Industries (ASI) for 2022-23, released on Monday, showed that the total number of employees in manufacturing industries increased by 7.5 per cent to 1.84 crore in 2022-23 from 1.72 crore in 2021-22.

Background: -

- The ASI data is the principal source of industrial statistics and data for organised manufacturing.

About Annual Survey of Industries (ASI)

- The ASI is a **comprehensive and detailed survey** conducted annually to gather statistical information on the industrial sector in India.

- **Conducted by:** Ministry of Statistics and Programme Implementation (MoSPI).

- **Scope and Coverage**:

  o Coverage: The ASI covers all factories registered under the Factories Act, 1948, which employ 10 or more workers with power or 20 or more workers without power. The definition is slightly tweaked for states of Maharashtra, Rajasthan and Goa, wherein data

is collected for factories employing 20 or more workers with power and factories having 40 or more workers without power.

o The survey also covers registered bidi and cigar manufacturing establishments.

o Exclusions: Defense establishments, oil storage and distribution depots, restaurants, hotels, cafes, computer services, and certain other establishments are excluded.

- **The ASI collects data on various parameters, including:**

  o Output and Input: Measures the total output and input of the industrial units.

  o **Gross Value Added (GVA):** Indicates the contribution of the industrial sector to the economy.

  o **Employment**: Data on the number of persons engaged in the industrial sector.

  o Capital Formation: Information on investments in the industrial sector.

  o **Wages and Emoluments**: Details on the wages and salaries paid to employees

Key takeaways from ASI for 2022-23:

- This is the **highest rate of increase in employment** in manufacturing industries in the last 12 years.

- **The highest employment was recorded in factories producing** food products, followed by textiles, basic metals, wearing apparel, and motor vehicles, trailers and semi-trailers, the latest ASI data showed.

- **In terms of GVA, Maharashtra ranked first in 2022-23 followed by Gujarat, Tamil Nadu, Karnataka and Uttar Pradesh.** These top five states together contributed more than 54 per cent of the total manufacturing GVA of the country in 2022-23.

- **In terms of employment also, the top five states were** Tamil Nadu, Maharashtra, Gujarat, Uttar Pradesh and Karnataka in ASI 2022-23, contributing about 55 per cent of total manufacturing employment in 2022-23.

Source: Indian Express

CENTRE RECONSTITUTES MONETARY POLICY COMMITTEE

Context: The central government on Tuesday reconstituted the Monetary Policy Committee (MPC) ahead of the monetary policy review of the Reserve Bank of India (RBI) on October 7-9.

Background:

- The government has appointed three external members in the MPC. They have been appointed for a period of four years.

Key Points About the Monetary Policy Committee (MPC):

- **Establishment**: The MPC was constituted under the **Reserve Bank of India Act, 1934**, following amendments made in 2016.

- **Objective**:

  o The primary mandate of the MPC is to maintain price stability while keeping in mind the objective of economic growth.

o It is tasked with setting the repo rate, the key policy rate, to control inflation within the prescribed target.

- **Composition: The MPC consists of 6 members:**

  o **3 members from the RBI:**

    ▪ The Governor of RBI, who acts as the Chairperson.

    ▪ The Deputy Governor in charge of monetary policy.

    ▪ One officer of the RBI nominated by the central bank.

  o **3 external members appointed by the Government of India.** These are experts in economics or related fields, selected for a tenure of four years and are not eligible for reappointment.

- Decisions are made by a majority vote, with each member having one vote. In case of a tie, the RBI Governor has the casting vote.

- **Mandate and Inflation Targeting:**

  o The MPC's mandate is to maintain inflation within the range of 4% ± 2%. This means the inflation target is set at 4%, with an upper tolerance limit of 6% and a lower limit of 2%.

  o The committee usually meets bi-monthly (once every two months) to review the economy and set the policy interest rate, which influences inflation and growth. The MPC is required to meet at least four times in a year according to RBI Act 1934.

  o By increasing or decreasing the repo rate, the MPC influences liquidity and demand in the economy, which in turn affects inflation and economic growth.

- **Rationale for the MPC:**

  o Prior to the MPC's establishment, monetary policy decisions were made solely by the RBI Governor. The MPC institutionalizes a democratic decision-making process, bringing multiple perspectives from both within and outside the RBI.

  o It helps in reducing discretionary control and fosters a more objective, rule-based approach to monetary policy.

Source: Indian Express

CIRCULAR MIGRATION

Context: A notable example of circular migration is the recent initiative where 997 youth from Maharashtra, with only high school certificates, secured employment in Israel with a monthly salary of Rs 1.37 lakh. This migration model promotes temporary migration where workers gain valuable skills abroad and return to their home country.

Background: -
- As artificial, non-economic barriers to the free movement of workers collapse due to skill deficits in regions with aging populations, India should position itself as a global source of human capital.

About circular migration
- It refers to the temporary, repetitive movement of individuals between two or more places, often across international borders, for work, education, or other purposes.

- It usually involves a person leaving their home region or country to seek employment elsewhere, but with the intention of returning periodically or eventually.

Key characteristics of circular migration include:
- **Temporary nature**: Migrants do not settle permanently in the host country; they move back and forth.

- **Seasonal work:** Many circular migrants engage in seasonal or temporary jobs, such as agriculture, construction, or tourism.

- **Benefit for both regions:** The home country receives remittances and knowledge transfer, while the host country gains a flexible workforce.

Brain Drain:
- In contrast, brain drain refers to the permanent emigration of highly skilled or educated individuals from their home country to another, usually for better employment opportunities, living conditions, or education.

- Unlike circular migration, brain drain often results in a loss of talent, expertise, and human capital from the country of origin.

Key characteristics of brain drain include:
- **Loss of investment**: Countries spend resources on educating and training individuals, only to lose them to other nations.

- **Talent gap:** It leads to a shortage of skilled professionals in critical sectors such as healthcare, technology, and education in the home country.

- **Unequal exchange**: While the host country gains from the influx of talent, the country of origin suffers a net loss of intellectual capital.

Workforce Shortage in Developed Nations:
- Europe and Japan face shortages in sectors like computing, infrastructure, and healthcare due to aging populations.

- Circular migration agreements with countries like Germany, Japan, and Israel aim to address this shortage by sourcing skilled workers from India.

- Highly-qualified permanent migrants like doctors and engineers contribute only 32% of India's remittances. In contrast, manual workers in the Gulf contribute 40%, highlighting the economic impact of low-skilled migration.

Source: Indian Express

INSOLVENCY AND BANKRUPTCY CODE ISSUES

Context: India's G20 Sherpa Amitabh Kant's call for reforms in India's insolvency resolution framework to

cut delays and boost creditor recovery is latest in the growing chorus for making the Insolvency and Bankruptcy Code (IBC) more effective.

Background: -

- In the recent past, various stakeholders, including RBI Governor Shaktikanta Das and the Parliament's Standing Committee on Finance, also flagged concerns and the need to rethink the IBC's design.

Reforms in India's Insolvency and Bankruptcy Code (IBC) – Key Issues and Recommendations

- Introduced in 2016, the IBC aimed to **rescue and reorganize distressed companies through a time-bound process, prioritizing their survival as going concerns.**

- Despite fostering credit discipline, the IBC is facing delays, high case backlog, and steep haircuts for creditors, affecting its efficiency.

Delays in Resolution Process:

- Average time for resolution at NCLT increased to 716 days in FY24 (up from 654 days in FY23), against the prescribed timeline of 330 days.

- RBI Governor Shaktikanta Das flagged admission delays, citing an average time of 468 days (FY21) and 650 days (FY22), eroding asset value.

- **Impact of Delays on Debt Recovery:** Delays push cases towards liquidation, with 44% of closed cases ending in liquidation by March 31, 2024.

Steep Haircuts for Creditors:

- Ravi Mital, IBBI Chairperson, noted that creditors often approach IBC too late, with cases already losing over 50% of their value before admission.

- 84% recovery is possible when measured against the fair value, but delays reduce this figure significantly.

Legal and Procedural Challenges:

- The NCLT often takes months to **admit cases despite a 14-day timeline stipulated by law**.

- **The Supreme Court (2022) ruled that the 14-day timeline for admission is procedural, granting NCLT discretion to consider circumstances beyond just the default.** This leads to further delays and uncertainty in the process.

Key Concerns and Recommendations:

- Need for second-generation reforms to address procedural delays, personnel shortages, and bottlenecks in judicial infrastructure.

- Clarification of key legal principles, particularly regarding the Committee of Creditors' (CoC) commercial judgment and priority of claims.

Source: Indian Express

DRY PORTS

Context: Telangana will soon have dry port facilities to boost logistics services for its industries.

Background: -

- Logistics is the backbone of industrial development.

Key takeaways
- A dry port is **an inland terminal directly connected to a seaport by road**, rail, or waterways. It functions as a multimodal logistics hub where goods are handled, stored, and cleared for customs, thus extending the capabilities of seaports.

- **An exporter can complete all customs formalities at the dry dock, saving time and cost.**

Purpose:
- **Reduce Congestion at Seaports:** By handling container traffic away from the seaport, dry ports help reduce congestion at major ports.

- **Facilitate Trade:** They provide efficient customs clearance and reduce time for cargo processing, thus facilitating faster and cheaper trade.

- **Enhance Connectivity:** Dry ports improve connectivity between the hinterland and international trade gateways by integrating various transport modes like road, rail, and waterways.

Functions:
- **Cargo Handling**: Sorting, labeling, packing, and distribution of goods.

- **Customs Clearance**: Enables customs inspections and procedures inland, reducing the burden on seaports.

- **Warehousing and Storage**: Offers facilities for long-term storage of goods.

- **Logistics and Distribution**: Acts as centers for regional and international distribution of cargo.

Importance for India:
- Improves Trade Efficiency: Dry ports help in faster cargo movement, making India's export-import system more efficient.

- Boosts Hinterland Connectivity: Enhances the connection of remote areas with international trade, contributing to balanced regional development.

- Supports 'Make in India': By providing logistics solutions, dry ports support India's manufacturing sector by ensuring smooth supply chains.

Examples in India:
- **Concor's Inland Container Depots (ICDs):** Located at places like Tughlakabad (Delhi), Dadri (Uttar Pradesh), and Whitefield (Bangalore).

- **Jawaharlal Nehru Port Dry Port:** Near Jalna, Maharashtra, which improves connectivity for industries in central India.

Source: Hindu Businessline

A NOBEL PRIZE FOR EXPLAINING WHY NATIONS FAIL OR SUCCEED

Context: The 2024 Economics Nobel was awarded to U.S. economists Daron Acemoglu, Simon Johnson and James A. Robinson "for studies of how institutions are formed and affect prosperity." The prize committee

credited the winners for enhancing our understanding of the root causes of why countries fail or succeed.

Background: -

- Why some countries are rich while others are poor is a question that has been debated by economists for a long time now.

The 2024 Nobel Prize Winners' Economic Research

• The Nobel Committee reports that the richest 20% of countries are 30 times richer in terms of average income than the poorest 20%.

• Theories ranging from colonialism to natural resource disparities, intelligence, and historical accidents have been proposed to explain the disparity in prosperity.

• The 2024 Nobel laureates argue that differences in the quality of economic and political institutions best explain the divergence in economic fates of countries.

• Institutions are the "rules of the game" that define incentives for individuals, leading to economic prosperity.

• Institutions can be "inclusive" or "extractive", with inclusive institutions characterized by secure private property rights and democracy, and extractive institutions marked by insecure private property rights and lack of political freedom.

• Factors like culture can influence the more explicit "rules of the game" expressed by political and economic institutions.

• The laureates argue that rulers face different choices in their countries, often leading to the prevailing extractive institutions for long-term benefit.

What's special about the Nobel prize given to Acemoglu, Johnson, and Robinson?

- **The economics Nobel prize is usually awarded for ground-breaking academic research into topics that are of significant real-world importance.**

- In the last two years, the Nobel prize was awarded to scholars who worked on important questions such as the gender pay gap and the fragility of the banking system. While these topics are no doubt important, they still do not delve deep enough into the more fundamental questions that economics as a discipline was founded to answer. This year's Nobel prize corrects this flaw by bringing the world's focus back onto the crucial topic of institutions, which determine the very "rules of the game" in any economy and thus affect literally everything that happens in it.

Source: The Hindu

GEOGRAPHY

BRITAIN TO RETURN CHAGOS ISLANDS TO MAURITIUS

Context: The UK has agreed to hand over the Chagos Islands to Mauritius, ending years of bitter dispute over Britain's last African colony.

Background: -

- The agreement will allow a right of return for Chagossians, who the UK expelled from their homes in the 1960s and 1970s, in what has been described as a crime against humanity and one of the most shameful episodes of postwar colonialism.

Key takeaways

- **The Chagos Archipelago or Chagos Islands is a group of seven atolls comprising more than 60 islands in the Indian Ocean about 500 kilometres south of the Maldives archipelago.**

- This chain of islands is the southern most archipelago of the **Chagos–Laccadive Ridge, a long submarine mountain range in the Indian Ocean.**

- In its north are the Salomon Islands, Nelsons Island and Peros Banhos; towards its south-west are the Three Brothers, Eagle Islands, Egmont Islands and Danger Island; southeast of these is Diego Garcia, by far the largest island.

- The Chagos contain the world's largest coral atoll, The Great Chagos Bank, which supports half the total area of good quality reefs in the Indian Ocean.

Timeline of the island:

- 1783: The first inhabitants arrive on the Chagos Islands: enslaved Africans, who are put to work on coconut plantations, producing copra, created by the French. Later, after their emancipation, indentured Indians arrive.

- 1814: Britain formally takes possession of the Chagos Islands and nearby Mauritius from France.

- 1965: The Chagos Islands become the British Indian Ocean Territory (BIOT). UK agreed with the US to create a military base on one of the islands, Diego Garcia.

- 1968: Mauritius is granted independence but the UK retains control of the BIOT.

- 1967-1973: The entire population of the Chagos Islands are forced to leave their homes, with

most moving to the main island of Mauritius or to Seychelles, thousands of kilometres away. Human Rights Watch has called the forcible displacement an "appalling colonial crime" and a crime against humanity.

- 2019: In an advisory opinion, the UN's highest court, the international court of justice, rules that continued British occupation of the remote Indian Ocean archipelago is illegal and orders the UK to hand it back to Mauritius.

- The UN general assembly passes a motion condemning Britain's occupation of the islands. The motion sets a six-month deadline for Britain to withdraw and for the islands to be reunified with Mauritius, but the UK does not comply.

- 2021: The UN's special international maritime court rejects the UK's claim to sovereignty over the Chagos Islands.

- 2024: The UK agrees to hand over the Chagos Islands to Mauritius, although it will retain control over the military base on Diego Garcia, which it operates jointly with the US.

Source: The Guardian

NEARBY RIVER CONTRIBUTING TO THE RISE OF MOUNT EVEREST

Context: Mount Everest, currently 8,849 metres tall, has over the past 89,000 years, grown about 15 to 50 m higher than expected because a nearby river is eroding rock and soil at its base, helping push it upwards, according to a new study.

Background: -
- The study, 'Recent uplift of Chomolungma enhanced by river drainage piracy', was published in the journal Nature Geoscience.

Key takeaways from the study
- The loss of landmass in the Arun River basin, which spreads across Nepal and Tibet and is 75 km away from Everest, is causing the world's tallest peak to rise by up to 2 mm a year.

- While Everest and the rest of the Himalayas have been slowly rising due to the collision of the Indian and Eurasian plates, the change in the Arun river network is a contributing factor to the mountains' continued rise.

- Everest has been experiencing an additional boost to its height due to a geological process called isostatic rebound.

- Isostatic rebound (also called continental rebound, post-glacial rebound or isostatic adjustment) involves the rise of land masses on the Earth's crust when the weight of the surface diminishes.

- In the case of Everest and its neighbouring mountains, the surface weight started to reduce after the Arun River merged with the Kosi River around 89,000 years ago. This resulted in accelerated erosion that carried off huge amounts of rock and soil, reducing the weight of the region near Everest.

Himalayan Formation - Key Points:
- **Tectonic Activity:**
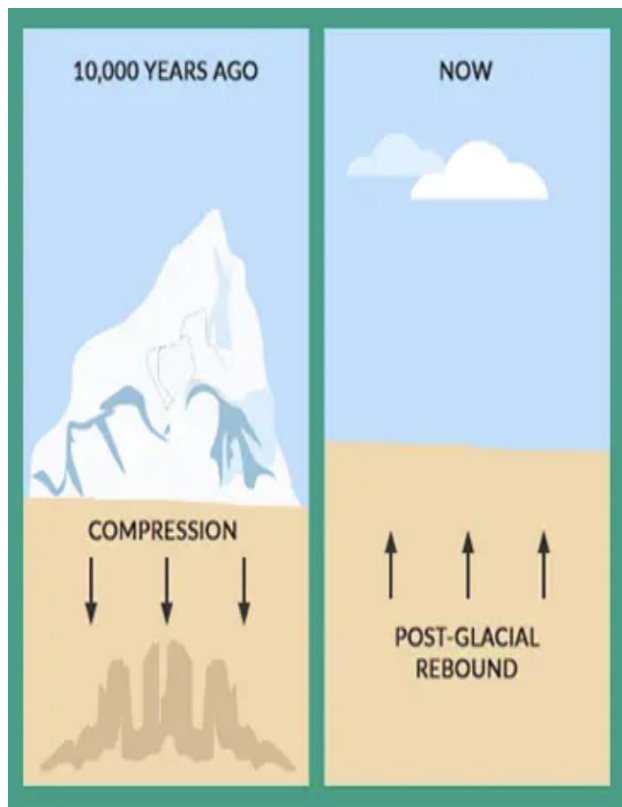
o The Himalayas were formed as a result of the collision between the Indian Plate and the Eurasian Plate around 50 million years ago during the late Cretaceous to early Tertiary period.

o As the Indian Plate moved northward, it collided with the Eurasian Plate, leading to the folding and uplifting of sediments that had accumulated in the Tethys Sea, which once separated the two plates.

o This process is an example of convergent plate boundary activity, where two continental plates collide.

• **Geological Evolution**: The process of orogeny (mountain formation) is still ongoing, which explains the frequent earthquakes and tectonic activity in the region.

Source: Indian Express

WHY NORTH BIHAR SEES FLOODS EVERY YEAR

Context: Bihar is flooded yet again, with 11.84 lakh people affected.

Background:

- Bihar is among India's most flood-prone states. The reasons for this are the state's unique geography, and a decades-old solution that has proved short-sighted.

Key Points

- 76 per cent of the population in north Bihar lives under the recurring threat of flood.

- Bihar is crisscrossed by both snow-fed and rain-fed rivers, putting it at the risk of various kinds of floods.

- **The state's Disaster Management Authority has categoried floods into four classes.**

  o The first are flash floods, occurring due to rainfall in Nepal, lead time [time between forecast and flood] is short (8 hours), receding of flood waters is fast.

  o Then are river floods, where the lead time is 24 hours and receding of flood waters takes one week or more.

  o Class III: Drainage congestion in river confluence- lead time more than 24 hours, lasting full monsoon season (i.e. receding of flood water takes 3 months);

  o Class IV: Permanent water logged area.

- **A major reason for the first three kinds of flooding is that Bihar is located below Nepal, with its Himalayan rivers flowing down to the state.**

- Because the Himalayas are a young mountain range with a lot of loose soil, these rivers — Kosi, Gandak, Burhi Gandak, Bagmati, Kamla Balan, Mahananda, Adhwara — are full of sediments. Thus, when the volume of water increases due to rains, the rivers quickly overflow their banks.

- The fourth category of permanent waterlogging is because of several factors. The reasons of water-logging are spilling of silted small rivers, encroachment of drainage channels, embankment-induced waterlogging, and presence of saucer type depression locally called Chaurs. Chaurs are created due to a river changing course and deposition of its sediments.

- This year, the flood has been caused by heavy rainfall and flooding in Nepal and release of water from its barrage on the Kosi river.

Embankments, and the Kosi question

- Among the more destructive rivers of the state is Kosi, known as the 'sorrow of Bihar'. Soon after independence, in the 1950s, embankments were built along the Kosi to contain its flow. While they were seen as a lasting solution, not only have the embankments been breached several times, they have created a new problem.

- Embankments narrowed the course of the river. Thus, while Kosi earlier had the option to distribute its sediments, now it was in a straitjacket. With nowhere for the sediments to go, the river's bed has been rising by about 5 inches a year, making it more prone to overflowing.

- This time, flooding is worse than the past few years because the Birpur barrage, built on the Kosi in Nepal, released 6.6 lakh cusec of water, the highest in almost six decades. On the Indian side, embankment breaches have been reported from seven places in four districts.

Effect of the Bihar floods

- While Bihar floods may not result in loss of lives every year, their economic cost is steep.

- The state government spends about Rs 1,000 crore annually for flood management and relief.

Possible solutions

- For decades, the proposal of a dam on the Kosi has been mooted, but since that will require Nepal to come on board too, the plan has not progressed.

- There are two ways of dealing with floods — one is through structural solutions, which includes dams, embankments, etc., and the other is through non-structural solutions, which includes laws, policy, risk reduction, mitigation, etc.

Source: Indian Express

NORTHEAST MONSOON (NEM)

Context: India's southwest monsoon has ended on an optimistic note, with 8% more rain than anticipated. Given the centrality of rainfall to the Indian economy, focus has already shifted now to the northeast monsoon.

Background: -

- Because of its limited spread and quantity, the northeast monsoon does not get as much attention as the southwest monsoon.

What is the Northeast Monsoon?

- The Northeast Monsoon occurs from October to December, bringing rainfall primarily to the southern part of India.

- It is often referred to as the **"post-monsoon season" or "retreating monsoon"** in meteorological terms.
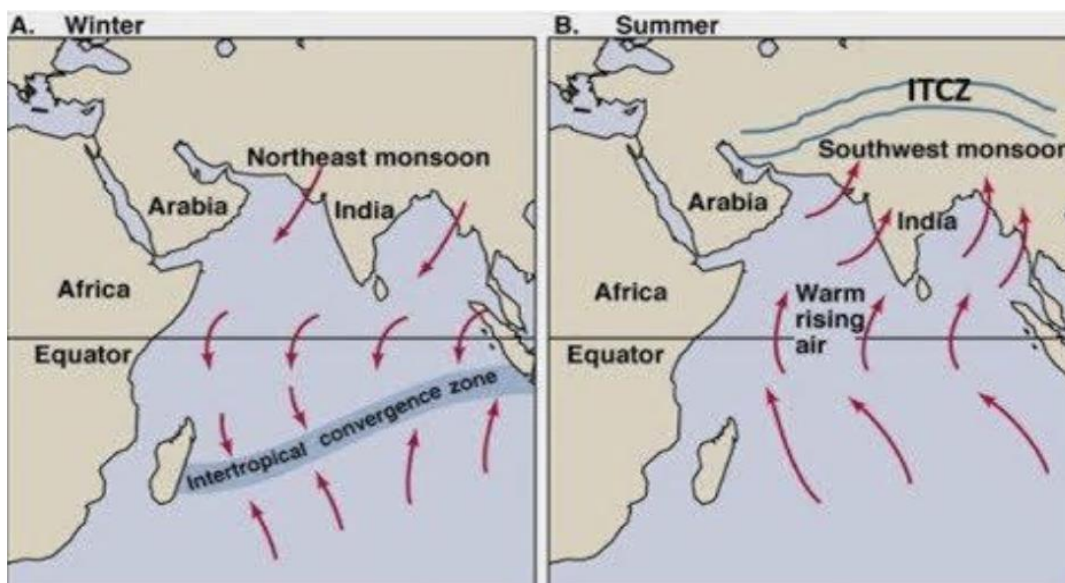
- **Wind Direction:** Characterized by northeast trade winds blowing from the northeastern directions towards the Indian subcontinent.

Mechanism

- One of the primary causes of the northeast monsoon is the southward movement of **Inter Tropical Convergence Zone (ITCZ) —** a dynamic region near the Equator where the trade winds of the northern and southern hemispheres come together.

- During the southwest monsoon season, this ITCZ moves northwards over to the Indian landmass, where it is also referred to as the monsoon trough. But as the temperatures in the northern hemisphere begin to drop around September, the ITCZ starts moving towards the Equator and further into the southern hemisphere.

- This southward movement of the ITCZ, coupled with the heating up of the Indian Ocean, reverses the direction in which the lower-atmosphere moisture-laden winds blow (from southwest to northeast), thereby triggering the NEM.

- As the northeastern winds blow from land to sea, most parts of the country are dry in these months. But a portion of these monsoon winds blows over the Bay of Bengal, picks up moisture, and brings rain-bearing clouds to the southern subdivisions of Tamil Nadu, Kerala and southern parts of Karnataka, Telangana, and Andhra Pradesh.

Geographical Distribution of Rainfall

- **The Northeast Monsoon is crucial for the southeastern states of India.** Unlike the Southwest Monsoon (which covers most of India), the Northeast Monsoon brings significant rainfall mainly to:

   o Tamil Nadu: About 48%–60% of Tamil Nadu's annual rainfall is received during this season, making it vital for agriculture and water resources.

   o Southern Andhra Pradesh, Karnataka, and Kerala also receive rainfall but in lesser quantities.

   o The Andaman and Nicobar Islands also receive rainfall during this season.

Importance of the Northeast Monsoon

- **Agricultural Impact:**
  - o Tamil Nadu and parts of Andhra Pradesh rely heavily on the Northeast Monsoon for agricultural activities, as the region doesn't receive much rainfall from the Southwest Monsoon.
  - o Rice cultivation is a significant beneficiary of the rainfall from this monsoon.
- **Water Resources**:
  - o It is vital for recharging reservoirs and water bodies in the southern states, which face severe water scarcity otherwise.
  - o Groundwater recharge during this period is essential for drinking water and irrigation.
- **Fisheries**:

  - o The monsoon is crucial for the fishing communities along the Coromandel Coast, as it influences marine ecosystems and seasonal fishing patterns.

Source: The Hindu

MOUNT ADAM

Context: Scientists are trying to establish what caused an unusual spike in earthquakes at the Mount Adams volcano by installing multiple temporary seismic monitoring stations at the site.

Background: -

- In September, six small earthquakes were recorded at the "high threat" volcano. Normally, it only experiences one earthquake every two to three years, according to the U.S. Geological Survey (USGS).

About Mount Adams

- **It's a stratovolcano located in the Cascade Range of the western United States, in Washington State.**

- It is the **second-highest mountain in Washington after Mount Rainier**, with an elevation of 3,743 meters.

Geological Significance

- **Stratovolcano**: Mount Adams is a stratovolcano, which means it is built up by many layers of hardened lava, tephra, pumice, and volcanic ash. Stratovolcanoes are known for their explosive eruptions.

- **Cascade Volcanic Arc:** It is part of the Cascade Volcanic Arc, a chain of volcanoes in the Pacific Northwest region formed due to the subduction of the Juan de Fuca Plate beneath the North American Plate.

- **Dormant Volcano:** Mount Adams is considered dormant but not extinct. The last known eruption occurred about 1,000 years ago, and there is still potential for future volcanic activity.

Source: Livescience

SWELL WAVES

Context: The Indian National Centre for Ocean Information Services (INCOIS) has issued extensive advisories for swell waves for Andaman and Nicobar and Lakshadweep as well as parts of coastal areas in Andhra, Goa, Gujarat, Kerala, Maharashtra, Odisha, Tamil Nadu, West Bengal, Daman and Diu, and Puducherry.

Background: -

- **Swell waves are also called Kallakkadal waves in India**, which is a colloquial term used by Kerala fishermen to denote sudden waves that cause flash floods.

- **INCOIS Hyderabad launched its swell surge forecast system in February 2020** to provide warnings for coastal populations in case of anticipated swell waves.

What are swell waves?

- **They are long-wavelength ocean waves that travel away from their places of origin.** They are usually **created by windstorms or other weather systems.** Sea waves otherwise are usually generated due to local winds.

- Windstorms and other powerful air current systems transfer energy from the air to water, making swell waves more powerful. Because of their high energy, swell waves are able to travel large distances and strike shores with considerably high power.

- According to INCOIS, swell waves organise themselves into groups of similar heights and periods, and then travel long distances without much change. Wave period is the time one wavelength takes to pass a specific point. Longer wavelengths, therefore, result in longer wave periods, and these characteristics are associated with faster and more powerful waves.

- A wave is essentially a transfer of energy from one point to another. Shorter waves dissipate more energy due to frequent movement, which is why they also lose energy quickly. Longer wavelengths are more powerful, and this is also why swells continue to persist days after they are formed.

· **How are swell surges different from tsunami waves?**

- Kallakkadal waves **inundate large areas of land**. These waves are also sometimes confused with tsunami waves given their stealthy nature, but both are different. Kallakkadal **waves are caused due to weather phenomenon, while tsunamis are mostly caused due to earthquakes or tectonic activity.**

Source: The Hindu

ATMOSPHERIC RIVERS

Context: Atmospheric rivers are shifting toward higher latitudes, and that's changing weather patterns around the world.

Background: -

- The shift is worsening droughts in some regions, intensifying flooding in others, and putting water resources that many communities rely on at risk.

About Atmospheric Rivers

- Atmospheric Rivers (ARs) are **long, narrow bands of concentrated water vapor that travel through the atmosphere, resembling rivers in the sky.**

- These bands transport large amounts of moisture from tropical regions to higher latitudes, often resulting in heavy rainfall and sometimes causing extreme weather events.

- They are critical to the global water cycle and significantly influence precipitation patterns, particularly in coastal regions.

Characteristics:

- Typically 2,000-4,000 km long and 400-600 km wide.

- **Strongest atmospheric rivers are referred to as "Pineapple Express" when they transport moisture from the tropical Pacific to the U.S. West Coast.**

- While atmospheric rivers share a similar origin — moisture supply from the tropics — atmospheric instability of the jet stream allows them to curve poleward in different ways. **No two atmospheric rivers are exactly alike.**

The science behind atmospheric rivers

An atmospheric river (AR) is a flowing column of condensed water vapor in the atmosphere responsible for producing significant levels of rain and snow, especially in the Western United States. When ARs move inland and sweep over the mountains, the water vapor rises and cools to create heavy precipitation. Though many ARs are weak systems that simply provide beneficial rain or snow, some of the larger, more powerful ARs can create extreme rainfall and floods capable of disrupting travel, inducing mudslides and causing catastrophic damage to life and property. Visit www.research.noaa.gov to learn more.

A strong AR transports an amount of water vapor roughly equivalent to 7.5–15 times the average flow of water at the mouth of the Mississippi River.

ARs are a primary feature in the entire global water cycle and are tied closely to both water supply and flood risks, particularly in the Western U.S.

On average, about 30-50% of annual precipitation on the West Coast occurs in just a few AR events — and contributes to the water supply — and flooding risk.

ARs move with the weather and are present somewhere on Earth at any given time.

ARs are approximately 250–375 miles wide on average.

Scientists' improved understanding of ARs has come from roughly a decade of scientific studies that use observations from satellites, radar and aircraft as well as the latest numerical weather models. More studies are underway, including a 2015 scientific mission that added data from instruments aboard a NOAA ship.

3/2015

WATER VAPOR COOLS

CALIFORNIA

Image not to scale.

- **They are commonly seen in the extratropics, a region between the latitudes of 30 and 50 degrees in both hemispheres that includes most of the continental U.S., southern Australia and Chile.**

- Atmospheric rivers typically occur in the extratropical North Pacific/Atlantic, southeastern Pacific, and South Atlantic oceans often making landfall on the west coasts of North and South America.

What the new study says?

- New study shows that atmospheric rivers have be**en shifting poleward over the past four decades**. In both hemispheres, activity has increased along 50 degrees north and 50 degrees south, while it has decreased along 30 degrees north and 30 degrees south since 1979.

A global chain reaction

- One main reason for this shift is changes in sea surface temperatures in the eastern tropical Pacific. Since 2000, waters in the eastern tropical Pacific have had a cooling tendency, which

affects atmospheric circulation worldwide. This cooling, often associated with La Nina conditions, pushes atmospheric rivers toward the poles.

- The poleward movement of atmospheric rivers can be explained as a chain of interconnected processes.

- During La Nina conditions, when sea surface temperatures cool in the eastern tropical Pacific, the Walker circulation — giant loops of air that affect precipitation as they rise and fall over different parts of the tropics — strengthens over the western Pacific. This stronger circulation causes the tropical rainfall belt to expand. The expanded tropical rainfall, combined with changes in atmospheric eddy patterns, results in high-pressure anomalies and wind patterns that steer atmospheric rivers farther poleward.

- Conversely, during El Nino conditions, with warmer sea surface temperatures, the mechanism operates in the opposite direction, shifting atmospheric rivers so they don't travel as far from the equator.

Why does this poleward shift matter?
- In the subtropics, where atmospheric rivers are becoming less common, the result could be longer droughts and less water. Many areas, such as California and southern Brazil, depend on atmospheric rivers for rainfall.

- In higher latitudes, atmospheric rivers moving poleward could lead to more extreme rainfall, flooding and landslides in places such as the US Pacific Northwest, Europe and even in polar regions.

- In the Arctic, more atmospheric rivers could speed up sea ice melting, adding to global warming and affecting animals that rely on the ice.

Source: Down To Earth

NORTH KOREA BLOWS UP KEY ROAD LINKS TO SOUTH KOREA

Context: North Korea detonated explosives on key road and railway links connecting its territory to South Korea.

Background:
- Although these roads had not been in use for years, their destruction is symbolically important. The two Koreas remain divided by one of the world's most heavily fortified borders.

Key takeaways.
- During the period of inter-Korean détente in the 2000s, the two Koreas reopened two roadways and two railway lines across their heavily fortified border. However, their use was gradually halted as tensions over North Korea's nuclear program and other issues escalated.

- The explosions followed recent accusations from North Korea that South Korea had been flying propaganda-laden drones over Pyongyang (North Korean Capital).

- Earlier this month, North Korean leader Kim Jong Un scrapped his policy of seeking peaceful reunification with the South, describing the relationship as one between "two hostile nations."

About North Korea - South Korea Border

- The border between North Korea and South Korea is known as **the Demilitarized Zone (DMZ).**

- It runs roughly along the **38th parallel, dividing the Korean Peninsula into two separate nations**.

- The DMZ is approximately 250 kilometers long and about 4 kilometers wide, making it one of the most heavily militarized borders in the world.

Historical Background:

- **The DMZ was established following the Korean Armistice Agreement in 1953, which ended the Korean War in a ceasefire (not a peace treaty), leaving North and South Korea technically still at war.**

Military Demarcation Line (MDL):

- Within the DMZ lies the Military Demarcation Line (MDL), which is the actual border between the two countries.

- The border is symbolic of the Cold War divide, with North Korea (DPRK) being a communist regime and South Korea (ROK) a democratic state allied with the United States.

Source: Indian Express

ENVIRONMENT AND ECOLOGY

ECO

INTERNATIONAL BIG CAT ALLIANCE (IBCA)

Context: Recently, the Union cabinet approved the proposal of India to become a member country of the International Big Cat Alliance (IBCA) by signing and ratification of the Framework Agreement on the establishment of the International Big Cat Alliance (IBCA).

Background: -

- The International Big Cat Alliance (IBCA) is a global initiative launched by India in April 2023 during the 50th anniversary of Project Tiger.

About International Big Cat Alliance

- The Union cabinet in its meeting held on February 29 **approved the establishment of International Big Cat Alliance with Headquarters in India with a one-time budgetary support of ₹150 crore for a period of five years from 2023-24 to 2027-28.**

- So far four countries have become member of IBCA including **India, Nicaragua, Eswatini and Somalia.**

- All UN member countries are eligible for becoming the member of IBCA.

Concept and Objectives:

- A multi-country, multi-agency coalition of big cat range and non-range countries, conservation partners, scientific organizations, business groups, and corporates.
- Aims to establish networks, synergies, and a centralized repository of best practices, personnel, and financial resources to strengthen big cat conservation efforts.
- Focused on arresting the decline of big cat populations and reversing the trend.

Mission:

- Foster mutual cooperation among countries for big cat conservation.
- Support knowledge sharing, capacity building, networking, advocacy, finance, and research.
- Integrate big cat conservation with sustainable development and climate resilience.

Approach:

- **Multipronged Strategy:**
  - Broad-based linkages in areas like knowledge sharing, capacity building, research, advocacy, and technical support.
  - Education and awareness campaigns targeting youth and local communities.
  - Use big cats as symbols for sustainable development and livelihood security.
- **Synergies and Partnerships**:
  - Collaborative platform for sharing gold-standard conservation practices.
  - Access to centralized technical know-how and financial resources.
  - Strengthen species-specific transnational initiatives on conservation.
  - Align biodiversity policies with the UN Sustainable Development Goals (SDGs).
- **Sectoral Integration:**

o Promote biodiversity integration into agriculture, forestry, tourism, and infrastructure.

o Support sustainable land-use practices, habitat restoration, and ecosystem-based conservation approaches.

o Contribute to climate change mitigation, food security, clean water, and poverty reduction.

Governance Structure:

- Assembly of Members, Standing Committee, and Secretariat.
- Governance framework modeled on the International Solar Alliance (ISA).
- Director General (DG) appointed by MoEFCC as Interim Head, until formal appointment during IBCA Assembly.

Source: Indian Express

SALT PAN LAND TO BE USED FOR HOMES

Context: The Maharashtra government has issued a GR (Government Resolution) allocating 255 acres of salt pan land, distributed over three land parcels in Mumbai's eastern suburbs, for the construction of rental houses in the Dharavi Redevelopment Project through a lease agreement.

Background: -

- The decision has caused concern among environmentalists and urban planners.

What are salt pans?

- Salt pan lands are ecologically **important salt marshlands**. They are low-lying areas around the shore that are used for salt cultivation. They act as holding ponds and work as a sponge for the absorption of rain.

- They are a coastal area's natural defence against flooding. They help intertidal activity, and are home to diverse flora and fauna.

What does the decision entail?

- The government has allocated 255 acres of salt pan land distributed over three land parcels — to Dharavi residents.

- The land parcels allocated are under the ownership of the Central government. After the Maharashtra government sought these parcels from the Centre, the Union Cabinet approved the proposal in September 2024.

What are the terms for allocation of land?

- Four conditions have been put forth for the allocation of the land which will be given at a concessional rate of 25% of the prevailing rate.

  o The State government will collect the land revenue from the Dharavi Redevelopment Project Private Limited (DRPPL), the special purpose vehicle (SPV), and pay it to the Central government.

  o The DRPPL will bear the cost of resettlement of the labourers working on the land, and other incidental costs for the acquisition of the land. The DRPPL is an SPV in which an

Adani Group entity holds 80% stake and the State government has a 20% stake.

  o The land will be used for rental housing, slum rehabilitation, and affordable housing for economically weaker sections.

  o The land will be leased to the Maharashtra government for a period of 99 years, and it cannot be used for commercial activities.

What are the concerns?
- Impact assessment study needs to be done before opening up large packs of land for intensive activities like housing.

- The most important demand with respect to the Dharavi project has been for in-situ rehabilitation. Urban planners point out that handing over land parcels in different parts of the city for a developer will lead to formation of ghettos.

Source: The Hindu

GREEN PATCH SPREADS IN ANTARCTICA

Context: Plant cover across the Antarctic Peninsula, a long, mountainous extension of Antarctica that points north towards South America, has increased more than 10 times over the past few decades due to rising temperatures, a new study says.

Background: -
- In March 2022, Antarctica experienced its most intense heatwave — temperatures in East Antarctica soared to 39 degrees Celsius above normal.

How quickly is Antarctica warming?
- The continent is warming twice as fast as the global average, at a rate of between 0.22 degrees Celsius and 0.32 degrees Celsius per decade currently. **The Intergovernmental Panel on Climate Change (IPCC),** the UN body that advances scientific knowledge about climate change, has estimated that the Earth as a whole is warming at the rate of 0.14-0.18 degrees Celsius per decade.

- The situation in the **Antarctic Peninsula is worse than in the rest of Antarctica** — it is warming five times faster than the global average. **The Antarctic Peninsula is now almost 3 degrees Celsius warmer on average than in 1950.**

- Antarctica has also been experiencing record-breaking heatwaves, especially during the height of its winter season (which is summer in the northern hemisphere).

What has the study found?
- Researchers used satellite imagery and data to conclude that the extent of vegetation - mostly mosses and lichen - in the Antarctic Peninsula has increased 14 times in just 35 years.

- Rising temperatures in Antarctica have also resulted in a rapid decrease in the extent of sea ice — the 2024 extent was the second smallest of the satellite record, only slightly more than the record low set in 2023. Warmer open seas may be leading to wetter conditions that favour plant growth.

Why should we worry about increased vegetation in Antarctica?

- Mosses can colonise bare rock and create the foundation of soils that could in milder conditions make the continent more favourable for the growth of other invasive species that could threaten native flora and fauna.

- Increase in plant life could also **reduce the Antarctic Peninsula's ability to reflect sunlight (solar energy) back to Space — a darker surface absorbs more solar radiation. This could further increase ground temperatures, with local and global repercussions.**

Source: Indian Express

WAYANAD WILDLIFE SANCTUARY

Context: A two-day vulture survey that concluded in the Wayanad Wildlife Sanctuary recently, has recorded the presence of 80 vultures across nine locations.

Background:

- Wayanad Wildlife Sanctuary remains one of Kerala's last bastions for vultures, whose survival is closely tied to apex predators like tigers and leopards.

About Wayanad Wildlife Sanctuary

- It's located in the state of Kerala, is an integral part of the Nilgiri Biosphere Reserve.

- Established in 1973, the sanctuary spans approximately 344.44 square kilometers and lies between the famous protected areas of Nagarhole and Bandipur in Karnataka and Mudumalai in Tamil Nadu. It is divided into four hill ranges: Sulthan Bathery, Muthanga, Kurichiat, and Tholpetty.

- **Kuruma, Paniya, Kattunaicka, Urali, Kurichiar and Adiyar** are some of the tribal communities that inhabit this area.

Flora

- The Wayanad Wildlife Sanctuary is predominantly covered by tropical moist deciduous forests, with patches of semi-evergreen forests.

Fauna

- The sanctuary is home to an array of wildlife, including several endangered and endemic species. It forms a key part of the migratory corridor for elephants and tigers.

- Wayanad is known for its large elephant population. The sanctuary hosts a significant number of Bengal tigers, which frequently move between Wayanad and the adjacent Nagarhole-Bandipur-Mudumalai complex.

- Leopards, Wild Boar, Indian Bison (Gaur), Sloth Bear, Sambar Deer, Spotted Deer (Chital), Nilgai, Bonnet Macaques, and Indian Wild Dogs (Dholes) are commonly found.

Source: The Hindu

GANDHI SAGAR SANCTUARY

Context: Gandhi Sagar Sanctuary is set to reintroduce cheetahs.

Background:

- It will make Gandhi Sagar the second site in India to host cheetahs, after Kuno National Park.

About Gandhi Sagar
- Located in Madhya Pradesh, near the Chambal River, spread across the districts of Mandsaur and Neemuch. Established in 1974 to protect the unique biodiversity of the region.

- It sits atop a flat rocky plateau, with the Chambal river cutting the sanctuary into two almost equal halves. Due to the rocky terrain and exposed sheetrock, the topsoil is shallow. This is behind Gandhi Sagar's savanna ecosystem comprising open grasslands interspersed with dry deciduous trees and shrubs. The riverine valleys, however, are evergreen.

- World famous **Chaturbhuj Nala rock shelters are also part of Gandhi Sagar wildlife sanctuary.**

Geographical Features:
- Gandhi sagar is the second largest reservoir (in area) in the country, next only to Hirakud in Orissa.

- It has a mix of dry deciduous forests and grasslands.

Flora and Fauna:
- **Flora**: The sanctuary hosts typical dry deciduous vegetation such as teak, khair, and salai.

- **Fauna**: Notable species include leopard, nilgai, chinkara, wild boar, and various bird species like peafowl and partridges.

- The sanctuary is part of the Chambal River ecosystem, which is crucial for conserving endangered species like the gharial (Indian crocodile) and gangetic dolphins.

Source: Times of India

GRADED RESPONSE ACTION PLAN (GRAP)

Context: As Pollution worsens in Delhi, the first set of emergency response measures under GRADED RESPONSE ACTION PLAN Stage-1 was implemented.

Background: -
- The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change.

About Graded Response Action Plan (GRAP)
- GRAP is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold.

- Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300). The second, third and fourth stages will be activated three days ahead of the AQI reaching the 'very poor' category (301 to 400), 'severe' category (401 to 450) and 'severe +' category (above 450) respectively.

- Measures being imposed under the previous categories will continue even when the subsequent category is activated, that is, if measures under Stage-2 are activated, measures under Stage-1 will continue to remain in place.

- The GRAP was first notified in 2017 based on a plan that was submitted by the Central Pollution Control Board (CPCB) in 2016. According to the notification, the task of implementing the GRAP

fell on the now-dissolved Environment Pollution (Prevention and Control) Authority for the NCR.

- From 2021 onwards, the GRAP is being **implemented by the Commission for Air Quality Management (CAQM).**

- **The Commission for Air Quality Management in NCR and Adjoining Areas (CAQM) was constituted through the CAQM Act, 2021.**

- The air quality monitoring body is tasked with better coordination, research, identification, and resolution of problems surrounding the air quality index and related matters in NCR and adjoining areas. It has the power to take measures, issue directions and entertain complaints to protect and improve the air quality in the region.

- The Commission is required to have a full-time chairperson with experience of not less than 15 years in the field of environmental protection and pollution control, or administrative experience of not less than 25 years.

Source: Indian Express
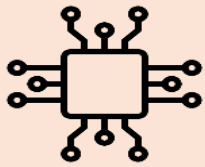
SCIENCE & TECHNOLOGY

SMALL NUCLEAR REACTORS (SMR) GET TRACTION

Context: India's plans to get into the manufacturing value chain of Small Modular Reactors (SMR) are yielding some positives with a handful of private players learnt to have shown interest in deploying these at their captive site.

Background: -

- The SMR push comes at a time when the global nuclear power sector is faced with a general decline in output, with its share dropping to the lowest point in nearly four decades due to a combination of factors — national policy pivots, economic viability issues, safety concerns and the rapid growth of renewable energy alternatives.

About Small Modular Reactors (SMR)

- **SMRs are small reactors offering 30-300 MWe power output per unit**, and are seen as effective in not just producing base load power, but also amongst renewables as a more carbon-neutral source.

- SMRs are conceptualised in such a way that their systems and components are manufactured in a controlled factory environment and then transported straight to the project site to be installed, which optimises the construction lead time and cuts down the cost of these projects — two concerns with regard to traditional large reactor projects.

- They have potential **deployment advantages like** reduced size of the Emergency Planning Zone (ring fenced areas around the project site) and passive safety system, rendering them relatively safer than larger reactor-based projects.

Additional Information

- India is pushing for a leadership slot in this small reactor space, both as a way of fulfilling its commitment to clean energy transition, and bundling SMRs as a technology-led foreign policy pitch.

- These reactors are important in offering base load power that could give grid operators some degree of operational flexibility. This is seen as significant since SMRs, when pooled together, can produce a meaningfully large amount of electricity and help meet the challenge of inducting more base load power to balance out the vagaries of renewable power output. While thermal generation is seen as important in this regard, nuclear energy offers a more carbon-neutral base load generation option.

- Though India's civil nuclear programme has progressively upscaled its reactor sizes, from the earlier 220MWe reactors to the latest 700MWe PHWRs (pressurised heavy water reactors), the country does have an edge in producing and commercially operating small reactors.

Source: Indian Express

PROGERIA

Context: Sammy Basso, who was the longest living survivor of the rare genetic disease progeria, has died at the age of 28.

Background: -

- There are only 130 recognised cases of classic progeria worldwide, of which four are in Italy.

What is Progeria?

- Progeria, also known as **Hutchinson-Gilford Progeria Syndrome (HGPS),** is a rare genetic disorder characterized by accelerated aging in children.

- **It results from a mutation in the LMNA gene**, which produces the lamin A protein, essential for maintaining the structural integrity of cell nuclei.

- The mutation leads to the production of an abnormal form of lamin A, known as progerin, which causes cells to become unstable and age prematurely.

Key Symptoms:

- Rapid aging in early childhood (usually between 1-2 years).

- Physical characteristics: Growth failure, loss of body fat and hair, aged-looking skin, stiffness of joints, and cardiovascular diseases.

- Life expectancy is approximately 13 to 15 years, primarily due to complications like cardiovascular diseases, such as atherosclerosis. Death often occurs from heart attacks or strokes.

Diagnosis and Treatment:

- Diagnosis involves genetic testing for the **LMNA** mutation.

- No definitive cure, but symptomatic treatments include heart medications, physical therapy, and low-dose aspirin to prevent strokes.

- Lonafarnib, a farnesyltransferase inhibitor, has been approved by the FDA to help manage some symptoms and extend life expectancy.

Research and Advances:

- Research is focused on understanding the mechanism of progerin accumulation and finding treatments to reduce its effects.

- Stem cell research and gene therapy offer potential for future treatments.

Source: Reuters

MicroRNAs

Context: The 2024 Nobel Prize in Physiology or Medicine was awarded to Victor Ambros and Gary Ruvkun by the Nobel Assembly at Karolinska Institutet in Stockholm, Sweden. The scientists won the esteemed prize for the discovery of microRNA and its role in post-transcriptional gene regulation

Background: -

- Chairperson of the Nobel Committee for Physiology or Medicine 2024, said that there are no clear applications of **miRNAs** yet. Understanding them is the first step towards further research.

What are microRNAs?

- MicroRNAs, or miRNAs, are small, non-coding molecules of RNA. They are typically around 19-24 nucleotides long and play an important role in determining how much messenger RNA (mRNA), which carries genetic information, eventually gets translated into protein.

- The body makes proteins in a complex process with two broad steps.

  o In the transcription step, a cell copies a DNA sequence into messenger **RNA (mRNA)** in the nucleus. The mRNA moves from the nucleus, through the cell fluid, and attaches itself to the ribosome.
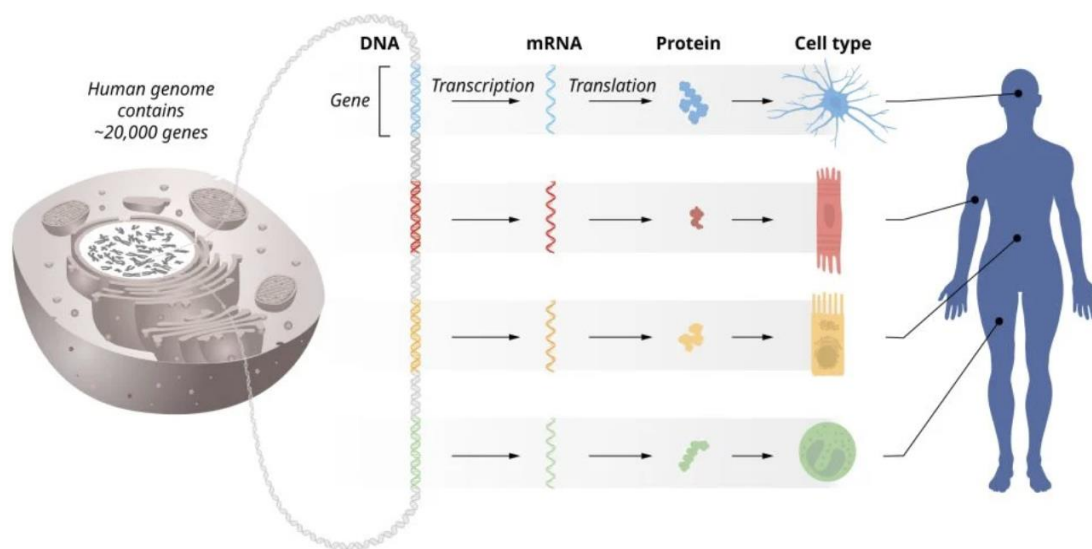
The flow of genetic information from DNA to mRNA to proteins. The identical genetic information is stored in DNA of all cells in our bodies. This requires precise regulation of gene activity so that only the correct set of genes is active in each specific cell type.

  o on the translation step, another type of RNA called transfer RNA (tRNA) brings specific amino acids to the ribosome, where they are linked together in the order specified by the mRNA to make the protein.

- **Micro RNA, or miRNA, regulates the production of proteins** by bonding with and subsequently silencing the mRNA at an appropriate juncture. The process is called post-transcriptional gene regulation.

Applications

- A single micro-RNA can regulate the expression of many genes, and alternatively a single gene can also be controlled by multiple micro-RNAs. This leads to fine tuning of different types of cells despite similar genetic information.

- Abnormal regulation by microRNA can contribute to cancer, and mutations in genes coding for microRNAs have been found in humans, causing conditions such as congenital hearing loss, eye and skeletal disorders.

Source: The Hindu

ARTIFICIAL NEURAL NETWORKS

Context: On October 8, John Hopfield and Geoffrey Hinton won the 2024 Nobel Prize for physics for foundational discoveries and inventions that enable machine learning with artificial neural networks.

Background: -

- Their work lies at the roots of a large tree of work, the newest branches of which we see today as artificially intelligent (AI) apps like ChatGPT.

What are Artificial Neural Networks (ANNs)?

- **Artificial Neural Networks (ANNs)** are computational models inspired by the human brain's neural networks. They are composed of layers of interconnected artificial neurons that process data in a way that mimics human learning. ANNs are the foundation for many AI applications, particularly those involving pattern recognition, data analysis, and decision-making.

Structure of ANNs

- Neurons and Layers: ANNs consist of interconnected units called neurons, organized into layers. There are typically three types of layers:

  o Input Layer: Receives the initial data.

  o Hidden Layers: Perform computations and feature extraction.

  o Output Layer: Produces the final result or prediction.

Types of ANNs

- **Feedforward Neural Networks (FNNs):** The simplest type, where connections do not form cycles. Data moves in one direction from input to output.

- **Convolutional Neural Networks (CNNs):** Specialized for processing grid-like data such as images. They use convolutional layers to automatically and adaptively learn spatial hierarchies of features.

- **Recurrent Neural Networks (RNNs):** Designed for sequential data, such as time series or natural language. They have connections that form cycles, allowing them to maintain a memory of previous inputs.

- **Autoencoders:** Used for unsupervised learning, these networks aim to learn a compressed representation of the input data.

Applications of ANNs

- **Image and Speech Recognition:** CNNs are widely used for tasks like identifying objects in images and recognizing spoken words.

- **Natural Language Processing (NLP):** RNNs and their variants, such as LSTM (Long Short-Term Memory) networks, are used for language translation, sentiment analysis, and more.

- **Healthcare:** ANNs assist in diagnosing diseases, predicting patient outcomes, and personalizing treatment plans.

- **Finance:** Used for stock market prediction, fraud detection, and risk management

Source: The Hindu

MAJOR ATMOSPHERIC CHERENKOV EXPERIMENT (MACE) OBSERVATORY

Context: The Major Atmospheric Cherenkov Experiment (MACE) Observatory was inaugurated on October 4, 2024, in Hanle, Ladakh.

Background:
- MACE Observatory is a monumental achievement for India, and it places our nation at the forefront of cosmic-ray research globally.

About MACE OBSERVATORY
- Located at Hanle, Ladakh, at an altitude of approximately 4,300 meters, making it the highest imaging Cherenkov telescope in the world.
- **Significance:** It is the largest imaging Cherenkov telescope in Asia.
- **Built By:** Bhabha Atomic Research Centre (BARC) with support from the Electronics Corporation of India Ltd (ECIL) and other Indian industry partners.

Purpose and Functionality
- The MACE Observatory is designed to study high-energy gamma rays. Gamma rays do not reach the Earth's surface but interact with the atmosphere to create high-energy particles that emit Cherenkov radiation. The telescope captures these flashes to trace them back to their cosmic sources.

Scientific and Socio-Economic Impact
- **Research:** The telescope will advance cosmic-ray research, allowing scientists to study phenomena such as supernovae, black holes, and gamma-ray bursts.
- **Community Engagement:** The project also aims to support the socio-economic development of Ladakh, encouraging local students to pursue careers in science and technology.

Unique Advantages
- **Location Benefits:** Hanle offers extremely low light pollution, which is ideal for gamma-ray observations. Its longitudinal position allows MACE to observe sources that are not visible from other parts of the world.

About Cherenkov radiation
- Cherenkov radiation is a fascinating phenomenon that occurs when a charged particle, such as an electron, travels through a dielectric medium (like water or glass) at a speed greater than the phase velocity of light in that medium.

Physical Origin
- **Speed of Light in Medium:** While the speed of light in a vacuum is a universal constant (approximately 3×10^8) meters per second), it slows down when it passes through a medium like water or glass. For instance, light travels at about 75% of its speed in a vacuum when in water.
- **Charged Particles:** When charged particles (e.g., electrons) move faster than the speed of light in that medium, they emit Cherenkov radiation.

Mechanism
- **Electromagnetic Shockwave:** This radiation is analogous to a sonic boom, which occurs when an object exceeds the speed of sound in air. Similarly, Cherenkov radiation is an electromagnetic shockwave produced when a particle exceeds the speed of light in a medium.

Appearance
- **Blue Glow:** Cherenkov radiation typically appears as a faint blue glow. This is because the emitted photons are in the blue and ultraviolet part of the electromagnetic spectrum.

Historical Context
- **Discovery:** The phenomenon was first observed by Soviet physicist Pavel Cherenkov in 1934. He noticed a faint blue light around a radioactive preparation in water.

- **Nobel Prize:** Pavel Cherenkov, along with Ilya Frank and Igor Tamm, received the Nobel Prize in Physics in 1958 for their theoretical explanation of this effect.

Applications
- **Nuclear Reactors**: Cherenkov radiation is commonly observed in the water surrounding nuclear reactors, where it serves as a visual indicator of high-energy particles being emitted.

- **Particle Detectors:** Cherenkov detectors are used in particle physics to identify high-speed charged particles. These detectors are crucial in experiments involving cosmic rays and high-energy physics.

- **Medical Imaging:** Recent advancements have explored the use of Cherenkov radiation in medical imaging, particularly in radiotherapy, where it helps visualize the distribution of radiation doses.

Source: PIB

TOOLS TO DESIGN PROTEINS, PREDICT STRUCTURE WIN 2024 CHEMISTRY NOBEL

Context: The 2024 Nobel Prize for chemistry was jointly awarded to David Baker for his work on computational protein design and to Demis Hassabis and John Jumper for developing technologies to predict the structure of proteins.

Background: -
- The chemistry prize concerns two areas in the field of protein research: design and structure.

Why are proteins important?
- All life requires proteins and all proteins are made of amino acids. While there are many types of amino acids in nature, only 20 of them in different combinations make up all the proteins in the human body and in most life-forms.

- Amino acids are found in tissues — like muscles, skin, and hair — that provide structural support; they're catalysts in biochemical reactions; move molecules like oxygen across membranes; control muscle contraction that lets us move and have our hearts beat; and help cells communicate with each other to perform tasks.

What is the protein-folding problem?
- A protein has many identities and one of them depends on the arrangement of its amino acids in the three dimensions of space — in other words, its 3D structure. And scientists have spent decades trying to understand how proteins attain these structures.

- In 1962, John Kendrew and Max Perutz won the Nobel for elucidating the first 3D models of haemoglobin and myoglobin, both proteins, using X-ray crystallography. (This method reveals a crystal's structure based on how its constituent atoms scatter X-rays. For this the proteins need to be purified and crystallised first). A year earlier, Christian Anfinsen had found that a protein's

3D structure is governed by the sequence of amino acids in the protein, and won the 1972 chemistry Nobel.

- Notable breakthrough arrived in 1969 when scientists found that a protein doesn't try to bend into different shapes before settling into its final one. Instead it somehow knows the shape it needs to have and rapidly folds itself to acquire it. The mysterious nature of this 'knowledge' of the protein is called the protein-folding problem.

- By the late 2010s, scientists had worked out the structures of around 1.7 lakh proteins — a large number yet still small compared to the roughly 200 million proteins in nature. This situation changed drastically around 2018.

What is AlphaFold?
- Hassabis co-founded DeepMind in 2010 and which Google acquired. Here, Hassabis and his colleagues unveiled AlphaFold in 2018. AlphaFold is a deep-learning model able to predict the structures of almost all proteins after training on the set of known structures.

- DeepMind launched its successor AlphaFold 2 in 2020, when it was able to predict the structure of proteins with an accuracy comparable to that of X-ray crystallography.

- Jumper led the work on AlphaFold 3. This model is able to predict the structures of various proteins as well as how two proteins and/or a protein and another molecule might interact.

- Given enough computing power, these machine-learning models are capable of deducing the 3D shapes of most proteins in a matter of hours. However, these machines have not been able to say why a protein prefers a particular structure.

What is protein design?
- Baker, who received the other half of chemistry Nobel, developed tools that scientists use to design new proteins with specific shapes and functions. His first notable work was in 2003, when he led a team to create a novel protein and determined its structure using a bespoke computer program they had developed in 1999 called **'Rosetta'.**

- The ability to design proteins has far-reaching implications. For example, in 2022, Baker's team developed an antiviral nasal spray to treat COVID-19. At its heart were proteins the team designed using computational methods in the laboratory to stick to vulnerable sites on the viral surface and target the spike protein.

Source: The Hindu

X-BAND RADAR

Context: After devastating floods and landslides killed more than 200 people in Kerala's Wayanad district in July 2024, the Union Ministry of Earth Sciences approved an X-band radar to be installed in the district.

Background: -
- A torrential downpour triggered the landslide in the valley instantly wiping out habitations.

Key takeaways
- Radar is short for **'radio detection and ranging'.** The device uses radio waves to determine the

distance, velocity, and physical characteristics of objects. A transmitter emits a signal aimed at an object whose characteristics are to be ascertained (in meteorology, this could be a cloud). A part of the emitted signal is echoed by the object back to the device, where a receiver tracks and analyses it.

- Weather radar, also known as a Doppler radar, is a common application of this device. The Doppler effect is the change in frequency of sound waves as their source moves towards and away from a listener.

- In meteorology, Doppler radars can reveal how fast a cloud is moving and in which direction based on how the cloud's relative motion changes the frequency of the radiation striking it. Doppler radars can monitor weather conditions and anticipate new wind patterns, the formation of storms, etc.

What is an X-band radar?
- Doppler radar relies on Rayleigh scattering, when the scatterer is much smaller than the wavelength of the radiation. A radar trying to 'see' smaller particles like rain droplets or fog will need to use radiation of lower wavelengths, like in the X-band.

- An X-band radar is radar that emits radiation in the X-band of the electromagnetic spectrum: 8-12 GHz, corresponding to wavelengths of around 2-4 cm (this is in the microwave part of the spectrum.)

- The smaller wavelengths allow the radar to produce images of higher resolution. However, the greater the frequency of some radiation, the faster it will be attenuated. So X-band radars have a relatively shorter range.

- In Wayanad, the new radar is expected to be able to monitor the movements of particles, such as soil, to inform landslide warnings. The device will also perform high temporal sampling, that is, rapidly sample its environs, allowing it to spot particle movements happening in shorter spans of time.

How many radars does India have?
- In its X-band radar network, India has both wind-finding and storm-detecting radars, and some with dual capabilities. The country also uses S-band radars (2-4 GHz) for long-range detection.

- In September, the Union Cabinet cleared the **₹2,000-crore 'Mission Mausam'** to upgrade meteorological infrastructure in the country. This includes installing up to 60 meteorological radars until 2026 under the Mission's first phase.

Source: The Hindu

EUROPA CLIPPER MISSION

Context: NASA is set to launch Europa Clipper mission today.
Background: -
- The spacecraft is scheduled to launch from Nasa's Kennedy Space Center in Florida aboard a Falcon Heavy rocket.

About Europa Clipper Mission

- Europa Clipper Mission is a NASA mission aimed at exploring Jupiter's moon Europa, which is considered one of the top candidates in the search for extraterrestrial life.

- The mission is expected to last several years, with the spacecraft making multiple flybys of Europa.

- The main objective of the Europa Clipper mission is to determine whether Europa's subsurface ocean could support life. The mission will investigate the moon's ice shell, ocean, composition, and geology.

- Europa Clipper is the largest spacecraft NASA has ever developed for a planetary mission. Its solar arrays span over 100 feet (30 meters) when deployed.

- The spacecraft is expected to reach Jupiter and begin its scientific investigations by April 2030

- The mission ends in 2034 with a planned crash into Ganymede — Jupiter's biggest moon and the solar system's too.

What will Nasa's Europa Clipper do?

- Nasa's spacecraft is equipped with nine state-of-the-art instruments.

- It includes high-resolution cameras, magnetometers, and an ice-penetrating radar, all designed to study the composition, geology, and nature of Europa's ice shell and underlying ocean.

- Once reaching Jupiter, Europa Clipper will perform 49 close flybys of Europa, swooping as low as 16 miles about the moon's surface. Then while orbiting, the spacecraft will scan nearly the entire moon while minimising its exposure to Jupiter's intense radiation belts.

- The Europa mission represents a major step in our quest to understand the potential for life beyond Earth. It paves the way for future exploration of ocean worlds in our solar system.

Europa, the superstar among Jupiter's many moons

- One of Jupiter's 95 known moons, Europa is almost the size of our own moon. It's encased in an ice sheet estimated to be 10 miles to 15 miles or more thick. Scientists believe this frozen crust hides an ocean that could be 80 miles or more deep.

- The Hubble Space Telescope has spotted what appear to be geysers erupting from the surface. Discovered by Galileo in 1610, Europa is one of the four so-called Galilean moons of Jupiter, along with Ganymede, Io and Callisto.

- Like Europa, Jupiter's jumbo moon Ganymede is thought to host an underground ocean. But its frozen shell is much thicker — possibly 100 miles thick — making it tougher to probe the environment below. Callisto's ice sheet may be even thicker, possibly hiding an ocean.

Source: Business Standard

HABER-BOSCH PROCESS

Context: A hundred million tonnes of nitrogen are now removed from the atmosphere and converted into fertilizer via the Haber-Bosch process, adding 165 million tonnes of reactive nitrogen to the soil.

Background: -

- The Haber-Bosch process revolutionized agriculture by enabling the large-scale production of

synthetic fertilizers, which significantly boosted crop yields and transformed global food production

What is the nitrogen molecule?

- Nearly eight metric tonnes of nitrogen lie on every square metre of the earth's surface, yet it can't feed a single blade of grass. Nitrogen in the air is mostly in the form of N2. When two nitrogen atoms join together, they share three pairs of electrons to form a triple bond, rendering the molecule nearly unbreakable.

- The energy required to break the nitrogen triple bond is so high that molecular nitrogen is nearly inert. But if the bond is broken, atomic nitrogen can form ionic nitrides such as **ammonia (NH3), ammonium (NH4+), or nitrates (NO3–).** Plants need these types of nitrogen, called reactive nitrogen, to synthesise enzymes, proteins, and amino acids.

How is nitrogen availed in nature?

- Among natural things, only lightning has enough energy to destroy the N2 triple bond. In a lightning bolt, nitrogen in the air combines with oxygen to generate nitrogen oxides such as NO and NO2. They can then combine with water vapour to create nitric and nitrous acids **(HNO3 and HNO2, respectively).** Reactive nitrogen-rich droplets fertilize soil when it rains.

- Apart from lightning, a gentle metabolic process carried out by Azotobacter bacteria can also create reactive nitrogen. Some microorganisms such as Rhizobia have developed symbiotic relationships with legume plants (clover, peas, beans, alfalfa, and acacia) to provide reactive nitrogen in exchange for nutrition.

What is the nitrogen cycle?

- Plants usually get their reactive nitrogen from the soil, where they absorb minerals dissolved in water such as **ammonium (NH4+) and nitrate (NO3-).**

- Humans and animals need nine pre-made nitrogen-rich amino acids from plants. The nitrogen ingested by plants and animals returns to the soil through excreta and the decomposition of dead bodies. But the cycle is incomplete: some nitrogen is released back into the environment in molecular form.

- Although legumes can produce nitrogen independently, important food crops draw nitrogen from the soil. As the human population multiplies, nitrogen in agricultural soil depletes faster, needing fertilizers to compensate.

How is ammonia made?

- **Ammonia (NH3)** is made of nitrogen and hydrogen, both of which exist naturally as two-atom molecules. Under extreme heat, the molecules separate and form a compound, but it is short-lived because of the heat. The reversible reaction **N2 + 3H2 = 2NH3** (the '=' sign has been used here as a stand-in for bidirectional arrows) must be maintained in specific conditions to harvest considerable amounts of ammonia.

- The German chemist Fritz Haber heated the N2-H2 combination to various temperatures and calculated the amount of ammonia created. At 1,000 degrees Celsius, Haber found that harvestable ammonia made up just one-hundredth of 1% of the mixture.

- Then Haber wondered if pressure could be the answer. He calculated that hydrogen and nitrogen would only remain united in extreme conditions: temperatures of 200 degrees Celsius and pressures of 200 atm (that is, 200-times the average air pressure at sea level). But the ammonia production rate was still too slow, so Haber wanted a catalyst. He also realised that if he could cool the ammonia to a liquid state, he could collect most of it.

What is the Haber-Bosch process?

- Robert Le Rossignol, joined Haber's lab, solving the engineering challenge of maintaining high pressure in reaction chamber, while mechanic Friedrich Kirchenbauer built the necessary equipment. Haber acknowledged both in his Nobel Prize speech, sharing patents and prize money with them.

NOMINATED FOR THE PRIZE

SATYENDRA NATH BOSE
Discipline: Physics
Work: For his work in quantum statistics, developing Bose-Einstein condensate. Class of elementary particles called Bosons are named after him
No. of nominations: 7

MEGHNAD SAHA
Discipline: Physics
Work: An astrophysicist, he developed the Saha equation, a basic tool in deciphering the electromagnetic spectrum of stars
No. of nominations: 7

HOMI J BHABHA
Discipline: Physics
Work: Well known as the father of India's atomic programme, he provided the first understanding of Bhabha scattering, the interaction between electrons and positrons
No. of nominations: 5

G N RAMACHANDRAN
Discipline: Chemistry
Work: On structural biology, including determination of three-dimensional protein structures, a precursor to the work honoured by 2024 Chemistry Nobel
No. of nominations: 1

T R SESHADRI
Discipline: Chemistry
Work: For his work on structure and synthesis of some organic compounds in plants that impact their pigmentation and flavour
No. of nominations: 2

UPENDRANATH BRAHMACHARI
Discipline: Medicine or Physiology
Work: For his work on tropical diseases, particularly the discovery of a treatment for kala-azar, a disease caused by a protozoan parasite
No. of nominations: 6

- The heated hydrogen and nitrogen combination would circulate in a steel chamber at a pressure of 200 atm. The chamber had a valve that could withstand the high pressure while allowing the N_2-H_2 mixture to pass through. Haber also built a contraption to ensure the hot gases departing from the reaction chamber passed their heat to the cooler incoming gases. Thus the departing combination would rapidly cool while the ingested gas would be heated, achieving two objectives at once.

- Haber soon began testing catalysts. One was osmium, a rare and dense metal found in trace levels on the earth. When Haber inserted an osmium sheet into the chamber, filled it with a N_2-H_2 mixture, and heated them, the nitrogen triple bond cracked away, leaving reactive nitrogen to fuse with hydrogen and produce a large amount of ammonia.

- Haber tested uranium which worked well, too. However both osmium and uranium were very expensive. When **Badische Anilin- und Soda-Fabrik (BASF),** a German company, decided to upscale Haber's experiment to a factory-scale operation, it st out to find a readily available catalyst and found that certain iron oxides were good catalysts. Finally, some brilliant engineering by BASF's Carl Bosch turned Haber's tabletop setup into an industrial process to produce fertilizer.

Source: The Hindu

INDIA AND THE SCIENCE NOBELS

Context: It has been 94 years since an Indian won a Nobel Prize in the sciences — Physics, Chemistry or Medicine — while working in India. CV Raman's Nobel Prize in Physics in 1930 remains the only such honour.

Background: -

- Three more Indian-origin scientists have won — Hargovind Khorana in Medicine in 1968, Subrahmanyan Chandrasekhar in Physics in 1983, and Venkatraman Ramakrishnan in Chemistry 2009 — but they did their work outside India and were not Indian citizens when they were honoured.

Key takeaways

- Inadequate attention on basic research, low levels of public funding, excessive bureaucracy, lack of incentives and opportunities for private research, and decay of research capabilities in universities are cited as some of the reasons suffocating India's potential.

- Few institutions are engaged in cutting edge research, and the number of researchers as a proportion of population is five times lower than the global average. The pool from which a potential Nobel winner can emerge, thus, is quite small.

Objectives of the Anusandhan National Research Foundation (ANRF)
- Enhances cooperation for maritime security and order.
- Provides opportunities for navies to improve warfighting skills and operational capabilities.

Nominations for Nobel Prize
- Nominations are made by select individuals, including university professors, scientists, and past Nobel laureates.
- Names of nominated candidates are not publicly disclosed until at least 50 years later.
- Jagadish Chandra Bose, the first to demonstrate wireless communication, is among the 35 Indians on the nomination list.
- CNR Rao's work in solid state chemistry is likely to have been considered for the Nobel Prize.

ANRF Act, 2023
- Aims to fund, coordinate, and promote research across India's universities and colleges.
- Aims to address the infrastructure gap in state and central universities, where research capabilities are often non-existent.

Source: Indian Express

HISTORY AND ART & CULTURE

DADASAHEB PHALKE AWARD

Context: Actor-politician Mithun Chakraborty will receive the Dadasaheb Phalke Award.

Background: -

- Mithun Chakraborty will be the 54th winner of the Dadasaheb Phalke Award.

About Dadasaheb Phalke Award

- The Dadasaheb Phalke Award is India's highest award in the field of cinema.

- It is named after Dhundiraj Govind Phalke, popularly known as Dadasaheb Phalke, who is regarded as the **"Father of Indian Cinema"** for directing India's first full-length feature film, Raja Harishchandra in 1913.

- Purpose: The award honors individuals for their outstanding contribution to the growth and development of Indian cinema.

- Instituted: The award was instituted in 1969 by the Government of India to commemorate Dadasaheb Phalke's contribution to Indian cinema.

- The recipient of the Dadasaheb Phalke Award receives: A Swarna Kamal (Golden Lotus) medallion, A shawl, A cash prize of ₹10 lakh .

- Selection Process: The recipient is selected by a committee consisting of eminent personalities from the Indian film industry

- Ceremony: The award is presented annually at the National Film Awards ceremony by the Directorate of Film Festivals, an organization set up by the Ministry of Information and Broadcasting.

Source: Hindustan Times

JAYAPRAKASH NARAYAN

Context: Jayaprakash Narayan, popularly known as Lok Nayak, was born on 11 October 1902 in Bihar's Saran district. As we commemorate his 122nd birth anniversary this year, his legacy as a people's leader and champion of their cause continues to inspire.

Background: -

- He played a noteworthy role in the Indian national struggle and especially in leading the call for 'Total Revolution' during the Emergency.

Key takeaways

- The first encounter of **Jayaprakash Narayan (JP)** with freedom struggle happened during the Swadeshi movement. He gave up his foreign clothes and footwear in support. From the beginning, he was influenced by Gandhi.

- In December 1920, Gandhi visited Patna with the message of Non-cooperation. Inspired by his speech, JP wanted to invest all his time into political work but was held back by apprehension. His

misgivings disappeared when Maulana Abul Kalam Azad visited Patna and prompted students. JP quit college and became part of the Non-Cooperation Movement. In 1922, he left India to study at the University of California, Berkeley, where Karl Marx's ideas influenced him.

- In 1929, upon returning to India, he joined the Indian National Congress. During the Civil Disobedience Movement, when all the prominent leaders were arrested, JP kept the Congress functional. He began working on building an extensive illegal underground network distributing literature and recruiting supporters. Several warrants were issued against him, eventually leading to his arrest in 1932.

- Influenced by Socialist ideas, the young congressmen in Bihar founded the Bihar Socialist Party in 1931, JP was associated with the organisation since its inception. JP became instrumental in the formation of the **All India Congress Socialist Party (CSP)** in 1934 with Narendra Deva as president and himself as secretary.

- It was during the **Quit India Movement (1942)** that JP came to the forefront. He along with Ram Manohar Lohia and Aruna Asaf Ali, took charge of the movement after all the senior leaders were arrested. Soon, he was also arrested under Defence India Rules. He was taken to Hazari Bagh Central Jail from where he escaped in November 1942.

- JP organised an **"Azaad Dasta" (armed guerrilla revolutionaries)** in Nepal after escaping from jail. JP hoped to launch a countrywide revolution. However, he was arrested in September 1943, exactly ten months and ten days after he escaped from Hazaribagh jail. It was only in 1946 that he was released from jail.

- In March 1974, students in Bihar protesting against rising prices and unemployment, invited JP, who has given up from active politics, to guide the student movement. JP accepted it on one condition that the movement will remain non-violent and will not limit itself to Bihar. JP demanded the dismissal of the Congress government in Bihar and gave a call for a "total revolution" in the social, economic, and political spheres.

- A massive protest was organised in Delhi's Ramlila grounds on 25 June 1975 where JP announced a nationwide satyagraha for then Prime Minister, Indira Gandhi's resignation and asked the army, the police, and government employees not to obey "illegal and immoral orders". In response, the government declared a state of emergency on 25 June 1975.

- The General Elections were called in 1977. The election results turned into a referendum on Emergency, at least in north India. Indira Gandhi's government was defeated, paving the way for the formation of the first-ever non-Congress government at the Centre. Throughout the Emergency, JP fought vigorously against the authoritarian and became a beacon of hope in the face of adversity.

Source: Indian Express

BRAHMI SCRIPT

Context: A Brahmi inscription found in Dharanikota village at Amaravathi mandal in Palnadu district.

Background: -

- The place is historically known for its rich Buddhist culture.

About Brahmi Script:

- **Origin:** The Brahmi script is believed to have originated around the 3rd century BCE and is one of the oldest writing systems in the Indian subcontinent.
- **Discovery:** It was deciphered by James Prinsep in 1837, providing key insights into inscriptions and historical records from ancient India.
- **Period:** It was predominantly used during the Maurya Dynasty, especially during the reign of Emperor Ashoka.
- **Inscriptions:** Most famous for being the script in which Ashoka's edicts were written, providing a wealth of information on his administration and Buddhist principles.

Key Features

- Brahmi is an abugida and uses a system of diacritical marks to associate vowels with consonant symbols.
- **Direction:** The script is written from left to right.
- Brahmi evolved over time,
  with variations such as Early Brahmi (or Ashokan Brahmi), Middle Brahmi (or Kushana Brahmi), and Late Brahmi (or Gupta Brahmi).
- **Languages:** Originally used for Prakrit, it was later adapted to write several languages, including Sanskrit.

Importance in Indian Epigraphy

- **Brahmi is regarded as the mother of all Indian scripts, giving rise to:**
  - Devanagari, which is used for writing Sanskrit, Hindi, and several other modern Indian languages.
  - Tamil, Kannada, Telugu, Bengali, and Gujarati scripts, among others.
- The widespread usage of Brahmi in Ashoka's inscriptions, spread across India, Nepal, Pakistan, and Afghanistan, attests to its importance in unifying communication across the Mauryan Empire.

Significance

- **Cultural Impact:** Brahmi played a crucial role in the dissemination of Buddhist teachings and governance principles through inscriptions and manuscripts.
- **Literary Development:** It laid the foundation for the development of Indian literature, enabling the preservation and transmission of religious texts like Buddhist and Jain scriptures.
- **Indo-European Linguistics:** The decipherment of Brahmi was pivotal in the study of the Indo-European language family and understanding linguistic changes over time.

Source: [The Hindu](#)

DEFENCE& SECURITY.

KARTARPUR SAHIB CORRIDOR

Context: India and Pakistan agreed to renew their pact on the Kartarpur Sahib Corridor for another five years. The pact was due to lapse on October 24.

Background: -

- The development comes after Jaishankar went to Pakistan recently to attend the **Shanghai Cooperation Organisation (SCO)** meeting.

Key takeaways

- The 4 km-long Kartarpur Corridor provides visa-free access to Indian Sikh pilgrims to visit Gurdwara Darbar Sahib, the final resting place of Sikhism founder Guru Nanak Dev.

- While the Corridor was opened in November 2019, movement was suspended in March 2020 after the pandemic struck. It was reopened later.

- The Agreement, signed on 24 October 2019 to facilitate the visit of pilgrims from India to Gurdwara Darbar Sahib Kartarpur, Narowal, Pakistan through the Kartarpur Sahib Corridor, was valid for a period of five years. Extension of the validity of Agreement will ensure uninterrupted operation of the Corridor.

Additional Information

- Kartarpur marks the most significant phase in the life of Guru Nanak Dev. It was here on the banks of the river Ravi that he laid the foundations of a new faith in a commune he set up. Guru Nanak came to the town between 1520 and 1522.

- He had spent the formative years of his life at Talwandi, about 90 km west of Lahore in Pakistan, where he was born in 1469.

- The next 10 years of Guru Nanak's life were spent at Sultanpur Lodhi, where he gained enlightenment. He finally came to Kartarpur rich with experiences gained from his interactions with rulers, common people, clergymen, and thinkers.

- The janam sakhis on Guru Nanak's life say he was offered this land by a 'karori' (administrator of a pargana). Guru Nanak called it Kartarpur, and started living here with his parents, wife Mata Sulakhni, and two sons, Sri Chand and Lakshmi Chand, thus demonstrating that he preferred the life of a householder to that of an ascetic.

- At Kartarpur, Guru Nanak practised what he preached—"naam japo, kirrt karo, wand chhako (worship, work, and share)" — as the path to liberation. He and his followers cultivated the

land and also reared cattle. As per the janam sakhis, Guru Nanak used to bring his cattle to graze at the well of Ranjita Randhawa, a landlord at Pakhoke Randhawa, now called Dera Baba Nanak from where the Kartarpur Corridor starts, a few kilometres from Kartarpur.

- It was at Kartarpur that Nanak started the concept of 'langar', a community meal prepared in a community kitchen where everyone would sit on the floor and eat together regardless of background.

- The distinctive feature of Sikh identity — Service before Self — was formulated by Guru Nanak at Kartarpur.

- It was at Kartarpur that Nanak gave the three Gs — Gurdwara, the Granth, and the Guru himself — that underpin the Sikh faith.

Source: Indian Express

ILLEGAL IMMIGRATION IS A THREAT TO INTERNAL SECURITY

Context: Recently, a P8I aircraft of the Indian Navy has reached France to participate in 'Exercise Varuna' with the French Navy.

Background: -
- The P8I Poseidon is a specialized aircraft designed for maritime patrol and reconnaissance missions, playing a crucial role in coastal patrolling, monitoring the seas, anti-submarine warfare, and search-and-rescue missions.

About Exercise Varuna
- Exercise Varuna is an annual bilateral naval exercise between the Indian Navy and the French Navy, reflecting the strategic partnership between India and France.

History and Significance
- **Initiation:** The exercise began in 1993 and was named 'Varuna' in 2001.
- **Purpose:** It aims to enhance interoperability, improve coordination, and share best practices between the two navies.

Scope and Activities
- **Operations**: The exercise includes a wide range of naval operations such as cross-deck operations, replenishment-at-sea, minesweeping, anti-submarine warfare, and information sharing.
- **Phases:** Typically conducted in multiple phases, it involves complex tactical manoeuvres and joint operations.

Recent Edition (2024)
- **Location:** Held in the Mediterranean Sea from September 2 to September 4, 2024.
- **Participants:** The Indian Navy deployed the INS Tabar and a P8I Poseidon aircraft, marking the first European deployment of this aircraft.
- **Significance:** This edition is notable for being the first time in 63 years that an Indian Navy aircraft operated from a French airbase.

Source: Hindu
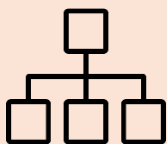
DIGITAL PERSONAL DATA PROTECTION ACT

Context: NITI Aayog, the top think tank of the government, had opposed some of the provisions of the Digital Personal Data Protection Act, and particularly red-flagged the changes proposed to the Right to Information (RTI) Act that could "weaken" the legislation.

Background: -
- In simple words, what the data protection law proposed is an amendment to a section in the RTI Act with such effect that disclosure of personal information about public officials would not be allowed even when these are justified in larger public interest.

Digital Personal Data Protection Act:
- It is a comprehensive privacy and data protection law that provides guidelines on processing, storing, and securing personal data.

- It aims to regulate the processing of digital personal data while ensuring individuals' right to protect their data and the need to process it for lawful purposes.

- It protects digital personal data by providing:
  - o The obligations of Data Fiduciaries (that is, persons, companies, and government entities who process data) for data processing (that is, collection, storage, or any other operation on personal data);
  - o The rights and duties of Data Principals (that is, the person to whom the data relates);
  - o Financial penalties for breach of rights, duties, and obligations.

Salient Features of the Digital Personal Data Protection Act:
- It applies to the processing of digital personal data within India where such data is collected in digital form or non-digital form and digitised subsequently.

- It empowers individuals with the right to know and control their personal data. This includes rights to access, correction, and erasure of their data, giving citizens greater control over their personal information.

- It mandates that personal data may be processed only for a lawful purpose after obtaining the consent of the Data Principal (who shall have the right to withdraw consent at any time). For a child or a person with a disability, consent will be provided by the parent or legal guardian.

- It makes provisions to enhance data security and facilitate easier enforcement of data protection laws as certain types of sensitive personal data are required to be stored and processed within India.

- It establishes a **Data Protection Board of India (DPBI)** to oversee compliance and handle grievances. It is responsible for adjudicating disputes and imposing penalties for violations.

- It mandates organisations to notify individuals and the Data Protection Board of any data breaches that may compromise personal information. It aims to ensure transparency and prompt

action in the event of data leaks.

- It specifies penalties for various offences such as up to Rs 200 crore for non-fulfilment of obligations for children, and Rs 250 crore for failure to take security measures to prevent data breaches.

Issues with the Digital Personal Data Protection Act:
- It violates the fundamental right to privacy as it provides exemptions for the State. Using exemptions, a government agency may collect data about citizens to create a 360-degree profile for surveillance.

- It does not provide enough safeguards regarding the transfer of personal data outside India as it may not ensure adequate data protection standards in the countries where the transfer of personal data is allowed.

- It has removed Section 43A of the **Information Technology (IT)** Act, 2000, which mandated companies to compensate users in case of mishandling their data.

- It has provided a complicated approach to grievance redressal as aggrieved individuals are required to first approach the data fiduciary's redressal mechanism.

- It proposes that the personal information of public officials will not be disclosed under the **Right to Information (RTI) Act,** which could aid corrupt practices by not disclosing assets, liabilities, etc.

- It provides that the data fiduciary will not undertake any processing that has a detrimental effect on the well-being of a child. However, there is no definition of detrimental effect or any guidance for determining such effect.

- It does not grant the right to data portability and the right to be forgotten to the data principal.

Source: Indian Express

NATIONAL STATISTICAL COMMISSION (NSC)

Context: Former Chief Statistician Pronab Sen remarked that National Statistical Commission (NSC) is reasserting its authority and this could lead to a process of depoliticising data.

Background: -
- The Ministry of Statistics and Programme Implementation (MoSPI) had dissolved the Pranob Sen-led Standing Committee on Statistics (SCoS) on the grounds that its work was "overlapping" with a steering committee set up by the NSC to oversee National Sample Surveys.

National Statistical Commission (NSC) – Key Points:
- **Establishment:**

  o The NSC was established in 2006 on the recommendation of the Rangarajan Commission (2001), which identified the need for reforms in the Indian statistical system. The intention was to improve the reliability, credibility, and timeliness of statistics in India for better policy-making.

  o It is not yet provided with statutory status.

- **Objective:**

  o The NSC was set up to reduce the undue influence of the government on data generation and ensure the production of objective and unbiased statistics.

  o It works to set standards and promote transparency in the collection and dissemination of official statistics.

- **Composition: The NSC consists of -**

  o The Commission consists of a part-time Chairman (with the status of a Minister of State) and four part-time Members (with the status of a Secretary to the Government of India) and an Ex officio member.

- **Functions:**

  o **Policy Formulation:** The NSC advises the government on statistical policies, methodologies, and priorities in data collection.

  o **Coordination:** It promotes coordination between Central and State agencies to ensure standardization in statistical procedures and quality.

  o **Monitoring:** The NSC reviews the performance of statistical agencies, ensuring data quality and identifying areas for improvement.

  o **Capacity Building:** The commission also focuses on strengthening human resources in the statistical domain through training and research.

- **Importance:**

  o The NSC plays a crucial role in maintaining the integrity and independence of statistical data, which forms the backbone for policy formulation, economic planning, and evaluation of programs.

  o It also addresses concerns about the credibility of data, especially with respect to GDP growth, unemployment, and inflation figures, which are critical for economic governance.

Source: Indian Express

HAND-IN-HAND (HIH) INITIATIVE & FOOD AND AGRICULTURE ORGANIZATION

Context: 72 countries have joined the Hand-in-Hand Initiative.

Background: -

- Innovative and targeted approaches to development are in ever-greater demand, as underscored by growing participation in the Hand-in-Hand Investment Forum 2024.

Key takeaways

- The Hand-in-Hand Initiative is an evidence-based, country-led, and country-owned initiative of the Food and Agriculture Organization of the United Nations.

- Its primary goal is to accelerate agricultural transformation and sustainable rural development to eradicate poverty (SDG1) and end hunger and all forms of malnutrition (SDG2).

Key Features:

- **Integrated Analyses:** The initiative provides integrated analyses that identify key interactions, synergies, and trade-offs among actions to accelerate economic growth, ensure social inclusion, and promote sustainable use of biodiversity and natural resources.

- **Geospatial Modeling and Analytics:** The initiative uses advanced geospatial modeling and analytics to identify opportunities with the greatest potential for alleviating poverty and hunger.

- **Partnership-Building Approach:** The initiative brings together beneficiary countries with donors, private sector organizations, international financial institutions, research institutions, and civil society to mobilize means of implementation.

- **Focus Areas:** The initiative prioritizes countries and territories where poverty and hunger are highest, national capacities are limited, or operational challenges are significant.

Food and Agriculture Organization (FAO)

- The **Food and Agriculture Organization (FAO)** was established on 16 October 1945 as a specialized agency of the United Nations (UN).

- **Headquarters:** Rome, Italy.

- **Objective:** FAO's main goal is to lead international efforts to defeat hunger and improve nutrition and food security by promoting sustainable agriculture and rural development.

- **Key Mandates:**

    o Achieving food security for all.

    o Raising levels of nutrition and standards of living.

    o Increasing agricultural productivity and ensuring sustainable management of natural resources (land, water, air, climate, and genetic resources).

Key Programs and Initiatives:

- **Hand-in-Hand Initiative:** Focuses on eradicating poverty and ending hunger through targeted investments.

- **Globally Important Agricultural Heritage Systems (GIAHS):** Recognizes traditional agricultural systems with cultural, ecological, and agricultural significance.

- **State of Food Security and Nutrition in the World (SOFI):** An annual report by FAO tracking global progress towards ending hunger.

- **Members:** The FAO has 195 members, including 194 countries and the European Union.

- **Key Reports:**

    o FAO publishes several important reports, such as:

o   State of World Fisheries and Aquaculture.

o   State of Food and Agriculture.

o   Global Forest Resources Assessment (GFRA).

Source: FAO

NATIONAL ONE HEALTH MISSION (NOHM)

Context:UN General Assembly Recognizes Anti-Microbial Resistance as Global Health Threat

• Antimicrobials, including antibiotics, antivirals, antifungals, and antiparasitics, have been misused and overused in industrial-scale food production.
   • The **World Health Organization (WHO)** recommended phasing out antibiotic growth promoters from agriculture and animal sectors in 2000.

Concept of One Health
   • One Health is a collaborative, multi-sectoral, and transdisciplinary approach aiming to prevent and control zoonotic diseases and other public health threats.

National One Health Mission (NOHM)
   • A comprehensive initiative in India integrating human, animal, and environmental health sectors to address health challenges holistically.
   • Vision: Build an integrated disease control and pandemic preparedness system for better health outcomes, improved productivity, and biodiversity conservation.
   • Goals: Enhance pandemic preparedness, integrated disease control, and early warning systems for both endemic and emerging epidemic threats.

Key Pillars of NOHM
   • Technology-enabled integrated surveillance across sectors.
   • National network of Biosafety Level 3 laboratories.
   • Collaborative and integrated R&D for medical countermeasures.
   • Data integration across sectors.
   • Training and capacity building in all spheres related to One Health.

Source: PSA

MISCELLANEOUS

CENSUS NEXT YEAR, DELIMITATION SOON AFTER

Context: The government is set to conduct the much-delayed Census next year, and to complete the process by 2026. Following the completion of the Census, the government will go ahead with delimitation, for redrafting of constituencies.

Background: -

- Delimitation would have its own share of problems, with the South worried about the impact on its political share in a Parliament where a disproportionate number of seats will be from the North due to its heavily populated states.

Key takeaways

- In 2002, the Atal Bihari Vajpayee govt had delayed delimitation by 25 years via the 84th Amendment, saying this would be carried out only after **"the relevant figures for the first Census taken after the year 2026 have been published".** This meant delimitation to be carried out after the 2031 Census.

- However, as per sources, the government now plans to begin the delimitation process by 2027 and finish it within a year, so that the next Lok Sabha elections (in 2029) can be done post-delimitation.

- Although there is demand by various quarters that caste enumeration be included in the Census, the government has not been able to finalise a formula for it.

- The amendments required for a delimitation process include changes to Article 81 (which defines the composition of the Lok Sabha), Article 170 (composition of Legislative Assemblies), Article 82, Article 55 (deals with the presidential election process for which value of each vote in the electoral college is decided on the population basis), Articles 330 and 332 (covering reservation of seats for the Lok Sabha and Legislative Assemblies, respectively).

Source: Indian Express

REMEMBERING THE 'IRON MAN OF INDIA'

Context: National Unity Day is celebrated in India on 31st October. It was introduced by the Government of India in 2014. The day is celebrated to mark the birth anniversary of Sardar Vallabhbhai Patel.

Background: -

- Vallabhbhai Jhaverbhai Patel, famously known as Sardar Patel was the first Deputy Prime Minister and Home minister of India. Patel was a leader of the Indian National Congress and played a significant role in India's struggle for freedom.

Key takeaways

Early Life and Role in the Freedom Movement

- Born on October 31, 1875, in Nadiad, Gujarat, Patel initially pursued a career in law. Inspired by Gandhi, he joined the independence movement. Notably, his leadership in the Bardoli Satyagraha

of 1928, where farmers protested against increased taxes, earned him the title "Sardar" (leader).

Sardar Patel's contribution to uniting India
- As the first Home Minister of independent India, Sardar Patel played a crucial role in unifying and shaping the nation.

- At the time of independence, the British presented the challenge of declaring the Indian princely states as independent under the Indian Independence Act of 1947.

- The issue of the princely states was complex and challenging to resolve. When the British announced their departure, many princes believed it was the perfect moment to declare their independence. Additionally, there were others who found themselves in a struggle between India and Pakistan.

- However, through his diplomatic efforts, Patel secured the accession of the princely states, aligning these regions with the nation's constitutional framework.

- Patel adopted various approaches based on the situation; he offered friendly advice in some cases, persuaded rulers to see reason in others, and even used force in the case of Hyderabad. He was valued for his political astuteness and pragmatic skills, which were essential in bringing together the more than 500 royal territories into the fold of the Indian union.

Sardar Patel's contribution to administration
- Along with the monumental task of unifying India, the Iron Man of India, Patel also played a crucial role in reinforcing the steel frame of India — the All India Services.

- He was instrumental in the establishment of the modern all-India services system. For this he is remembered as the **"patron saint of India's civil servants".**

Sardar Patel's Contribution to Constitution
- As the chairman of the Advisory Committee on Fundamental Rights, Minorities, and Tribal and Excluded Areas of the Constituent Assembly, Patel played a key role in shaping important sections of the Constitution concerning fundamental and minority rights.

Source: Indian Express

'PINK TICKET' REPORT

Context: A recent report on the free public bus transport for women in Delhi shows a positive picture.

Background: -
- Titled 'Riding The Justice Route', the report was released by Greenpeace India on Tuesday, the fifth anniversary of the Delhi government's 'pink ticket' policy that made commuting on public buses free for women, after surveying the participants and assessing the impact of the scheme on their lives.

Key takeaways
- As per the report, one in four women have started using buses after travel was made fare-free.

- After the scheme's introduction, 23 per cent of women have started using buses at least four times a week, and 15 per cent of women, who rarely or never used buses before the scheme,

now use them regularly.

- When it comes to challenges faced by women, the survey says that a little less than 50 per cent of women bus users feel "mostly safe" while travelling to the bus stop, waiting there, and riding a bus. The survey also suggests that 77 per cent of women feel unsafe while travelling by bus after 5 pm and two in three women find the lighting at the bus stop inadequate.

- Frequency also remains a challenge as 87 per cent of the women reported waiting more than 10 minutes, while a good 13 per cent waited more than 30 minutes for the bus.

- The impact of the scheme on the perception of women towards public transport across income groups is noteworthy. After the 'pink ticket' was introduced, 88 per cent of women surveyed perceived the scheme as impactful in promoting bus use among women.

Source: Indian Express

INDIA CANNOT PHASE OUT COAL LIKE THE UK

Context: UK's last coal-based generation plant at Ratcliffe-on-Soar was taken off the grid.

Background: -
- The UK has made some progress in the decarbonisation of the power sector though it hasn't got rid of carbon footprints completely. It is highly dependent on gas which is half as dirty as coal.

Key takeaways
- The UK government has been pursuing a policy of closing down coal mines since the 1990s for reasons other than climate change — mainly political.

- In 2015, the government decided to completely phase out all coal-based plants by 2025 — the deadline was later advanced to 2024.

- To get rid of coal-based generation, the government relied on market drivers and regulatory interventions.

- UK have increased the cost of carbon dioxide emissions. The government also introduced mandatory use of carbon capture and storage for all new coal-based plants. These measures ensured that coal-based generation became unprofitable.

- UK also had cheap gas as an alternative to coal. Equally important is the fact that UK has already peaked its electricity generation and is now on the way down, both in terms of total generation and also in per capita terms. Generation in 2000 was 377 billion units (BUs) and it was down to 286 BUs in 2023. Similarly, per capita electricity consumption came down from 6 megawatt hours (MWHs) in 2000 to 4.1 MWHs in 2023. There was thus enough excess capacity to phase out coal-based generation.

- Another point merits consideration. The UK imports a fair amount of electricity. The UK was not dependent on domestic coal-based generators and the country could easily fill the gap through imports.

Can India follow in the UK's footsteps?
- India's demand for power is still growing and has not peaked. So the country need to add to its

installed capacity every year.

- India does not have access to cheap gas to substitute coal. Several issues have crippled the growth of the hydro sector. The nuclear sector contributes less than 3 per cent to the electricity mix. Growth in renewable generation may look spectacular but its far less than what is required to meet the demand in 2030. So, India needs to rely on coal.

- The country is delaying the retirement of coal-based plants and wants them to operate beyond the tenure of the power purchase agreements — usually 25 years.

- Guidelines on environment norms were issued in 2015 and over time, they have been relaxed to accommodate more coal-based generation. This is exactly the reverse of what was done in the UK where norms became more and more stringent.

- **India's track record in installing flue-gas desulfurisers (FGDs)** is very bad — less than 5 per cent of the identified capacity in the central sector has installed FGDs. Amongst the state sector generators, not a single plant has installed FGDs.

Source: Indian Express

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PAPER 1

CHILD BETROTHALS

GS I – Salient features of Indian society

Context: Stating that marriages fixed in the minority of a child have the effect of violating their "free choice" and "childhood", the Supreme Court asked Parliament to consider banning child betrothals by amending the Prohibition of Child Marriage Act (PCMA) of 2006.

Child Betrothals:

- It forms a component of child marriage practices, where a couple is engaged from infancy until they reach the legal age for marriage, potentially leading to marriage in adulthood.

Factors Responsible for Child Betrothals:

- In many societies, it is a cultural norm rooted in religious practices that emphasise early marriage to preserve family honour or secure alliances.
- It reinforces traditional gender roles for girls that prioritise marriage and motherhood over education and personal development due to lack of access to education for girls
- It is used as a way to reduce financial responsibilities by marrying off daughters at a young age.
- Adolescents may opt to marry or enter informal unions as a means to assert their independence or escape challenging situations, including poverty or family violence.
- Child marriage and betrothal persist due to insufficient legal frameworks.

Consequences of Child Betrothals:

- It limits the freedom of young individuals to make personal choices about marriage, often subjecting them to the wishes of their families or communities.
- Children born to young parents from betrothal arrangements may be more susceptible to domestic violence and abuse, as they often have less power to negotiate within their relationships.
- It can lead to early pregnancies that pose significant health risks for young girls, and higher mortality rates for both mothers and newborns, including anxiety, depression, and complications during childbirth.
- Children born to young parents from betrothal arrangements often face higher risks of health issues, lack of education, and poverty, perpetuating a cycle of disadvantage.
- Children who are betrothed are often required to take on domestic responsibilities, increasing the likelihood of school dropout.

Supreme Court Recommendations Related to Child Betrothals:

- It urged the Parliament to outlaw child betrothals and declare a child whose marriage was fixed as "a minor in need of care and protection" under the Juvenile Justice Act.
- It stated that marriages fixed in the minority of a child have the effect of violating their basic right of "free choice" "autonomy" and "childhood".
  It referred to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) of 1975, which explicitly prohibits the betrothal of minors, emphasising the need for India to align its laws with global norms.

CLASSICAL LANGUAGE

GS I –Indian culture

Context: The Union Cabinet approved a decade-old proposal to accord classical language status to Marathi. The government also named Pali, Prakrit, Assamese, and Bengali as classical languages.

Classical Language:

- In October 2004, the centre decided to create a new category of languages as "classical languages", with Tamil becoming the first language to be declared one.
- In November 2004, a Linguistic Experts Committee (LEC) was constituted by the Ministry of Culture under the Sahitya Akademi to examine the eligibility of the languages proposed to be accorded classical language status.
- In 2005, Sanskrit was declared a classical language. Gradually, Telugu and Kannada in 2008, and Malayalam and Odia in 2013 and 2014 joined the list.
- **The 8th Schedule of the Indian Constitution** lists the official languages of the **Republic of India** which currently includes **22 languages. They are** Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi,Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.
- All the Classical Languages are **listed in the Eighth Schedule of the Constitution except** Prakrit.
- Currently, Tamil, Sanskrit, Kannada, Telugu, Malayalam, Odia, Marathi, Pali, Prakrit, Assamese, and Bengali are designated as "Classical Languages".
- The Ministry of Education takes steps to promote classical languages. Three central universities were established in 2020 through an Act of Parliament to promote the Sanskrit language.
- The Central Institute of Classical Tamil was set up to facilitate the translation of ancient Tamil texts, and offer courses in Tamil.
- The Centres for Excellence for studies in Kannada, Telugu, Malayalam, and Odia were also set up to enhance the study and preservation of classical languages.
- In 2006, the Government of India laid down the criteria for conferring classical language status.

The Ministry of Culture provides guidelines regarding Classical languages. They are:

- High antiquity of its early texts/recorded history over a period of 1500-2000 years;
- A body of ancient literature/texts, which is considered a valuable heritage by generations of speakers;
- The literary tradition be original and not borrowed from another speech community;
- The classical language and literature being distinct from modern, there may also be a discontinuity between the classical language and its later forms or its offshoots.

Benefits of declaring a language as a classical language:

- Once a language is declared classical, it gets **financial assistance for setting up a center of excellence** for the study of that language and also opens up an **avenue for two major awards for scholars of eminence.**

Besides, the **University Grants Commission** can be requested to create - to **begin with at least in Central Universities**, a certain number of professional chairs for classical languages for scholars of eminence in the language.

COMMUNAL VIOLENCE

GS I –Communalism

Context:A 22-year-old man was shot dead in a communal clash when a Durga idol immersion procession was passing through Maharajganj village in the Bahraich district in Uttar Pradesh.

Communalism:

- It is a political movement, that seeks to mobilize members of a particular religious community for political

action.

- The Indian Penal Code (IPC) defines communal violence as any act that promotes enmity between different groups on grounds of religion, race, place of birth, residence, language, etc. and does acts prejudicial to the maintenance of harmony.
- Bharatiya Nyaya Sanhita Section 196 aims to prevent and punish actions that promote enmity and hatred between different groups based on various grounds. It seeks to maintain social harmony by penalizing such acts with imprisonment and fines, especially when these actions occur in places of worship or during religious gatherings.

Causes of Communalism in India:

- The divide-and-rule strategy of the British led to the creation of communal divisions and tensions between different religious communities in India.
- Political factors such as competition for power and resources, as well as divisive political rhetoric, can contribute to the rise of communalism. Some political leaders and parties may use communal rhetoric to mobilize support and gain power.
- Socio-economic factors such as poverty, unemployment, and lack of access to resources can contribute to communal tensions as different communities compete for scarce resources.
- Socio-cultural factors such as caste and class divisions, as well as regional and linguistic differences, can contribute to communal tensions. For example, the caste-based reservation system in India has often led to communal tensions between castes and communities.
- The role of media in shaping communal ideologies and spreading misinformation and hate speech can contribute to the rise of communal tensions.
- In some cases, religious factors such as religious fundamentalism and extremist ideologies can contribute to communal tensions. For example, religious extremist groups and fringe elements can incite communal violence against minorities.

Impacts of Communal Violence in India:

- It results in significant loss of life, tearing apart families and communities and creating enduring scars that affect social dynamics for generations.
- It leads to the destruction of properties such as homes, businesses, and places of worship leading to substantial economic losses.
- It weakens social cohesion, eroding trust and unity among communities. Long-standing relationships can become strained or severed, resulting in divided societies.
- It leads to resource diversion and creates an unfavorable investment climate. Economic activities are disrupted, hindering growth and development.
- Survivors of communal violence experience trauma, anxiety, and depression, affecting their mental well-being.
- It undermines democracy, and the rule of law, and can contribute to authoritarianism and increased corruption.

Major Occurrences of Communalism in India:

- The Partition of India in 1947 led to the creation of Pakistan and resulted in widespread communal violence and displacement of millions of people.
- Anti-Sikh Riots in October 1984 broke out after the assassination of Indira Gandhi, where more than 4000 Sikhs were killed in Delhi, Uttar Pradesh, and other parts of India.
- The Babri Masjid demolition in 1992 in Ayodhya, by a mob of Hindu nationalists led to widespread communal riots across India, resulting in the deaths of over 2,000 people.
- The Gujarat riots of 2002 resulted in the deaths of over 1,000 people and the displacement of over 150,000 people.
- Assam Violence of 2012 between the Bodos and Bengali-speaking Muslims stemmed from competition for resources, land, and political influence.
- The Muzaffarnagar riots of 2013 in Uttar Pradesh resulted in the deaths of over 60 people and the

displacement of over 50,000 people.
- The Delhi riots of 2020 resulted in the deaths of over 50 people and injuries to hundreds more, as well as the displacement of thousands of people.

Way Forward:

- Promote social harmony and understanding by encouraging interfaith dialogue, cultural exchange programs, and educational initiatives.
- Addressing socio-economic inequalities such as poverty, unemployment, and lack of access to resources helps to reduce the competition between different communities for scarce resources.
- Holding political leaders and parties accountable for divisive rhetoric and communal actions can help to reduce the use of communal ideologies for political gain.
- Monitoring and regulating the media to prevent the spread of misinformation and hate speech can help to reduce communal tensions.
- Implementing legal measures to punish those who incite violence and discrimination based on communal identity can help to reduce communal tensions.

HURRICANES

GS I –Important geophysical phenomena

Context: Hurricane Milton, which made landfall near the city of Siesta Key in Florida, triggered intense rainfall, flooding, tornadoes, storm surge, and strong winds in the area.
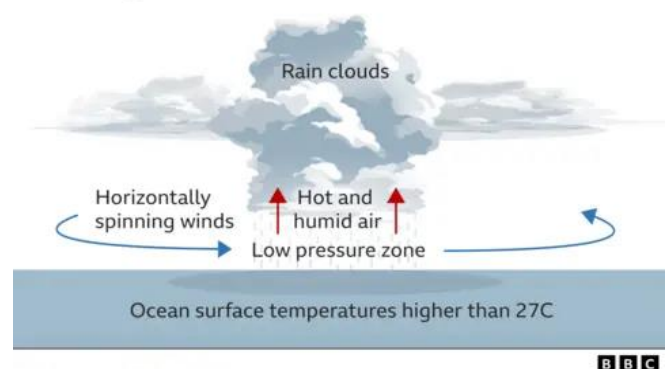
Hurricanes:

- Hurricanes, or tropical storms, form over warm ocean waters near the equator.
- When the warm, moist air from the ocean surface rises upward, a lower air pressure area is formed below. Air from surrounding areas with higher air pressure rushes into this low-pressure area, eventually rising, after it also becomes warm and moist. As warm, moist air rises, it cools down, and the water in the air forms clouds and thunderstorms.
- This whole system of clouds and winds gains strength and momentum using the ocean's heat, and the water that evaporates from its surface. Storm systems with wind speeds of 119 kmph and above are classified as hurricanes.
- Parts of a Hurricane:
  o Eye: The calm centre of the storm.
  o Eye Wall: Surrounds the eye and is where most activity occurs.
  o Rain Bands: Extend further out from the eye.

Formation of Hurricanes:

- A hurricane often starts as a tropical wave, which is a low-pressure area that moves through the tropics. The tropical wave can be caused by several factors, including thunderstorms, wind shear, and upper-level troughs.
- The tropical wave needs to have winds converging towards it. This means that the winds need to be blowing from different directions and coming together at the centre of the wave.
- The warm, moist air from the ocean rises into the atmosphere. As the air rises, it cools and condenses, forming clouds. The release of latent heat from the condensation helps to power the storm.
- The rising air creates a low-pressure area at the centre of the storm. This low-pressure area causes the winds

to spiral inward, which creates the rotation of the storm.

- The hurricane will continue to strengthen as long as it has warm, moist air to feed it. The winds will also continue to increase as the storm grows larger.

Effect of Climate Change on Hurricanes:

- Evaporation intensifies as temperatures rise, and so does the transfer of heat from the oceans to the air. As the storms travel across warm oceans, they pull in more water vapor and heat. That means stronger wind, heavier rainfall, and more flooding when the storms hit land.
- Storm surge happens when waters rise above their normal levels and are pushed inland by wind. This phenomenon is made worse by sea level rise, which is triggered by human-caused global warming as warmer ocean water expands and land ice melts.
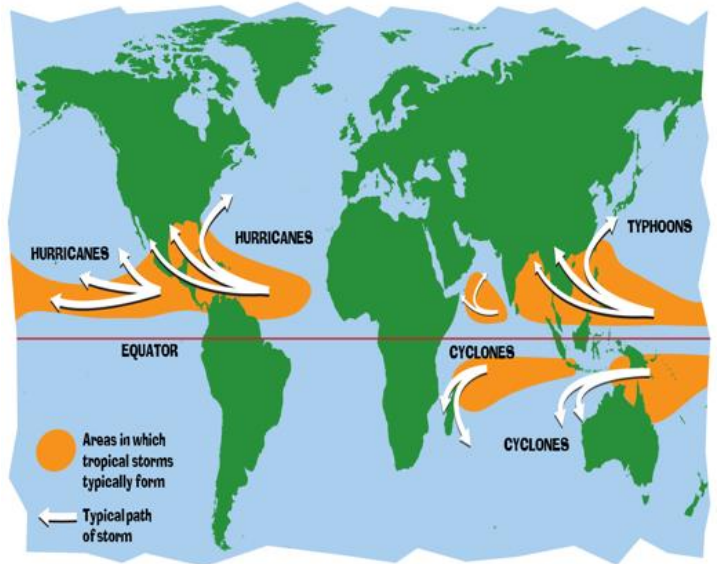
Where do tropical cyclones take place?

Historic tropical cyclones tracks, 1842-2023

— Category 5   — Cat. 4   — Cat. 3   — Cat. 2   — Cat. 1
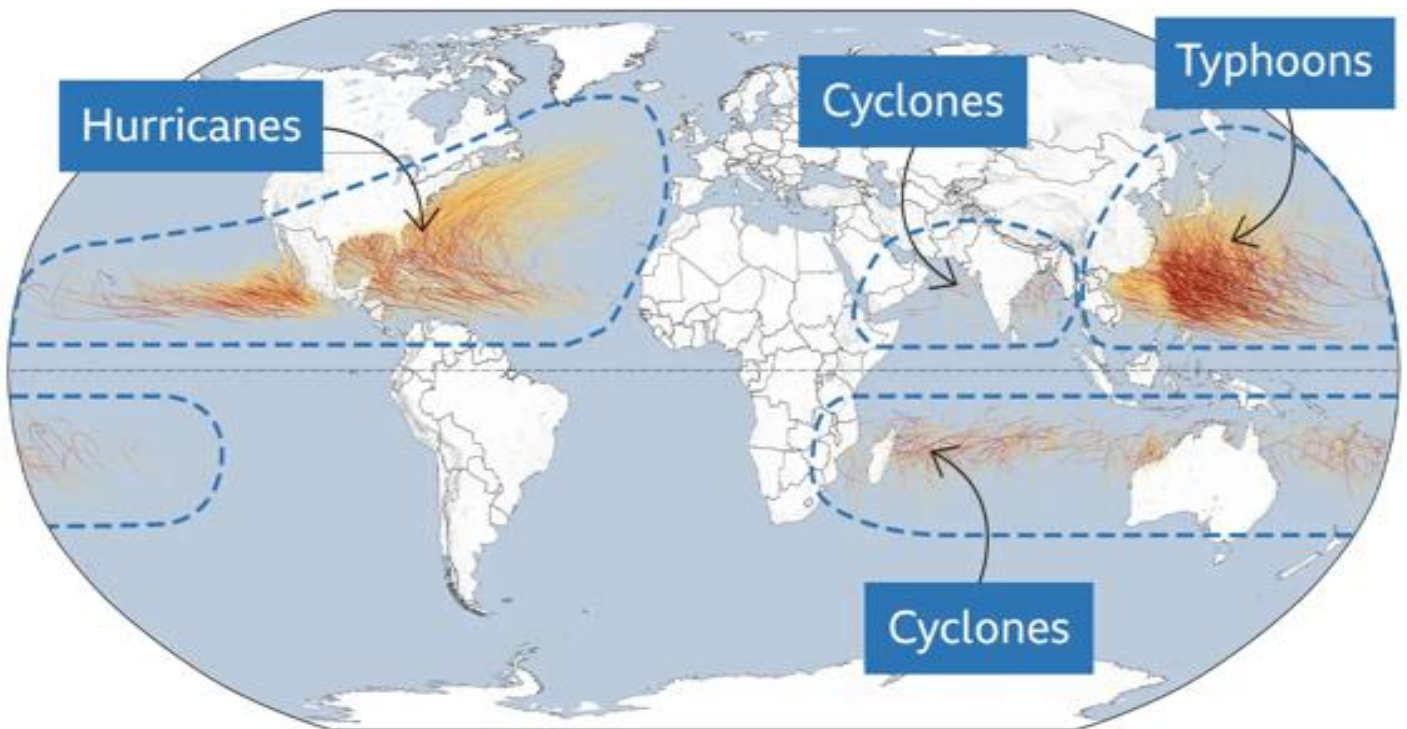
Source: Noaa

BBC
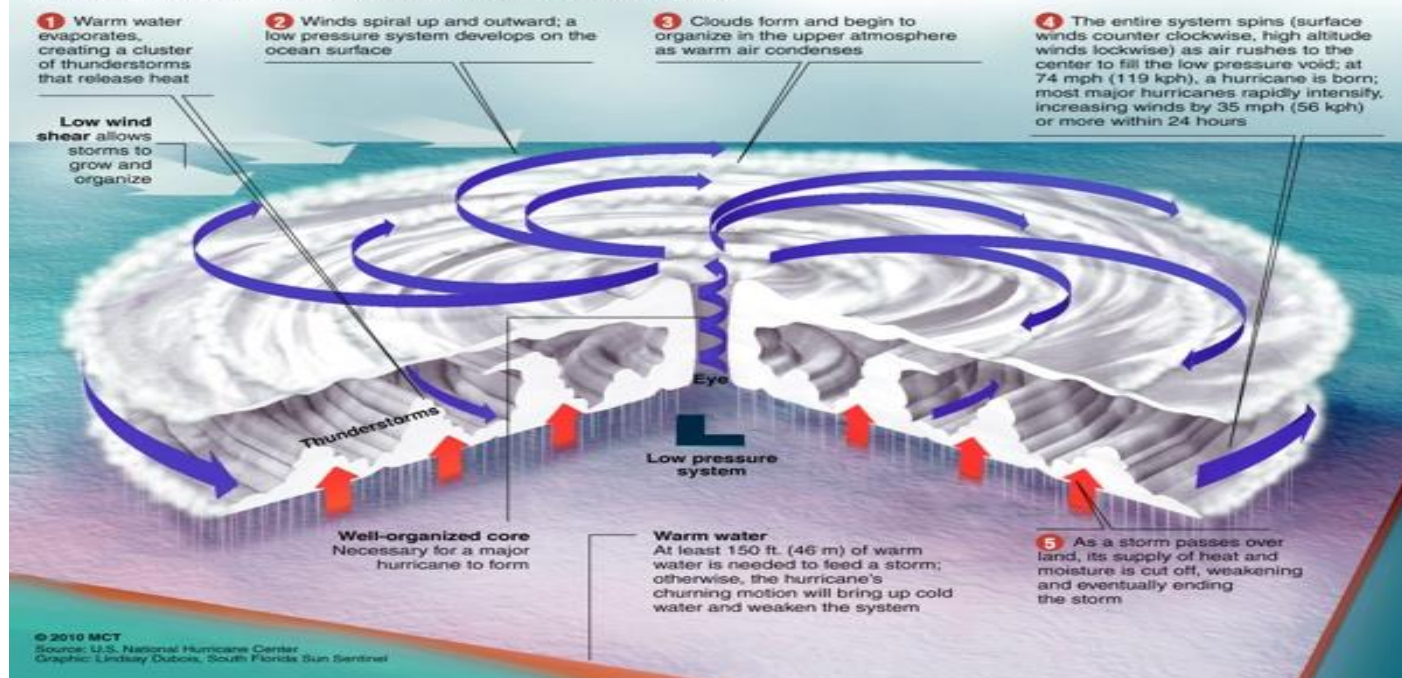
- Stronger hurricanes are becoming more common in warmer climate. Researchers suggest that the most damaging U.S. hurricanes are three times more frequent than 100 years ago and that the proportion of major hurricanes (Category 3 or above) in the Atlantic Ocean has doubled since 1980.

How fast hurricanes intensify has also increased in the Atlantic since the 1980s, due to climate change. Hurricanes Laura and Dorian are prime examples. Both rapidly intensified close to landfall, making it harder to predict the potential danger.

STREET VENDORS IN INDIA

GS I – Salient features of Indian Society

Context: Recently, a brawl between two street vendors following an inspection by a civic body team took an ugly turn after one of them died of a stab injury.

Street Vendors in India:

- A street vendor is an individual who sells goods to the public **without a permanent built-up** structure for vending.
- They may operate from **stationary positions on pavements** or other public/private spaces, they may be mobile, carrying their merchandise on push carts or in baskets.
- In India, approximately **49.48 lakh street vendors** have been identified, with **Uttar Pradesh** having the **highest count at 8.49 lakh,** followed by Madhya Pradesh at 7.04 lakh. Conversely, Delhi has about 72,457 identified street vendors, while none have been identified in **Sikkim.**
- **Article 19(1)(g)** of the Indian Constitution grants citizens the fundamental right to practice any profession, trade, or business.

Significance of Street Vendors in India:

- They serve as a vital source of **income for millions** of people, particularly migrants and the urban poor as it offers them opportunities for **self-employment** and sustenance amidst challenging economic conditions.
- They create **indirect employment opportunities in supply chains, logistics, and support services.**
- They play a crucial role in providing **affordable and accessible goods** and services to urban residents.
- They are often custodians of culinary traditions and cultural practices through their offerings, such as **Mumbai's vada pav and Chennai's roadside dosai** embody their significance.

Government Initiatives for Street Vendors:

- **PM SVANidhi Scheme** launched by the **Ministry of Housing and Urban Affairs,** aims to provide affordable working capital loans to street vendors to restart their businesses or expand their existing ones. It also offers incentives for timely repayment.
- **National Urban Livelihood Mission (NULM) is a centrally sponsored scheme** that aims to reduce poverty and vulnerability of urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities. It includes provisions for **skill training, capacity building,** and access to credit for street vendors.
- **Urban Street Vendors (USV) Component under Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)** focuses on street vendors. It provides support for setting up and upgrading vending infrastructure, organizing vendors into **Self-Help Groups (SHGs)**, and facilitating access to credit and social security schemes.
- Various skill development programs and vocational training initiatives are implemented to enhance the capabilities of street vendors, enabling them to diversify their livelihood options and improve their earning potential.
- Under the **Street Vendors Act, Town Vending Committees** are formed at the municipal level to facilitate the implementation of the Act's provisions. These committees are responsible for identifying vending zones, issuing vending certificates, and addressing grievances of street vendors.

Challenges Faced by Street Vendors in India:

- Despite the Street Vendors Act which focuses on protection, street vendors endure increased harassment and eviction, often stemming from **outdated bureaucratic attitudes** to treat them as illegal migrants.
- There is a dearth of understanding among state authorities, the public, and vendors regarding the Act's provisions, resulting in gaps in implementation.
- Street vendor representatives in Town Vending Committees (TVCs) often lack influence, and the inclusion of women vendors remains superficial.
- The Act's alignment with urban governance frameworks is deficient, and Urban Local Bodies (ULBs) lack the necessary authority and capacity.
- Programs like the Smart Cities Mission prioritize infrastructure development over the integration of street vendors, undermining the Act's objectives.
- Conventional perceptions of **'world-class cities' marginalize** street vendors, impeding their acknowledgment as legitimate contributors to urban life.
- Street vendors confront new challenges from climate change, competition from e-commerce, and declining incomes, necessitating innovative responses.
- The societal view of the high-tech urban sphere perpetuates the condition of street vendors, depicting them as hindrances to development instead of recognizing their importance as integral members of urban communities.

Cases of '**rangadari tax' and 'hafta'** are common. In many cities, vendors have to part with substantial money to ply their trade.

Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act of 2014:

- It was implemented **to legalize the vending rights** of street vendors **(SVs)**.
- Its objective was to safeguard and regulate street vending in urban areas, with s**tate-level regulations** and programs overseen by **Urban Local Bodies (ULBs)** through the formulation of by-laws, planning, and enforcement.

- It outlines the **roles and responsibilities** of both vendors and various levels of government.
- It envisages accommodating all **existing vendors** in designated vending zones and issuing **Vending Certificates (VCs).**
- It establishes a **participatory governance framework** through the creation of Town Vending Committees (TVCs), where street vendor representatives must constitute **40%** of the members, with a sub-representation of **33%** for women SVs. These committees are responsible for ensuring the inclusion of all existing vendors in vending zones and they include mechanisms for addressing grievances and disputes, proposing the establishment of a **Grievance Redressal Committee** chaired by a civil judge or judicial magistrate.

It mandates that states/ULBs conduct surveys to identify SVs at least once **every five years.**

STUDENT SUICIDE CASES

GS I – Population and Associated Issues

Context: Weeks after a final-year student died allegedly by suicide in his hostel room at the Indian Institute of Management (IIM), Ahmedabad, the institute's students' council has demanded the setting up of a committee to probe into the circumstances surrounding the death.

Status of Student Suicides in India:

- As per the **National Crime Records Bureau's (NCRB's)** Accidental Deaths & Suicides in India (ADSI) Report 2021, over 13,000 students died in 2021 in India at the rate of more than 35 every day, a rise of 4.5% from the 12,526 deaths in 2020 with 864 out of 10,732 suicides being due to **failure in examination.**

States with Higher Percentage Share of Suicides during 2019 to 2021

Sl. No.	Year					
	2019		2020		2021	
1	Maharashtra	(13.6%)	Maharashtra	(13.0%)	Maharashtra	(13.5%)
2	Tamil Nadu	(9.7%)	Tamil Nadu	(11.0%)	Tamil Nadu	(11.5%)
3	West Bengal	(9.1%)	Madhya Pradesh	(9.5%)	Madhya Pradesh	(9.1%)
4	Madhya Pradesh	(9.0%)	West Bengal	(8.6%)	West Bengal	(8.2%)
5	Karnataka	(8.1%)	Karnataka	(8.0%)	Karnataka	(8.0%)

Reasons for increasing Student Suicide Cases:

- **Academic Pressure because of h**igh expectations from parents, teachers, and society can lead to excessive stress and pressure to perform well in exams. It can be overwhelming for **some students, leading to feelings of failure and hopelessness.**
- Mental health problems such as depression, anxiety, and bipolar disorder can contribute to student suicides. These conditions can be exacerbated by stress, loneliness, and lack of support.
- Many students in educational hubs come from far away and live away from their families and friends which can lead to feelings of isolation and loneliness, which becomes difficult to deal with in an unfamiliar and competitive environment.
- Financial difficulties, **such as not being able to afford tuition fees** or living expenses, can create a great deal of stress and worry for students.
- Many students in educational hubs are **reluctant to reach out for help when they are struggling which** can be due to stigma surrounding mental health problems or a fear of being judged.
- In Indian society, failure in competitive exams **is often stigmatized.** Students may feel ashamed to admit their struggles **or discuss their mental health issues**, leading to a lack of support and understanding.

Government Initiatives to Curb Suicides:

- **Mental Healthcare Act (MHA), 2017** aims to provide mental healthcare services for persons with mental illness.
- The Ministry of Social Justice and Empowerment has launched a 24/7 toll-free helpline "KIRAN" to provide support to **people facing anxiety, stress, depression, suicidal thoughts**, and other mental health concerns.

- **Manodarpan** is an initiative of the Ministry of Education under Atmanirbhar Bharat Abhiyan which is aimed at providing psychosocial support to students, family members, and teachers for their mental health and well-being during the times of Covid-19.

The National Suicide Prevention Strategy was announced in 2023 and is the first of its kind in the country, with time-bound action plans and multi-sectoral collaborations to achieve a reduction in suicide mortality by 10% by 2030. This strategy is in line with the World Health Organisation's South East-Asia Region Strategy for suicide prevention

CITIZENSHIP ACT

GS II –Government policies and interventions

Context: A Constitution Bench of the Supreme Court, in a 4:1 majority judgment, upheld the constitutionality of Section 6A of the Citizenship Act, 1955, which permits immigrants from Bangladesh residing in Assam to secure Indian citizenship.

Citizenship:

- Citizens are full members of the Indian State and owe allegiance to it. They enjoy all civil and political rights.
- The Constitution of India confers the following rights and privileges only to citizens of India.
- In India, both citizens by birth and naturalised citizens are eligible for the office of President.
- The Constitution of India deals with citizenship from Articles **5 to 11 under Part II**. It empowers **Parliament to enact laws** for these and other citizenship-related matters.
- India follows single citizenship.
- The term "citizen" is not defined in the Constitution, leaving it to statutory laws like the Citizenship Act.
- Accordingly, Parliament enacted the **Citizenship Act of 1955**, which has been amended periodically.

Citizenship Act of 1955:

- It regulates who can obtain Indian citizenship
  based on birth, descent, registration, or naturalization.
- The Act bars illegal immigrants from obtaining citizenship. An illegal immigrant is someone who:
- Enters India without valid documents (e.g., passport, visa), or
- Enters with valid documents but overstays beyond the permitted period.
- It prescribes five ways of acquiring citizenship - birth, descent, registration, naturalisation, and incorporation of territory.
- It does not provide for dual citizenship.
- It mentions three primary grounds under which Indian citizenship can be terminated - renunciation, termination, and deprivation.
- The Citizenship Act of 1955 was amended six times between 1986 and 2019, in 1986, 1992, 2003, 2005, 2015, and 2019.

Citizenship Amendment Act (CAA) of 2019:

- It provides that illegal migrants who fulfil four conditions will not be treated as illegal migrants under the Act. The conditions are:
- They are Hindus, Sikhs, Buddhists, Jains, Parsis or Christians
- They are from Afghanistan, Bangladesh, or Pakistan they entered India on or before December 31, 2014
- They are not in certain tribal areas of Assam, Meghalaya, Mizoram, or Tripura included in the Sixth Schedule to the Constitution, or areas under the "Inner Line" permit, i.e., Arunachal Pradesh, Mizoram, and Nagaland.
- The Central Government exempted the said migrants from the adverse penal consequences of the Passport (Entry into India) Act of 1920 and the Foreigners Act of 1946 and rules or orders made thereunder.
- The period of naturalisation has been reduced from 11 years to 5 years for the above category of migrants.

The Act provides that the central government may cancel the registration of OCIs on certain grounds like fraud, disaffection to the Constitution, engaging with the enemy, or violation of any law in force

Section 6A:

- It is a special provision added through the Citizenship Amendment Act, 1985 in furtherance of a

Memorandum of Settlement called the 'Assam Accord' between the then central government and leaders of the Assam Movement.

- It conferred citizenship to those who migrated from East Pakistan (now Bangladesh) to Assam from January 1, 1966, until 24 March 1971 upon completion of ten years from the date of detection as a foreigner.

DIGITAL PERSONAL DATA PROTECTION ACT

GS II –Government policies and interventions

Context:NITI Aayog, the top think tank of the government, had opposed some of the provisions of the Digital Personal Data Protection Act, and particularly red-flagged the changes proposed to the Right to Information (RTI) Act that could "weaken" the legislation.

Digital Personal Data Protection Act:

- It is a comprehensive privacy and data protection law that provides guidelines on processing, storing, and securing personal data.
- It aims to regulate the processing of digital personal data while ensuring individuals' right to protect their data and the need to process it for lawful purposes.
- It protects digital personal data by providing:
- The obligations of Data Fiduciaries (that is, persons, companies, and government entities who process data) for data processing (that is, collection, storage, or any other operation on personal data);
- The rights and duties of Data Principals (that is, the person to whom the data relates);
- Financial penalties for breach of rights, duties, and obligations.

Salient Features of the Digital Personal Data Protection Act:

- It applies to the processing of digital personal data within India where such data is collected in digital form or non-digital form and digitised subsequently.
- It empowers individuals with the right to know and control their personal data. This includes rights to access, correction, and erasure of their data, giving citizens greater control over their personal information.
- It mandates that personal data may be processed only for a lawful purpose after obtaining the consent of the Data Principal (who shall have the right to withdraw consent at any time). For a child or a person with a disability, consent will be provided by the parent or legal guardian.
- It makes provisions to enhance data security and facilitate easier enforcement of data protection laws as certain types of sensitive personal data are required to be stored and processed within India.
- It establishes a Data Protection Board of India (DPBI) to oversee compliance and handle grievances. It is responsible for adjudicating disputes and imposing penalties for violations.
- It mandates organisations to notify individuals and the Data Protection Board of any data breaches that may compromise personal information. It aims to ensure transparency and prompt action in the event of data leaks.
- It specifies penalties for various offences such as up to Rs 200 crore for non-fulfilment of obligations for children, and Rs 250 crore for failure to take security measures to prevent data breaches.

Issues with the Digital Personal Data Protection Act:

- It violates the fundamental right to privacy as it provides exemptions for the State. Using exemptions, a government agency may collect data about citizens to create a 360-degree profile for surveillance.
- It does not provide enough safeguards regarding the transfer of personal data outside India as it may not ensure adequate data protection standards in the countries where the transfer of personal data is allowed.
- It has removed Section 43A of the Information Technology (IT) Act, 2000, which mandated companies to compensate users in case of mishandling their data.
- It has provided a complicated approach to grievance redressal as aggrieved individuals are required to first approach the data fiduciary's redressal mechanism.
- It proposes that the personal information of public officials will not be disclosed under the Right to

Information (RTI) Act, which could aid corrupt practices by not disclosing assets, liabilities, etc.
- It provides that the data fiduciary will not undertake any processing that has a detrimental effect on the well-being of a child. However, there is no definition of detrimental effect or any guidance for determining such effect.

It does not grant the right to data portability and the right to be forgotten to the data principal.

News:

- The data protection law proposed an amendment to a section in the RTI Act with such effect that disclosure of personal information about public officials would not be allowed even when it is justified in the larger public interest.
- The law proposes to amend Section 8(1)(j) of the Right to Information Act, 2005. This prevents a public authority from sharing anyone's personal information on two main grounds – that the disclosure will have no bearing on any public activity, and that revealing such information would cause an unwarranted invasion of the privacy of an individual unless such disclosure is justified in larger public interest.

The NITI Aayog formally wrote to the Ministry of Electronics and Information Technology (MeitY) urging it to not pass the proposed law in its current form as it could weaken the RTI Act.

GLOBAL DIGITAL COMPACT

GS II –Important International Institutions
Context: In the recently concluded 'Summit of the Future' organised by the United Nations, member countries adopted the 'Global Digital Compact' (GDC). This ambitious instrument is perhaps the first of its kind in the international arena focusing on the potential of digital technologies, with the specific intention to harness and regulate them for the common good.

Global Digital Compact (GDC):

- It is a comprehensive framework for global governance of digital technology and artificial intelligence.
- It charts a roadmap for global digital cooperation to harness the immense potential of digital technology and close digital divides.
- It is a diplomatic instrument adopted by UN member countries at the 'Summit of the Future'.
- It is a non-binding diplomatic instrument aiming to guide governments, institutions, and stakeholders in digital technology use and governance.
- It promotes global cooperation in technology governance based on international laws, the Universal Declaration of Human Rights, and the UN 2030 Agenda, emphasizing inclusive participation, sustainability, and responsible data governance.

Significance of the Global Digital Compact (GDC):

- It makes efforts to reduce the digital divide by proposing "digital public goods" like open-source software, open data, and AI models to ensure broader access to the digital economy.
- It paves the way for collaboration between governments and private entities to build a shared digital infrastructure that delivers services according to stakeholders' needs.
- It seeks to promote responsible and ethical use of AI with proper human oversight by establishing panels for AI governance.
- It links digital technologies to the achievement of Sustainable Development Goals (SDGs) by enabling data collection and analysis to measure progress.
- It helps foster South-South and North-South collaborations for developing digital public goods by emphasizing capacity-building through partnerships.

Issues/Challenges with the GDC:

- Due to non-disclosure agreements and intellectual property protection, public-private partnerships may face restrictions.

- Even though GDC promotes self-regulation for tech companies still the past experience shows it has failed to protect users effectively.
- The absence of strong personal data protection laws along with increasing data collection for AI raises privacy risks.
- It proposes giving more power to corporations in data governance but lacks safeguards against monopolistic practices.

It limits global cooperation because some countries reject data flow with trust to protect digital sovereignty.

Summit of the Future:

- It is a high-level event, bringing world leaders together to forge a new international consensus on how we deliver a better present and safeguard the future.
- It brings together UN Member States, UN agencies, non-governmental organizations (NGOs), civil society organizations (CSOs), academic institutions, the private sector, and youth under the theme, 'Summit of the Future: Multilateral Solutions for a Better Tomorrow'.

It aims to build upon the Sustainable Development Goal (SDG) Summit and deliver an action-oriented Pact for the Future to accelerate progress towards the Sustainable Development Goals.

HOOCH TRAGEDY

GS II –Health

Context: The death toll in the Bihar hooch case touched 25 with several people hospitalised and some among them losing their eyesight.

Spurious Alcohol/Hooch:

- **The** alcohol becomes spurious due to the contamination by methyl alcohol or methanol to increase its alcohol content.
- **The alcohol becomes spurious due to the addition of herbs to give flavours which may react t**o form deadly chemicals.
- The unsafe distillation of hooch which is a derivative of cane sugar leads to the formation of methyl alcohol.
- Hooch is alcohol meant to intoxicate. But if prepared incorrectly, it can kill.

Reasons behind the problem of methanol poisoning deaths due to spurious alcohol:

- It is difficult to inspect the area by regulatory authorities as it is **manufactured i**llegally mostly in villages on farmlands.
- It is supplied using underground channels as the country-made liquor is mainly produced by local breweries. When there is an increase in demand for local liquor, it is prone to corruption and lack of regulation, which leads to hooch tragedy incidents.
- Methyl alcohol, a contaminant used to produce illicit liquor is easily available.
- According to WHO, unrecorded and spurious alcohol makes up more than half of all alcohol consumed in India. This is due to its reduced price when compared to the price of Indian-made foreign liquor.
- Few states like Bihar and Gujarat have enacted total prohibition on alcohol which helps in the flourishing underground illicit liquor business supported by bordering states.

Consequences of methanol poisoning deaths due to spurious alcohol in India:

- It can cause severe poisoning leading to coma and death if untreated.
- It may also lead to permanent blindness, kidney failure, or other long-term neurological impairments of the body's organs.
- The treatment of methanol poisoning and its long-term consequences places a substantial burden on the healthcare system.
- The sudden death of a family member due to spurious alcohol consumption causes significant

emotional and financial strain on families.
- The illegal production and distribution of spurious alcohol leads to increased crime rates, which include violence and corruption.

Way Forward:

- The village administration should use local informants to target the vendors who are responsible for selling sub-standard raw materials and poisonous chemicals used for making spurious liquor.
- **Establish adequate treatment facilities to handle tragedies due to alcohol poisoning in rural and remote areas.**
- A uniform and comprehensive policy should bring uniformity regarding liquor laws in all states.
- Using GPS-equipped vehicles to track the movement of molasses and alcohol inside the state helps to curb illegal trade.

The state government should plan regular and massive raids in rural areas where there is major production of illicit liquor which helps to tackle illegal production units.

Methanol:

- It is a simple alcohol molecule consisting of one carbon atom bonded to three hydrogen atoms and one hydroxyl group.
- It is primarily produced in industries by combining carbon monoxide and hydrogen in the presence of copper and zinc oxide catalysts, typically at pressures of 50-100 atm and temperatures around 250°C.
- It is classified under Schedule I of the Manufacture, Storage, and Import of Hazardous Chemical Rules 1989 in India.

It is used in the production of acetic acid, formaldehyde, aromatic hydrocarbons, as an antifreeze, and as a solvent.

INDIA – CANADA RELATIONS

GS II –Bilateral Relations

Context: In a sharp escalation of the row between the two countries, India ordered the expulsion of six Canadian diplomats, while also announcing its decision to withdraw the Indian High Commissioner to Canada and "other targeted diplomats", citing security concerns after Ottawa identified them as "persons of interest" in its investigation into the killing of Khalistan separatist Hardeep Singh Nijjar.

Significance of India-Canada Relations:

- Bilateral trade in goods was approximately $ 9.9 billion and in services, it was 6.5 billion in 2022.
- Canada hosts one of the largest Indian Diasporas in the world, accounting for more than 3% of the totalCanadian population.
- The science and technology collaboration mainly promotes industrial R&D with a focus on creating new IPs, processes,prototypes, and products.Since the 1990s, India and Canada have cooperated in space science. ANTRIX, the Commercial arm of ISRO, haslaunched several nanosatellites from Canada.
- The Civil Nuclear Agreement of 2010 facilitated Canada to provide uranium forIndian nuclear reactors as part of the agreement.
- Canada's Indo-Pacific Policy acknowledges China as a "disruptive global power" andunderscores India as a "critical partner" for collaboration in shared interests.

Issues/Challenges in India-Canada Relations:

- During the Cold War, Canada was a founding member of the North Atlantic Treaty Organization(NATO), while India pursued a policy of non-alignment.
- Canada endorsed a plebiscite in Kashmir, which ran counter to India's interests.
- After India's nuclear tests in 1998, Canada temporarily halted potential nuclear cooperation with India.

- Canada's immigration systemenables individuals with a contentious past to acquire citizenship and utilize that position to engage in activities against other nations.This presents a substantial obstacle to upholding robust bilateral relations in today's interconnected globallandscape.
- The current coalition government in Canada is with the alliance of parties Pro-Khalistan parties enabling the particular stand.
- A Comprehensive Economic Partnership Agreement (CEPA) between thesecountries is pending since 2010.CEPA between them could boost bilateral trade by as much as $6.5 billion, yielding a GDP gain of $3.8 billionto $5.9 billion for Canada by 2035.
- Canada is meddling in India's domestic affairs. For example, during the farmers' protests in India, the Canadian PMexpressed his support for the farmers, stating that the situation was a cause for concern.

Way Forward:

- The first step towards improving relations involves pausing the current escalation. Each sideshould express their concerns without disrupting the status quo.Diplomacy, not expulsions or service suspensions, should be the way forward.
- Canada should carefully balance the empowerment of immigrant communities.It should assess their activities and influence, avoiding undue political or economic sway.
- People endorsing violence, separatism, or terrorism should be held accountablefor the abuse of freedom of expression.

Both countries should collaborate under the Framework for Cooperation onCountering Terrorism and Violent Extremism, established in 2018.

INDIA AND SRI LANKA RELATIONS

GS II –India and its Neighbourhood Relations

Context: Sri Lankan President Anura Kumara Dissanayake told External Affairs Minister S Jaishankar in Colombo that "Sri Lankan territory would never (be) allow to be used in a manner inimical to India's security interests", an oblique reference to China's presence in the island nation.

India-Sri Lanka Relations Overview

• India and Sri Lanka share over 2,500 years of historical, cultural, religious, spiritual, and linguistic ties.
• The Sri Lankan Civil War in the 1980s strained relations, leading to the Indo-Sri Lankan Accord.
• Post-war, India played a crucial role in Sri Lanka's reconstruction efforts, but tensions resurfaced due to India's stance on human rights violations.
• The India-Sri Lanka Free Trade Agreement (ISFTA) in 2000 expanded trade between the two countries.
• India provided USD 4 billion in aid to Sri Lanka during its worst financial crisis since independence in 1948.
• India continues to assist in High Impact Community Development Projects in education, ambulance services, small and medium enterprise development, and training.
• Sri Lanka has adopted India's UPI service, enhancing fintech connectivity and aiding Sri Lanka's economy.
• India and Sri Lanka are members of international and regional organizations.
• The Cultural Cooperation Agreement signed in 1977 forms the basis for periodic Cultural Exchange Programmes.
• The India-Sri Lanka Foundation was established in 1998 to enhance scientific, technical, educational, and cultural cooperation.
• Sri Lanka's location near India's southern coast and its significant role in global oil and container transportation make it a significant player in the relationship.

Significance/Importance of Sri Lanka for India:

- Sri Lanka plays a crucial role in the relationship between the two countries as it is positioned near India's southern coast across the Palk Strait. The East-West maritime route passing around the island state carries around two-thirds of the world's oil and half of the world's container transportation.
- Sri Lanka has the potential to become a maritime hub due to the presence of ports which helps India to secure the strategic Sea Lanes of Communication in the Indian Ocean.

- India has invested heavily in Sri Lanka after the end of the civil war in 2009 and after the unprecedented economic crisis in 2022. Hence, it wants to safeguard its strategic interest.
- The enhancement of digital payment systems across the two nations will promote economic integration and simplify business transactions between India and Sri Lanka. It helps streamline trade and improves connectivity for tourism exchanges between the two nations.
- The recent rising aggressive footprint of China in the Indian Ocean region makes Sri Lanka even more significant in terms of maintenance of stability, peace, and security.

Issues/Challenges in India-Sri Lanka Relations:

- There is a strategic issue between the two countries due to the increased Chinese presence. China has built Colombo and Hambantota ports as part of the Maritime Silk Route (MSR) policy.
- There are long-expressed concerns in Sri Lanka about illegal fishing by Indian fishermen within its territorial waters across the Palk Strait. There have been regular arrests of Indian fishermen for crossing the International Maritime Boundary Line (IMBL).
- There is an issue revolving around the ownership and usage rights of the uninhabited island of Katchatheevu, located in the Palk Strait between India and Sri Lanka, imposing restrictions on fishing activities without explicit permission.
- India hoped that the expectations of the Tamil people for equality, justice, peace, and respect would be realized and that the devolution of powers according to the 13th Amendment would be taken forward. However, Colombo has not committed to this.
- The porous maritime boundary between India and Sri Lanka has led to issues of border security and the smuggling of goods, including narcotics and illegal immigrants.

Sri Lanka has witnessed political instability in recent years, with frequent changes in government and leadership. This has affected the country's ability to engage with India and implement policies that promote economic cooperation and regional stability.

13th Amendment:

- **It** was enacted after the **Indo-Lanka Accord of 1987** and remains the **only legislative guarantee** of power devolution to the provinces.
- It led to the creation of

Provincial Councils, ensuring a power-sharing arrangement to enable all nine provinces in the country, including Sinhala majority areas, to self-govern.

INDIA BHUTAN RELATIONS

GS II – India and its Neighborhood- Relations

Context: In a significant step towards promoting sustainable transportation solutions, the Minister of Petroleum & Natural Gas, showcased India's advancements in green hydrogen mobility by demonstrating a hydrogen-fuelled bus powered by IndianOil to the Prime Minister of Bhutan and his delegation.

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Programmes.
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• Sri Lanka's location near India's southern coast and its significant role in global oil and container transportation make it a significant player in the relationship.

Challenges in the India-Bhutan Relations:

- China's increasing presence in Bhutan, particularly along the disputed border between Bhutan and China, has **raised concerns in India.** India has been Bhutan's closest ally and has played a key role in protecting Bhutan's sovereignty and security. However, China's growing economic and military influence in the region **poses a challenge to India's strategic interests in Bhutan.**
- India and Bhutan share a **699 km long border,** which has been largely peaceful. However, there have been some incidents of border **incursions by Chinese forces in recent years.** The **Doklam standoff in 2017** was a major flashpoint in the India-China-Bhutan tri-junction. Any escalation of such disputes could strain India-Bhutan relations.
- Bhutan's hydropower sector is a key pillar of its economy, and India has been a major partner in its development. However, there have been concerns in Bhutan over the terms of some of the hydropower projects, which have been seen as too favourable to India. This has led to some public opposition in Bhutan to Indian involvement in the sector.

The original **BBIN (Bangladesh, Bhutan, India, and Nepal) Motor Vehicles Agreement** was signed by all four nations in June 2015. Due to objections in **Bhutan related to sustainability and environmental issues,** the Bhutanese parliament opted not to endorse the initiative.As a result, the other three countries moved forward with the vehicular movement initiative **(BIN-MVA) in 2017.**

Takeawaysfrom the Bilateral Meeting:

- India emphasised the country's commitment to sustainable energy solutions by showcasing its progress in green hydrogen technology by presenting a hydrogen-fuelled bus, highlighting the country's advancements in sustainable mobility.

Bhutan's delegation expressed a keen interest in adopting green hydrogen mobility, aligning with Bhutan's spirit for environmental sustainability and transitioning to clean energy solutions.

INDIA-ASEAN RELATIONS

GS II –Regional Groupings

Context: TheIndian Prime Minister said he looked forward to the deliberations with world leaders as he arrived in Laos for a two-day visit to attend the ASEAN-India and East Asia summits.

Association of Southeast Asian Nations (ASEAN):

- It is a regional grouping that aims to promote economic and security cooperation among its ten members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Significance of ASEAN for India:

- It constitutes the 3rd largest market in the world. This can help India utilize its export potential.
- It is a crucial component of India's "Act East" policy and its "Indo-Pacific" strategy, reflecting the convergence of interests in the region.
- It can serve as a counterbalance to China's influence in the region.
- It can boost economic development in India's northeastern states by positioning them as a hub for regional trade and commerce.
- It plays a central role in promoting a rules-based security architecture in the Indo-Pacific region, which is essential for the region's stability and prosperity.

Areas of Cooperation between India and ASEAN:

- The formal engagement of India with ASEAN began as a "Sectoral Dialogue Partner" in 1992 and subsequently as a "Dialogue Partner" in 1996. It was upgraded to the Summit level in 2002. India currently has annual summits with ASEAN.
- India and ASEAN have signed an FTA that has boosted trade and investment between the two. ASEAN is India's 4th largest trading partner. Its total trade stood at $110.4 billion in 2021-22. ASEAN-India Business Council (AIBC) was set up in 2005 to foster closer business linkages.
- India is working on enhancing connectivity with ASEAN countries through the India-Myanmar-Thailand (IMT) Trilateral Highway, the Kaladan Multimodal Transit Transport Project, etc.
- India and ASEAN have strengthened defence cooperation by conducting joint military exercises such as the ASEAN-India Maritime Exercise and the ASEAN Defense Ministers' Meeting Plus (ADMM+).
- India has established the ASEAN-India Centre at the Research and Information System for Developing Countries (RIS) to promote research and studies on ASEAN-India relations.
- Delhi Dialogue of 2009 is an annual Track 1.5 forum for discussing politico-security, economic, and socio-cultural issues between ASEAN and India.
- India has provided financial assistance to ASEAN countries from the ASEAN-India Cooperation Fund, ASEAN-India S&T Development Fund, and ASEAN-India Green Fund.
- The establishment of the **ASEAN-India Network of Universities in 2022** and Initiatives like the ASEAN-India Artists' Camp and Music Festival strengthen academic and cultural exchanges.
- ASEAN's rapidly digitalizing economies present significant opportunities for India's IT sector and start-up ecosystem. The inaugural **ASEAN-India Start-up Festival** showcases the potential for collaboration in areas like fintech, e-commerce, and artificial intelligence. The **ASEAN-India Science and Technology Development Fund**, with its recent **USD 5 million boost,** supports joint research in cutting-edge fields.

Issues/Challenges in India-ASEAN Relations:

- India's trade deficit with ASEAN has increased over the years. This has led to concerns in India about the benefits of the ASEAN-India Free Trade Agreement.
- India still engages with ASEAN countries more on a bilateral basis rather than through a multilateral approach.
- Engagement with other regional agreements like the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) diverts attention and resources away from the ASEAN-India relationship.
- The existence of other regional powers like China limits the ability of ASEAN to harness India's potential for regional stability.

Despite efforts to enhance connectivity, physical and digital connectivity between India and ASEAN countries remains limited, which affects trade, investment, and people-to-people ties.

East Asia Summit (EAS):

- It was established in 2005 as an Association of Southeast Asian Nations (ASEAN)-led initiative.
- It is the only leader-led forum in the Indo-Pacific that brings together all key partners to discuss political, security, and economic issues of strategic importance.
- The EAS comprises 18 members:
- o 10 ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam).

8 dialogue partners (Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia, and the United States).

INDIA-CHINA BORDER DISPUTE

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

Context: Four-and-half years after the standoff between India and China, New Delhi and Beijing have agreed on the disengagement on the border where 50,000 to 60,000 troops are stationed on both sides, the Foreign Secretary said.

Line of Actual Control (LAC):
- It is the demarcation that separates Indian-controlled territory from Chinese-controlled territory.
- India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.
- It is divided into three sectors: the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh.
- The alignment of the LAC in the eastern sector is along the 1914 McMahon Line, and there are minor disputes about the positions on the ground as per the principle of the high Himalayan watershed. This pertains to India's international boundary as well but for certain areas such as Longju and Asaphila.
- The line in the middle sector is the least controversial but for the precise alignment to be followed in the Barahoti plains.

Key aspects of the recent India-China LAC Agreement:

- It allows both nations to resume patrols along previously established routes that aim to return to the status quo that existed before the tensions escalated in 2020.
- It is expected to initiate a process of disengagement, de-escalation, and demilitarization in the areas where both nations currently have 50,000 to 60,000 troops each. The phased approach of the agreement will focus first on disengagement, followed by de-escalation and eventual de-induction of forces.
- It aims to prevent incidents like the 2020 Galwan clash, which resulted in the deaths of 20 Indian soldiers and at least four Chinese soldiers.
- India and China have agreed to restore mutual patrolling rights in the Depsang Plains and the Demchok region, areas with disputes predating the 2020 incursions. Indian troops will now be allowed to patrol up to Patrolling Points (PP) 10 to 13 in the Depsang Plains and the Charding Nullah in Demchok.
- Both India and China will slightly withdraw their forces from current positions to prevent confrontations. Regular monitoring and review meetings will be instituted to ensure compliance with the new protocols.

Implications of the recent agreement regarding the Line of Actual Control (LAC) for India-China relations:

- It enhances diplomatic relations through the successful implementation of the agreement as it facilitates the resumption of higher-level diplomatic engagements in forums such as BRICS, SCO, etc.
- It normalizes military interactions leading to the resumption of flights and increased Chinese investment in India which increases economic ties between India and China.
- It improves regional stability and could set a precedent for resolving other territorial disputes in Asia. It will pave the way for the resolution of 'legacy border issues' like Depsang and Demchok in the future.

Issues/Challenges in resolving the India-China border dispute:

- One of the major challenges regarding the India-China border dispute is a complex history that dates back to the 1962 border war and the presence of 'legacy issues', such as the disputes over the Depsang Plains and Demchok.
- The infrastructural development coupled with military build-up along the LAC by both India and China adds to the layer of complexity in the effective resolution of disputes.
- The lack of trust between the two nations due to the deadly clashes in the Galwan Valley in 2020, leads to heightened suspicion and uncertainty that is not conducive to long-term conflict resolution.

During the disengagement process, the

buffer zones established have resulted in India losing more territory than China. This imbalance creates further tension and makes conflict resolution more difficult

Note:
The map shows Demchok and Depsang Plains in Eastern Ladakh, which had been the point of friction between the two sides.

Source: Indian Express

Source: TOI

ISRAEL-HEZBOLLAH CONFLICT

GS II –Effect of Policies and Politics of Developed and Developing Countries on India's Interests

Context: Israel killed Hezbollah leader Sayyed Hassan Nasrallah in a powerful airstrike in Beirut, dealing a heavy blow to the Iran-backed group as it reels from an escalating campaign of Israeli attacks.

Hezbollah:

- It is a Shiite militant group and political party based in Lebanon that was founded in the early 1980s, with support from Iran, following Israel's invasion of Lebanon in 1982.
- It has grown into a powerful force in Lebanese politics and maintains a military wing that regularly clashes with Israeli forces.

Israel-Lebanon Civil War:

- Israel has conducted several military operations in Lebanon and the 1982 invasion is the most significant one.
- Israel's invasions in southern Lebanon were initially driven by the aim to destroy the Palestinian Liberation Organization (PLO) in the 1990s and now against Hezbollah in recent years.
- Shebaa Farms, which is located at the intersection of Lebanon, Israel, and Syria remains a point of contention between Hezbollah and Israel, after the Israeli occupation of the territory.
- Iran's financial and military support for Hezbollah is another key factor in the ongoing Israel-Lebanon conflict. Israel views Hezbollah as a major security threat due to its military capabilities, leading to regular Lebanese skirmishes.

Global Implications of the Escalation of Israel - Lebanon War:

- There has been a disruption in the geopolitical realignment process in the Middle East due to the Israel-Arab reconciliation to the Iran-Saudi détente.
- Middle East has made the region a theatre for proxy wars like the US and Iran. The recent Israel-Palestine conflict has the potential to become a full-blown war with the involvement of foreign powers.
- It has led to the disruption of global connectivity projects like India India-Middle East Economic Corridor (IMEC) and global transport routes. The escalation of the Israel-Lebanon conflict endangers strategic supply routes like the Strait of Hormuz and the Red Sea.
- It impacts the oil production and supply chain of goods which will further increase global inflation, which has already been rattling the world economy.
- It could serve as a rallying point for extremist groups in the Middle East like Al-Qaeda or ISIS as they might use the conflict as an opportunity to recruit new members, by framing the war as a broader jihad against Israel and the West.

Concerns for India:

- There are about 18,000 Indians in Israel and about 5,000-10,000 Indians in Iran, about 90 lakh people are living and working in the Gulf and West Asia region. Any conflict that expands will end up posing a risk to the Indian community that is based in the region.

- The West Asia region contributes to India's 80 percent of oil supplies, which a potential conflict will impact. India has been able to minimise the impact of oil prices due to the Russia-Ukraine war by buying Russian oil at discounted prices, but this conflict will harm energy prices.
- India sees the region as its extended neighbourhood, and it has been pushing for the India-Middle-East-Europe Economic corridor, which has strategic as well as economic benefits.
- Chabahar in Iran is another strategic economic project, which acts as a gateway to Afghanistan and Central Asia — since Pakistan denies land transit to Indian goods. Any conflict in the region and the implementation of any US sanctions will also impact India's plans for Chabahar port.
- It may affect the India-Israel-UAE-US I2U2 initiative and plans to connect Indian cargo routes through the International North-South Transport Corridor (INSTC) to Russia.

India's Stand:

- India's stakes in the bilateral relationships with both Israel and Iran are huge, India will expect both countries to avoid military actions that will trigger a dangerous and wider war in the region.

Inter-state and intra-state conflicts in the Middle East are deep and pervasive, and India will have to forever balance its engagement with key regional actors Egypt, Iran, Israel, Qatar, Turkey, Saudi Arabia, and the United Arab Emirates whose orientation and interests are different and often in conflict.

Note:

IRAN AND ISRAEL: A LONG HISTORY OF SHADOW WARS

1979: Iran's pro-Israel leader Mohammed Reza Shah swept from power in Islamic Revolution, new regime considers Israel an enemy.

1982: Israel invades Lebanon, Iran's Revolutionary Guards set up Hezbollah.

1983: Hezbollah uses suicide bombings to expel Western, Israeli forces. Israel later withdraws from much of Lebanon.

2002: Israel urges tough action against Tehran after revelation that Iran has secret uranium enrichment programme.

2006: Israel fights Hezbollah in a month-long war in Lebanon, unable to crush them.

2009: Iran Supreme Leader Ayatollah Ali Khamenei calls Israel 'a dangerous and fatal cancer'.

2018: Benjamin Netanyahu hails US President Donald Trump's withdrawal from Iran's nuclear deal.

2020: Israel welcomes US assassination of General Qassem Soleimani.

2022: US President Joe Biden and Israeli Prime Minister Yair Lapid sign a joint pledge to deny Iran nuclear arms.

2024: Suspected Israeli air strike on Iranian embassy in Damascus kills two IRGC commanders.

(Above) The Iron Dome system in action in central Israel; (and) celebrations in Tehran after Iran's airstrike. *AP, Reuters*

MADRASAS IN INDIA

GS II –Education

Context: The Supreme Court stayed the operation of the communications issued by the National Commission for Protection of Child Rights (NCPCR) recommending the closure of government-aided madrasas not compliant with the Right to Education (RTE) Act. It also ordered that the consequent directions by the Centre, Uttar Pradesh, and Tripura, too, "shall not be acted upon".

Madrasa:

- It refers to an educational institution primarily associated with Islamic teachings.
- As of 2018-19, India had a total of 24,010 madrasas, of which 19,132 were recognised, while 4,878 remained unrecognized.
- Uttar Pradesh has the largest share of madrasas in the country followed by Rajasthan.

- Some states like Assam, Punjab, Tamil Nadu, and Telangana reported having no recognised madrasas.
- It follows a curriculum similar to the structure of mainstream school and higher education, with students progressing through various levels like Maulvi (equivalent to Class 10), Alim (equivalent to Class 12), Kamil (equivalent to a Bachelor's degree), and Fazil (equivalent to a Master's degree).
- Its medium of instruction includes Arabic, Urdu, and Persian in charitable Madrasa Darse Nizami while Madrasa Darse Aliya uses textbooks either published by state textbook corporations or prescribed by the National Council of Educational Research and Training (NCERT).
- The primary source of funding for madrasas comes from the respective state governments, with supplementary support from the central government under the Scheme for Providing Education to Madrasas/Minorities (SPEMM).

Role of Madrasas in the Indian Education System:

- It helps in preserving culture as they have served to preserve and transmit Islamic culture, beliefs, and values among Muslim communities in India.
- It fosters a sense of identity and community in Muslim communities in India.
- It provides an educational platform for many Muslim children, particularly in areas where access to formal schooling is limited.
- It can become a platform to promote positive values among its students regarding communal harmony.

Criticisms/Issues related to Madrasas:

- Some have been facing the issues of promoting extremist ideologies and anti-national sentiments leading to social divisions and communal tensions within the country.
- Its existence raises questions about secularism and equality in education funding. Some of them argue that public funds should not be used to support religious education without equally funding other religions to ensure uniformity and adherence to secular principles.
- Students who graduated from Madrasas face difficulties in integrating into the broader workforce due to a lack of vocational skills and modern education.

Its educational approach often leads to isolation from mainstream society, hindering opportunities for upward mobility and social cohesion.

NATIONAL COMMISSION FOR PROTECTION OF CHILD RIGHTS

GS II –Statutory Body

Context: The National Commission for Protection of Child Rights (NCPCR) has written to the Ministry of Information and Broadcasting, asking it to ensure that over-the-top (OTT) platforms display disclaimers in "English, Hindi, and local/regional languages before showing any adult content".

National Commission for Protection of Child Rights (NCPCR):

- It is a statutory body set up in March 2007 under the Commissions for Protection of Child Rights (CPCR) Act, 2005.
- It is under the administrative control of the Ministry of Women & Child Development.
- The Commission's mandate is to ensure that all laws, policies, programmes, and administrative mechanisms align with the child rights perspective as enshrined in the Constitution of India and also the UN Convention on the Rights of the Child.
- It inquiries into complaints relating to a child's right to free and compulsory education under the Right to Education Act, 2009.
- It monitors the effective implementation of the Protection of Children from Sexual Offences (POCSO) Act of 2012, the Juvenile Justice (Care and Protection of Children) Act of 2015, and the Right to Free and Compulsory Education (RTE) Act of 2009.
- It has a chairperson and six members (at least two must be women) appointed by the central government.
- The c**entral government** may by order remove the chairperson or any other member from office if:

- o Is adjudged insolvent
- o Engages during his term of office in any paid employment outside the duties of his office
- o Refuses to act or becomes incapable of acting
- o Is of unsound mind and stands so declared by a competent court
- o Has so abused his office as to render his continuance in office detrimental to the public interest
- o Is convicted and sentenced to imprisonment for an offense, which in the opinion of the central government, involves moral turpitude
- The Commission, while investigating, shall have all the powers of a **Civil court** in respect of the following matters:
- o **Summoning** and **enforcing** the attendance of any person from any part of India and examining him/her on oath
- o **Requiring** the discovery and production of any document
- o **Receiving** evidence on affidavits.
- o **Requisitioning** any public record or copy thereof from any court or office
- o **Issuing** commissions for the examination of witnesses and documents

Functions of the National Commission for Protection of Child Rights (NCPCR):

- **It examines and reviews existing safeguards** for the protection of child rights and recommends measures for their effective implementation.
- **It reports** annually and at other intervals to the central government on the effectiveness of these safeguards.
- **It investigates cases related to violations of child rights** and recommends legal proceedings in appropriate cases.
- **It reviews existing policies,** programs, and activities related to child rights and makes recommendations for their improvement.
- **It promotes research** in the field of child rights.
- **It raises awareness of child rights** and available safeguards through various means, such as publications, media, and seminars.
- **It inspects institutions** where children are detained or reside, including juvenile homes, and recommends remedial action if necessary.
- **It investigates complaints** and takes suo motu notice of issues related to the deprivation and violation of child rights and the non-implementation of laws protecting and developing children.

Issues/Challenges faced by the National Commission for Protection of Child Rights (NCPCR):

- It has limited financial and human resources, which can hinder its ability to effectively carry out its functions and mandate.
- It can make recommendations to government agencies and other organizations, but due to limited capacity, it may not be able to ensure that these recommendations are implemented.
- There is no set time frame for the completion of enquiries or investigations conducted by the NCPCR.

In today's world, a wide range of issues affect children in India, NCPCR may not have the resources or capacity to address all of these issues effectively.

NOBEL PRIZE

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

Context: For its "efforts to achieve a world free of nuclear weapons", the 2024 Nobel Peace Prize was awarded to the Japanese organization Nihon Hidankyo. The members of Nihon Hidankyo are survivors of the atom bombings in Hiroshima and Nagasaki by the United States in 1945.

Nobel Prize:

- The Nobel Prizes were established by Alfred Nobel as per his 1895 testament and are given to "those who, during the preceding year, have conferred the greatest benefit to humankind."
- The first Nobel Prizes were awarded in Stockholm, Sweden in 1901 on the fifth anniversary of the death of

Alfred Nobel.
- Since then, it has been provided for Physics, Chemistry, Physiology/Medicine, Literature, and Peace almost every year.
- In 1968, the Sveriges Riksbank Prize in Economic Sciences was established and has been provided since then by Sveriges Riksbank (Sweden's central bank) in memory of Alfred Nobel.
- Prizes may be given only to individuals, except the Peace Prize, which may also be conferred upon an institution. However, 3 individuals at max, can share a prize.
- All the Nobel Prizes are given in Stockholm, Sweden except for the Nobel Peace Prize which is awarded in Oslo, Norway.
- Each Nobel Prize consists of a gold medal, a diploma bearing a citation, and a sum of money.
- The first woman to win the Nobel Prize was Marie Curie, and she won the award twice. Between 1901 and 2023, 61 women have been given the Nobel Prize and the Sveriges Riksbank Prize in Economic Sciences.
- Poet and writer Rabindranath Tagore was the first non-European and Indian to get a Nobel Prize in 1913 in literature.
- India received its first Nobel Prize in physics in 1930 when scientist Sir Chandrasekhara Venkata Raman was awarded for his work on the scattering of light and the discovery of the effect named after him. This phenomenon is now known as the Raman Effect.
- The other prominent Indian personalities who have received the Nobel Prize include Abhijit Banerjee, Kailash Satyarthi, Venkatraman Ramakrishnan, V. S. Naipaul, Amartya Sen, Subramanyan Chandrasekhar, Mother Teresa, and Har Gobind Khorana.

Significance of Nobel Prize:

- It is the most prestigious award in the field of intellectual endeavour which gives a visibility that is unmatched by any other prize.
- It increases public awareness of important issues around the world and motivates group efforts for justice and peace. The Nobel Peace Prize, in particular, is of great significance because it recognizes people and groups that have made noteworthy contributions to peacebuilding, conflict resolution, and increasing humanitarian causes.
- The discoveries help in advancing society by fostering growth and aiding in self-awareness.
- It provides funding and assistance for additional study, research, invention, and knowledge expansion on the work of the winners due to its reputation and monetary benefits.
- It enhances international collaboration and networking as the Nobel Prize ceremonies and events bring together laureates, experts, and leaders from all over the world, encouraging collaboration, the sharing of ideas, and networking between people and organizations with interests in related fields.

Issues/Criticism associated with the Nobel Prize:

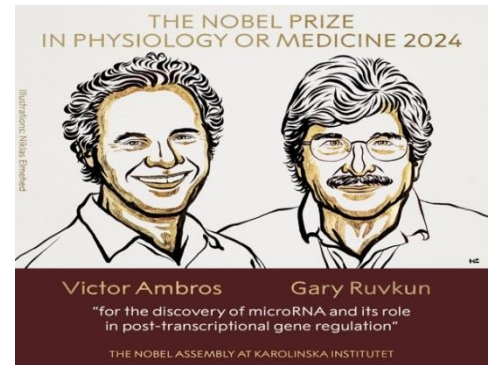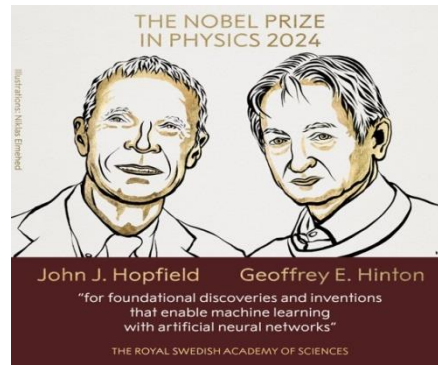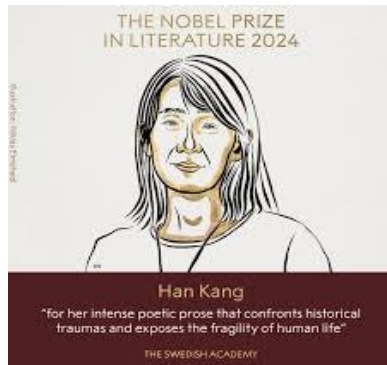- The Nobel Peace Prize has drawn criticism for its political motivations and flawed understanding of peace.
- It is criticized for involving political agenda in the inclusion of certain Nobel Laureates and the exclusion of a few deserving candidates. The Literature Prize in particular has been charged with being Eurocentric.
- It has been criticized for neglecting significant accomplishments. Despite being nominated for

the Nobel Peace Prize five times in 1937, 1938, 1939, and 1947, Mahatma Gandhi, a symbol of nonviolence in the 20th century, never received it and Lise Meitner despite being nominated for the Nobel Prize 48 times, who assisted in the atom-splitting process, never won.

- The awards are biased towards the West since more than 80% of all winners since 1901 have come from the US, Canada, and Western Europe, whereas only 17 were found in Africa, and only seven of those were outside of South Africa.

They are not awarded after death hence it does not give proper attention to the works of intellectuals.

THE NOBEL PRIZE IN LITERATURE 2024 — Han Kang — "for her intense poetic prose that confronts historical traumas and exposes the fragility of human life" — THE SWEDISH ACADEMY

THE NOBEL PRIZE IN PHYSICS 2024 — John J. Hopfield, Geoffrey E. Hinton — "for foundational discoveries and inventions that enable machine learning with artificial neural networks" — THE ROYAL SWEDISH ACADEMY OF SCIENCES

THE NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE 2024 — Victor Ambros, Gary Ruvkun — "for the discovery of microRNA and its role in post-transcriptional gene regulation" — THE NOBEL ASSEMBLY AT KAROLINSKA INSTITUTET

PERSONS WITH DISABILITIES

GS II – Government Policies and Interventions

Context: A day after the Central Government notified the amended Rights of Persons with Disabilities (RPwD) Rules, 2024, the National Platform for the Rights of the Disabled (NPRD), a cross-disability rights organization, has sought its rollback on grounds that the new rules make the process of availing disability certificates more stringent and cumbersome.

Person with Disabilities:

- The **United Nations Convention on the Rights of Persons with Disabilities** (UNCRPD) defines "Persons with disabilities include those who have long-term **physical, mental, intellectual or sensory impairments** which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others."

Status of Person with Disabilities in India:

- In India, there were around **26.8 million persons** with disabilities, constituting **2.21% of India's total population (2011 Census).**

Challenges Faced by Disabled Population in India:

- The **absence of inclusive educational institutions** and vocational training centers hinders the skill acquisition and workforce participation of persons with disabilities in rural areas.The literacy rate of persons with disabilities is lower than the national average. According to the 2011 Census, the literacy rate of persons with disabilities is 52.9%, compared to 74.0% for the general population.
- Persons with disabilities often **encounter discrimination and biases** in the job market, leading to high unemployment and underemployment rates. According to the 2011 Census, the employment rate of persons with disabilities is 36.0% as against 51.6% for the general population**.**
- Public spaces, including schools, hospitals, transport systems, and government offices, often lack accommodations for people with disabilities which **restricts their mobility, education, healthcare, and engagement** in social and civic activities.
- Persons with disabilities **frequently face social stigma and discrimination,** which isolates them from mainstream society. Prejudice and misconceptions about disabilities contribute to negative attitudes,

- limiting their social interactions and opportunities.
- There is a **lack of awareness regarding government schemes** and benefits for people with disabilities even though India has ratified the **UN Convention on the Rights of Persons with Disabilities (CRPD)** and enacted the **Rights of Persons with Disabilities Act (RPwDs).**

Rights of Persons with Disabilities (RPwD) Rules of 2024:

- It has been notified by the Union Ministry of Social Justice and Empowerment under the Rights of Persons with Disabilities Act of 2016.
- The required documents for disability certificate include proof of identity, a recent photograph (not older than six months), and an Aadhaar card.
- Only a medical authority or notified competent medical authority at the district level can issue disability certificates in the district of residence of the applicant as mentioned in the proof of residence.
- Processing time has been extended from one month to three months.
- Applications will lapse or become "inactive" if undecided for over 2 years. Applicants must re-apply or contact the authority to reactivate the application.
- It introduced new colour-coded UDID cards:
- White: Disability below 40%.
- Yellow: Disability between 40% and 80%.
- Blue: Disability of 80% or above.

Measures taken by the Indian government to empower disabled persons:

- **The Unique Disability Identification (UDID) Portal** is being implemented with a view of **creating a National Database for Persons with Disabilities (PwDs)** and issuing **a Unique Disability Identity Card** to each PwDs.
- **The Accessible India Campaign** also known as the **Sugamya Bharat Abhiyan** enables persons with disabilities to gain universal access and equal opportunity for development.
- **Deendayal Disabled Rehabilitation Scheme** is a c**entral sector scheme** of the Government of India that has been implemented **since 1999** to provide financial assistance to **NGOs working** for the education and rehabilitation of persons with disabilities.
- **Assistance to Disabled Persons for Purchase/fitting of Aids and Appliances** aims at helping disabled persons by bringing suitable, durable, scientifically manufactured, modern, standard aids and appliances within their reach.
- **National Fellowship for Students with Disabilities** aims to increase opportunities for students with disabilities to pursue higher education and grants **200 fellowships per year** to students with disability.
- The Rights of Persons with Disabilities Act, of 2016 protects the rights of persons with disabilities. It defines a person with a disability as a person with long-term physical, mental, intellectual, or sensory impairment. That person limits full and effective participation in society.

Global Measures to empower disabled persons:

- The International Day of Persons with Disabilities is observed every year on 3rd December to **promote the rights and well-being of people** with disabilities at every level of society and development.
- **Incheon Strategy to Make the Right Real for Persons with Disabilities in Asia and the Pacific** is an initiative aimed at advancing the rights and well-being of persons with disabilities in the Asia-Pacific region.

The UN Convention on the Rights of Persons with Disabilities is an international human rights treaty that focuses on safeguarding the rights of disabled people.

PM ELECTRIC DRIVE REVOLUTION IN INNOVATIVE VEHICLE ENHANCEMENT (PM E-DRIVE) SCHEME

GS II –Government policies and interventions for development in various sectors

Context: In a major push toward achieving India's climate targets, the Union Cabinet recently approved the PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-DRIVE) scheme, which allocates funding for electric vehicles (EVs) across many segments.

PM E-DRIVE Scheme:

- Its objective is to expedite the adoption of Electric Vehicles (EVs) by providing upfront incentives for their purchase, as well as by facilitating the establishment of essential charging infrastructure for EVs.
- It aims to promote EVs to reduce the environmental impact of transportation and improve air quality.
- Ministry of Heavy Industries is its nodal ministry.Project Implementation and Sanctioning Committee (PISC), an Inter-ministerial empowered committee, headed by the Secretary (Heavy Industries) is constituted for overall monitoring, sanctioning, and implementation.
- Its fund allocation is Rs 10,900 crore and the time period is 2024-26.
- Targets:
- Support e-2Ws, e-3Ws, and e-buses
- Installation of 22,100 fast chargers for e-4Ws, 1800 fast chargers for e-buses, and 48,400 fast chargers for e-2W/3Ws.

Key Features of the Scheme:

- Demand incentives for consumers (buyers/end users) to purchase certain categories of EVs.
- Aadhaar-authenticatede-vouchers for EV buyers will be generated through the PM E-DRIVE app/portal to reduce the upfront purchase price of EVs. The amount will be reimbursed to the original equipment manufacturer (OEM) by the Government of India.
- The proposed incentive is 5,000 per kWh in FY 2024-25 and ₹2,500 per kWh in FY 2025-26 for e-2W and e-3W categories (both capped at 15% of ex-factory price).
- It provides grants for the creation of capital assets including e-buses, establishment of a network of Electric vehicle public charging stations (EVPCS) & upgradation of identified testing agencies. EVPCS shall be installed in the selected cities (9 cities initially like Mumbai, Delhi, Bangalore, etc) with high EV penetration and also on selected highways.
- Charging infrastructures will be established as per the Ministry of Power (MoP) "Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024" and further amendments.
- The Scheme shall be implemented through a Project management agency (PMA), which shall be responsible for providing secretarial, managerial, and implementation support.
- **Phased Manufacturing Programme (PMP)** has to be followed by OEMs and EV charging infrastructure/ public charging stations to be eligible for support.
- Incentives/grants payable under the Scheme are independent of and in addition to incentives given under the **production-linked incentive (PLI) scheme for the automobile and auto components industry** (PLI-Auto) and PLI scheme for advanced chemistry cell (PLI-ACC).

Encourages **states to offer fiscal and non-fiscal incentives**, such as road tax concessions, toll exemptions, and parking fee reductions to further promote EV adoption

Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024:

- The Bureau of Energy Efficiency (BEE) will act as the central nodal authority to monitor the implementation.
- It shall apply to public spaces such as commercial complexes, railway stations, petrol pumps, airports, metro stations, and private spaces such as office buildings, educational institutions, hospitals, etc.

- Government/public entities shall offer land for the installation of Public Charging Stations (PCS) at a subsidized rate to the government/public /private entity.
- **Note:**

Source: PIB

PRADHAN MANTRI VISHWAKARMA SCHEME

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

Context:Pradhan Mantri Vishwakarma Yojana is making scores of people including the rural women self-reliant and helping them earn money while sitting at their homes.

PM Vishwakarma Scheme:

- It is a central sector scheme for the duration of FY 2023-24 to FY 2027-28.
- It envisages providing end-to-end holistic support to the traditional artisans and craftspeople in scaling up their conventional products and services.
- Its nodal ministry is the Ministry of Micro, Small & Medium Enterprise (MoMSME).
- It will be jointly administered by MoMSME, the Ministry of Skill Development and Entrepreneurship (MSDE),and the Department of Financial Services (DFS) under the Ministry of Finance.

Objectives of the Scheme:

- To enable recognition of artisans and craftspeople as Vishwakarma.
- To provide incentives for digital transactions to encourage the digital empowerment of Vishwakarma.
- To provide a platform for brand promotion and market linkages to help them access new growth opportunities.

Key Features of the Scheme:

- The National Committee for Marketing (NCM) will provide services such as quality certification, branding and promotion, e-commerce linkage, trade fairs advertising, publicity, and other marketing activities.
- Credit support will rejuvenate the sector as collateral-free enterprise development loans of Rs 1 lakh (first tranche for 18 months repayment) and Rs 2 lakh(second tranche for 30 months repayment) are provided at a concessional rate of interest of 5% to be charged from the beneficiary with an interest subvention cap of 8% to be paid by MoMSME.
- Basic training of 5-7 days and advanced training of 15 days or more, with a stipend of Rs. 500 per day will help in skill upgradation.
- Provisions such as incentives for digital transactions and marketing support, liberal loan terms, etc. will help to develop a supporting ecosystem for this industry.
- It encapsulates the essence of preserving heritage while embracing progress.
- As per the census of crafts conducted during the Seventh Plan period, there were more than 68.8 lakh crafts persons in the country. Women (56.13%) and socially and economically disadvantaged sections like SC, ST, and OBC (which together make up more than 72%) account for a majority of the pool which in turn promotes gender equality.

Significance of the Scheme:

- The enhanced earning potential due to skill upgradation, better market reach, and access to credit will boost entrepreneurial ventures among artisans that in turn enhance their economic status.
- It helps in preserving culture through continued and enhanced practice of traditional trades by passing down trades through generations.
- It gives recognition by formalizing the traditionally informal sector.
- It increases employment opportunities in traditional crafts and has the potential to attract younger

generations to take up traditional crafts as a profession.

Issues/Concerns associated with the Scheme:

- The last census of crafts was carried out during the Seventh Plan period, which ended in 2012. Hence the available data on the crafts landscape is outdated.
- There is concern that the scheme may inadvertently reinforce caste-based occupations, limiting the opportunities for community members to explore more lucrative professions.
- Under Guru-Shishya Parampara, the master usedto provide valuable training, which he has learnedfrom his experiences with new employees remains unrecognized as formal training under the scheme.
- Low wages caused the gradual erosion of artisan communities.

Due to poor market coverage and quality concerns products often get lower price tags causing a lack of economic viability for their output.

RICE FORTIFICATION

GS II – Issues relating to poverty and hunger

Context: The Union Cabinet extended the universal supply of fortified rice in all central government schemes providing free food grain under the National Food Security Act of 2021, in its present form, until December 2028.

Rice Fortification:

- It is the process of adding essential micronutrients like iron, folic acid, vitamin B-12, zinc, and vitamins A, B-1, B-2, B-3, and B-6, to rice to enhance its nutritional value.
- It seeks to improve the nutritional quality of rice and help address micronutrient deficiencies and public health concerns.

Significance/Advantages of Rice fortification in India:

- Rice constitutes a staple food for about 65% of the population in India. Hence, rice fortification helps to address the nutritional deficiencies of iron, zinc, and vitamins of the Indian population.
- Pregnant women and children are vulnerable to anaemia. Iron fortification targets this group by providing better maternal health and reduced risks during pregnancy.
- It is a cost-effective strategy to address malnutrition as the estimated annual cost for the scheme is around ₹2,700 crore, which is manageable given the potential health benefits.
- It minimizes additional costs and logistical challenges as it can be integrated into existing rice production and distribution systems.
- It leads to improved educational outcomes as rice fortification can help in the mitigation of cognitive impairments associated with iron deficiency.
- It enhances the productivity of the workforce as it aims to improve overall public health and reduce healthcare costs associated with malnutrition-related diseases.

Issues/Concerns associated with Rice Fortification in India:

- The indiscriminate use of fortified rice especially for individuals with the haemoglobinopathies like thalassemia and sickle cell disease could lead to serious health complications like organ failure.
- The promotion of consumption of 250-350 grams of fortified rice consumption per day, could undermine dietary diversity as the National Institute of Nutrition (NIN) recommends that no more than 40% of a healthy diet's total calories should come from cereals, and only a fraction of that from rice.
- Excessive iron intake due to lack of monitoring could be potentially harmful for women. For example, excessive iron intake in pregnant women can negatively affect foetal development and birth outcomes, which will increase the risk of chronic diseases in children.
- Due to excess commercialization fortification may benefit industries more than the people due to profiteering purposes it may become difficult to reverse fortification, even after micronutrient deficiencies are reduced.

The proposed amendment by the Food Safety and Standards Authority of India (FSSAI) to remove the warning labels

regarding thalassemia and sickle cell anaemia, has sparked concern among health experts.

Rice Fortification Scheme:

- It is a centrally funded initiative, with 100% of the costs covered by the central government. The initiative is part of Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) and aims to provide a unified institutional mechanism for its implementation.

It aims to combat anaemia and address micronutrient deficiencies across the population.

SWACHH BHARAT MISSION

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

Prime Minister of India will mark the completion of 10 years of the Swachh Bharat Mission launch by participating in the Swachh Bharat Diwas programme on October 2, during which he will launch and lay foundation stones for several projects related to sanitation and cleanliness worth more than ₹9,600 crores

Swachh Bharat Mission (SBM):

- Mahatma Gandhi emphasised swachhta which ensures a healthy life and society. Keeping this in mind, the Indian government launched the Swachh Bharat Mission on October 2, 2014.
- It aimed to change the sanitation habits of 550 million Indians by providing over 100 million household toilets.
- The mission covers all rural and urban areas. The urban component of the mission is implemented by the Ministry of Housing and Urban Affairs and the rural component by the Ministry of Drinking Water and Sanitation.
- Swachh Bharat Mission (SBM) Urban included:
- elimination of open defecation
- conversion of unsanitary toilets to pour flush toilets
- eradication of manual scavenging
- municipal solid waste management and
- bringing about a behavioural change in people regarding healthy sanitation practices.
- SBM-U 2.0 aims to make all cities 'Garbage Free'. SBM-U 2.0 will ensure grey and black water management in all cities, other than those covered under AMRUT. The mission focusses on source segregation of solid waste.
- Swachh Bharat Mission (Gramin) [SBM(G)] was launched on 2nd October 2014. It aimed to ensure cleanliness in rural areas through Solid and Liquid Waste Management activities and make India Open Defecation Free (ODF) in Five Years (2014-2019). Having achieved the milestone of an ODF India, the aim now is overall cleanliness (Sampoorn Swachhata) in villages. i.e., sustaining the ODF status, managing solid and liquid waste by 2024-25, and transforming all the villages from ODF to ODF Plus Model.
- Swachh Bharat Kosh was launched in 2014 to facilitate channelisation of philanthropic contributions and Corporate Social Responsibility (CSR) funds towards this cause. Using the donations, the fund aimed to finance activities such as the construction of new toilets as well as the repair and renovation of dysfunctional toilets in rural areas, urban areas, and elementary, secondary, and senior secondary government schools, in Anganwadi. They were also aimed to be used for constructing water lines to the toilets, training and skill development to maintain hygiene in the toilets as well as other activities to improve sanitation. It focuses on increasing sewage and septic management, making cities water-secure, and ensuring that no sewage drains in rivers.

Key Achievements of the SBM:

- All Indian states declared themselves Open Defecation Free (ODF) by October 2, 2019. It impacted 550 million people by changing their sanitation habits.
- According to the reports by the Nature Journal, SBM saved 60,000–70,000 lives annually among children under five by reducing sanitation-related diseases.
- It provided access to household toilets which enhanced the safety, privacy, and dignity of women.

- According to a report by UNICEF, the ODF status saved each household Rs 50,000 annually due to reduced medical expenses and time savings.
- It helped in achieving Sustainable Development Goal 6 (clean water and sanitation) by improving sanitation.
- It has influenced global sanitation policies through the four Ps—political leadership, public financing, partnerships, and people's participation—shared at the Mahatma Gandhi International Sanitation Convention in 2018 and inspired global initiatives like Nigeria's "Clean Nigeria Campaign".

Issues/Challenges faced by Swachh Bharat Mission:

- Even after achieving 100% sanitation coverage by 2019, only 85% of rural Indians utilize safe and hygienic toilets, indicating a usage gap.
- It faces issues of quality infrastructure such as malfunctioning facilities, unhygienic conditions, and structural defects like full pits or collapsing superstructures that impede toilet usage.
- There has been increased non-usage of toilets due to water scarcity, particularly in rural areas.
- Due to cultural norms and behaviours influence, some households are repurposing toilets for activities other than defecation.
- Toilet access and usage exhibit variations across castes, with surprising trends showing higher non-usage rates among upper castes.
- The larger households face challenges like overcrowding and inadequate facilities for toilet usage.

The scientific collection, segregation, and disposal of growing waste volumes remain an issue due to resource and capacity constraints of urban local bodies.

Swachh Bharat Diwas:

- It will showcase India's decade-long sanitation achievements and those in the recently- concluded "Swachhata Hi Seva" campaign.
- The projects to be launched include those worth more than Rs 6,800 crore aimed at enhancing urban water and sewage systems under AMRUT.
- The theme for "Swachhata Hi Seva 2024" — "Swabhav Swachhata, Sanskaar Swachhata" — has once again united the country in its commitment to cleanliness, public health, and environmental sustainability.

TEMPLE REGULATION IN INDIA

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

Context: As the Supreme Court hears petitions seeking a court-monitored probe into the alleged adulteration of the ghee in Lord Venkateswara's laddu prasadam, Hindu organisations have revived their demand to free temples from government control.

Regulation of Religious Places in India:

- In 1863, the British enacted the Religious Endowments Act, which handed over control of temples to committees set up under the Act.
- After Independence, the 1925 Act became the blueprint for various states to enact their own laws to administer temples. The first such Act was the Madras Hindu Religious and Charitable Endowments Act.
- Muslims and Christians manage their places of worship and religious institutions through boards or trusts run by the community.
- In the case of many Hindu, Sikh, Jain, and Buddhist places of worship, however, the government exercises considerable control.
- States use a part of the income from offerings and donations at large temples for the administration and upkeep of those and smaller temples, and for welfare activities that may or may not be connected to the temple such as running hospitals, orphanages, or schools/ colleges that provide secular education.
- States draw their power to enact such legislation from Article 25(2) of the Constitution, under which a government can make laws "regulating or restricting any economic, financial, political or other secular

activity which may be associated with religious practice", and "providing for social welfare and reform or the throwing open of Hindu religious institutions of a public character to all classes and sections of Hindus".

- Article 25 (1) gives the freedom of religion and 25 (2) talks about areas where the State may intervene and make laws or regulate religious institutions.
- Article 26 provides for the freedom to manage the religious affairs of the citizens and is subject to public order, morality, and health.
- Religious endowments and institutions are in List III (Concurrent List) of the Seventh Schedule, which means both the Centre and states can legislate on the subject.
- Hindu Religious Endowments Commission declared that government control over temples was essential to prevent maladministration.

Arguments in favour of Regulation of Temple by State:

- The state temple regulation has ensured more inclusive and non-discriminatory practices in public temples by challenging the hereditary priesthood.
- It has helped in countering the historical dominance of certain groups over marginalized communities in temple management by promoting adequate representation.
- It has promoted effective temple management by ensuring proper administration and preservation of temple assets, and ensuring endowments are used for their intended purposes.
- It provides opportunities for community welfare through temple funds benefiting the local populace.

Arguments against Regulation of Temple by State:

- It violates the principle of secularism which separates state affairs from the religion.
- It leads to non-uniform regulation as there is a disproportionate focus on the regulation of Hindu temples, while other religious institutions remain largely autonomous.
- It may lead to erosion of cultural capital as poor conservation efforts have led to the damage and demolition of historically significant temple structures.
- It may affect tourist potential adversely as states may divert temple funds into other activities leaving little investment for temple infrastructure.

The control of temples by states might not be sensitive to the unique customs and traditions of tribal communities associated with their places of worship

Judicial Pronouncements related to Temple:

- In the Shirur Mutt Case of 1954, the Supreme Court held that a law that takes away the right to administration of the religious denomination and vests it in another authority would be violative of the right guaranteed under Article 26(d).
- In Ratilal Panachand Gandhi vs. The State of Bombay Case of 1954, the Supreme Court said that in matters of religion, the right of management given to a religious body is a fundamental right that no law can take away.
- In the Pannalal Bansilal Pitti vs State Of Andhra Pradesh Case of 1996, the Supreme Court upheld the validity of a law that abolished the hereditary right over the chairmanship of a trust administering a Hindu religious institution or endowment and also rejected the contention that the law must uniformly apply to all religions.

UNIVERSITY RANKING FRAMEWORKS

GS II –Education

Context: Recently the National Institute Ranking Framework (NIRF) published its results under various categories including Overall, Universities, State Public Universities, Open Universities, Skill Universities, Colleges, Research Institutions, Innovation Institutions, Engineering, Management, Pharmacy, Architecture and Planning, Law, Medical, Dental, Agriculture and Allied Sectors.

National Institutional Ranking Framework (NIRF):

- It is released annually by the Ministry of Education, Government of India.

- It ranks Indian higher education institutions based on parameters such as teaching, learning, and resources, research and professional practices, graduation outcomes, outreach and inclusivity, and perception.

Key Highlights of National Institutional Ranking Framework (NIRF) Rankings 2024:

- It has been introduced for 'open universities', 'skill universities,' and 'state-funded government universities'.
- Indian Institute of Technology Madras retains its 1st position in the Overall Category for the sixth consecutive year.
- Indian Institute of Science, Bengaluru tops the Universities Category for the ninth consecutive year.
- IIM Ahmedabad tops in Management subjects retaining its first position for the fifth consecutive year.
- All India Institute of Medical Sciences (AIIMS), New Delhi occupies the top slot in Medicine for the seventh consecutive year.

Significance of University Ranking Framework:

- It helps institutions in the identification of their strengths and weaknesses, guiding them towards strategic planning and resource allocation by providing valuable insights into a university's performance relative to its peers.
- It enhances the educational quality and research output of universities through the competitive nature of the ranking framework.
- It provides global recognition as universities with high rankings provide a significant boost to a university's visibility on an international scale which helps in attracting international students, faculties, donors, and potential research partners from around the world.
- The highly ranked universities on the ranking framework help in facilitating partnerships between universities for collaboration with those having strong reputations leading to an increase in exchange programs between the universities.
- The highly ranked institutions on the ranking framework provide opportunities for valuable networking opportunities with alumni and industry leaders, making it beneficial for students seeking internships or job placements after graduation.

Issues with University Ranking Framework:

- It fails to fully represent the quality and relevance of research as it overemphasizes research output.
- It has negatively impacted the students from economically weaker sections in India as highly ranked universities have led to increased student fees in public institutions.
- It has diminished the importance of teaching, as the faculty members are judged on research output rather than their ability to teach and mentor students.
- Many times, research quality has been compromised as the ranking framework has fostered the culture of "publish or perish".

There is a bias in the framework's metrics and evaluation criteria which tends to favour the Western universities by marginalizing institutions from developing countries or those that prioritize teaching over research

Global University Ranking Frameworks:

- QS World University Rankings is a portfolio of comparative college and university rankings compiled by Quacquarelli Symonds, a higher education analytics firm. The six metrics employed are- Academic reputation, Employer reputation, Faculty/student ratio, Citations per faculty, international faculty ratio, and international student ratio.
  - Academic Reputation surveys academic peers to gauge perceived quality.
  - Employer Reputation assesses how employers view graduates from different institutions.
  - Faculty/Student Ratio is a measure of teaching resources available to students.
  - Citations per Faculty reflect research impact by measuring citations per academic staff.
  - The International Faculty Ratio indicates the diversity of faculty members.
  - The International Student Ratio shows the institution's global appeal and inclusivity.
- Academic Ranking of World Universities (ARWU), also known as the Shanghai Ranking is one of

the oldest and most recognized university ranking systems globally.

Times Higher Education (THE) World University Rankings are widely regarded as a detailed analysis of university performance. They use 13 indicators divided into 5 categories– Teaching (the learning environment), Research (volume, income, and reputation), Citations (research influence), International outlook (staff, students, research), and Industry income (innovation).

WORLD ENERGY OUTLOOK 2024

GS II –Important International Institutions

Context: The IEA World Energy Outlook 2024 outlines a future where EV adoption continues to gain momentum, potentially displacing up to 6 million barrels per day of oil demand by 2030.

Major Highlights of the World Energy Outlook 2024 Report:

- The global energy security is threatened due to the ongoing geopolitical tensions, such as the Russia-Ukraine war and tensions in the Middle East.
- Clean Energy Transitions Accelerating: Clean energy investments, particularly in solar and wind power have reached record highs.
- Renewable energy is expected to become the dominant source of electricity, surpassing coal, oil, and gas by 2030.
- The second half of the 2020s is expected to see a surplus in oil and liquefied natural gas (LNG) supply, leading to downward pressure on prices.
- The electric vehicle (EV) market is rapidly expanding globally, with EVs expected to account for 50% of new car sales by 2030.
- There has been intense competition among suppliers of clean energy technologies, such as solar PV and battery storage.
- The global energy systems are experiencing challenges due to the increasingly visible effects of climate change, such as extreme weather events.
- One of the keys to cutting emissions is improving energy efficiency, but the report shows that the global target of doubling efficiency by 2030 is unlikely to be met with current policies.

Key Observations Related to India:

- It noted that India was the fastest-growing major economy in 2023, with a 7.8% growth rate, and is set to become the world's third-largest economy by 2028.
- Due to rapid economic growth and urbanisation, India is set to experience the highest increase in energy demand globally over the next decade. The total energy demand is expected to rise by nearly 35% by 2035.
- Coal remains a critical part of India's energy mix, despite its ambitious renewable energy targets.
- Government initiatives like the PM-KUSUM scheme for solar energy in agriculture, the National Solar Mission, and the Production Linked Incentive (PLI) Scheme for manufacturing solar PV modules are supporting India's clean energy ambitions.
- India's industrial sector is poised for major growth by 2035. Iron and steel production is expected to rise by 70%, while cement production is projected to increase by 55%.
- The country is on track to nearly triple its electricity generation capacity to 1,400 GW by 2035.
- India is set to have the world's third-largest installed battery storage capacity, crucial for integrating variable renewables like solar and wind by 2030.
- The stock of air conditioners in India is projected to grow more than 4.5 times by 2035, causing electricity demand from cooling to surge. The energy required for air conditioning alone in 2035 will exceed Mexico's total projected electricity consumption for that year.
- One of the key components of India's energy strategy is its goal of achieving net zero emissions by 2070.

Issues/Challenges Cited in the Report:

- Global energy security and global energy supplies are threatened due to geopolitical tensions, like the war in Ukraine.

- Very few countries produce clean energy technologies, like solar panels and batteries which creates risks if supplies are disrupted.
- Developing countries are facing the challenge of funding renewable energy projects due to high expensive costs.
- Many countries lack the grid capacity to handle the fast-growing renewable energy supply, leading to the underuse of solar and wind power.
- There is a continued Reliance on fossil fuels like coal, oil, and gas in energy use, Despite the growth in renewables which is slowing the shift to clean energy.

There is extra pressure on energy systems to increase their resilience due to extreme weather events, like heat waves and floods.

World Energy Outlook:

- It is released by the International Energy Agency (IEA).
- It presents a detailed analysis of global energy trends, focusing on clean energy transitions, rising energy demand, and the impacts of geopolitical conflicts.

International Energy Agency (IEA):

- It was created by member countries of the Organisation for Economic Co-operation and Development (OECD) in 1974 to help industrialized countries respond to the major 1973-1974 oil crisis.
- It is headquartered in Paris, France.
- It provides analysis, data, and policy recommendations to help countries provide secure and sustainable energy.
- It has four main areas of focus. They are energy security, economic development, environmental awareness, and engagement worldwide.
- Its major publications:
  o World Energy Outlook Report
  o India Energy Outlook Report
  o World Energy Investment Report
  o The IEA Technology Roadmap and Policy Pathway series
  o The Annual Energy Efficiency Market Report

The Energy Technology Perspectives

PAPER 3

AMAZON DROUGHT

GS III – Environmental Degradation

Context: The world's largest river, the Amazon River, is battered by back-to-back droughts fuelled by climate change and is drying up, with some stretches of the mighty waterway dwindling to shallow pools only a few feet deep.

Factors responsible for drought in the Amazon rainforest:

- The **El Niño phenomenon** is identified as one of the key drivers of drought in the Amazon as it **decreases humidity and reduces rainfall, exacerbating drought conditions**. It leads to abnormal warming of the **surface waters of the Pacific Ocean**, which subsequently affects rainfall patterns.
- The high water **temperatures in the Northern Tropical Atlantic Ocean are one of the factors leading to the Amazon drought.** Due to warmer ocean waters, heated air rises into the atmosphere, which then reaches the Amazon rainforest. The warm air **inhibits the formation of clouds,** causing rainfall to drop sharply.
- **The human-induced climate change is exacerbating the drought. Human activities like agriculture and logging have resulted in deforestation which** hampers the Amazon's ability to regulate climate and retain moisture. This lack of vegetation leads to reduced **evapotranspiration** and, consequently, an increased susceptibility to drought.
- Unregulated mining activity in the region contributes to the problem by creating **land banks that impede river navigation.** The alteration of aquatic and terrestrial ecosystems through mining also releases **pollutants and greenhouse gases into the environment,** further affecting the climate.
- The construction and operation of hydroelectric dams in the Amazon, particularly on the **Madeira River,** a major **tributary of the Amazon** contribute to drought scenarios.
- The construction of infrastructure, like highways, can have detrimental effects on the rainforest by **cutting through conserved areas,** increasing deforestation, and intensifying climate anomalies in the **biome.**

Impacts of the drought caused in the Amazon rainforest:

- It has caused water levels to drop drastically in many rivers, including the **Rio Negro a tributary of the Amazon, one of the world's largest rivers by discharge levels,** which has fallen to a record low level.
- This has left tens of thousands of people stranded in remote jungle villages, with **limited access to food, drinking water, medicine, and other supplies.** Some communities have reported outbreaks of diseases such as **diarrhoea and skin infections due to the contaminated water.**
- The drought has also affected the biodiversity and wildlife of the rainforest. Hundreds of fish and **Amazon River dolphins** also known as **boto or pink river dolphin,** have been found dead, their rotting carcasses polluting the water. Many animals are also suffering from hunger and thirst, as their habitats and food sources are shrinking.
  The drought has also increased the **risk of forest fires,** which have reached a record high in some areas. The fires have destroyed large swathes of vegetation, released huge amounts of **carbon dioxide into the atmosphere,** and created a thick haze of smoke that has worsened the air quality and visibility in many cities.

Amazon Rainforest:

- These are large tropical rainforests occupying the **drainage basin of the Amazon River** and its tributaries in northern South America and covering an area of 6,000,000 square km.
- The Amazon Basin supports the **world's largest rainforest**, which accounts for more than half the total volume of rainforests in the world.
- Comprising about **40% of Brazil's total area**, Peru, and also parts of Guyana, Colombia, Ecuador, Bolivia, Suriname, French Guiana, and Venezuela, the **Amazon River Basin is the world's largest drainage system.**
- It is bounded by the **Guiana Highlands** to the north, the **Andes Mountains** to the west, the **Brazilian Central**

Plateau to the south, and the **Atlantic Ocean** to the east.

Amazon River:

- It is the largest river in South America and, in terms of both basin area and flow volume, the world's largest drainage system.
- It measures at least 4,000 miles (6,400 km) from the headwaters of the Ucayali-Apurímac River system in southern Peru, the river is marginally shorter than the Nile River.
  Its mouth lies in the Atlantic Ocean on Brazil's northeastern coast, and its westernmost source is high in the Andes Mountains, only 100 miles (160 km) from the Pacific Ocean.

ARMED FORCES (SPECIAL POWERS) ACT (AFSPA)

GS III – Various Security Forces and Agencies and their Mandate

Context: The Union Home Ministry extended the Armed Forces (Special Powers) Act (AFSPA) in parts of Nagaland and Arunachal Pradesh for another six months.

Armed Forces (Special Powers) Act (AFSPA):

- It is a law enacted by the Parliament in 1958 which gives the armed forces special powers and immunity to maintain public order in "disturbed areas".
- An area can be considered to be disturbed due to differences or disputes among different religious, racial, language, or regional groups or castes or communities.
- The Central Government, or the Governor of the State or Administrator of the Union Territory, can declare the whole or part of the State or Union Territory as a disturbed area.
- It can be applied only after an area has been declared "disturbed" under section 2 of the Act.
- The 'special powers' of armed forces under AFSPA are:
  o They have the authority to prohibit a gathering of five or more persons in an area, can use force, or even open fire after giving due warning if they feel a person is in contravention of the law.
  o If reasonable suspicion exists, the army can also arrest a person without a warrant, enter or search a premises without a warrant, and ban the possession of firearms.
  o Any person arrested or taken into custody may be handed over to the officer in charge of the nearest police station along with a report detailing the circumstances that led to the arrest.

Arguments in Favour of AFSPA:

- It plays a significant role in addressing the persistent security threats in the regions where it's enforced.
- The legal enforcement of AFSPA helps security forces to effectively counter the presence of armed groups and insurgent activities that pose a continuous danger to public safety and stability.
- It provides legal authority to security forces to combat insurgency and terrorism effectively by providing necessary powers for security forces to conduct operations, make arrests, and maintain public order in areas designated as disturbed.
- It shields security personnel operating in disturbed areas from legal liability while they carry out their duties under challenging and often hazardous circumstances.
- It plays a major role in boosting the morale of armed forces personnel through legal protections provided by AFSPA which enhances their confidence and motivation to perform effectively in challenging environments.

Argument Against AFSPA:

- It undermines the autonomy of the states as Section 3 of AFSPA grants the central government the authority to designate any area as a Disturbed Area without requiring the consent of the respective state.
- It raises concerns about the excessive and disproportionate use of force by security forces as Section 4 of AFSPA grants specific powers to authorized officers, including the use of firearms against individuals, which can potentially result in fatalities.

- It may violate individuals' civil liberties, as it bypasses standard legal procedures and safeguards against arbitrary detention and searches as Section 4 grants officers the power to arrest without a warrant and to seize and search premises without any warrant.
- Section 7 of AFSPA requires obtaining prior executive approval from central or state authorities for the prosecution of a member of the security forces. It creates a lack of accountability and transparency in cases of alleged human rights violations by security forces, as it allows them to operate with impunity.

Hegde Commission appointed by the Supreme Court found evidence of abuse. It found that all seven deaths in the six cases it investigated were extrajudicial executions and highlighted widespread abuse of AFSPA by security forces in Manipur.

Committees related to AFSPA:

- Justice B P Jeevan Reddy Committee (2004) recommends the incorporation of AFSPA in the Unlawful Activities (Prevention) Act of 1967.
- 2nd ARC 5th Report (2007) recommended the repeal of AFSPA since it would remove the feeling of discrimination and alienation.
- Santosh Hegde Committee (2013) recommended to properly reviewing the act every six months to see if its implementation is necessary.
- Justice Verma Committee (2013) recommended that any sexual violence against women by members of the armed forces must be brought within the purview of ordinary criminal law.

CONSUMERISM AND ETHICS

GS III – Consequences of Ethics in Human Actions

Context: In the last few decades, it has been noticed that the tendency of consumerism has been rising among people.

Consumerism:

- It is the idea that increasing the consumption of goods and services purchased in the market is always a desirable goal and that a person's well-being and happiness depend fundamentally on obtaining consumer goods and material possessions.
- It is based on the assumption, that possession of material wealth and things make a person happy and satisfied.
- It is mainly driven by lifestyle obsession instead of necessity. For instance, replacing a perfectly working mobile phone or laptop because a new model is launched.

Ethical Values Undermined by Consumerism:

- Both consumers and brands can resort to means that are not ethically correct to achieve the end. For example, the advertisements of products that claim to change the user's life.
- In the race to buy products and create collections, a person loses his awareness of one's thoughts and feelings which prevents them from making the right decisions. For example, many people shop for things just for their social media uploads.
- Societies driven by consumerism have huge disparities; some people live lavish lives while other's basic needs are not fulfilled which undermines the effort of social justice.
- Consumerism goes against most religions/societies' propagation that satisfaction will bring inner solace. It also includes the loss of traditional cultures and values; and the decline of altruism and community.
- It ultimately creates a selfish society in which people just think about their needs. For example, many people spend lakhs on clothes, and this amount can be utilized to support the education of poor children.

Ways of Striking a Balance Between Needs and Desires:

- Promoting ethical consumerism helps in purchasing products and services in a way that minimizes negative impact on social and/or environmental consequences.

- It is the best way to include moral and consumer education as a part of the curriculum at all levels of education.
- Corporations should adopt 'Stakeholder Capitalism' instead of 'Shareholder Capitalism'. Stakeholder capitalism proposes that corporations should serve the interests of all their stakeholders, and not just shareholders.
- Regulating authorities like the Advertising Standards Council of India (ASCI) should keep an eye on the advertisements that try to manipulate consumers.
- Celebrities/influencers should become role models for others by practicing responsible consumption and making sustainable choices.
- It can be controlled by imposing taxes on luxury goods and giving incentives for sustainable practices.

Volunteers of civil society organizations can carry out awareness to combat consumerism and promote sustainable living.

Factors that drive Consumerism:

- Advertising is a vast industry dedicated to the power of persuasion.
- Credit cards, store cards, payday loans, and 'buy now, pay later' schemes all bring forward our expenditure.
- Obsolescence stems from the realization by capitalism that the life cycles of products could be planned and managed.
- A tendency to have more than one.

FLORICULTURE

GS III – Agriculture

Context: Lucknow-based National Botanical Research Institute pitches in with scientific inputs to make floriculture sustainable in the Jujumara region of Sambalpur.

Floriculture:

- It involves the cultivation of flowering and ornamental plants for various purposes, such as direct sales, cosmetics, perfume, and pharmaceutical industries.
- It includes seed and plant material production through techniques like cutting, grafting, and budding.
- In India, floriculture is a **sunrise industry** and accorded **100% export-oriented status.**
- **Agricultural and Processed Food Products Export Development Authority (APEDA)** is responsible for the export promotion and development of floriculture in India.
- According to the 2nd Advance Estimate, about 297 thousand hectares of the area were under Cultivation for floriculture in 2023-24.
- Karnataka, Tamil Nadu, Madhya Pradesh, West Bengal, Chhattisgarh, Andhra Pradesh, Gujarat, Uttar Pradesh, Assam, and Maharashtra have emerged as major floriculture centres.

Factors contributing to the growth of floriculture in India:

- India is situated in the tropical and subtropical zone which provides for varied agro-climatic conditions that help in growing any kind of flowers in one or other part of the country, year-round.
- India is geographically located between two major export markets viz, Europe and Asia-Pacific providing an ample amount of opportunities for the floriculture industry.
- In India, there is a high availability of semi-skilled manpower at lower rates.
- Infrastructure development including roads for floriculture units, electric supply, water, cold storage at airports, and training of customs officials for faster and careful clearance and export-friendly policies of the government has promoted floriculture on a large scale.
- Flowers are deeply intertwined with Indian culture either festivals or ceremonies from birth to death, flowers occupy a central position which helps in boosting demand for flowers.

Challenges faced by Floriculture Industry in India:

- It suffers from a low knowledge base as floriculture is relatively a new concept where scientific and commercial floriculture is not well-understood, leading to inefficiencies in production and marketing.
- A large number of floriculture farmers have small land holdings, limiting their ability to invest in large-scale, modern cultivation practices.
- The marketing system is fragmented and lacks organized platforms like auction yards and controlled condition storage facilities, making it difficult for farmers to get fair prices.
- There is a lack of scientific post-harvest management and cold storage leading to quality degradation, especially in flowers grown for domestic markets.
- Flower production in open fields exposes crops to various biotic and abiotic stresses, making the produce less suitable for high-quality export markets.
- Export barriers like high air freight rates, and low cargo capacity, reduce the global competitiveness of Indian floriculture products.

Government Initiatives to Promote Floriculture:

- APEDA (Agricultural and Processed Food Products Export Development Authority) supports floriculture exporters with cold storage, freight subsidies, and infrastructure development.
- Council of Scientific & Industrial Research (CSIR) Floriculture Mission is a nationwide mission being implemented in 22 states to enhance the income of farmers and develop entrepreneurship through high-value floriculture utilizing CSIR technologies.
- 100% foreign direct investment (FDI) under the automatic route is allowed in the Floriculture sector making the investment process much easier for the foreign investor.

Integrated Development of Commercial Floriculture Scheme provides access to quality planting material, promotes off-season cultivation, and enhances post-harvest management.

Methods/Ways in which Floriculture is Transforming Jujumara's Economy:

- By helping to boost farmers' income as profits from flower cultivation can exceed Rs 1 lakh per acre, compared to around Rs 40,000 per acre from paddy farming.
- Farmers are transitioning from traditional paddy farming to flower cultivation, reducing dependence on a single crop and enhancing income stability.
- Market adaptation through platforms like WhatsApp groups, farmers receive updates on market trends, enabling them to make informed decisions about production and sales.

The integration of beekeeping alongside floriculture promotes biodiversity and provides an additional income stream for farmers.

GENE-DRIVE TECHNOLOGY

GS III – Biotechnology

Context: Genetically modified mosquitoes have been used in outdoor but controlled conditions in India, Brazil, and Panama which showed promising drops in mosquito populations, around 90% during the trials.

Gene-Drive Technology (GDT):

- GDT is a type of genetic engineering technique that modifies genes to alter the typical rules of Mendelian inheritance.
- Mendelian inheritance refers to certain patterns of how traits are passed from parents to offspring.
- A gene drive consists of three key components:
  o The gene to be spread;
  o The Cas9 enzyme to cut DNA; and
  o CRISPR is a programmable DNA sequence that determines where the enzyme should cut.

Outcomes:

- The genetic material that encodes for these three elements gets inserted into an animal's DNA, in place of the naturally occurring gene.
- It increases the likelihood that a particular suite of genes will be passed onto the next generation, allowing the genes to rapidly spread through a population and override natural selection.

Applications of GDT:

- GDT can be used to exterminate insects such as mosquitoes that can spread malaria, dengue, and the Zika virus.
- Gene drives can also be used to control invasive species such as rodents.

Concerns/Issues related to GDT:

- Long-term disruption in an ecosystem like a disturbance in the balance of food-web, potentially leading to unintended ecological consequences.
- Gene drive could get out of control and spread uncontrollably across international borders.
- It could potentially be used for bioterrorism or other malicious purposes.

Deciding which species to target and the irreversible nature of GDT raises complex ethical and moral issues.

CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats):

- They are repetitive DNA sequences developed as a method of repurposing bacterial immune systems to make breaks in DNA at precise locations.

Cas9:

It is an enzyme that acts as a molecular scissor that cuts the DNA at a specific location in the genome.

GEOENGINEERING

GS III – Environmental Conservation

Context: A new study has argued that spraying millions of tonnes of diamond dust in the Earth's upper atmosphere every year could help cool down the Earth and combat global warming. It might appear to be a rather outlandish claim, but this is not the first time such a solution has been proposed.

Geoengineering Technique:

- It refers to any large-scale attempt to alter the Earth's natural climate system to counter the adverse impacts of global warming.
- These interventions generally fall into two categories - **Carbon Dioxide Removal (CDR) and Solar Radiation Management (SRM).**

Carbon Dioxide Removal (CDR): These techniques aim to remove excess carbon dioxide from the atmosphere, thereby reducing the greenhouse effect. **Various CDR Techniques are:**

- **Afforestation and Reforestation:** Planting trees or restoring forests to increase the natural absorption of carbon dioxide by plants.
- **Biochar:** Converting **biomass** into **charcoal** and burying it in the soil to enhance its carbon storage capacity.
- **Bioenergy with Carbon Capture and Storage (BECCS):** Growing crops for **biofuel production** and capturing the carbon dioxide emitted during combustion and storing it underground or in the ocean.
- **Ocean Fertilization:** Adding nutrients such as iron or **nitrogen to the ocean to stimulate the growth of phytoplankton** that consume carbon dioxide and transfer it to the deep ocean.

Solar Radiation Management (SRM): These techniques aim to reduce the amount of solar energy that reaches the Earth's surface, thereby cooling the planet. **Various SRM Techniques are:**

- **Stratospheric Aerosol Intervention (SAI):** It would introduce aerosols into the stratosphere to create a cooling effect via global dimming and increased **albedo,** which occurs naturally from volcanic winter.
- **Space-Based Reflectors (SBR):** Placing mirrors or other devices in orbit around the Earth to deflect or block some of the incoming sunlight.
- **Marine Cloud Brightening (MCB):** Spraying seawater droplets or other substances into low-level clouds over the ocean to increase their reflectivity and albedo.
- **Cirrus Cloud Thinning (CCT):** Reducing the formation or persistence of high-level cirrus clouds that trap heat by cloud seeding them with ice crystals or other agents.

Surface Albedo Modification (SAM): Changing the reflectivity of the land or sea surface by painting roofs white, covering deserts with reflective sheets, or increasing the ice cover.

News:

- The new study published in Geophysical Research Letters found that diamonds would be more effective in doing the job than any other material previously considered.
- The bare minimum for achieving the target requires the world to cut its emissions by at least 43 percent from the 2019 levels, by 2030.
- Ongoing and promised actions, however, will likely result in a reduction of just two percent by 2030. As a result, scientists have been looking for radical technology solutions that achieve dramatic results within a short period, even if only temporarily. Geoengineering offers such options.

GIG WORKERS

GS III – Employment

Context: The Union Ministry of Labour and Employment is drafting a national law to incorporate gig workers into social security schemes, offering benefits such as health insurance and retirement savings.

Gig Workers:

- The new Labour Codes of 2019 defines a gig worker as "A person who performs work or participates in a work arrangement and earns from such activities outside of a traditional employer-employee relationship". It includes freelancers, workers who are employed on a contractual and project-based basis, and short-term work.
- As per NITI Aayog, Gig workers are those engaged in livelihoods outside the traditional employer-employee arrangement. It classifies gig workers into platform and non-platform-based workers.
o Platform workers are those whose work is based on online software apps or digital platforms.
o Non-platform gig workers are generally casual wage workers in the conventional sectors, working part-time or full-time.

Gig Workers in India:

- NITI Aayog estimates that the number of gig workers could expand to 23.5 million by 2029–30.
- The gig economy is expected to expand at a Compound Annual Growth Rate (CAGR) of 12%, reaching 23-25 million workers by 2030. This would mean that gig workers would make up 4.1% of India's total workforce by that time.

Factors behind the rapid growth of the gig economy in India:

- Many traditional jobs were disrupted during the lockdowns imposed due to the COVID-19 pandemic which pushed people to seek alternative employment opportunities.
- India's rapid digitalization increased access to smartphones and affordable internet, and the rise of platforms like Zomato, Uber, Swiggy, and Ola have provided gig workers with more opportunities.
- The current generation workforce prefers flexible work arrangements over traditional full-time employment which in turn promotes the gig economy as it offers autonomy to workers, allowing them to manage their

schedules and choose tasks or projects based on their interests or needs.

- Many people, especially those in lower-income groups, are facing financial crunch due to the increasing cost of living and inflation. So they are turning to gig work to supplement their earnings.
- Companies, particularly startups and small businesses, are leveraging gig workers instead of hiring full-time employees to save costs.

Issues/Challenges Faced by Gig Workers in India:

Top reasons for working in the gig economy
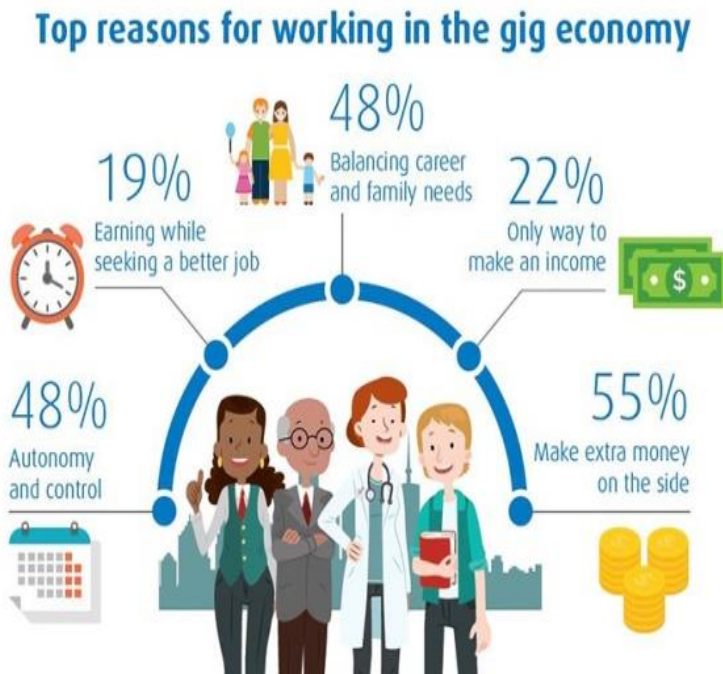
- Gig workers are classified as informal workers, which places them outside the traditional employer-employee relationship.
- Employment relations in the gig economy are camouflaged, with gig workers being labelled as independent contractors.
- This categorization leads to gig workers missing out on institutional social security benefits enjoyed by formal workers.
- Institutional protection such as minimum wage protection is missing for gig workers. Occupational safety and health regulations do not apply to gig workers.
- Gig workers can be easily disconnected from the platform, leading to a loss of income and livelihood. Moreover, their earnings are often unpredictable and fluctuate based on demand, making it difficult to plan financially.
- Gig workers are not included under the Industrial Relations Code 2020 and are not covered under the dispute resolution mechanism.
- Due to a lack of legal protection and the power imbalance between workers and platforms gig workers face exploitation.
- Gig workers are typically isolated and cannot unionize or collectively bargain for better working conditions and remuneration which makes it difficult for them to advocate for their rights or negotiate better terms with the platforms they work for.

Government Initiatives to Protect Gig Workers in India:

- The Code on Social Security of 2020 recognizes gig workers as a separate category and envisages the extension of social security benefits to them.
- e-Shram Portal is a national database for unorganized sector workers, including gig and platform workers.
- Pradhan Mantri Shram Yogi Maandhan (PMSYM) is a pension scheme for workers in the unorganized sector, including gig workers.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is a life insurance scheme for unorganized workers.

News:

- The Union Ministry of Labour and Employment is drafting a national law to incorporate gig workers into social security schemes, offering benefits such as health insurance and retirement savings.
- The government is expected to require aggregators to contribute 1%-2% of their revenue to establish a social security fund, which would provide health insurance and other benefits.
- The government is also revising the definitions of gig and migrant workers to make them more inclusive and reflective of current employment realities.
- The proposed legislation will establish a welfare board model, creating a fund for the social security of gig workers. It mandates the registration of all gig workers and requires aggregators to give a 14-day notice,

with valid reasons before termination, while ensuring transparency in automated systems.
Dispute resolution mechanisms will also be introduced to protect gig workers' rights.

GREENHUSHING

GS III – Environmental Pollution

Context: Australia is home to a growing number of carbon-neutral certified firms, but many of them don't advertise their credentials. These firms measure, reduce, and offset their carbon emissions but often decide to stay silent about their efforts, an emerging global trend called "greenhushing".

Greenwashing:

- It is a deceptive practice where companies or even governments exaggerate their actions and their impact on mitigating climate change, often providing misleading information or making unverifiable claims.

Greenhushing:

- It is a type of greenwashing that occurs when firms underreport or strategically withhold information about their environmental goals and achievements.
- Greenhushing firms don't advertise their green credentials or deliberately remain silent about their future commitments to environmental sustainability.

Reasons for Greenhushing:

- In the US, public firms could face lawsuits if perceived as prioritizing sustainability over shareholder profits. This legal risk discourages companies from openly discussing their environmental initiatives.
- In some conservative regions of the US, there has been a backlash against ESG (Environmental, Social, and Governance) initiatives, causing firms to retreat from promoting their sustainability goals to avoid political and regulatory scrutiny.
- It is perceived by many consumers that green products are of lower quality or have higher prices which discourages companies from marketing their environmental contributions due to potential brand harm.
- Firms vocal about sustainability may attract unwanted attention and be held to higher standards, pushing them to remain silent to avoid future commitments or pressures to achieve more ambitious goals.
- Companies may opt not to promote their environmental efforts in industries like tourism fearing they might make customers uncomfortable by reminding them of issues like climate change or resource depletion.
- Concerns about greenwashing accusations, where companies are criticized for falsely claiming to be more eco-friendly than they are, also encourage firms to hide their environmental achievements from public view.

Issues/Concerns with Greenhushing:

- According to a report by climate consultancy South Pole, 58% of companies surveyed are reducing their climate communication due to increased regulation and scrutiny.
- It becomes difficult to assess the progress companies are making in reducing carbon emissions as many companies do not openly communicate their sustainability efforts which in turn reduces the ability to track and verify climate action progress.
- It may lead to delays in the adoption of sustainable practices as companies withhold information about their environmental efforts. It overall weakens the global effort to combat climate change.
- One of the main challenges is fear of backlash and retaliation from regions or industries that oppose sustainability efforts deterring other businesses and companies from adopting sustainable practices.
- Customers may tend to buy less sustainable products, inadvertently slowing down the demand for eco-friendly alternatives as the companies remain silent about their sustainability achievements.

Types of Greenwashing:

- Greenhushing is when companies underreport or hide sustainable credentials to avoid scrutiny.
- Greenrinsing is when a company regularly changes its ESG (Environmental, Social, Governance) targets before achieving them.
- Greenlabeling involves the labeling of an essentially unsustainable product as green or sustainable.
- Greenlighting involves highlighting a particularly green feature of a business's products or activities to draw attention away from its environmentally harmful actions.
- Greenshifting is when companies reduce the climate crisis to consumer behavior and shift responsibility to individuals.
  Greencrowding is when a company hides within a group and is slow to adopt sustainability policies.

ILLEGAL IMMIGRATION IS A THREAT TO INTERNAL SECURITY

GS III – Internal Security

Context: Three Bangladeshi nationals have been apprehended in two days while trying to enter Indian territory by negotiating the border fence, the Border Security Force (BSF) said.

Illegal Immigration is a Threat to Internal Security:

- It is alleged that among the illegal migrants there are also militants especially groups such as NSCN/KUFLA, who enter India to carry out terrorist activities.
- In recent decades, trafficking of women and human smuggling has become quite rampant across borders.
- The Commission on Integration and Cohesion found that tension usually exists with the presence of high levels of migration combined with other forms of social exclusion like poverty, poor housing, etc.
- Immigration has increased pressure on the part of the government, as the government has to increase the expenditure on education and health facilities for the immigrants.
- Most illegal immigrants have their names enlisted in the voting list illegally, thereby claiming themselves as citizens of the state.
- The influx of immigrants created a crisis of identity among the indigenous people of the region.
- Large areas of forestland were encroached upon by the immigrants for settlement and cultivation. This creates conflict in resource utilization with the local communities.

Laws in India to tackle Illegal Migration:

- Under the Foreigners Act of 1946, the central government can deport illegal foreign nationals.
- Under the Passport (Entry into India) Act of 1920, the state governments have been entrusted to remove an illegal foreigner by force.
- The Citizenship Act of 1955 provides for the acquisition and determination of Indian citizenship.

Way Forward:

- A considerable portion of the problem of illegal immigration lies in the fact that we have no such effective refugee policy. The central government should frame a holistic refugee policy.
- India has to make a diplomatic effort to get neighboring countries to cooperate as illegal migration cannot be solved unless the origin country cooperates.
- The government should introduce identity cards for the borderland people who frequently used to cross borders for different reasons.
- There is a vast area of the border that is not protected by fencing. The central government should complete the border fencing.
- Regional forums like BIMSTEC can be used to discuss issues like illegal migration from neighboring countries and garner support and coordination from the members.
- Border guards like BSF and ITBP should be strengthened and a second line of defence can be created by the State government through the state police force.

MINIMUM SUPPORT PRICE (MSP)

GS III – Issues related to Minimum Support Price

Context: The Union government announced minimum support prices (MSP) for six rabi crops for the 2025-26 rabi marketing season (RMS), with wheat — the country's second-largest crop — seeing an increase of `150 per quintal, or 6.59 percent, over its current MSP

Minimum Support Price (MSP):

- It is an agricultural product price set by the Government to purchase directly from the farmer.
- The reason behind the idea of MSP is to counter the price volatility of agricultural commodities due to factors like variation in their supply, lack of market integration, and information asymmetry.

Significance/Advantages of MSP:

- It ensures adequate food grain production in the country and hence, maintains food security.
- It protects the farmers from any sharp fluctuations in price. MSP is announced before the sowing season so that the farmers can make an informed decision.
- It increases the farmers' income and when they have more disposable income in hand, they can invest in new technology.
- It acts as a surety for farmers that their produce will get a fair amount and hence encourages them.

Constraints/Issues in MSP:

- Even though it is announced every year, it does not increase in proportion to the increase in the cost of production.
- Many farmers do not have adequate knowledge about the Minimum Support Price so they end up being exploited by middlemen.
- Not all farmers have equal access to the benefits given by the government through MSP as several regions in the country do not have effective implementation of the scheme.
- Government interference in the market is seen as killing of the competition which disturbs the working of open markets.
- It has been criticized by various countries at the WTO on the grounds of being highly trade-distorting by its method of calculation.
- MSP has raised the maintenance cost of procuring food grains by the government. Rising transportation and storage costs of the FCI are other contributing factors to this increase. This rising cost affects the investment in other sectors like agri-infrastructure.

Way forward:

- There is a need to increase awareness among the farmers about the information disseminated at the lowest level so that the knowledge would increase the bargaining power of the farmers.
- The delay in payment of MSP needs to be corrected and immediate payment should be ensured for the sustainability of farming.
- Efforts should be made to announce MSP well in advance of the sowing season to enable the farmers to plan their cropping.
- The farmers should receive their MSP rate in the case on the spot the same day so that they will be encouraged to improve their production and create a more marketable surplus

RAIL SAFETY

GS III – Infrastructure

Context: In yet another signal failure accident, a speeding express train rammed into a stationary goods train at Kavaraipettai near Gummidipoondi in the Chennai Division of Southern Railway.

Indian Railways:

- It is the largest rail network in Asia and the world's second-largest railway system under a single management.
- The first railway line in India, between Mumbai and Thane, was opened to the public on April 16, 1853.

Importance/Significance of Rail Safety:

- Indian Railways plays a major role in the country's transportation infrastructure and plays a vital role in the economy. So, any disruption can lead to economic setbacks, affecting industries, businesses, and overall development.
- India is the fourth-largest rail network in the world at 68,043 km and almost 3.5 billion people travel on this network annually. With a massive population and millions of people relying on the railways for their daily commute, ensuring the safety of Indian Railways becomes crucial.
- Railways are considered the lifeline for a bulk of India's poorer economic migrants whose ability to move and improve their economic prospects has a positive impact on their home states through remittances.
- Rail safety is essential to maintain the public's trust and confidence in the system.
- Indian Railways is a lifeline for connectivity, ensuring people from various regions can travel and access opportunities for economic growth.

**Issues/Challenges related to Rail Safety:**

- **Congestion on railway tracks due to the** same track for passenger trains and goods trains.
- **Technical glitches** and **system failures** include poor signaling systems.
- The railway infrastructure, which includes tracks, bridges, overhead wires, and rolling stock, is often defective due to poor maintenance, aging, vandalism, sabotage, or natural disasters.
- Human error, such as incorrect setting of points, mistakes in shunting operations, and overspeeding, has been identified as a significant factor contributing to train accidents.
- There is a lack of **sufficient funds** for switching over to Linke Hofmann Busch coaches, etc.

Government measures towards Rail Safety:

- **KAVACH is a**n a**utomatic train protection system that** prevents trains from passing the red signal along with activating an automatic train braking system.
- **Rashtriya Rail Sanraksha Kosh (RRSK)** aims to replace/renew/upgrade critical safety assets.
- The Comptroller and Auditor General of India (CAG) periodically conducts audits of Indian Railways, identifying shortcomings and making recommendations to address safety concerns.
- **An Electrical/Electronic Interlocking System is a** computer-based system that prevents more than one train from running on the same track.
- Project Mission Raftar is an Indian Railway project that aims to double the average speed of freight trains and increase passenger train speed by 50%. While the focus is on improving speed, it indirectly contributes to safety by reducing travel time and potentially minimizing the risks associated with prolonged journeys.
- Mission Zero Accident comprises two sub-missions:
- Elimination of unmanned level crossings on Broad Gauge in the next 3-4 years. This will reduce deaths due to accidents and will improve the throughput of the network.

TCAS (Train Collision Avoidance System) is a new technology developed to equip 100% of the High-Density Network with TCAS in the next 3 years. It will prevent head-on collisions and also improve throughput with increasing average sectional speeds.

Status of Railway Accidents:

Consequential Train Accidents
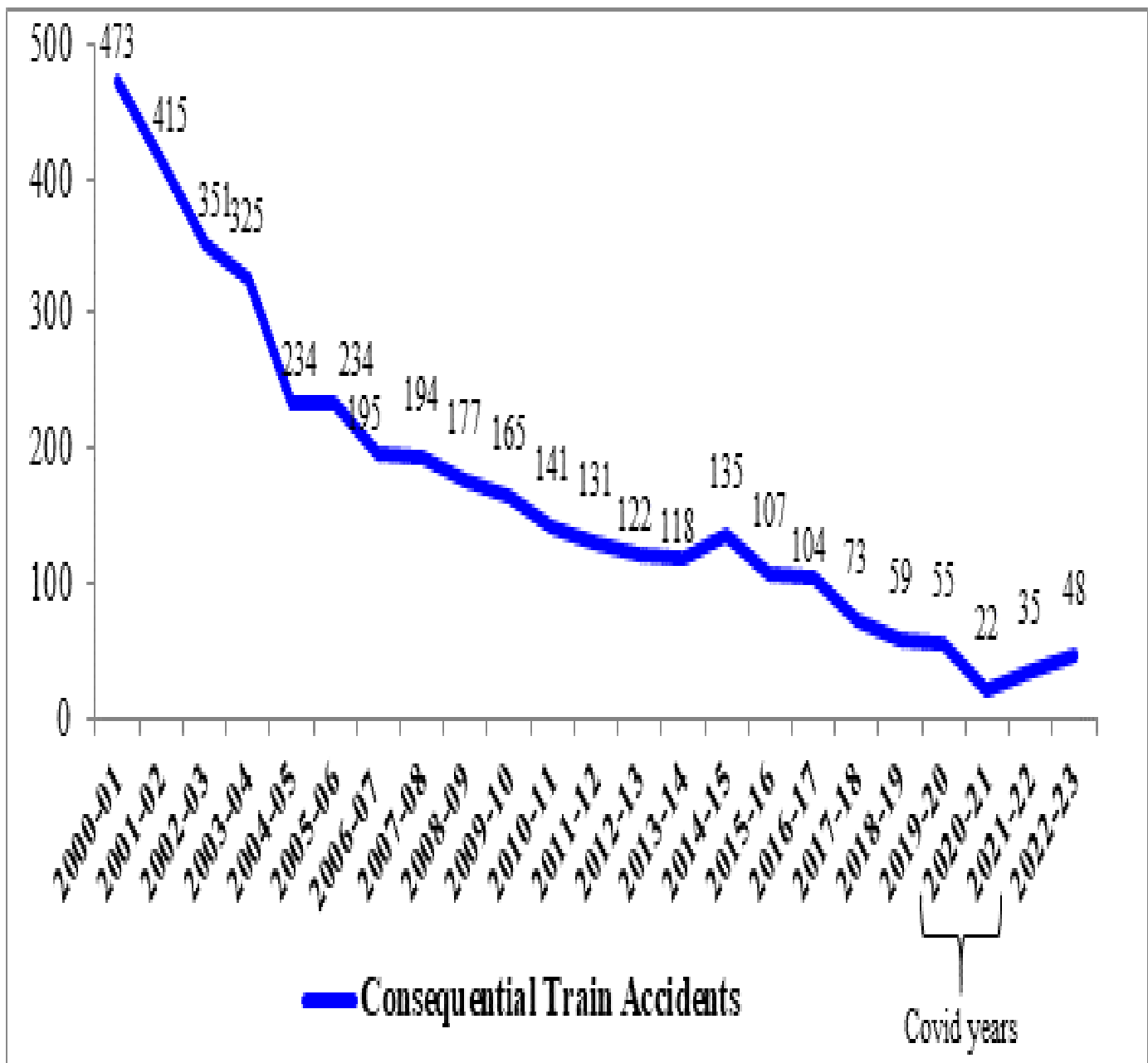
- According to the National Crime Records Bureau, an average of 23,000 people died every year between 2010 and 2021 in railway accidents.
- A steep decline in the number of **consequential train accidents** has been witnessed from 473 in 2000-01 to 48 in 2022-23.
- The six-year period between 2015-16 to 2021-22 saw 449 train accidents (excluding train accidents from Konkan Railways).

Committees related to Rail Safety:

- **Justice Khanna or Railway Safety Review Committee of 1998 l**ed to the creation of a safety department in Indian Railways with officers and staff drawn from all disciplines.
- **High Level Safety Review Committee under the chairmanship of Dr. Anil Kakodkar of 2012 r**ecommended switching over from the Integral Coach Factory (ICF) design coaches to the much safer LHB design coaches.

Deadliest train accidents in India

Source: PTI | The Hindu Graphics

Purushottam Express

Deaths: 305

Aug. 20, 1995: Crashed into the stationary Kalindi Express near Firozabad in Uttar Pradesh

Brahmaputra Mail

Deaths: 285

Aug. 2, 1999: Crashed into the stationary Avadh Assam Express at Gaisal station

Jammu Tawi-Sealdah Express

Deaths: 212

Nov. 26, 1998: Collided with three derailed coaches of Frontier Golden Temple Mail in Punjab's Khanna

Jnaneswari Express

Deaths: 148

May 28, 2010: The Mumbai-bound train derailed near Jhargram in West Bengal and hit by an incoming goods train

Indore-Rajendra Nagar Express

Deaths: 152

Nov., 2016: 14 coaches derailed at Pukhrayan, approximately 60 km from Kanpur in Uttar Pradesh

Pamban-Dhanushkodi train

Deaths: 126

Dec. 23, 1964: Washed away by the Rameswaram cyclone

Howrah Rajdhani Express

Deaths: 140

Sep. 9, 2002: Derailed over a bridge on the Dhave river in Bihar's Rafiganj, blamed on terrorist sabotage

SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI)

GS III – Indian Economy

Context: Markets regulator Securities and Exchange Board of India (SEBI) has released a set of six measures to strengthen the equity index derivatives — also known as equity futures & options (F&O) — framework.

Securities and Exchange Board of India (SEBI):

- It is a statutory body established on April 12, 1992, as per the provisions of the Securities and Exchange

Board of India Act of 1992.
- Its basic function is to protect the interests of investors in securities and to promote and regulate the securities market.
- It is a quasi-legislative and quasi-judicial body that can draft regulations, conduct inquiries, pass rulings, and impose penalties.
- It functions to fulfill the requirements of three categories:
  - It provides issuers with a marketplace in which they can increase their finance.
  - It provides the safety and supply of precise and accurate information to investors.
  - **It enables** a competitive professional market for intermediaries.
- Its headquarters is situated in Mumbai and its regional offices are located in Ahmedabad, Kolkata, Chennai, and Delhi.
- Its Board consists of a chairman and several other full-time and part-time members.
- Securities Appellate Tribunal (SAT) has been constituted to protect the interest of entities that feel aggrieved by SEBI's decision. It consists of a presiding officer and two other members. It has the same powers as vested in a civil court. Further, if any person feels aggrieved by SAT's decision or order can appeal to the Supreme Court

Significance/Importance of SEBI:

- It is in charge of regulating the securities market under the SEBI Act of 1992 which keeps investors safe and keeps the market honest.
- It ensures fair price discovery and encourages openness by requiring corporations to provide pertinent information, which also helps to prevent insider trading.
- It boosts investor confidence through SEBI's rules and supervision in the securities market, which leads to more investments and growth.
- It prevents fraudulent activity through enforcement measures against dishonest behavior, like Ponzi schemes, to safeguard investors and uphold market integrity.
- It helps businesses get money as it allows businesses to get money through public offerings and other means, which they can then use to grow their businesses.
- It enhances corporate governance by increasing accountability and transparency while protecting the rights of minority shareholders.
- It encourages innovation and growth by making it easier for new goods and markets to be created.

Issues/Challenges faced by SEBI:

- There is a crunch in resources which causes delays in regulatory and enforcement proceedings.
- It faces issues with legal delays that slow down its enforcement work.
- It faces difficulty in cooperating with other regulators, which results in regulatory gaps.
- Insider trading is still a problem in India which distorts the market.
- Cybersecurity threats pose a serious challenge to SEBI and necessitate ongoing monitoring.
- Its regulatory framework has difficulties due to regulatory holes in sectors like over-the-counter (OTC) derivatives.
- Lack of awareness and understanding by customers still pose a challenge to SEBI.

New Rules by SEBI:

- The minimum contract size at the time of its introduction in the market has been recalibrated to Rs 15 lakh from the existing stipulation of Rs 5-10 lakh. It can curb speculation by small traders who have been hyperactive in the F&O segment.
- SEBI has mandated the collection of options premium upfront from options buyers by the trading member (TM) or the clearing member (CM). The new rule will be applicable from February 1, 2025. This is primarily to ensure prudent risk management at the investor level by denying undue intra-day leverage to the end client and discouraging the practice of allowing positions beyond the collateral at the end client level.
- SEBI has said that expiry-day trading in index options at a time when option premiums are low is largely speculative. Stock exchanges offer short-tenure options contracts on indices which expire on every day of

- the week, leading to hyperactive trading in index options on expiry day. It will limit the avenues for uncovered/ naked options selling.
- Expiry day can see significant 'basis' risk, where the value of a contract expiring on the day can move very differently from the value of similar contracts expiring in the future. This will force players to do rollovers early and not wait until expiry day, easing expiry day 'basis' speculation.
- The regulator has increased the 'tail risk' coverage by levying an additional 'Extreme Loss Margin' (ELM) of 2% for short options contracts. This will ensure that market participants have more skin in the game, particularly on days when volatility spikes. It acts as a buffer against abrupt market moves driven by leveraged short options, protecting both investors and the broader market ecosystem from significant downside risk.

Note:

- ELM is the margin that exchanges charge over and above the normal margin requirement.
- Tail risk is the chance of a loss due to a rare event.

TEXTILE INDUSTRY IN INDIA

GS III – Industry

Context: Recently, a marginal increase in exports was experienced, driven by textiles, engineering, and electronic goods that compensated for lower petroleum exports, alongside a sharp decline in gold imports, helped India's goods trade deficit ease to a five-month low of $21 billion.

Status of the Textile Industry in India:

- The textiles and apparel industry contributes 2.3% to the country's GDP, 13% to industrial production, and 12% to exports.
- India is the world's second-largest producer of textiles and garments. It is also the sixth-largest exporter of textiles spanning apparel, home, and technical products, having a 4% share of the global trade in textiles and apparel.
- India is set to achieve $250 bn textiles production and $100 bn exports by 2030.

Significance of the Textile Industry:

- In 2019–20, the domestic textile and apparel market was worth $150.5 billion.
- India registered $ 41 bn in textile exports in CY 2021, with a CAGR (2.7) marginally higher than the global average.
- The second-largest employer in India, the textile and garment sector employs 100 million people in supporting sectors in addition to 45 million workers directly.
- Technical textiles are useful materials that are used in a variety of fields, such as automotive, civil engineering, healthcare, agriculture, personal protection, and construction.

Challenges faced by the Textile Industry:

- The unorganized sector and small and medium-sized businesses dominate India's textile industry, which is highly fragmented.
- Due to market competition and access issues, the Indian textile sector struggles to keep up with international standards. This is especially true of small-scale businesses.
- The GST (Goods and Service Tax) tax structure makes clothing expensive and uncompetitive in both domestic and foreign markets. The threat of growing labour and worker salaries is another.
- For the past six years, the sector's exports have stayed constant at a level of USD 40 billion.
- Bangladesh has at least 500 machines per factory on average, whereas the average size of the textile units in India is only 100, which is significantly smaller.

One of the concerns is that there is a lack of foreign investment in the textile business because of the issues mentioned above.

Government Initiatives to promote the growth of the Textile Industry:

- Pradhan Mantri Mega Integrated Textile Region and Apparel (PM MITRA) Parks Scheme aims to develop world-class infrastructure including plug and play facility with an outlay of Rs. 4445 crores for a period up to 2027-28.
- PLI Scheme for Textiles (2021-2030) is intended to promote the production of MMF Apparel & Fabrics and Technical Textiles products in India to enable the textile industry to achieve size and scale and become globally competitive.
- **The National Technical Textile Mission** seeks to enhance domestic technical textile consumption while establishing the nation as a global leader in the field. By 2024, it hopes to increase the size of the domestic market to between $40 billion and $50 billion USD.
- **Amended Technology Upgradation Fund Scheme (ATUFS)** to modernize the textile industry's technology, the government approved the "Amended Technology Upgradation Fund Scheme (ATUFS)" in 2015.
- 100% FDI (automatic route) is allowed in the textile and apparel sector in India.
- **The SAMARTH (Scheme for Capacity Building in the Textile Sector)** for capacity building in the textile sector to alleviate the scarcity of trained people.
- **The North East Region Textile Promotion Scheme (NERTPS)** is a program that supports all areas of the textile industry with infrastructure, capacity building, and marketing assistance.

Power-Tex India includes innovative power-loom textile research and development, new markets, branding, subsidies, and worker welfare programs.

UNIFIED PAYMENTS INTERFACE (UPI)

GS III – Digital Economy

Context: The National Payments Corporation of India (NPCI) has approved Paytm to onboard new UPI users, subject to adherence to all procedural guidelines and circulars, according to the company.

Unified Payments Interface (UPI):

- It was developed by the National Payments Corporation of India (NPCI) in 2016 and built over Immediate Payment Service (IMPS) infrastructure.
- It powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features e.g., transfer of funds, etc.
- It is designed to enable peer-to-peer inter-bank transfers through a single two-click factor authentication process.

Features of Unified Payments Interface (UPI):

- It simplifies transfers using the recipient's UPI ID, be it a mobile number, QR code, or Virtual Payment Address, eliminating account numbers.
- Earlier, only the deposited amount could be transacted through the UPI System. But now using the credit line on UPI enables pre-sanctioned credit lines from banks via UPI.

- It eliminates the need to enter bank details or other sensitive information each time a customer initiates a transaction.
- It enhances cross-operability, enabling 24/7 transactions.
- It uses technologies like the Immediate Payment Service (IMPS) and the Aadhaar-Enabled Payment System (AEPS) to ensure that payments between accounts go smoothly.
- The users can both send and receive money offline through any compatible device that supports Near Field Communication (NFC) using UPI Lite X.
- UPI Tap and Pay allows NFC-enabled QR codes at merchants to complete payments, with a single tap without entering the PIN.

Concerns/Issues/Challenges associated with UPI:

- Expanding UPI to accommodate a global user base will require adhering to data protection, financial laws, and regulations of different countries posing regulatory and compliance challenges.
- The recent Parliamentary panel's report, titled 'Digital Payment and Online Security Measures for Data Protection' highlighted that foreign entities like PhonePe and Google Pay dominate the Indian fintech sector. For example, the market share of PhonePe is 46.91% and Google Pay is 36.39% in terms of the transaction volume in October-November 2023, whereas for BHIM UPI it is 0.22%.
- UPI faces various threats by cybercriminals who may exploit vulnerabilities in the system or use social engineering techniques to gain access to sensitive information leading to financial losses.
- UPI poses a significant challenge for cross-border transactions that includes managing currency conversion and exchange rates while facilitating payments and loading money into the wallet.

UPI remains a barrier to its widespread adoption especially among individuals with a lack of familiarity with digital payments, leading to financial fraud.

National Payments Corporation of India (NPCI):

- It is an umbrella organization for operating retail payments and settlement systems in India.
- It has been incorporated as a not-for-profit company under provisions Section 8 of the Companies Act 2013.
- It is an initiative of RBI and the Indian Banks' Association (IBA) under provisions of the Payment and Settlement Systems Act of 2007.

It has launched payment products like RuPay card, IMPS, UPI, BHIM, BHIM Aadhaar, etc.

PAPER 4

CORRUPTION AND ETHICS

GS IV – Ethics and Human Interface Ethics in Public Administration

Context: According to the 60th annual report of the Central Vigilance Commission, as many as 74,203 corruption complaints were received against all categories of officers/employees in 2023, of which 66,373 were disposed of and 7,830 were pending.

Corruption:

- It refers to the act of misuse and abuse of power especially by those in the government for personal gains either pecuniary or a favour.
- It promotes illegality, unethicality, subjectivity, inequity, injustice, waste, inefficiency, and inconsistency in administrative conduct and behaviour.

Reasons for Corruption in India:

- Over Centralisation creates a greater distance between authority and accountability. The large number of functionaries between the citizens and final decision-makers makes accountability diffused and the temptation to abuse authority strong.
- Various laws have been made to curb the evil of corruption but their weak enforcement has acted as a hindrance in curbing corruption.
- In a society that worships power, it is easy for public officials to deviate from ethical conduct.
- Various scams like the telgi stamp scam took place due to the inexhaustible appetite for illegal illegitimate funds.

Ethical Implications of Corruption:

- It creates unequal access to resources and opportunities that leads to preferential treatment of those who can afford to pay bribes or offer favors, thus violating the ethical principle of justice, which demands fair treatment for all.
- It erodes public trust in institutions, which is essential for the proper functioning of society.
- Through corruption, individuals in positions of power prioritize their benefits over their duty to the public.
- It diminishes the quality of public services and harms the most vulnerable sections of society. For example, funds meant for development projects, healthcare, or education are siphoned off, depriving citizens of essential services.
- It can foster a culture where dishonesty, bribery, and manipulation are accepted as part of the system.
- The attitude of moral relativism weakens the ethical fabric of society, as individuals rationalize corrupt actions based on circumstances rather than adhering to absolute ethical standards.
- It can lead to a breakdown of legal systems, where laws are applied inconsistently.

Recommendations made by the Second Administrative Reforms Commission on Combating Corruption:

- Prevention of Corruption Act should be amended to provide for a special offence of collusive bribery, which is an offence whose outcome leads to a loss to the state, public or public interest.
- The prior sanction should not be necessary for prosecuting a public servant who has been trapped red-handed or in cases of possessing assets disproportionate to the known sources of income.
- The law should provide that public servants who cause loss to the state or citizens by their corrupt acts should be made liable to make good the loss caused and, in addition, be liable for damages.
- A legal provision needs to be introduced fixing a time limit for various stages of trial.

Whistleblowers exposing false claims, fraud, or corruption should be protected by ensuring confidentiality and anonymity and given protection from victimization in their careers.

Government Measures to Tackle Corruption:

- Prevention of Corruption Act of 1988 seeks to create a balance between the need to bring the corrupt to the books and protect honest officers. Its main thrust is to prohibit public servants from accepting or soliciting illegal gratification in the discharge of their official functions.

- The Prevention of Money Laundering Act of 2002 seeks to prevent money laundering including the laundering of property through corruption and provides for the confiscation of such property.

- Right to Information Act of 2005 makes disclosure of information a legal right of the public to promote transparency.

- Lokpal and Lokayukta Act of 2013 appoints an independent authority Lokpal at the center and Lokayukta at the states to probe into the complaints of wrongdoing by public servants.

- E-governance initiatives seek to reduce the manual interface between state and citizen thus preventing the incidences of bribery

Citizen Charters and Public Service Delivery and Grievance Redress Acts in many states make bureaucracy legally accountable for delivering quality service within stipulated time periods.

EMOTIONAL INTELLIGENCE (EI)

**GS IV –** Emotional Intelligence

Context: A recent study suggests that non-cognitive skills andEmotional Intelligence (EI) are as crucial in shaping a student's academic journey as brain intelligence.

Emotional Intelligence (EI):

- It was first coined in 1990 by researchers John Mayer and Peter Salovey but was later popularized by psychologist Daniel Goleman.
- It is defined as the ability to recognize, understand, manage, and influence your own emotions and the emotions of others.
- It helps in strengthening interpersonal skills, especially related to conflict management and communication, and holistic personality development by developing non-cognitive skills.
- It consists of identifying, perceiving, and regulating emotions through self-awareness, self-regulation, empathy, and social skills.

Significance/Importance of EI in Education:

- It enhances students' academic performance by managing stress, and setbacks that help them to persevere through challenges. Emotionally intelligent students exhibit improved focus and problem-solving abilities, enabling them to engage more effectively in the learning process.
- It helps to improve the overall mental well-being of students by having higher self-esteem, and lower levels of anxiety and depression.
- It helps students develop empathy and compassion towards peers which helps in creating a supportive and inclusive learning environment, where students feel valued and understood.
- It equips students with the skills necessary to communicate their thoughts, needs, and emotions effectively in in turn nurtures their relationship with people.
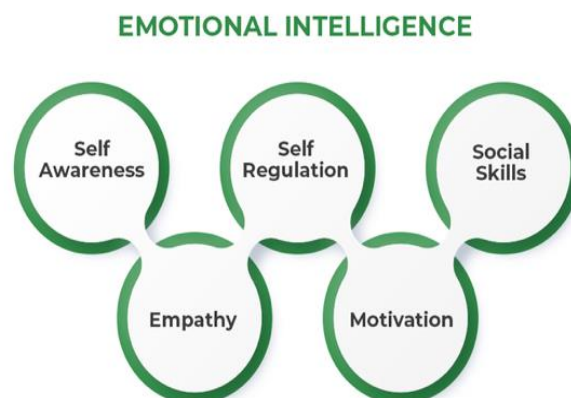
- It is highly valued by employers and organizations as it helps to manage emotions, collaborate effectively, and exhibit strong interpersonal skills which are critical in the workplace.
- It helps students to understand their strengths and weaknesses, possess self-confidence, and can motivate and inspire others.

Ways to Inculcate Emotional Intelligence:

- Social-emotional learning (SEL) programs are designed to teach students the skills they need to manage their emotions, set and achieve positive goals, feel and show empathy, establish and maintain positive relationships, and make responsible decisions.
- Collaborative learning through group projects, peer tutoring, and team-based activities encourages students to work together, share ideas, and develop social skills to aid in improving teamwork, communication, and conflict-resolution skills.
- Reflection and self-awareness practices like meditation, and journaling help students develop self-awareness and self-regulation.
- Empowering teachers and staff in recognizing and responding to emotional needs, creating emotionally safe classrooms, implementing restorative practices instead of punitive measures, etc.

Feedback system to measure the impact of steps taken through student surveys, and the impact on academic performance, and behavioural indicators like peer relationships, discipline referrals, etc.

ETHICAL CONCERNS WITH ONLINE GAMING

GS IV – Consequences of Ethics in Human Actions

Context: The Tamil Nadu government is deliberating a potential ban on online games from midnight to 5 AM in response to the rising concerns over addiction and financial stress caused by online gambling.

Online Gaming:

- It refers to mobile games or video games that are played over the internet through various devices.
- It involves collaborative gameplay in which player connections are facilitated through the internet.

Ethical Concerns with Online Gaming:

- Gaming involves skill-based activities, strategic thinking, and immersive experiences, while gambling entails wagering money on uncertain outcomes with chance playing a critical role. There are concerns with online gaming platforms promoting gambling.
- There are issues related to privacy concerns and data consent as online gaming platforms meticulously track player actions and interactions, profiling player behaviour while also providing personalized experiences.
- It brings into the picture the issue of fair play as real money game outcomes can be manipulated by malicious actors undermining the integrity of competitions and financial loss to users.
- There have been instances of disruptive behaviours like harassment, cheating, bullying, identity theft, and abuse which compromises user protection.
- It has raised concerns related to virtue ethics as in-game characters' traits displayed in action influence players' ethical decision-making in real life.

Regulatory Framework for Gaming in India:

- Entry No. 34 of List II (State List), gives the state legislators the exclusive power to make laws relating to Gaming, Betting, and Gambling.
- The Ministry of Electronics and Information Technology has established a central legal framework for online gaming via amendments to the Information Technology, Intermediary Guidelines and Digital Media Ethics Code Rules of 2021 that aims to prevent gambling, user harm, and money laundering, especially in case of access to "online real-money games" to the public.
- Consumer Protection Act of 2019 applies to online gaming in India and protects consumers' rights to safety, be informed, seek redressal, be heard, and choose.

- The Public Gambling Act of 1867 is the central law governing gambling in all its forms.
- The Digital Personal Data Protection (DPDP) Act of 2023 aims to safeguard individual privacy and regulate data processing.
- The Lotteries Regulation Act of 1998 considers the lottery as legal in India, provided that the lottery is organized by the state government and the place of draw is in that particular state.

Under the Foreign Exchange Management Act (FEMA) of 1999, remittance of the income generated from lottery winning, and racing/riding is prohibited.

ETHICAL LESSONS FROM THE LIFE OF RATAN TATA

GS IV – Lessons from the Lives and Teachings of Great Leaders

Context: Ratan Naval Tata, chairman emeritus of Tata Sons, a beacon of India Inc. who steered his group amid India's economic liberalization and, subsequently, guided its global expansion, breathed his last at Breach Candy Hospital in Mumbai.

Ratan Naval Tata:

- Tata was born on December 28, 1937, and joined the Tata group in 1961.
- After serving in various companies, he was appointed Director-in-Charge of the National Radio and Electronics Company in 1971.
- In 1981, he was named Chairman of Tata Industries, the group's other holding company, where he was responsible for transforming it into a group strategy think tank and a promoter of new ventures in high-technology businesses.
- Tata was the Chairman of the major Tata companies, including Tata Motors, Tata Steel, Tata Consultancy Services, Tata Power, Tata Global Beverages, Tata Chemicals, Indian Hotels, and Tata Teleservices and during his tenure, the group's revenues grew manifold.
- Tata served on the international advisory boards of Mitsubishi Corporation and JP Morgan Chase.
- He was the Chairman of the Tata Trusts which are amongst India's oldest, non-sectarian philanthropic organizations that work in several areas of community development.
- He was also the Chairman of the Council of Management of the Tata Institute of Fundamental Research and also served on the board of trustees of Cornell University and the University of Southern California.
- Tata received an undergraduate degree in architecture from Cornell University in 1962. He worked briefly with Jones and Emmons in Los Angeles before returning to India in late 1962. He completed the Advanced Management Program at Harvard Business School in 1975.
- The Government of India honoured Tata with its second-highest civilian award, the Padma Vibhushan, in
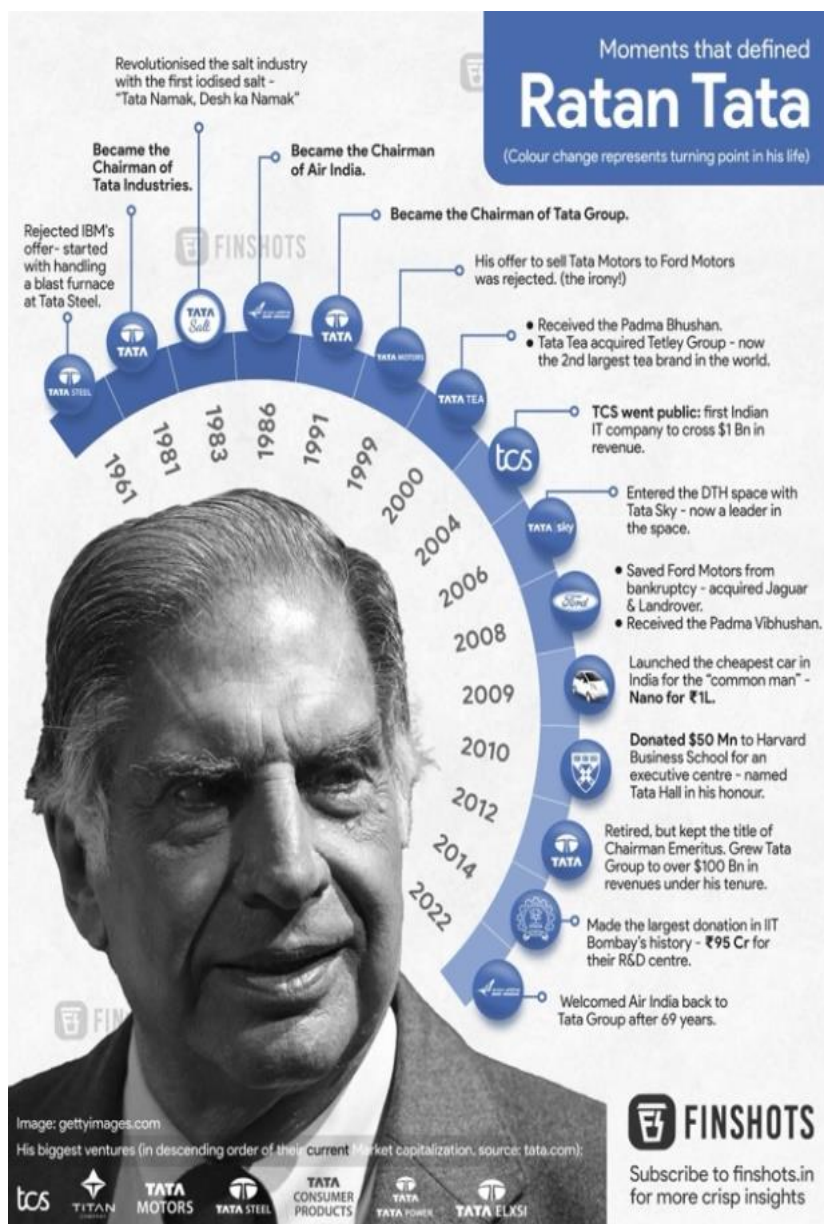
2008.

- He was appointed Knight Grand Cross of the Most Excellent Order of the British Empire and Rockefeller Foundation conferred him with the Lifetime Achievement Award.
- Tata was also an honorary fellow of the Institution of Mechanical Engineers, Royal Academy of Engineering, and a foreign associate of the National Academy of Engineering.

Ethical Lessons from the Life of Ratan Tata:

- Kindness is a virtue that encompasses the ability to be polite and caring towards others. It entails empathy and compassion towards others. Ratan Tata had scripted an untold story of humanity and kindness during the darkest period for the Sikh community in 1984, when thousands of them were massacred in the genocide and their vehicles were gutted across Delhi and other parts of north India. Ratan Tata emerged as a ray of hope for the Sikh truck drivers, and in a heart-warming gesture, Tata Motors gave away new trucks to genocide survivors, without charging a penny, and helped them restart their businesses from scratch.
- Spirit of Service is a quality of a person that encourages one to be committed to public service without any self-motives. During the 26/11 Mumbai Attack, Ratan Tata was the Chairman of the Tata Group at the time and ensured the hotel's restoration despite the massive destruction of property and he visited employees affected by the attack. He formed the Taj Public Service Welfare Trust to not only provide relief to those affected by the terrorist acts but also to set up a system to help and rehabilitate those recovering from such tragic events in the future. It is a display of compassion and resilience in the face of adversity.
- Compassion is defined as the emotional response when perceiving suffering and involves an authentic desire to help. Practicing compassion increases our well-being by enhancing a sense of connection to others. Ratan Tata is famous for his love for animals, particularly dogs and Tata had instructed Mumbai's Taj Hotel staff to treat stray animals with care if they wander into the premises.
- A leader is someone who takes the initiative to bring about transformation in society. Leadership is the ability of an individual to guide and influence people. The values, decision-making style, ethics, and interpersonal skills of a leader profoundly influence the organization's culture and public perception. Ratan Tata chose to work as an employee for his own company. He joined Tata in 1961 and worked on the shop floor of Tata Steel. He wanted to get hands-on experience at the grassroots level to understand the nuances and problems.
- Perseverance is continued persistence in doing what one considers to be right despite difficulties or delays in achieving the desired results. It implies unwavering steadfastness in pursuing the right course of action, even in the face of odds or failures. Even before the Nano could hit Indian roads, it faced many speed breakers. The car was initially supposed to be manufactured in West Bengal's Singur, and the former Left Front government had even allocated the land for it. Then came the protests, with Mamata Banerjee, then in the Opposition in the state, creating enough of a stir which ultimately resulted in the plant being shifted to Gujarat's Sanand. The Tata Nano was launched in 2008.
- Utilitarianism as a principle advocates that from an ethical point of view, an action is right if the sum total of the utilities produced by a particular act emerges greater than the sum total of utilities generated by any other act. The Tata Nano was launched in 2008. Ratan Tata said it was "always meant for all our people". The Nano was often referred to as India's first 'lakhtakia' – a car that costs all of Rs 1 lakh, a few thousand more expensive than two-wheelers. His vision was an embodiment of utilitarianism and inclusivity.

Philanthropy as a Social Responsibility. Ratan Tata's philanthropy work ranges from education, healthcare, and rural development to disaster relief and social welfare. The Tata Trust, under Ratan Tata, has expanded to reflect a deep sense of social responsibility.

MEDIA TRIAL AND ETHICS

GS IV – Consequences of Ethics in Human Actions

Context: In the present times, the media has clothed itself with the power of investigation and trial and ultimately branded him/her as a criminal, even before our courts of law have delivered a judgement.

Media Trial:

- It is considered the process in which media publishes their versions of facts in newspapers, news websites, and news channels to sensationalize the case.

- It is often seen as an invasion of the domain of the judiciary by conducting indirect trials parallel with the courts.

Ethical Issues with the Media Trial:

- It undermines the principle of innocence until proven guilty which advocates that every accused is presumed innocent until proven guilty by the law. For example, the Aarushi–Hemraj murder case.
- It also leads to contempt of court (disrespect or disobedience toward a court by entering into their domain).
- When sub-judice cases (cases under trial) are being discussed by experts in the media, their opinions can affect the perception of judges toward the accused/victim. For example, Jasleen Kaur's harassment case.
- The personal information of the accused and victim is revealed which can negatively affect the public image of an individual. For example, the Sushant Singh Rajput case.
- It violates key principles of media ethics such as truth and accountability and goes against the idea of responsible journalism.

Concerns/Challenges in Controlling Media Trials:

- In India, organizations like the News Broadcasting and Digital Standards Authority (NBSA) and Broadcasting Content Complaints Council have been set up as internal self-regulatory mechanisms for television news and entertainment, respectively. This mechanism has not been very effective as these bodies lack statutory backing.
- Under Article 19 of the Constitution, media enjoys the freedom of expression, but it is at times misused when engaging in Media Trials. Also, for regulating agencies it becomes difficult to decide what constitutes a Media Trial as there is no clear definition or guidelines. For example, cases of investigative journalism.

With the rise in internet penetration, social media has emerged as the new platform for media trials. For example, the sharing of sensationalized or fake posts to alter public opinion.

Practice Questions

Q1.) With reference to the Current Account Deficit (CAD), consider the following statements:

1. A country experiences a CAD when its total imports of goods exceed its total exports of services.
2. CAD leads to an outflow of foreign exchange from the country.
3. A high CAD can result in depreciation of the domestic currency.

Which of the statements given above is/are correct?

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

Q2.) With reference to the Dadasaheb Phalke Award, consider the following statements:

1. The award is named after Dadasaheb Phalke, who directed India's first full-length feature film, Raja Harishchandra.
2. The Dadasaheb Phalke Award was instituted in 1969.
3. The Dadasaheb Phalke Award is India's highest award in the field of cinema.

Which of the statements given above is/are correct?

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

Q3.) With reference to the Index of Industrial Production (IIP) and the Index of Core Industries (ICI), consider the following statements:

1. The manufacturing sector has the highest weightage in the IIP.
2. The Index of Core Industries (ICI) covers eight industries, which together account for more than 50% of the weightage in the IIP.
3. The base year for both the IIP and ICI is the same.

Which of the statements given above is/are correct?

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

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

Q4.) Consider the following statements regarding the Monetary Policy Committee (MPC):

1. The Monetary Policy Committee (MPC) was established under the Reserve Bank of India Act, 1934, following amendments made in 2016.
2. The MPC's primary mandate is to maintain inflation within the range of 6% ± 2%.
3. The Governor of the Reserve Bank of India does not have a casting vote in case of a tie in MPC decisions.

Which of the statements given above is/are correct?

(a) 1 only

(b) 1 and 2 only

(c) 1 and 3 only

(d) 2 and 3 only

Q5.) With reference to the National Statistical Commission (NSC), consider the following statements:

1. The NSC was established in 2006 on the recommendation of the Rangarajan Commission but has not yet been granted statutory status.
2. The Chairman of the NSC holds the status of a Cabinet Minister, while the four part-time members hold the status of Secretaries to the Government of India.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Q6.) With reference to the geological processes affecting the Himalayas and Mount Everest, consider the following statements:

1. The Himalayas were formed as a result of the collision between the Indian Plate and the Eurasian Plate around 50 million years ago.

2. The rise of Mount Everest is partly due to a process called isostatic rebound, which occurs when the Earth's crust rises after the removal of surface weight.
3. The Arun River's merger with the Kosi River reduced erosion in the Everest region, slowing down the isostatic rebound process.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2, and 3

Q7.) With reference to the Northeast Monsoon in India, consider the following statements:

1. The Northeast Monsoon occurs from October to December and primarily brings rainfall to the southern states of India.
2. The southward movement of the Inter Tropical Convergence Zone (ITCZ) is one of the factors contributing to the onset of the Northeast Monsoon.
3. Goa receives about 60-80% of its annual rainfall from the Northeast Monsoon.
4. The monsoon winds during this season blow from the southwest towards the Indian subcontinent, bringing rainfall to the northern states.

Which of the above statements is/are correct?

a. 1 and 2 only
b. 1, 2, and 3 only
c. 2 and 4 only
d. 1, 2, 3, and 4

Q8.) With reference to the Shanghai Cooperation Organisation (SCO), consider the following statements:

1. The SCO was established as a successor to the Shanghai Five, which included China, Russia, Kazakhstan, Uzbekistan, and Tajikistan.
2. The SCO promotes mutual trust, cooperation in various fields, and the maintenance of peace and security among its member states.
3. The Regional Anti-Terrorist Structure (RATS) of the SCO is based in Bishkek, Kyrgyzstan.
4. Belarus joined SCO and is its first exclusively European member.

Which of the statements given above is/are correct?

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

Q9.) With reference to the flood situation in Bihar, consider the following statements:

1. Bihar's flood-prone situation is exacerbated by its unique geography, being situated below Nepal with snow-fed and rain-fed rivers bringing large volumes of water and sediments.
2. The embankments built along the Kosi river have successfully prevented floods by allowing the river to distribute its sediments effectively.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q10.) With reference to the International Big Cat Alliance (IBCA), consider the following statements:

1. The headquarters of the International Big Cat Alliance (IBCA) is located in India.
2. All UN member countries are eligible to become members of the IBCA.
3. The IBCA governance framework is modeled on the International Solar Alliance (ISA).
4. The IBCA aims to focus solely on tiger conservation.

Which of the statements given above is/are correct?

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

Q11.) Which of the following statements regarding big cats in India is/are correct?

1. India is home to five of the seven big cats: tiger, lion, leopard, snow leopard, and cheetah.
2. The leopard is part of a species-specific conservation program in India due to its endangered status.
3. The snow leopard is commonly found in the Shivalik Hills of Northern India.
4. The reintroduction of African cheetahs was done at Kuno National Park in Madhya Pradesh.

Select the correct answer using the code given below:

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

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q12.) Which of the following statements regarding Progeria is/are correct?

1. Progeria, also known as Hutchinson-Gilford Progeria Syndrome (HGPS), is caused by a mutation in the LMNA gene.
2. Intellectual development in children with Progeria is severely impaired.
3. Lonafarnib, a farnesyltransferase inhibitor, has been approved to manage some symptoms of Progeria and extend life expectancy.
4. Progeria primarily affects life expectancy due to complications like cardiovascular diseases.

Select the correct answer using the code given below:

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

Q13.) With reference to Dry Ports, consider the following statements:

1. Dry ports help in reducing congestion at seaports by handling customs clearance and cargo operations inland.
2. Dry ports play a critical role in boosting India's regional development by improving connectivity between remote areas and international trade hubs.

Which of the above statements is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q14.) With reference to microRNAs (miRNAs), consider the following statements:

MicroRNAs are small non-coding RNA molecules that regulate gene expression by degrading mRNA or inhibiting its translation.

MicroRNAs function in gene regulation at the transcriptional level.

Which of the above statements is/are correct?

Q15.) With reference to the Scholars at Risk (SAR) network, consider the following statements:

1. Scholars at Risk (SAR) is an international network that aims to protect scholars and promote academic freedom globally.
2. SAR provides temporary academic positions to scholars who face threats in their home countries due to their work.

Which of the above statements is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q16.) Consider the following statements regarding the Nilgiri tahr:

1. The Nilgiri tahr is the only mountain ungulate found in southern India.
2. The largest population of the Nilgiri tahr is found in the Eravikulam National Park in Kerala.
3. The species is listed as Critically Endangered on the IUCN Red List.
4. The Nilgiri tahr is protected under Schedule I of the Wildlife (Protection) Act of India, 1972.

Which of the statements given above is/are correct?

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

Q17.) With reference to the Major Atmospheric Cherenkov Experiment (MACE) Telescope, which of the following statements is/are correct?

1. It is located at Hanle in Ladakh and is the largest imaging Cherenkov telescope in Asia.
2. The telescope is designed to study high-energy gamma rays that directly reach the Earth's surface in large amounts.
3. MACE Telescope was built by the Bhabha Atomic Research Centre (BARC) in collaboration with other Indian industry partners.

Select the correct answer using the codes given below:

(a) 1 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2, and 3

Q18.) The Amazon River, located in South America, is one of the most significant river systems in the world. Consider the following statements about the Amazon River:

1. The Amazon River is the longest river in the world.
2. It accounts for about 20% of the world's fresh river water discharge.
3. The Amazon Basin covers more than 70% of South America's landmass.
4. The Amazon River is primarily fed by major tributaries, including the Rio Negro, Madeira, and Tapajós.

Which of the above statements are correct?

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

Q19.) Consider the following statements regarding the Malabar Exercise:

1. The Malabar Exercise started as a trilateral exercise between India, Japan, and the United States in 1992.
2. Australia became a permanent participant of the Malabar Exercise in 2020.
3. The Malabar Exercise focuses on enhancing maritime security and interoperability among participating navies.

Which of the statements given above is/are correct?

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

Q19.) Which of the following statements about Fortified Rice in India is/are correct?

1. Fortified rice in India is enriched with Iron, Folic Acid, and Vitamin B12 to combat widespread malnutrition.
2. The 'extrusion' technology is considered the most suitable method for producing fortified rice kernels in India.

Select the correct answer using the codes given below:

a) Only 1

b) Only 2

c) Both 1 and 2

d) Neither 1 nor 2

Q20.) Consider the following statements regarding the Living Planet Report:

1. The Living Planet Report is published by the United Nations Environment Programme (UNEP) and assesses global biodiversity health.
2. It measures trends in global wildlife populations, using the Living Planet Index as its key indicators.
3. The report highlights the impact of human activities on wildlife populations, including habitat loss, climate change, and over-exploitation.

Which of the above statements is/are correct?

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

Q21.) With reference to Jayaprakash Narayan, consider the following statements:

1. Jayaprakash Narayan was instrumental in forming the All India Congress Socialist Party (CSP) in 1934.
2. He played a key role in leading the Quit India Movement after many senior leaders were arrested in 1942.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Q22.) Consider the following statements regarding Wayanad Wildlife Sanctuary:

1. Wayanad Wildlife Sanctuary is part of the Nilgiri Biosphere Reserve.
2. The sanctuary is an important migratory corridor for both elephants and Bengal tigers.
3. The dominant vegetation type in Wayanad Wildlife Sanctuary is dry deciduous forests.
4. The sanctuary shares its borders with the protected areas of Nagarhole and Bandipur in Karnataka and Mudumalai in Tamil Nadu.

Which of the statements given above is/are correct?

(a) 1, 2, and 4 only

(b) 1, 3, and 4 only

(c) 2 and 3 only

(d) 1 and 2 only

Q23.) Consider the following statements regarding the Brahmi script:

1. Brahmi is written from right to left.
2. It was deciphered by James Prinsep in the 19th century.
3. The Brahmi script is the precursor to modern Indian scripts like Devanagari.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2, and 3

Q24.) With reference to Shale Gas in India, consider the following statements:

1. Shale gas extraction primarily involves hydraulic fracturing and horizontal drilling techniques.
2. India has large-scale commercial production of shale gas, making it a significant part of its energy mix.
3. The Cambay and Krishna-Godavari basins are identified as potential shale gas reserves in India.

Which of the statements given above is/are correct?

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

Q25.) With reference to the Serious Fraud Investigation Office (SFIO), consider the following statements:

1. The SFIO was given statutory status under the Companies Act, 2013.
2. SFIO can investigate a company's affairs only on the recommendation of the Registrar of Companies.
3. SFIO is a multi-disciplinary agency consisting of experts in various fields like accountancy, law, forensic auditing, and information technology.

Which of the statements given above is/are correct?

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

Q26.) With reference to the Haber-Bosch process, consider the following statements:

1. It is an industrial process used for the synthesis of ammonia from nitrogen and oxygen.
2. The process requires high temperatures and pressures along with the use of a catalyst.
3. The Haber-Bosch process has played a critical role in increasing agricultural productivity by enabling the mass production of fertilizers.

Which of the statements given above is/are correct?

a)	1	and	2	only
b)	**2**	**and**	**3**	**only**
c)	1	and	3	only
d) 1, 2, and 3				

Q27.) Mount Adams, located in the Cascade Range, is known for its volcanic features. Which of the following statements about Mount Adams and lahars is/are correct?

1. Mount Adams is an active stratovolcano located in South Africa.
2. Lahars are volcanic mudflows that can occur even without an eruption.
3. It is part of the Cascade Volcanic Arc, a chain of volcanoes in the Pacific Northwest region

Select the correct answer using the code given below:

a)		1		only
b)		2		only
c)	**2**	**and**	**3**	**only**
d) 1, 2, and 3				

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2, and 3

Q28.) Which of the following statements regarding Diphtheria is/are correct?

1. Diphtheria is a viral infection affecting the respiratory tract.
2. It is preventable by a vaccine that is part of India's Universal Immunization Programme.
3. Diphtheria primarily spreads through direct contact with infected individuals or their belongings.

Select the correct answer using the code given below:

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2, and 3

Q31.) Consider the following statements regarding the Five Eyes Alliance:

1. The Five Eyes is an intelligence-sharing alliance comprising the United States, United Kingdom, Canada, Australia, and New Zealand.
2. The Five Eyes alliance was initially formed during World War I to share intelligence about the Axis powers.

Which of the above statements is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Q29.) Which of the following statements regarding Atmospheric Rivers (ARs) is/are correct?

1. Atmospheric Rivers are narrow bands of concentrated water vapor.
2. Atmospheric Rivers are responsible for the Indian monsoon.
3. Atmospheric rivers typically occur in the extratropical North Pacific/Atlantic, southeastern Pacific, and South Atlantic oceans often making landfall on the west coasts of North and South America.

Select the correct answer using the code given below:

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2, and 3

Q32.) Consider the following statements regarding the border between North Korea and South Korea:

1. The border between North and South Korea is known as the Demilitarized Zone (DMZ), which was established following the Korean War armistice.
2. The Demilitarized Zone is located exactly along the 38th parallel.

Which of the above statements is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Q30.) Which of the following statements about the Inter-Parliamentary Union (IPU) is/are correct?

4. The IPU is a global organization established to foster cooperation among national parliaments and promote democratic governance.
5. India is not a member of the Inter-Parliamentary Union.
6. The IPU holds an annual assembly to discuss global issues affecting parliaments and international relations.

Select the correct answer using the code given below:

(a) 1 and 2 only

Q33.) Consider the following statements regarding the Indian Pharmacopoeia (IP):

1. The Indian Pharmacopoeia is published by the Indian Pharmacopoeia Commission (IPC) under the Ministry of Health and Family Welfare.
2. Compliance with the standards of the Indian Pharmacopoeia is voluntary for drug manufacturers in India.

Which of the above statements is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

Q34.) Consider the following statements regarding the Food and Agriculture Organization (FAO):

1. FAO is a specialized agency of the United Nations that leads international efforts to eliminate hunger.
2. The FAO is headquartered in Rome, Italy.
3. India is not a member of the FAO.

Which of the statements given above is/are correct?

a) 1 only

b) 1 and 2 only

c) 2 and 3 only

d) 1, 2, and 3

Q35.) Which of the following statements is correct about Gandhi Sagar Sanctuary?

1. Gandhi Sagar Sanctuary is located in the state of Rajasthan.
2. It surrounds the Gandhi Sagar Dam on the Chambal River.
3. The sanctuary is known for its dry deciduous forests and grasslands.

Select the correct answer using the codes given below:

a) 1 and 2 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2, and 3

Q36.) Consider the following statements regarding the International Energy Agency (IEA):

1. The IEA was established in response to the 1973 oil crisis to ensure reliable and affordable energy for its member countries.
2. India is a founding member of the International Energy Agency.
3. The IEA works to promote renewable energy sources, energy security, and environmental sustainability.

Which of the statements given above is/are correct?

a) 1 and 3 only

b) 1 and 2 only

c) 2 and 3 only

d) 1, 2, and 3

Q37.) With reference to the Graded Response Action Plan (GRAP), consider the following statements:

1. GRAP is activated when the Air Quality Index (AQI) reaches the 'severe' category only.
2. The task of implementing GRAP currently lies with the Commission for Air Quality Management (CAQM).
3. The measures imposed under one stage of GRAP continue to remain in place even when a subsequent stage is activated.

Which of the statements given above is/are correct?

A) 1 only
B) 2 and 3 only
C) 1 and 2 only
D) 1, 2 and 3

Q38.) With reference to Non-Kinetic Warfare, consider the following statements:

1. Non-Kinetic Warfare involves the use of physical force and traditional weapons in conflict.
2. It encompasses cyber-attacks, information warfare, and economic coercion as tools to disrupt or manipulate an adversary without direct military engagement.
3. Psychological operations and disinformation campaigns are forms of Non-Kinetic Warfare.

Which of the statements given above is/are correct?

A) 1 only
B) 2 and 3 only
C) 1 and 2 only
D) 1, 2 and 3

Q39.) The One Health Approach refers to which of the following?
A) A holistic approach focusing on the conservation of biodiversity.
B) The integration of efforts across the disciplines of human health, animal health, and environmental health to prevent and control diseases.
C) A global initiative to promote sustainable agriculture practices.
D) An approach that focuses on human health

while neglecting animal and environmental health concerns.

Q40.) Consider the following statements regarding the National One Health Mission:
1. The One Health approach focuses solely on the health of humans.
2. The mission aims to address zoonotic diseases and antimicrobial resistance (AMR).
3. The Ministry of Environment, Forest and Climate Change is the primary ministry responsible for the implementation of the mission.
Which of the above statements is/are correct?
a) 1 and 2 only
b) 2 only
c) 1 and 3 only
d) 2 and 3 only

Q41.) Consider the following statements regarding the United Nations Relief and Works Agency for Palestine Refugees (UNRWA):
1. The UNRWA was established in 1949 to provide aid and services to Palestinian refugees displaced due to the 1948 Arab-Israeli war.
2. The UN agency is funded mostly by voluntary contributions from donor states.
Which of the statements given above is/are correct?
A. Only 1
B. Only 2
C.Both 1 and 2
D. Neither 1 nor 2

Q42.) Consider the following statements about Sardar Vallabhbhai Patel:
1. Sardar Patel was instrumental in the integration of princely states into the Indian Union after Independence.
2. He was India's first Home Minister and was also given the title "Iron Man of India".
3. The Statue of Unity, dedicated to Sardar Patel, is located on the banks of the Yamuna River in Delhi.
Which of the statements given above is/are correct?

A. Only 1 and 2
B. Only 2 and 3
C.Only 1 and 3
D. All 1, 2, and 3

Q43.) Consider the following statements about the Unified Payments Interface (UPI):
1. UPI allows users to make peer-to-peer inter-bank transfers through a two-click factor authentication process.
2. UPI Lite X enables users to make offline payments using Near Field Communication (NFC) technology.
3. UPI transactions can only be done with deposited funds and do not support pre-sanctioned credit lines from banks.
Which of the statements given above is/are correct?
A. Only 1 and 2
B. Only 1 and 3
C.Only 2 and 3
D. Only 1