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Current Affairs, November 2023

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1. Polity and Governance

1.1 Meri Maati Mera Desh campaign

- Prime Minister Narendra Modi is scheduled to take part in the program commemorating the end of the Meri Maati Mera Desh campaign at Kartavya Path.
- The campaign, which is a grand culmination of the "Azadi Ka Amrit Mahotsav," which celebrates 75 years of Indian Independence, was launched by the Union government.
- As part of this campaign, soil collected from various parts of the country in August will be used to develop a garden along the Kartavya Path in Delhi.
- The "Mitti Kalash" will be brought ceremoniously to the larger municipalities/corporations and transported to Kartavya Path. The initiative is intended to honor and remember the sacrifices made by the martyrs.
- It includes freedom fighters, defence personnel, and members of the Central Armed Police Forces (CAPF) and State Police, who laid down their lives in the line of duty.

Five-Point Agenda:-

- Shilaphalakam Installation: Memorials will be erected, adorned with the names of those who made the supreme sacrifice for the nation.
- Pledge of Commitment: A solemn pledge will be taken by people at the memorial sites.
- Vasudha Vandhan: Every gram panchayat or village will participate in 'Vasudha Vandhan' by planting 75 saplings of indigenous species.
- Veeron Ka Vandan: Freedom fighters and the families of deceased freedom fighters will be honoured and felicitated.
- National Flag Hoisting: The National Flag will be proudly hoisted, and the National Anthem will resonate in unison.

International Competition Network

- The International Competition Network (ICN), a global organization devoted to the enforcement of competition law worldwide, has welcomed the Competition Commission of India (CCI) to its 18-person steering committee.
- With 140 competition agencies, the ICN provides antitrust authorities with an informal forum for regular communication and the resolution of real-world competition issues.
- The members of the ICN are competition authorities from both national and international organizations. They work together in project-oriented working groups to achieve outcomes in the field of competition enforcement.

'Reference' fuel

- India has joined a restricted group of countries that generate these premium fuels by starting to create "reference" gasoline and diesel, which are specialist fuels used for testing cars.
- In order to replace imports, the Indian Oil Corporation (IOC) produced these fuels with better requirements, guaranteeing a consistent supply for testing agencies and vehicle manufacturers at a reduced cost.
- Reference fuels are high-quality fuels used by gasoline and diesel vehicle manufacturers. They are used for:

- Engine development
- Performance assessment
- Ensuring operability across global climatic conditions
- Calibration and testing of vehicles

Reference fuels are premium products. They have higher octane numbers than normal fuels

1.2 Mann Ki Baat program

In his Mann Ki Baat broadcast, Prime Minister Narendra Modi recently urged the public to speak out in support of local businesses during this festival season.

An Overview:

- On the occasion of festivals, Prime Minister Narendra Modi has urged the public to support local businesses by making purchases there.
- The impact of the Prime Minister's encouragement is also seen in Punjabi shoppers during festival season.

About the program Mann Ki Baat:

- Prime Minister Narendra Modi hosts the Indian radio show Mann Ki Baat.
- He speaks to the nation's listeners on DD National, DD News, and All India Radio.
- On October 3, 2014, the inaugural Mann Ki Baat show was aired in honor of Vijayadashami.
- This is the first visually enhanced radio program in India.
- Objective: to establish a dialogue with the citizens on issues of day-to-day governance. (E-governance's significance for administration)
- The radio was selected as the program's medium because of its broad audience reach—an estimated 90% of India's population may be reached through it.
- Every month, All India Radio airs a speech by Prime Minister Narendra Modi to the country.
- On April 30, 2023, Mann Ki Baat aired its 100th episode.
- DG UNESCO was involved in this incident.
- On behalf of UNESCO, he expressed his gratitude to Prime Minister Modi for giving him the chance to participate in the 100th episode of the "Mann Ki Baat" radio program.

Guests on the show:

- The fourth episode of Mann Ki Baat, which broadcast on January 27, 2015, featured the former US President, Barack Obama.
- Lata Mangeshkar appeared on the show as a special guest on September 29, 2019.
- Languages such as Adi, Assamese, Bengali, Bodo, Dogri, English, Garo, Gujarati, Kannada, Kashmiri, Khasi, Kokborok, Konkani, Lepcha, Maithili, Malayalam, Manipuri, Marathi, Mizo, Nagamese, Nepali, Odia, Pnar, Punjabi, Sanskrit, Santali, Sindhi, Tamil, Telugu, and Urdu are among the languages in which the program was originally recorded.

1.3 Election Commission

The Election Commission recently made it possible for voters who are 80 years of age or older and Divyanga to cast their ballots from home.

An Overview:

- Chief Electoral Officer Anupam Rajan has announced that voters over 80 years old and those with above 40% Divyanga have the option to cast their ballots from home during the Madhya Pradesh assembly elections, thanks to a facility offered by the Election Commission.
- In a similar vein, service voters can cast their ballots in advance of the election.

About Election Commission:

- The Indian Constitution established the Election Commission as an independent, permanent body. The Election Commission's goal is to guarantee free and fair elections across the nation.
- According to Article 324 of the Constitution, the election commission will be in charge of overseeing, directing, and controlling elections for the parliament, state legislatures, the office of president of India, and the office of vice president of India.

Indian Election Commission's composition:

- Participants: The Chief Election Commissioner and any additional election commissioners, if any, will make up the election commission. The President may, at any time, fix the number of election commissioners.
- Appointment: The Head shall appoint the Chief Election Commissioner and the other Election Commissioners. The chief election commissioner will preside over the election commission in the event that another commissioner is appointed in that capacity.
- Regional commissioners: The president has the authority to name any regional commissioners he deems essential to support the electoral commission, following agreement with the commission.

Method of Removal:

- Only Parliament can remove the Chief Election Commissioner from office through a procedure akin to that of a Supreme Court judge.
- A motion approved by Parliament on the basis of "Proven misbehavior or incapacity" may be used to remove judges of the High Courts and Supreme Court, the CEC, and the Comptroller and Auditor General (CAG) from their positions.
- A special majority of two thirds of the members present and voting, backed by more than half of the house's total strength, is needed for removal.
- Terms of service: they will be as the President may specify by regulation.

Key Functions of ECI:

- Superintendents of Election Commissions oversee and manage the entire election process. (Cohort on Election Integrity) These comprise elections for India's president and vice president as well as the legislatures and parliaments of each State.
- Election schedules are determined by it in order to hold regular and timely elections, whether they be by-elections or general elections.
- It issues Electronic Photo Identity Cards (EPIC) and compiles election rolls.
- It chooses where to set up polling places, distribute voters among them, locate counting centers, and make other necessary arrangements.
- Political parties are given recognition by it.
- It settles election-related disputes and assigns them election emblems.
- Its advisory jurisdiction extends to matters pertaining to the disqualification of sitting members of State Legislatures and Parliament following elections.

- It publishes the Model Code of Conduct for candidates and political parties running in elections.
- Model Code of Conduct: a collection of rules for political parties' and candidates' behavior during elections, released by the Indian Election Commission.
- It establishes and tracks campaign finance caps for each political party and individual candidate.

1.4 Directorate General of Civil Aviation (DGCA)

Air India has received a show cause notice from the Directorate General of Civil Aviation (DGCA) recently.

An Overview:

- Since May of this year, scheduled domestic airlines have been subject to inspections by the DGCA at a number of key airports to verify compliance with passenger-centric CARs.
- It was discovered that Air India was not abiding by the applicable CAR's requirements during the inspections.

What the Directorate General of Civil Aviation (DGCA) Is All About.

- Ministry: Civil Aviation Ministry.
- Head Office: New Delhi
- Attached to the Ministry of Civil Aviation is the Directorate General of Civil Aviation.
- It operates regional offices across India.

DGCA functions include:

- It is the civil aviation industry's regulating agency that mostly handles safety-related matters.
- It is in charge of enforcing air safety, airworthiness standards, and civil aviation legislation as well as regulating air transportation services to and from India.
- It is in charge of civil aircraft registration.
- Airport certification is under its purview.
- It is in charge of issuing licenses to pilots, flight engineers, air traffic controllers, and engineers who maintain aircraft, as well as carrying out examinations and verifications for that reason.
- By serving as a catalytic agent, it is in charge of encouraging domestic aircraft design and manufacturing.
- It is in charge of authorizing training programs for operators carrying hazardous materials, granting permits for such transportation, and other related tasks.
- Additionally, it works with the International Civil Aviation Organization to coordinate all regulatory activities.

Aviation Security Index:

- In November 2022, the International Civil Aviation Organization performed a coordinated validation mission, or audit, in which the DGCA made substantial progress in 2022.

Consequently, India's Safety Oversight position has moved from 102 to 48 among the 193 contracting states, with its effective implementation score rising from the previous 69.95% to roughly 85.49%.

1.5 National Human Rights Commission (NHRC)

Justice Arun Mishra, the Chairperson of the National Human Rights Commission (NHRC), recently spoke at the 14th International Conference of the National Human Rights Institutions (NHRIs).

About the National Human Rights Institutions' (NHRIs') 14th International Conference:.

- Date: November 6, 8, 2023.
- Location: Denmark's Copenhagen.
- Theme: "The role of NHRIs in the era of torture and other ill-treatment."
- Judge Mishra emphasized the need for cooperation to abolish the threat of torture, which frequently results in the deaths of unfortunate and impoverished people.
- He went on to say that in order to properly combat the practice of torture, it is imperative that those who commit the crime face consequences and that police activities and detention facilities be transparent.
- Additionally, Justice Mishra stated that the NHRC's suo motu cognizance and public interest litigation in courts are special tools for ensuring victims receive justice.
- He continued by saying that NHRIs had a duty to act to stop torture for the benefit of both the current and coming generations.

Regarding the NHRC, the National Human Rights Commission:

- Founded in 1993.
- Headquarters are in New Delhi.
- Established under the 1993 Protection of Human Rights Act (PHRA), the NHRC is a legislative body.
- The State Human Rights Commission (SHRC) is to be established, according to the Act.
- State Human Rights Commission: Its duties include safeguarding human rights and looking into any infringements that take place in the state in which it operates.

Historical Context:

- The Paris Principles were followed when the NHRC was founded.
- The Paris Principles were established in 1991 with the goal of advancing and defending human rights in Paris. The United Nations General Assembly gave it their blessing in 1993.

Members of the NHRC:

- It is a group of people.
- Five full-time members, seven considered members, and the chairperson make up this group.
- A retired Indian chief justice or a Supreme Court judge serves as the chairperson.

Appointments:

- On the advice of a six-member committee made up of the Prime Minister (head), the Speaker of the Lok Sabha, the Deputy Chairman of the Rajya Sabha, the Leaders of the Opposition in both Houses of Parliament, and the Union Home Minister, the President appoints the committee's chairman and members.
- Term: three years, or until they turn seventy-one, whichever comes first.
- Removal: In some situations, the president has the authority to remove them from office.
- Only allegations of demonstrated misconduct or incapacity, as determined by a Supreme Court judge's investigation, may result in their removal.

Roles of the NHRC:

- To look into the human rights infringement.
- To stop a transgression of human rights.
- To carry out human rights research.

- To launch awareness-raising campaigns via several channels and support the efforts of non-governmental organizations (NGOs).
- NGO: an organization that runs without interference from any government.
- It serves as the nation's watchdog for human rights.

1.6 HC Verdict: Local Reservation in the Private Sector

A 2020 Haryana government law that designated 75% of private sector jobs for state residents was declared illegal by the Punjab and Haryana High Court.

Local Reservation: What Is It?

- A policy or legislation that sets aside a defined percentage of employment, opportunities, or benefits for people who are local inhabitants of a particular region or state is commonly referred to as a local reservation.

What was stated in the 2020 Haryana State Employment of Local Candidates Act?

- Companies with ten or more employees are required by law to reserve 75% of positions that pay less than Rs. 30,000 per month for candidates from the state. Employers are required to register qualified workers on the Labor Department website.
- There are similar regulations regarding domicile job reservation in states like Madhya Pradesh, Jharkhand, and Andhra Pradesh.

Why did the court rule that the law was unconstitutional?

- Article 16 Violation: The statute, which states that a government cannot discriminate based on residence, violated constitutional rights by reserving 75% of private-sector positions for Haryana citizens.
- The court ruled that the Haryana government's assertion of jurisdiction under Article 16(4) (exceptions to Article 16) was unconstitutional.
- Article 19 violation: According to the court, the law violated people's rights under Article 19(1)(g) of the Constitution, created a "Inspector Raj," and placed undue control on private employers.
- Private employment is analytical and skill-based, and Indian citizens are entitled to work anywhere in the country.

What's Written in the Constitution?

- Through a number of articles, the Indian Constitution provides the right to free movement and, by extension, employment throughout the country.
- Article 14 guarantees equality before the law, regardless of birthplace.
- Article 15 prohibits discrimination on the basis of birthplace.
- Article 16 forbids discrimination in public employment on the basis of birthplace.
- Article 19 guarantees the freedom of movement of citizens across India's territory.

Supreme Court questions Governor's Discretion on TN Bills

- The Tamil Nadu administration claims that Governor R.N. Ravi does not have the "discretion" to refuse to sign the 10 Bills that the State Legislative Assembly "re-passed." This claim has been noted by the Supreme Court.
- The interpretation of Article 200 of the Constitution, which controls the Governor's authority to give

assent to bills passed by the State Legislature, is at the center of this legal dispute.

Governor's Discretion

- **Article 200 Interpretation:** The Tamil Nadu government argued that once Bills have been re-passed by the Assembly, they are treated similarly to Money Bills and cannot be rejected by the Governor.
- **Questioning the Process:** The CJJ questioned whether the Governor must send the Bills back to the Assembly for reconsideration after withholding assent.
- **Limiting Presidential Referral:** The State also emphasized that the Governor cannot refer the reiterated Bills to the President after withholding assent.

Background and Delay

- **Bills Delayed:** The State claimed that the Governor had been delaying the aforementioned bills indefinitely after they were submitted to the Governor's office between January 2020 and April 2023.
- **Special Session:** Following the Governor's withholding of consent, the TN Assembly called a special session to re-pass the bills.
- **Governor's Statement:** The Assembly moved to act when the Governor returned the Bills with the brief notation, "I withhold consent."

Legal Perspectives

- **Governor's Ceremonial job:** The State argues that the Governor must operate within the parameters set forth by the State Legislature and that his job is essentially ceremonial.
- **Will of the People:** The Assembly has passed bills that express the will of the people, and they shouldn't be postponed or rejected without good cause.

The Supreme Court's Reaction

- **Addressing Delay:** The Supreme Court recognized that it was necessary to determine whether the Governor's constitutional duties had been delayed.
- 182 bills were brought to the governor, of which 152 were approved, five were withdrawn, and nine were set aside for referral to the president, according to the Attorney General.
- **Key Issue:** Modifications to State university laws that impact the Governor's authority to choose Vice-Chancellors are the true crux of this dispute.

The Supreme Court's hearing on this case presents important issues about the Governor's authority to sign legislation and the necessity of ensuring prompt decision-making that serves the interests of the populace and State administration. In this judicial battle, how Article 200 of the Constitution is interpreted will be crucial.

1.7 Hindustan Aeronautics Limited

- Prime Minister Narendra Modi recently paid a visit to the Bengaluru facility of Hindustan Aeronautics Limited.

Context:

- The visit coincides with an important announcement: HAL has been awarded a contract by the Indian Air Force to acquire 12 cutting-edge Su-30MKI fighter fighters.

About Hindustan Aeronautics Limited:-

- Headquarters are in Bangalore, India.
- Defense Ministry is the ministry.
- India's state-owned aerospace and military company is called HAL.
- VISION: To lead the aerospace and defense industries globally.
- Originally known as Hindustan Aircraft Limited, the company was founded on December 23, 1940, in Bangalore by Shri Walchand Hirachand, in collaboration with the Mysore government of the time, with the intention of producing aircraft in India.
- The Indian government joined the company as a stakeholder in March 1941, and in 1942 it assumed managerial control.
- The Company started producing aircraft such as the Vultee Bomber, Curtiss Hawk Fighter, and Harlow Trainer in partnership with the Inter Continental Aircraft Company of the USA.
- The Ministry of Defence, Government of India, assumed administrative authority for Hindustan Aircraft Limited in January 1951.
- It currently manufactures and fabricates aircraft, helicopters, jet engines, and their replacement parts in addition to its primary aerospace business. (Aircraft Dornier)
- Its several facilities are dispersed over India, including Hyderabad, Bangalore, Kanpur, Nasik, Koraput, Korwa, Lucknow, and Kasaragod.

1.8 Governor

- The Supreme Court recently made it clear that a bill does not automatically get vetoed when a governor rejects it in a 27-page ruling.

Context:

- According to the court, the Governor is given three choices under Article 200 of the Constitution: he or she can agree to the proposed law, refuse to assent, or hold off on signing the bill until the President considers it.

About the Governor:

- Article 153 of the Constitution stipulates that every State must have a governor.
- Articles 155 and 156: A governor is chosen by the president and serves "during the pleasure of the President," according to Articles 155 and 156 of the Constitution.
- The Governor must resign if this pleasure is revoked before the end of the five-year tenure.
- The Governor is effectively subject to appointment and removal by the federal government, as the President acts with the assistance and counsel of the Prime Minister and the Council of Ministers.
- Article 163 states that, with the exception of duties requiring his discretion, the Governor will typically receive assistance and advice from the Council of Ministers.

The Governor's constitutional authority concerning State Bills:

- The Indian Constitution's Article 200 addresses the governor's authority to sign legislation passed by the state legislature as well as other duties including holding up a measure for the president to review.
- With regard to "Bills Reserved for Consideration," Article 201 gives governors the following veto power: total, suspense, and no pocket (except on money bills).
- Absolute Veto: This describes the Governor's ability to decline to sign an Assembly-passed law.

- **Suspensive Veto:** The Governor may use a suspensive veto to send a bill back to the State Assembly for more review.
- The Governor must approve the law without exercising his veto power if the Assembly resends it to him, unchanged or amended.
- Regarding the Money Bill, the Governor may not exercise his suspensive veto power.
- The President's power of a pocket veto keeps a law waiting forever.

1.9 Election Commission of India (ECI)

- The Karnataka government received a notification from the Election Commission of India (ECI) about the publication of advertising highlighting their accomplishments in Telangana publications, which is close to elections.

Context:

- The State Congress government has been contacted by the Commission to provide an explanation.

Regarding the Indian Election Commission (ECI):

- The Indian Constitution established the Election Commission as an independent, permanent body.
- **Election Commission**
- **Goal:** to guarantee free and fair elections throughout the nation.
- According to Article 324 of the Constitution, the election commission will be in charge of overseeing, directing, and controlling elections for the parliament, state legislatures, the office of president of India, and the office of vice president of India.

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- **Terms of service:** they will be as the President may specify by regulation.
- **Terms of office:** The President may set them by rule.

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- Political parties are given recognition by it.
- It settles election-related disputes and assigns them election emblems.
- Its advisory jurisdiction extends to matters pertaining to the disqualification of sitting members of State Legislatures and Parliament following elections.
- It publishes the Model Code of Conduct for candidates and political parties running in elections.
- Model Code of Conduct: a collection of rules for political parties' and candidates' behavior during elections, released by the Indian Election Commission.
- It establishes and tracks campaign finance caps for each political party and individual candidate.

1.10 Amplifi 2.0 portal

- In an effort to facilitate data-driven policymaking, the Union Ministry of Housing and Urban Affairs has introduced the Amplifi 2.0 portal, which offers academics, researchers, and stakeholders access to raw data from Indian cities on a single platform.
- The webpage includes information on a wide range of topics, including the number of people living in slums, fuel use, water quality testing, healthcare costs, and fatal traffic accidents.
- The goal of the project, which is a component of the Urban Outcomes Framework 2022, is to move the emphasis from indices to complete indicators for efficient analysis by streamlining data across 14 sectors.
- The initiative's goal is to use data to inform planning and urban policy decisions.

2. International Relations

2.1 BHUTAN CHINA BORDER TALKS

The 25th round of border talks between China and Bhutan concluded in Beijing with the signing of a major cooperation agreement. This historic agreement, which continues the 3-Step Roadmap started in 2021, represents the strides made in their pursuit of a border resolution. These latest initiatives hold great significance against the backdrop of a seven-year break in negotiations.



A summary of the border dispute between Bhutan and China

- The boundary dispute between Bhutan and China has its roots in historical claims and traditions. Both countries have always maintained differing interpretations of their border in the Doklam Plateau.
- The conflict has its beginnings in the 19th century when British India and China signed the 1890 Convention, known as the Sikkim-Tibet Convention. The border between Tibet, which was influenced by China, and Sikkim, which was then a British protectorate, was drawn by this agreement, crossing the Doklam Plateau.
- The Doklam Plateau is disputed territory claimed by Bhutan.
- China, meanwhile, asserts that, according to its interpretation of the 1890 Convention, the Doklam Plateau is part of its territory.
- When Indian and Chinese troops engaged in a border standoff in the Doklam region in 2017, the conflict attracted attention from around the world. Chinese troops' attempt to build a road in the area set off this standoff.
- Given its unique connection with Bhutan and its authority over its defense and foreign policy, India interfered in favor of Bhutan's territorial aspirations.

BHUTAN- CHINA BORDER TALKS

- There is a long, continuous border between Bhutan and the Tibetan Autonomous Region that measures about 470 kilometers. The two countries held 24 rounds of negotiations to resolve their border disputes before 2016.
- Due to the Doklam Standoff in 2017 and the COVID-19 epidemic that followed, talks had been put on hold.

But during this break, there were talks at different levels, particularly after China voiced worries about a boundary issue with Bhutan to the east.

- There has been significant progress in the boundary talks since they resumed after a seven-year break.
- The Joint Technical Team (JTT) helped create the 3-Step plan, which was finalized in 2021 through an agreement. Its goal is to draw a boundary between the Chinese and Bhutanese territory. Bhutan and China want to formally recognize their border even though they do not have diplomatic relations.

Steps in the Roadmap

- Agreement on the border “on the table.”
- On-ground inspections of the border.
- Formal demarcation of the boundary.

INDIA’S CONCERNS

- India's Security Concerns: India's national security is closely related to the border dispute with China, Bhutan, and India. Chinese incursions into the area worry India because they have the potential to tip the strategic balance and jeopardize its security interests.
- Strategic Importance: Doklam overlooks the tiny Siliguri Corridor, sometimes referred to as the "Chicken's Neck," making it strategically important for India. The corridor is a short stretch of land that links northeastern regions to mainland India. The northeastern area of India may be at risk for security if there is any Chinese involvement in Doklam.
- Tense Sino-Indian Relations: Any strengthening of ties between China and one of India's closest neighbors raises red flags in New Delhi given the declining state of relations between the two countries since the 2020 Line of Actual Control crisis.
- ramifications for the area There are wider regional ramifications to the resolution of the boundary dispute between China and Bhutan, particularly when considering the relationship between India and China. Stability and peace in the area would benefit from a peaceful conclusion.

2.2 Prisoner’s dilemma

The notion of the "Prisoner's Dilemma" was recently brought up by the defense minister to emphasize how crucial it is for nations to cooperate with one another rather than compete with one another in international affairs.

What is the Dilemma of the Prisoner?

- It is a fundamental idea in game theory that shows how logical decisions made by one person could have unfavorable consequences for both parties. It features two suspects, or captives, who can choose to betray one another by admitting to a crime, or they can cooperate by keeping quiet. Among the potential results are:
- If both remain silent (cooperate), they both get a minimal sentence for a lesser offence.
- If both confess (betray), they both receive a moderate sentence.
- If one remains silent while the other confesses, the one who confesses goes free, and the silent one receives a heavy sentence.

Its application in International Relations:

- The idea of the prisoner's dilemma is frequently used in international affairs to explain circumstances in which nations must make decisions that contradict with their interests. It shows why countries might not

always work together for the greatest possible result. For instance, in arms races, two nations may decide to arm themselves (confess) in order to obtain a competitive edge, even though disarmament (staying silent) would benefit the whole population by lowering the likelihood of conflict and conserving resources.

2.3 Japan-India Semiconductor Supply Chain Partnership

- The Indian Ministry of Electronics and Information Technology and the Japanese Ministry of Economy, Trade, and Industry have signed a Memorandum of Cooperation (MoC).
- With an emphasis on the Japan-India Semiconductor Supply Chain Partnership, its goal is to fortify bilateral collaboration in improving the semiconductor supply chain between the two nations.
- In order to create a robust semiconductor supply chain and capitalize on each nation's advantages, it promotes collaboration between governments and businesses.

The MoC intends to improve cooperation with Japan in the semiconductor industry and is a component of India's larger aspirations for international information technology cooperation. It is regarded as a step toward improving semiconductor supply chain resilience for mutual benefit and is in line with the "India-Japan Digital Partnership."

2.4 Organisation for Economic Co-operation and Development (OECD)

An Organization for Economic Co-operation and Development (OECD) report released recently states that 21 million tonnes of plastics escaped into the environment worldwide last year.

An Overview:

- Report for an international plastics treaty released two days prior to the Intergovernmental Negotiating Committee on Plastic Pollution.

About the Economic Co-operation and Development Organization (OECD):

- Commencement: 1961.
- Headquarters are in Paris, France.
- 38 members in total.
- Australia, Austria, Belgium, Canada, Chile, Costa Rica, Island, Japan, South Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States are the 38 Member Countries.
- India is an important economic partner but is not a member.
- An international body called the body for Economic Co-operation and Development (OECD) strives to create better policies for better lives.
- It creates policies to advance equality, prosperity, and opportunity for all.
- Its objective is to influence laws that promote wealth, equality, opportunity, and everyone's well-being.

Organizational framework:

- COUNCIL: Strategic direction and oversight.
- Committees: deliberation and evaluation.
- SECRETARIAT: Data and interpretation.

Objectives:

- The primary goals of the OECD are to advance global trade and the global economy.
- It provides the chance for governments from other nations to collaborate in order to discover answers to shared issues.
- It involves cooperating with democratic nations that are dedicated to improving the economic and social conditions of the populace as a whole.
- The primary goal of the OECD is to assist governments globally:
- Boost trust in the way institutions and markets are operating.
- Achieve sound public finances in order to promote future sustainable economic growth.
- to attain growth by means of innovation, sustainable approaches, and the sustainability of developing economies.
- Give folks the tools they need to become more productive.

OECD Reports and Indices:

- Government at a Glance 2017 report.
- International Migration Outlook.
- OECD Better Life Index.

2.5 ASEAN

The 10th ASEAN Defence Ministers' Meeting-Plus (ADMM Plus) was recently attended by Defence Minister Rajnath Singh.

An Overview:

- It is scheduled to take place in Jakarta, Indonesia during November 16–17, 2023.
- The purpose of the yearly meetings of the ADMM-Plus Ministers is to strengthen collaboration between ASEAN and the Plus nations, having begun in 2017.

Regarding ASEAN:

- Founded on August 8, 1967.
- Secretariat: Indonesia's Jakarta.
- Members include Brunei, Vietnam, Laos, Myanmar, Cambodia, Singapore, Malaysia, the Philippines, and Indonesia.
- The ASEAN was formally created in 1967 with the Bangkok Declaration.
- In 1976, there was the inaugural ASEAN summit.
- In the face of growing conflict, the Association of Southeast Asian Nations (ASEAN) was established as a regional organization to preserve political and social equilibrium among Asia's post-colonial states.
- Its motto is "One Vision, One Identity, One Community."
- The ASEAN Day is observed on August 8th.

ASEAN's institutional framework:

- The annual ASEAN Summit discusses regional concerns and establishes policy guidelines.
- The ASEAN Coordinating Council (ACC) is in charge of carrying out decisions and agreements within the organization.
- The ASEAN Secretariat helps and supports the organization's aims and operations.

- The ASEAN Regional Forum (ARF) provides a forum for discussion and collaboration on security and political matters between ASEAN member nations and their allies.
- Making decisions: Consensus and consultation are used in the process.

ASEAN's importance to India

- India requires robust diplomatic ties with ASEAN countries for security and economic reasons alike.
- India may be able to increase its influence in the region thanks to its connections with ASEAN countries. (India-ASEAN conference) By maintaining Northeast India at the center, these connectivity initiatives guarantee the expansion of the region's economies.
- Stronger trade relations with the ASEAN countries would counter China's influence in the area and promote India's economic expansion.
- Since the majority of India's trade depends on maritime security, ASEAN plays a key role in the rules-based security architecture of the Indo-Pacific.
- Working together with the ASEAN countries is essential to fighting terrorism, tax evasion, and insurgencies in the Northeast.

2.6 With life of eight Indians in Qatar at stake, India needs deft diplomacy

The administration faces a significant diplomatic obstacle in the form of eight retired Indian naval servicemen who were given unprecedented death sentences in Qatar on espionage allegations. This delicate position is further complicated by the public's expectations and Minister Jaishankar's circumspect approach.

What took place?

- In a startling move, eight former Indian military personnel were recently given death sentences by Qatar.
- These accusations are related to espionage, in contrast to other cases involving murder or drugs.
- The answer from Minister Jaishankar and his diplomatic assurances to Parliament regarding sensitivity: Aware of the sensitive nature of the issue, Minister Jaishankar urged patience while assuring the Parliament that it is a priority. Prioritizing the well-being of the eight people is the main goal.
- Media Statements & Caution: Because this matter is secret, media statements should be used with caution. A diplomatic stance that acknowledges the sensitivity of pending proceedings is to refrain from additional comment.

Present Difficulties:

- **Diplomatic Problem:** With Qatar sentencing eight former Indian naval personnel to death, the government is in a difficult position.
- **Public Concerns:** The administration is under pressure to repatriate those who have been convicted since the public and opposition parties are concerned about their safety.
- **Sensitive Matter:** The case is sensitive in the diplomatic community since it involves allegations of spying against a group of former defense officials.
- **Restricted Information:** The government is unable to provide many details about the case due to confidentiality, which makes individuals more speculative and anxious.

Way Forward:

- Talking with Qatar: India should keep discussing with Qatar, telling them to be fair and just while following their laws.

- **Assisting with Consular Matters:** It is imperative to guarantee that the convicted parties have regular meetings with Indian officials and that their court case is closely monitored.
- **Informing the Public:** The public must be informed of the government's activities while maintaining some privacy.
- **Obtaining Support:** Qatar may reconsider its choice if it approaches other nations for assistance and support.
- **Using Legal Moves:** It is imperative to use legal means to secure the release of the navy personnel, including filing appeals and communicating with Qatar.

Calming People: It's critical to inform the public and veterans about the situation and to take steps to allay their fears.

2.7 Voice of Global South Summit-2023

Prime Minister Narendra Modi presided over the second "Voice of Global South Summit-2023" inauguration session recently.

About Voice of Global South Summit-2023:-

- **Date:** January 12, 13, 2023.
- The "Voice of Global South Summit" provides a forum for poor nations to share ideas on attaining sustainable, cheap, and accessible energy security.
- The Summit is being hosted virtually by India.
- Four concurrent Ministerial sessions will take place after the initial session.
- These consist of the meetings with the environment, finance, education, and external affairs ministers.
- There will be four more Ministerial sessions in parallel throughout the afternoon.
- "Global South: Together for One Future" is the topic of the concluding leaders' session, while "Together, for Everyone's Growth, with Everyone's Trust" is the theme of the inaugural leaders' session.
- According to the Akashvani correspondent, the summit's main goal is to share with the Global South the major conclusions reached during India's G20 presidency in a variety of G20 meetings.
- January 12–13, 2023, saw India host the Voice of Global South Summit for two days.
- Ten sessions overall for the virtual format of the Summit were held.
- 125 Global South countries sent leaders and ministers to participate in it. This unique summit was called by India in an effort to draw attention worldwide to the issues, viewpoints, and priorities facing the developing world.
- This is especially important now as the globe is going through a challenging time with issues with health, food security, cheap energy access, climate financing and technologies, and economic growth.

Significance:

Almost three-fourths of the world's population are the most susceptible to the harmful effects of the numerous interconnected hazards that we face, and this summit serves as a timely reminder of what is at stake for them.

2.8 G20 Summit

The G20 Summit's adoption of the New Delhi Leaders' Declaration, according to External Affairs Minister Dr. S Jaishankar, will live on.

An Overview:

- During the Foreign Ministers' Session of the second Voice of Global South Summit, he made these words in his opening remarks.
- India's commitment to the Global South was reiterated by the External Affairs Minister through a wide range of development programs in 78 nations.
- According to him, these initiatives are transparent, outcome-driven, demand-driven, and sustainable.
- He emphasized that India will always place the Global South at the center of its foreign alliances as it embraces digital delivery, encourages green growth, and guarantees affordable health care.

About G20 Summit:-

- Organization: 1999.
- Following a meeting in Washington, DC, the finance ministers and central bank governors of seven nations—Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States—formed the G20 group.
- Members: Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union. Members also include Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, and the Republic of Korea.
- The G20 presidency is alternated annually among its members.
- The nation in office, the preceding and subsequent presidents, and themselves make up the "Troika."
- In 2022, India succeeded Indonesia as the G20's president, a position it will retain for a year.
- The troika will consist of Brazil, Indonesia, and India during India's presidency.

2.9 India and Australia

- India and Australia recently held two-plus-two conversations in New Delhi to discuss strengthening their diverse connections in several areas.

Background:-

- In New Delhi, there was a second India-Australia Two plus Two Dialogue.

Regarding Australia and India:

- In June 2020, the connection between Australia and India was elevated to a Comprehensive Strategic Partnership (CSP). The foundation of India-Australian relations is mutual understanding, trust, strong ties, and a common goal of an open, prosperous, and stable Indo-Pacific region.

Diplomatic Relationship:-

- Following the appointment of Lieutenant-General Sir Iven Mackay as Australia's first High Commissioner to India in 1943, diplomatic relations were established between Australia and India.
- In 1945, Sir Raghunath P. Paranjpe, the first High Commissioner of India to Australia, touched down in Canberra.
- Australia is among the select three nations with whom India has yearly meetings for leaders.
- Additionally, the prime ministers of Australia and India frequently engage in conversation at significant international gatherings such as the East Asia Summit, G20, and Quad.
- Additionally, in a "2+2" format, the foreign and defense ministers of Australia and India get together every other year to address strategic problems.

People-to-people Relationship:-

- Australia's second-largest and fastest-growing immigrant community is Indian.
- There were 976,000 respondents who identified as being of Indian descent in the 2021 Census.
- Of these, 673,000 Australians were of Indian descent, making up 2.6% of the total population.
- Australia's primary source of skilled migrants is still India.
- Additionally, India is the second-biggest source of foreign students.

Economic partnership:

- India's economy is the third largest in the world by purchasing power parity and the fifth largest in nominal terms, according to the International Monetary Fund (IMF).
- India's GDP is expected to rise by 5.9% in 2023 and 6.2% in 2025, according to IMF predictions.
- India ranked fourth among Australia's export markets for goods and services in 2022 and as the country's sixth-largest two-way trading partner in terms of goods and services.
- In 2022, trade in commodities and services of \$48.4 billion was conducted with India.
- In 2022, Australia's exports to India came to \$34.8 billion, while imports from India came to \$13.5 billion.
- In 2022, Australia's total investment in India was \$17.6 billion.
- \$34.5 billion was invested by India in Australia overall.

Environmental Relationship:-

- Australia and India agreed on the Terms of Reference for the Australia-India Green Hydrogen Taskforce during Prime Minister Modi's May 2023 visit to Sydney.
- Experts from Australia and India in the manufacturing and application of green hydrogen will make up the task team.
- It is a supplement to the work of the Australia-India Solar Taskforce, which was established in March 2023 and welcomed by the prime ministers of both countries.
- The Solar Taskforce will offer suggestions on how to improve supply chains and hasten the deployment of solar photovoltaic systems.
- The Australia-India Green Steel Partnership is assisting India in meeting its increasing needs for steel while promoting the commercialization of cutting-edge technologies that enhance production efficiency and environmental results.

Education Relationship:-

- Australia's largest service export to India is education, which is expected to be worth \$4.4 billion by 2022.
- Nearly 88,000 Indian students had visas to study in Australia as of May 2023.

Defence Relationship:-

- Australia and India's defense cooperation gained considerable traction in 2022 and has since expanded.
- after committing to our mutual logistics support agreement in 2021 and our CSP in 2020.
- Australia will host Exercise Malabar, a cooperative training program with India, the US, and Japan, for the first time in 2023.
- During bilateral army and navy drills called drills AUSTRALIND and AUSINDEX, they often train together.
- To improve awareness of the marine domain, they deploy marine Patrol Aircraft.

2.10 India-UK Free Trade Agreement: A Strategic Shift in Trade Relations



Recent talks between the British Prime Minister and the External Affairs Minister have elevated the India-UK Free Trade Agreement (FTA) to the top of the bilateral negotiation agenda.

Why is this Free Trade Agreement important?

- When the FTA is completed, it is anticipated to improve economic relations between India and the UK and act as a model for similar accords with the European Union (EU), which is India's second-largest trading partner.

What is an FTA, or free trade agreement?

- A legally binding trade agreement, or free trade agreement (FTA), is a contract that reduces or removes trade obstacles and fosters economic cooperation between two or more nations or regions.
- FTAs reduce or do away with quotas, tariffs (import fees), and other non-tariff barriers like rules and licensing requirements in order to promote cross-border trade in goods and services.
- These agreements are negotiated in order to promote economic growth and prosperity among the member countries by establishing a more open and competitive trade environment.

Benefits for India and the UK

- **India's Gains:** The country's labor-intensive industries, such as clothing and jewelry and gems, have suffered from a loss of market share. Potentially leveling the playing field with rivals like Bangladesh is a trade agreement. On the other hand, it might affect Least Developed Countries.
- **Benefits for the UK:** Previous trade agreements have demonstrated that removing tariffs does not ensure an increase in exports. Lowering tariffs on British goods, such as automobiles, wine, and whisky, may open up more access to Indian markets.
- **Tariff Disparity:** There is room for tariff alignment, as seen by the 4.2% average tariff on Indian imports into the UK and the 14.6% average duty on goods coming from the UK in India.

India's trade strategy has undergone a strategic shift with the signing of the India-UK Free Trade Agreement, which emphasizes integration with the West and Africa while reducing reliance on China.

2.11 India's 2+2 Ministerial Dialogues: Partnerships and Objectives



The sixth annual 2+2 Ministerial Dialogue was held in New Delhi recently, with the Indian Ministers of Defence and External Affairs hosting their US colleagues.

Understanding 2+2 Dialogues

- **Goal:** High-level delegates from two countries, usually the ministers of defense and foreign affairs, participate in 2+2 discussions. The goal of this format is to increase the amount of communication and cooperation between these nations.
- These kinds of conversations allow for in-depth talks about political issues, mutual sensitivities, and strategic concerns. In a constantly shifting global context, they promote a deeper comprehension of one another's geopolitical viewpoints and aid in the growth of more solid, cohesive strategic connections.

India's 2+2 Partners

- **United States:** The United States is India's most important and long-standing 2+2 format partner. The first two-way conversation happened in September 2018 while the Trump Administration was in office.
- **Australia:** India and Australia have 2+2 discussions to further strengthen their bilateral defense and security cooperation.
- **Japan:** The goal of the 2+2 negotiations, which started in 2019, is to strengthen strategic depth in defense and security cooperation.
- **United Kingdom:** In October 2023, India and the UK held their first two-plus-two dialogue, indicating the partnership's increasing significance.
- **Russia:** Through 2+2 talks, India and Russia are also able to develop mutual understanding on a range of regional and global concerns.

Significance of Defense and Strategic Agreements through 2+2 Dialogues:

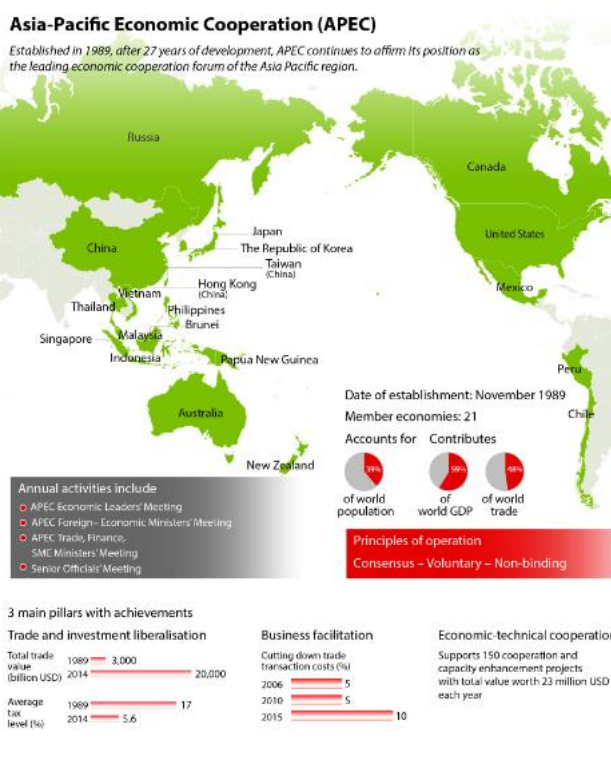
- These discussions have produced important collaborations and bilateral agreements. For example, the United States and India have inked Troika Pacts such as the Basic Exchange and Cooperation Agreement (BECA) for extensive military cooperation, the Logistics Exchange Memorandum of Agreement (LEMOA), and the Communications Compatibility and Security Agreement (COMCASA).
- **Taking Care of Regional Issues:** In light of shared regional issues, such as China's growing aggressiveness,

two-way talks have become essential tools for India and its allies to coordinate their strategic objectives. This includes working with Japan, Australia, and the United States in the Quadrilateral Security Dialogue (QUAD) forum.

- Extending Conventional Alliances: Recognizing common interests and worldviews, India cherishes its two-way talks with Russia in order to advance a multipolar global order.

India's dedication to cultivating strong and diverse strategic connections is demonstrated by its participation in 2+2 Ministerial Dialogues with important international partners. These discussions are essential for tackling local and international issues, enhancing military cooperation, and advancing common goals in a dynamic international system.

2.12 Asia-Pacific Economic Cooperation (APEC) and India



- Leaders from the Asia-Pacific region are gathering in San Francisco for the Asia-Pacific Economic Cooperation (APEC) Leaders' Week, which is bringing them together to talk about important trade and economic concerns.
- India attends the forum despite not being an APEC member.

An Overview of the Asia-Pacific Economic Cooperation (APEC)

- **Origins:** APEC is a regional economic conference that was founded in 1989 with the goal of advancing prosperity and regional economic integration in the Asia-Pacific area. Because of their emphasis on trade and economic issues, its 21 member economies are referred to as "economies."
- **Member economies:** APEC is made up of the following strategically placed countries around the Pacific Ocean: Australia, Brunei, New Zealand, Papua New Guinea, Hong Kong (part of China), the Philippines, Indonesia, Malaysia, Vietnam, Singapore, Thailand, Chinese Taipei (Taiwan), China, Japan, South Korea, Russia, Canada, the United States, Mexico, Peru, and Chile.

The Role of APEC Throughout Time

- **Champion of Free Trade:** APEC has continuously pushed for economic liberalization, lower trade barriers, and free trade.
- **Seoul Declaration:** The main goal of APEC was to construct a liberalized free trade region around the Pacific Rim, as stated in the Seoul Declaration of 1991.
- **Economic Impact:** The Asia-Pacific region's middle class is expanding thanks in large part to APEC activities. As of 2018, 2.9 billion people live in APEC economies, which provide over 60% of the world's GDP and 48% of its commerce.

India's APEC Interest

- **Historical Note:** In 1991, while economic changes for globalization and liberalization were beginning, India declared its desire to join APEC.
- **Justification:** Given its geographic location, prospective economic growth, and commercial connections with the Asia-Pacific region, India is interested in joining APEC.
- **Challenges:** In spite of India's interest, APEC has maintained an unofficial freeze on membership expansion. Although India's desire in joining APEC was acknowledged in the US-India Joint Strategic Vision for the Asia-Pacific and Indian Ocean Region in 2015, no official movement has been achieved.

Highlights of the 2023 APEC Summit

- The meeting between Chinese President Xi Jinping and US President Biden is a noteworthy event. Even if it might not have an immediate impact on US-China ties, it does represent continued high-level discussions.

Indo-Pacific Economic Framework (IPEF): Following the US withdrawal from the Trans-Pacific Partnership, the Indo-Pacific Economic Framework (IPEF) was established. The summit will primarily address developments in this area. The IPEF has 14 members, including Fiji and India; the remaining countries are APEC members.

2.13 G-7

A recent G-7 summit called for humanitarian ceasefires in Gaza.

An Overview:

- The foreign ministers gathered in Tokyo propose long-term solutions and call for the release of hostages and a return to a "broader peace process."

About G-7



- The "Group of Seven" industrialized nations is referred to as G7.
- In 1997, this intergovernmental body was established.
- Headquarters: Neither a written constitution nor a permanent headquarters exist for the G-7.
- Membership is open to the US, UK, Canada, France, Germany, Italy, and Japan.

Origin:

- The present G7 members, with the exception of Canada, met in order to form the group. This meeting took place in
- Because of the OPEC oil embargo, the world economy was in a recession at the time.
- The US determined that it would be advantageous for the major actors on the global arena to collaborate on macroeconomic efforts as the oil crisis worsened.
- Every year, the bloc convenes to deliberate on matters of mutual concern, such as international security, energy policy, and global economic governance.
- Leaders make non-binding decisions at their yearly summits.
- Common ideals among members include respect for international law, free markets, democracy, and fundamental freedoms.
- Consisting of the largest and most developed economies in the world, the G7 is an intergovernmental association.
- Before Russia was kicked out of the organization, the G7 was known as the G8.
- Some of the largest economies in the world, including China, Brazil, and India, are not members of the G7.

Significance:

- Economic Significance: Approximately 60% of the world's net wealth is held by the G7 countries.

3. Economy

3.1 Employees' State Insurance Scheme

- According to recent data, in September 2023, over 18.88 lakh new workers signed up for the Employees' State Insurance Scheme.

An Overview:

- The majority of newly registered employees are under the age of 25, totaling over nine lakh.

About Employees' State Insurance Scheme:-



- The 1948 Employees' State Insurance Act established the Employees' State Insurance Scheme (ESI), a comprehensive social insurance program. The (ESIC) Goals: The purpose of the ESI Scheme is to protect "employees" as that term is defined in the 1948 workers' State Insurance Act against the effects of illness, pregnancy, disability, and death from work-related injuries. It also aims to provide medical care to those who are insured and their families.
- Employees' State Insurance Corporation is the implementing agency.

Applicability of the ESI Plan:

- It covers factories and other businesses that employ ten or more people, such as road transportation, hotels, restaurants, movie theaters, newspapers, shops, and educational and medical facilities.
- Nevertheless, in several States, the minimum level for establishment coverage is still

Selection of Beneficiaries:

- Under the ESI Act, workers in the aforementioned categories of factories and businesses who make up to Rs. 15,000 per month are eligible for social security coverage.
- Additionally, the ESI Corporation has chosen to raise the salary cap under the ESI Act from Rs. 15,000 to Rs. 21,000 for employees.

Coverage under the ESI Plan:

- 1952: Initially, just two industrial hubs in the nation—Delhi and Kanpur—were subject to the ESI Scheme.

- Currently, the Scheme is being implemented in over 830 locations throughout 31 states and union territories.

Funding of ESI Scheme:-

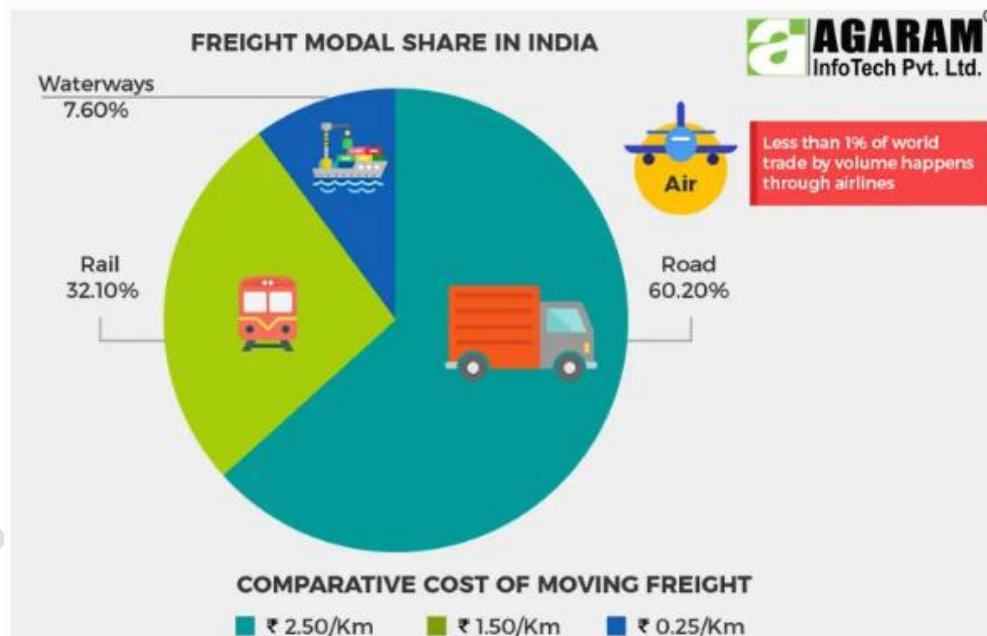
- Both employers and employees contribute to the Employees' State Insurance Scheme (ESI Scheme).
- 3.25 percent of the employee's compensation is the employer's contribution rate.
- Seventy-five percent of an employee's pay is allocated to them as their contribution.

Benefits offered by the ESI Plan:

The primary advantages of the ESI Scheme are:

- The following benefits are available: Unemployment Allowance (RGSKY), Vocational Rehabilitation, Physical Rehabilitation, Dependents' Benefit, Sickness Benefit, Disability Benefit, Maternity Benefit, and Medical Benefit.

3.2 Enhancing the transport of cargo by Indian Railways



When transporting large amounts of material, the railway is one of the most affordable options. But its share is only about 32%.

Government initiative for increasing bulk cargo in Railways:

- **Dedicated Freight Corridor:** The 2,343-kilometer North-South Dedicated Freight Corridor (North-South DFC) is a freight railway that links New Delhi and Chennai. It has 43 planned stops along its course. Preliminary Engineering & Traffic Surveys (PETS) for four further corridors, including the Dedicated Freight Corridor Corporation of India (DFCCIL), are being carried out by the Ministry of Railways.
 - East-West Corridor (Kolkata-Mumbai, 2,330 km)
 - East Coast Corridor (Kharagpur-Vijayawada, 1,100 km)
 - Southern Corridor (Chennai-Goa, 899 km)
- Rake movement rules have been loosened, allowing for the introduction of private freight terminals (PFTs), micro rakes, and loading from and to numerous sites.
- The goal of the Gati Shakti Terminal (GCT) Policy is to turn all private sidings and PFTs into GCTs. A

company-owned railway line that is connected to a railway is known as a private siding.

- Partnership with Private Freight Operators: Indian Railways has pushed private freight operators to purchase wagons, making it easier for privately held wagons carrying specialized cargo, including cars and fly ash, to be introduced.

3.3 India's Most Favoured Nation (MFN) approach

The latest ruling on tax treaties by the Supreme Court clarifies India's Most Favoured Nation (MFN) policy.

What is the Most Favoured Nation (MFN)?

- It is a diplomatic and commercial tenet that encourages fairness in dealing between trading partners. When one nation accords MFN status to another, it commits to providing that partner with the same trade benefits and favorable conditions as it does with its most preferred trading partner.

Explanation:

- For instance, if Country A grants Country B the MFN designation, it has to provide Country B with the same trade advantages as it provides to Country C, which is its greatest trading partner. This guarantees impartiality and absence of bias in global commerce.

MFN's Legal Status:

- WTO member nations are required by Article 1 of GATT 1994 to confer Most Favoured Nation (MFN) status on one another, guaranteeing equitable trade treatment. There may be some exceptions, such as agreements on bilateral trade or preferential access for underdeveloped countries.
- For example, Pakistan was initially awarded MFN status along with all other WTO members by India. However, Pakistan never granted India's MFN status back, and India revoked Pakistan's MFN status in 2019 for security concerns.

Why is the MFN Controversy so old?

- India modified its dividend tax laws in 2020, giving investors from specific nations comparable advantages. Because of the reduced tax rates in the treaties that India individually signed with new OECD members, investors from these nations benefited relatively.
- Currently, investors from the Netherlands, Switzerland, and France—ancient members of the OECD—have also begun to search India for advantages related to reduced tax rates. The topic of whether the three countries should automatically get the lower tax rates without any formal notification gave rise to dispute, though.

3.4 Hunger Hotspots

In 18 of the 22 countries that make up the FAO and WFP's hunger hotspots, severe food insecurity is predicted to get worse (countries including Afghanistan, Nigeria, Somalia, South Sudan, and Yemen are at the highest concern category).

What are hotspots for hunger?

- Hunger hotspots are areas or nations where severe food insecurity is a major concern, as determined by agencies such as the FAO and WFP. Many people in these places are suffering from severe food shortages

and other issues that are getting worse and could soon make the situation more dangerous.

Other Hotspots:

- Haiti, the Sahel (Burkina Faso and Mali), Malawi, Guatemala, Honduras and Sudan
- Pakistan, the Central African Republic, Ethiopia, Kenya, the Democratic Republic of the Congo, the Syrian Arab Republic, and Myanmar. Lebanon, El Salvador, and Nicaragua are newly added to the list
- The large number of persons experiencing severe acute food insecurity and aggravating circumstances that are anticipated to make matters worse in the upcoming months are the basis for the alert.

3.5 Microfinance in India

The third edition of "Micro Matters: Macro View – India Microfinance Review FY 2022-23" was introduced in Mumbai by the Microfinance Industry Network (MFIN).

Principal results of the review:

- In 729 districts, the microfinance industry acquired 87 lakh new female clients, bringing the total number of low-income women clients to approximately 6 crore, with outstanding credit totaling more than 3 lakh crores.
- Among other regulated companies, MFIs are the leading provider of micro-credit, followed by banks.
- Gross Non-Performing Assets (NPA) for MFIs dropped from roughly 5.6% in FY22 to 2.7% in FY23.

3.6 Greenwashing

The self-regulatory organization for the advertising sector, the Advertising Standards Council of India (ASCI), has unveiled a draft set of standards consisting of nine points to counteract corporate "greenwashing."

About the Guidelines:

- Environmental statements such as "eco-friendly," "sustainable," "environment-friendly," and "planet-friendly" need to be backed up with substantial data.
- Claims of this kind ought to take into account the product or service's whole life cycle.
- Seals of Approval and Certifications ought to list the qualities that have been assessed.
- Claims that a product is recyclable, biodegradable, compostable, non-toxic, or element-free should all be supported by solid scientific data.

Aim of the Guidelines:

- The purpose of the suggested rules is to support advertising that is genuine and transparent so that consumers may make wise judgments. The guidelines are currently available for public input through December 31st.

Efforts to prevent greenwashing:

- Beginning in 2024, businesses globally will be required to adhere to standardized sustainability and climate standards set by the International Sustainability Standards Board (ISSB).
- The Business Responsibility and Sustainability Reporting (BRSR) guidelines published by SEBI contain a list of dos and don'ts concerning green bonds.
- Joining the Greenwashing TechSprint of the Global Financial Innovation Network (GFIN) was announced by

RBI.

3.7 Technology Development Board (TDB)

An alliance between the Small Industries Development Bank of India (SIDBI) and the Technology Development Board (TDB) has been formed to promote the Micro, Small, and Medium Enterprise (MSME) sector.

About Technology Development Board (TDB)

- It is a statutory organization that was founded in 1996 and is housed under the Department of Science and Technology. Its mission is to advance the advancement and marketing of both domestic and foreign technology. It has eleven board members and offers loans or equity capital to businesses in the industrial sector as well as financial support to institutions dedicated to research and development.

In order to promote industrial investments in cutting-edge technological solutions, the TDB has funded the creation of the Global Innovation & Technology Alliance (GITA), a not-for-profit Public Private Partnership (PPP) firm.

3.8 Employees' Provident Fund Organisation (EPFO)

- According to recent data, in September 2023, the Employees' Provident Fund Organization (EPFO) attracted 17.21 lakh net members.

Context:

- Comparing this to the previous month of August, there has been a net member growth of 21,475.

About the EPFO, or Employees' Provident Fund Organization:-

- The Government of India's Ministry of Labour and Employment is in charge of the EPFO's administration.
- In terms of customers and the amount of money exchanged, it is among the biggest social security organizations in the world.
- On November 15, 1951, the Employees' Provident Funds Ordinance was passed, bringing it into being.
- The Employees' Provident Funds Act of 1952 took its place.
- In order to establish provident funds for workers in factories and other establishments, the Employees' Provident Funds Bill was presented to the Parliament in 1952.
- The Employees' Provident Funds & Miscellaneous Provisions Act, 1952 is the current name of the Act, which is applicable throughout India.
- The Central Board of Trustees, Employees' Provident Fund is a tripartite board that oversees the Act and its defined schemes.
- The Central Board of Trustees is made up of representatives from employers, employees, and the federal and state governments.
- For workers in India's organized sector, it manages an insurance program, a pension plan, and a contributory provident fund.
- The Employees' PF Organization (EPFO), which has offices at 138 places across the nation, provides assistance to it.
- The organization offers a well-equipped training facility where officers, staff members, and representatives of employers and employees attend training and seminar sessions.

Vision: Using cutting-edge technology, this innovative social security organization seeks to provide Nirbadh

(seamless and uninterrupted) service delivery to its stakeholders while expanding universal coverage.

3.9 Enforcement Directorate (ED)

- In the National Herald money laundering case, the Enforcement Directorate (ED) recently confiscated assets valued at over 751 crore rupees.

Context:

- The agency said in a social media post that the inquiry showed Associated Journals Ltd. (AJL) had 661.69 crore rupees worth of proceeds of crime in the form of real estate distributed across several Indian cities, including Delhi, Mumbai, and Lucknow.

About ED:-

- Founded in 1956, the Enforcement Directorate is a multidisciplinary agency.
- It is an enforcement agency whose job it is to fight economic crime in India, including money laundering and irregularities in foreign exchange, and to enforce laws related to the economy.
- It is operated by the Ministry of Finance's Department of Revenue.
- Head Office: New Delhi
- The following Acts are among the duties performed by the Directorate:
- The Prevention of Money Laundering Act (PMLA): This law was passed in 2002.
- A civil statute known as the Foreign currency Management Act, 1999 (FEMA) authorizes the ED to look into possible violations of foreign currency laws and regulations. (Act on Foreign Exchange Management)
- The 1974 Foreign Exchange Conservation and Smuggling Activity Prevention Act Sponsoring Organizations under the Foreign Exchange Regulation Act of 1973
- The Fugitive Economic Offenders Act, 2018 (FEOA) is a law that requires the Directorate to seize the assets of individuals who have fled India and are considered fugitive economic offenders, with the intention of apprehending them and confiscating their assets for the Central Government.
- On the advice of a commission led by the Central Vigilance Commissioner and made up of Vigilance Commissioners, Home Secretary, Secretary DOPT, and Revenue Secretary, the Director of Enforcement was appointed by the federal government.
- Maximum term of five years.

Recruitment of other officers:-

- It is possible to hire additional officers directly or indirectly from other investigation agency.
- It is composed of delegates from the Indian Revenue Services (IRS), Indian Police Services (IPS), Indian Administrative Services (IAS), and the departments of income tax, excise, customs, and police.

3.10 National Coal Index (NCI) surges this Month

- The National Coal Index (NCI) increased significantly in September of this year, the first gain since April 2023, according to current developments.
- This spike in the NCI has important ramifications for India's coal industry and is connected to variations in the price of coal globally.

Understanding the National Coal Index (NCI)

- **What's this?** The NCI is a price index that shows how the price of coal changed from a defined base year to a specific month.
- **Release:** The Ministry of Coal releases it once a month.
- **Launch:** On June 4, 2020, the NCI was unveiled as a tool to track changes in coal prices in relation to a set base year, FY 2017–18.
- **Price Indicator:** One important price indicator that integrates coal prices from several sources, such as import prices, auction prices, and notified prices, is the NCI.
- **Basis for Premiums:** Using a market-based approach, it is essential in setting premium rates, which can be done either on a per-tonne or revenue-sharing basis.

NCI components

- **Sub-Indices:** There are five sub-indices in the NCI, with three pertaining to non-coking coal and two to coking coal. The final index for non-coking and coking coal is derived by combining these sub-indices, which clearly distinguishes the two types of coal.
- **Customized Revenue Shares:** The revenue share is determined by using the relevant sub-index, which is based on the coal grade connected with a mining.

The causes of the NCI Surge

- **Impact of Global Prices:** The recent increase in the NCI is mostly due to a brief increase in the price of coal globally, which has had an impact on the Indian coal market.
- **Seasonal Demand:** As India's winter and holiday seasons get near, there is an increased demand for coal, which has forced producers to increase domestic output in order to keep up with the country's expanding energy requirements.
- **Growth in the Power Sector:** As a result of rising electricity demands, India has seen a spike in the demand for coal, especially from the power sector.
- **Continued Coal Imports:** In accordance with the electricity ministry's coal blending directive, power plants have kept importing coal.

3.11 PM-Kisan Bhai (Bhandaran Incentive) Scheme

Preparing to introduce the PM-Kisan Bhai (Bhandaran Incentive) initiative, the Indian government hopes to empower small and marginal farmers and reduce the authority of traders in setting prices.

PM-Kisan Bhai

- With the freedom to choose when and where to sell their harvests, this program seeks to encourage farmers to hold onto their produce for at least three months after harvest.
- It aims to give farmers more control over their produce by dismantling the traders' monopoly on determining agricultural prices.
- This project gives farmers the freedom to choose when to sell, as opposed to the usual practice of selling most crops during the 23-month harvest period.
- **Scheme Implementation First Rollout:** States including Andhra Pradesh, Assam, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, and Uttar Pradesh may be chosen to participate in the scheme's pilot program.

Two Essential Elements:

- **Storage Rental Subsidy (SRS):** Small farmers and farmer producer organizations (FPOs) are eligible to receive ₹4 per quintal per month under the SRS, up to a maximum of three months, regardless of storage costs.
- **Prompt Repayment Incentive (PRI):** Under the Kisan Credit Card (KCC) program, farmers who pledge their goods in exchange for loans at subsidized interest rates are to receive an additional 3% interest subvention from the government.
- The storage incentive will only be offered for a maximum of three months, according to government proposals.
- Furthermore, products kept for fewer than 15 days will not qualify for the rebate.
- Daily calculations will be used to determine the incentive.

Benefits:

- **Refusing Price Dictation:** Farmers are able to reject prices set by purchasers if they get financial assistance for storage throughout the harvest season.
- **Getting into a Bigger Market:** Farmers will have access to a wider range of buyers nationwide by promoting e-Negotiable Warehouse Receipt (eNWR) trade through platforms like e-National Agriculture Market (e-NAM).

Need for a scheme like this

- **Pledge Finance Facility:** Farmers can now access a pledge finance facility, but its usefulness is restricted by the high carryover costs for farmers and the credit risk to banks.
- **Encouraging Scientific Warehousing:** By lowering interest rates on pledge financing, the program seeks to encourage farmers to store their food in warehouses designed with science in mind.

3.12 Cabinet clears terms of reference for 16th Finance Commission

Fresh formulation

The 16th Finance Commission will have time until Oct. 31 2025, to recommend the tax sharing math between Centre and States

■ Panel will also prescribe measures to augment Consolidated Fund of a State to supplement resources of panchayats, local bodies



■ An Advance Cell was set up in the Finance Ministry last November to oversee preliminary work

■ Panel may review existing arrangements on financing Disaster Management initiatives

- The terms of reference (ToR) for the Sixteenth Finance Commission were approved by the Union Cabinet.
- A model for revenue sharing between the Center and the States for the term beginning on April 1, 2026, will be developed by the Commission.

About Finance Commission

- **Establishment:** In accordance with Article 280 of the Indian Constitution, the President of India founded the Finance Commission (FC) in 1951.
- Its principal function is to establish and oversee the financial agreements between the federal government and the several state governments.
- **Legislative Framework:** The Finance Commission (Miscellaneous Provisions) Act, 1951, provides more details about the Finance Commission's eligibility, term, qualifications, and disqualifications.
- The FC is made up of four members and a chairman who are appointed every five years.
- **Evolution:** Since the First FC, the macroeconomic conditions in India have undergone substantial changes that have impacted the Commission's recommendations.

Constitutional Provisions

- **Article 268:** Allows the States to collect and retain the duties levied by the Center.
- **Article 280:** Defines the FC's membership requirements, composition, and scope of work. It requires the FC to make recommendations about the sharing of net tax proceeds among the States and the Union. It also discusses the devolution of unplanned revenue streams and the financial relationship between the Union and the States.

Key Functions of the Finance Commission

- **Tax Devolution:** Proposes a division of net tax revenues between the federal government and the states.
- **Grants-in-Aid:** Establishes the guidelines for these State grants.
- **Enhancing State Funds:** Provides advice on how to improve the States' Consolidated Funds to assist local government units and panchayats, in accordance with the recommendations of State Finance Commissions.
- **Additional Financial Purposes:** handles any further financial issues that the President may have referred.

Members of the Finance Commission

- **Structure and Standards:** For the FC, the Finance Commission (Miscellaneous Provisions) Act, 1951 established global standards and a structured format.
- **Capabilities and Authority:** outlines the requirements, disqualification, term, appointment, eligibility, and powers of members.
- **Composition:** The Chairman is a public affairs veteran who was selected for the job. The other members are chosen based on their background in law, their understanding of public finance, their proficiency in administration and finance, or their expertise in special economics.

The 16th Finance Commission's challenges

- **Overlap with GST Council:** Living beside the permanent constitutional body known as the GST Council poses a new set of difficulties.
- **Conflict of Interest:** The FC's revenue-sharing estimates may be impacted by decisions made by the GST Council about tax rates.
- **Practicality of Recommendations:** Although the Center frequently implements the FC's tax devolution and

budgetary target recommendations, other recommendations could go unnoticed.

Major Outstanding Recommendations

- **Creation of the Fiscal Council:** The government has demonstrated resistance to the 15th FC's proposal for a Fiscal Council to oversee collective macro-fiscal management.
- **Non-Lapsable Fund for Internal Security:** Although the Center approved the creation of this fund "in principle," more information is needed to determine how it would be implemented.

3.13 RBI's new rules on Credit Information

- One of the most important considerations when applying for a loan is your credit score. Your debt and repayment history will determine it.
- The Reserve Bank of India (RBI) has taken a big step by giving credit information companies (CICs) guidelines about how transparently they can obtain your Credit Information Report (CIR).

RBI's Circular Regarding CIR Access

- **Notification to Customers:** When banks and non-banking financing firms (NBFCs) access a client's Credit Information Report (CIR), CICs are now required to send out an email or SMS notification to the customer.
- **Alerts on Default Information:** When customers provide information to CICs about defaults or Days Past Due (DPD) on current credit, credit institutions—including banks and NBFCs—must likewise notify their clients via SMS or email.
- **Timeline for Implementation:** Within six months, these new regulations will go into force.

Credit Information Companies (CICs): An Understanding

- **Function of CIC:** Banks and NBFCs supply CICs with credit information about persons and companies, which they retain and examine.
- **Credit Scores and Ranks:** Using this information, CICs evaluate a person's creditworthiness and credit history by calculating credit scores for people and credit ranks for businesses.
- **Effect on Grant of Loan:** Improved credit scores frequently result in better lending terms, while lower scores can make it more difficult to get approved for a loan or credit card (perhaps as a result of past loan defaults).

Getting to Know Your Credit Score

- **Payment Requirement:** CICs usually charge a fee for people to access their credit ratings.
- **RBI's Directive:** As of right now, persons whose credit history is accessible through the CIC are required to receive a "Free Full Credit Report (FFCR)," which includes the credit score, once a year from the CIC.
- **Easy view:** The CIC's website should have a prominent link that makes it simple to view the FFCR.

Data Correctness Issues

- **Data Correction:** Customers have the right to request a correction if they think their credit information is inaccurate.
- **Reason for Rejection:** In order to help clients better understand the concerns in the CIR, banks and NBFCs are expected to provide them with the rationale behind their decision to deny their requests for data correction.

CIC Accountability and Transparency

- **Evaluation of "Search & Match" Logic:** CICs are required to periodically, or at least semi-annually, assess the "search & match" logic process they employ to produce the CIRs for borrowers.
- **Root Cause Analysis:** Problems with the algorithm should be found by a "root cause analysis" of complaints.
- **Board Approval:** The CIC's Board of Directors should be presented with the analysis's findings and any modifications for their consideration.
- **Timely Data Ingestion:** Within seven calendar days of receiving the data, CICs are required to begin ingesting credit information from banks and NBFCs.

Disclosure of Complaints: On their websites, CICs are obligated to publish information about complaints that have been filed against them and credit institutions.

Edge IAS

4. Science & Technology

4.1 Project Q*

- The AI innovation known as Project Q* by OpenAI has generated debate and raised questions about whether it could endanger humankind.

Project Q*: What is it?

- According to reports, Project Q* is an AI breakthrough that can solve challenging puzzles and exhibit sophisticated reasoning akin to that of humans. The research has sparked worries about whether it poses a threat to civilization because of its deep learning skills, promise to advance science more quickly, and potential for misuse and unforeseen repercussions.

What is the difference between generative and artificial general intelligence (AGI)?

- Artificial General Intelligence (AGI) is the term used to describe artificial intelligence that possesses cognitive capacities equal to those of humans, meaning that it can learn, comprehend, and apply information in a variety of fields. A step toward artificial general intelligence (AGI) is thought to be Q*.
- Distinction from Generative AI: Generative AI focuses on creating content, including writing, graphics, and other types of data, using models and algorithms that have been trained on preexisting examples, whereas AGI strives for general intelligence.
- Ethical Dilemmas: Project Q* raises ethical concerns concerning the suitability of safety precautions, the possibility of accelerating scientific advancement, and the ethical commercialization of such sophisticated AI models.

4.2 Age of Moon

- Based on crystals recovered by Apollo astronauts in 1972, a new study has determined that the Moon is about 40 million years older than previously thought.
- These lunar crystals allowed the researchers to refine their estimate of the Moon's formation age, which now stands at a minimum of 4.46 billion years.
- These crystals are used as a benchmark for lunar chronology since they are the earliest known solids to form following a major impact.
- The age of the crystals was ascertained by the study using an analytical technique known as atom probe tomography, and it was discovered that the Moon is, in fact, at least 4.46 billion years old.

Significance:

- This knowledge is essential to comprehending how the Moon influences tides and stabilizes Earth's rotational axis, both of which have an impact on life as we know it.

Subsurface Water Ice Mapping (SWIM) project

- A map of Mars has been produced by the Subsurface Water Ice Mapping Project (SWIM), which shows the locations of subsurface water ice that have been found by NASA missions.
- Scientists can use this map as a useful tool to find possible landing locations for the first humans on Mars.
- Water ice is essential for drinking, rocket fuel, and other uses on Mars because liquid water cannot exist in

the planet's thin atmosphere.

- A NASA-funded initiative called Subsurface Water Ice Mapping (SWIM) seeks to identify areas on Mars where water ice is most likely to exist. Finding the greatest locations to access water ice buried beneath the Martian surface is another goal of the research.
- The Mars Exploration Program of NASA is assisted by the SWIM project in determining the location and kind of possible water resources on Mars. The map can be used by scientists to determine the location of the first astronaut landing.
- The High-Resolution Imaging Science Experiment (HiRISE) is used by the SWIM project to investigate recently formed impact craters. The sites of possible subsurface water ice on Mars were mapped in detail for the fourth time and made public.

4.3 Indigenous charging standards

- Light electric vehicles (LEVs) can now use the indigenous AC and DC mixed charging connector standard IS17017 (Part 2/Sec 7): 2023, which has been authorized by the Bureau of Indian Standards (BIS).
- Developed in India, this standard is the first of its sort in the world.

Importance:

- Original equipment manufacturers (OEMs) in India can now deviate from only depending on foreign standards and protocols thanks to this initiative.
- The new standard provides a hybrid and economical infrastructure for all forms of charging, addressing the demand for a standardized connector for combined AC and DC charging systems for two-wheelers, three-wheelers, and microcars.
- Customers can conveniently charge their EVs without lugging heavy chargers thanks to the interoperable networks it offers for both fast and slow charging.
- This achievement is viewed as a major step in accelerating the use of EVs in India and possibly globally, thereby fostering the expansion of electric transportation.

Venus had Earth-like plate tectonics billions of years ago

- Despite being a sweltering wasteland, Venus may have once experienced plate tectonics akin to those on the early Earth, according to a recent research.
- Venus's current atmosphere and surface pressure can only have been the consequence of early plate tectonics, according to study that employs computer modeling and atmospheric data from Venus.
- Because plate tectonics creates habitable conditions and stabilizes surface temperatures, it is vital to life.
- According to the study, Venus had plate tectonics between 4.5 and 3.5 billion years ago, which is comparable to Earth's plate tectonics but with less plate involvement and limited plate movement.

Significance:

- This discovery indicates that both planets were more similar than previously believed and suggests that there may have been early microbial life on Venus.
- Additionally, the work raises the possibility that planets' habitability may be impacted by shifts in and out of distinct tectonic regimes.
- The study offers evidence that atmospheres can reveal information about the early history and formation of a planet.
- The results of the study could affect our knowledge of other planets and moons, such as Jupiter's Europa,

which exhibits plate tectonics similar to those of Earth.

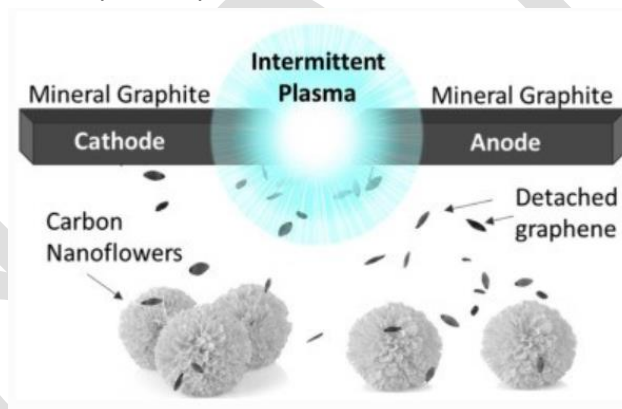
- The findings pave the way for additional research into Venus's demise and its possible effects on Earth's habitability.

4.4 Carbon nanoflorets

Carbon nanoflorets that effectively convert sunlight into heat have been made by researchers at the Indian Institute of Technology (IIT) Bombay.

Carbon nanoflorets: what are they?

- A special kind of nanostructure known as a carbon nanofloret is made up of carbon atoms organized in a way that resembles florets. Because of their remarkable qualities and structure, they offer a high surface area and a wide range of possible applications in industries including materials science, electronics, and nanotechnology.
- These nanoflorets are very effective in converting sunlight into thermal energy because they can absorb light at various frequencies, such as visible, infrared, and ultraviolet light.
- Furthermore, their distinctive shape guarantees low light reflection and effective heat retention.
- These nanoflorets can evaporate 5 litres of water in an hour on a surface area of 1 square meter, outperforming industrial solar stills.
- It has potential use in a number of industries, including healthcare and construction, and it can provide warmth that is environmentally friendly.



Premature mortality from major non-communicable diseases

- In terms of lowering the number of early deaths from major non-communicable diseases (NCDs), India is predicted to fall short of the targets established by the World Health Organization (WHO) and the United Nations Sustainable Development Goals (SDG).
- The WHO's target of a 25% reduction in premature mortality from the four major NCDs—cancer, cardiovascular disease, chronic respiratory diseases, and diabetes—by 2025 compared to 2010 is unlikely to be met by India, according to an analysis by the Indian Council of Medical Research (ICMR).

Key Findings:

- According to the study, NCDs cause a significant percentage of fatalities in India, with 22% of deaths in 2019 being preventable.
- Premature death can be decreased by reducing a number of risk factors, including obesity, high blood pressure, physical inactivity, alcohol and tobacco use, and poor food choices.

India is making less progress in lowering NCDs than other countries like China, Sweden, Moldova, Peru, and lower- and middle-income countries.

4.5 Hydroclimate extremes

- The effect of global warming on hydroclimate extremes over the Indian River Basins (IRBs) was investigated in a recent study conducted at Banaras Hindu University.
- Extreme weather events with significant potential effects on ecosystems and human society are known as hydroclimatic extremes. Droughts, heat waves, rainstorms, and floods are some of these occurrences.
- High-resolution simulations of precipitation from the Coupled Model Intercomparison Project-6 (CMIP6) experiments were employed in the study.

Findings:

- The results show that whereas heavy rainfall intensity is predicted to increase across the Upper Ganga and Indus basins, the frequency of extreme rainfall is forecast to increase over the Western Ghats and Northeast River basins.
- The study draws attention to an agricultural drought brought on by a drop in mean rainfall in the lower Ganga basin.

Significance:

- It highlights how important it is for decision-makers to create plans for handling excess or insufficient water. The study projects notable variations in precipitation in certain locations and an increase in heavy rainfall of 4% to 10% throughout the western portion of the Indian River basins.
- These modifications to the hydroclimate extremes may have a significant effect on socioeconomic situations, agriculture, and health.
- In order to reduce the risk associated with extreme events in these basins, policymakers should develop basin-specific climate adaptation and mitigation strategies, such as water and emergency services policies, as the study also identifies major hotspots for future urban flooding in densely populated cities.

4.6 Apollo 13 spacecraft recovery

At the age of 87, astronaut Ken Mattingly, who was well-known for his vital assistance in ensuring the safe return of the damaged Apollo 13 spacecraft to Earth, passed away.

How did the Apollo 13 spacecraft fare?

- An oxygen tank explosion on the Apollo 13 spacecraft during a mission to land on the moon in 1970 interrupted the mission and put the crew's lives at jeopardy. Their lunar landing had to be canceled.

In what manner was the spacecraft returned to Earth?

- The tale of Apollo 13's rehabilitation is one of cooperation, creativity, and tenacity. Astronauts Jim Lovell, Jack Swigert, and Fred Haise, as well as ground control and colleague astronaut Ken Mattingly, worked nonstop to find a solution when an oxygen tank exploded. They saved energy and supplies, turned the lunar module into a lifeboat, and traveled by starlight. They demonstrated the tenacity of human ingenuity and the spirit of discovery when they worked together to swing around the moon and safely return to Earth.

4.7 White Hydrogen

A significant deposit of "white hydrogen," said to be one of the highest concentrations of this clean energy source ever known, was uncovered in northeastern France by two scientists.

White hydrogen: what is it?

- A clean-burning energy source present in the Earth's crust naturally is called white hydrogen. It is known as natural hydrogen and can be found on Earth as naturally occurring molecular hydrogen. White hydrogen is distinguished from grey, brown, or black hydrogen (which comes from fossil fuels) and green hydrogen (which is made from renewable energy sources through the electrolysis of water).

Significance:

- One potentially plentiful and unexplored source of clean-burning energy is white hydrogen.
- White hydrogen is a more cost-effective sustainable energy source than green hydrogen, which is projected to cost \$6 per kilogram. White hydrogen's estimated cost is roughly \$1 per kilogram.
- Worldwide, deposits of white hydrogen have been found, including in the US, Russia, Australia, Oman, France, and Mali. These deposits are located in eastern Europe.

4.8 Tuberculosis

According to recent reports, the Philippines, Indonesia, and India are responsible for more than 60% of the decline in tuberculosis cases reported in 2020 and 2021.

An Overview:

- After COVID-19, tuberculosis (TB) continued to be the second most common infectious agent-related cause of death worldwide in 2022. It was nearly twice as common as acquired immunodeficiency syndrome (AIDS) and HIV combined, which was the primary cause of mortality for those living with HIV.

Regarding tuberculosis:

- The infectious disease known as tuberculosis (TB) typically attacks the lungs.
- Mycobacterium tuberculosis, the bacteria that causes tuberculosis, mostly affects the lungs but can also affect other regions of the body.
- It is possible to prevent and treat tuberculosis.
- It is believed that the TB bacteria has infected about 25% of the world's population.
- In the end, 5–10% of TB-infected individuals will have symptoms and develop TB illness.
- Risk elements Immune system disorders such as HIV are the most prevalent risk factor for tuberculosis (TB).

Ailments:

- protracted cough (sometimes with blood)
- weakness, exhaustion, fever, weight loss, and night sweats

Transfer:

- Like the flu or a cold, bacteria can spread through the air.
- When sick people cough, sneeze, or spit, the infection spreads via the air.
- It cannot be spread by those who are infected but not (yet) unwell with the illness.

Treatment:

- Antibiotics are typically used to treat tuberculosis (TB), which can be lethal if left untreated.
- The Bacille Calmette-Guérin (BCG) vaccine is administered to infants and young children in some nations in order to prevent tuberculosis.
- Not in the lungs, but outside the lungs, the vaccination guards against tuberculosis.

Prevention:

- It is important to get medical assistance if you experience symptoms such as a persistent cough, fever, or unexplained weight loss. Prompt treatment for tuberculosis can enhance recovery and prevent the disease's spread.
- obtaining a TB infection test if you are more susceptible, such as if you have HIV or come into contact with family members or coworkers who are TB carriers.

4.9 Scabies

- There may be a scabies outbreak in Malawi, according to recent reports.
- Hospitals are reporting thousands of cases of dangerous skin diseases months after cholera devastated an African nation.

Regarding Scabies:

- A parasite known as *Sarcoptes scabiei*, a mite that is a tiny bug of around 0.3 mm in length, is the cause of scabies, a skin illness.
- The parasite's female burrows behind the skin.
- It usually lays two to three eggs every day and starts laying within two to three hours of infection.
- In ten days, the eggs hatch into adult mites, as this parasite is known.
- *Sarcoptes scabiei*, a microscopic mite, is the source of the relatively common condition known as scabies.
- Transmission occurs more often through intimate skin contact between individuals.

Symptoms: –

- a strong itch
- Rashes and sore spots on the fingers, wrists, arms, legs, and around the belt
- larger rash on the scalp, ankles, palms, and soles of the feet in babies and young children.
- Large sections of the body are affected by a more severe form of scabies known as crusted scabies, which causes the skin to become scaly and crusty.

Treatment: -

- Various lotions that typically contain 5% permethrin can be applied to the body and left on for a duration of 12 to 24 hours.
- Usually, a single topical application is adequate; however, if mites persist after a week, another scabicide application may be necessary.
- Antihistamine drugs or calamine lotion can be used to reduce itching.

Avoidance:

- Maintaining proper cleanliness is crucial for preventing scabies. Diseases that Are Not Communicable (NCDs)

4.10 DEEPFAKES

- Deepfakes are artificial intelligence (AI)-generated, realistic-looking images or movies that alter or replace the original content with fresh, frequently faked content.
- The words "deep learning" and "fake" are combined to form the term "Deepfake."
- The phrase gained popularity after an AI-powered program that was made available to the public on Reddit was used to superimpose celebrity faces on the bodies of subjects in explicit films.
- Following the recent social media viral success of an actor named Rashmika Mandanna, deepfakes are once again making headlines.
- Researchers have found that scammers and hackers are using deepfakes 230% more frequently, and they project that deepfakes will supplant phishing in a few years.

How Does the Technology of Deepfake Work?

- The method uses generative adversarial networks (GANs), a type of machine learning, to create or change images and movies.
- The artificial intelligence (AI) program recognizes and mimics the subjects' gestures and expressions from the original footage, then replicates these in a different picture or video.
- The makers of deepfakes use a big library of source photos to make sure the final product is as authentic as possible. For this reason, there are more deepfake videos featuring politicians, celebrities, and public figures produced.
- Next, one piece of software uses the dataset to make a false video, and another uses it to look for evidence of forgery.
- The two software programs work together to render the bogus video until the second program is unable to recognize the forgery.
- When machine-language models teach themselves, this is referred to as "unsupervised learning." It is challenging for other applications to recognize Deepfakes using this strategy.

Challenges Posed by Deepfakes

- Encourages the "Liar's Dividend"- The term "Liar's Dividend" describes the circumstance in which an unfavorable fact is written off as fake news or Deepfakes. The leader's toolkit includes deepfakes to supplant real media and information. Deepfake videos featuring former President Donald Trump. Deepfakes obfuscate the distinction between fake and real. Individuals begin to reject reality as unreal.
- Loss of faith in democratic procedures such as elections In order to skew public opinion and undermine democracy, manipulated material—likely in the shape of an authentically rendered false film—is presented as fact. Deepfake media was used in 2021 to encourage the Capitol Hill riots.
- Crime against women: Women's chastity and dignity are being violated by the use of deepfakes as a weapon. Research from the AI startup Deepttrace claims that more than 90% of deepfake films are sexual in content.
- Violence and radicalization are encouraged by: Fake videos are used by non-state groups like ISIS and Al-Qaeda to incite people against states. Regarding Ex-Fake Videos: These purport to depict military personnel committing "crimes in conflict areas."
- An increase in cybercrimes: Phishing attacks, financial fraud, and identity theft are being carried out by cybercriminals employing deepfake technology. An ex-CEO of a UK energy company was duped into sending €2,20,000 to scammers by utilizing deepfake audio.

Deepfake Regulation in the World and in India

India

- The use of deepfake technology is not prohibited nor regulated by any particular laws or regulations in India.
- Deepfakes fall under the purview of Sections 67 and 67A of the Information Technology Act (2000), which deal with defamation and the publication of explicit information.
- According to India's IT Rules, 2021, intermediate platforms must remove any content that is found to be fraudulent or created using deepfake within 36 hours.
- Defamation is punishable by the Indian Penal Code (1860), Section 500.

Social media middlemen must create technologies, such as watermarking AI-generated material, to identify and report Deepfakes on their platforms. Microsoft's video authenticator, for example, is a new anti-deep fake technology designed to combat false information. There should also be constant debates over the requirement for legislative frameworks to deal with the malevolent application of Deepfakes technology.

4.11 Black Hole

Scientists recently created a lab simulation of a black hole.

An Overview:

- In 2022, physicists observed the equivalent of Hawking radiation by simulating the event horizon of a black hole using a chain of atoms in a single file.
- Particles produced by disruptions in quantum fluctuations brought on by the spacetime disruption created by the black hole are known as hawking radiation.

Regarding Black Holes:

- Nothing, not even light, can escape the gravitational pull of a black hole, an astronomical object with such a strong gravitational field.
- It is an area of space where the gravitational field is so strong that neither radiation nor matter can escape.
- Beyond what is known as the Event Horizon, which is the region surrounding the black hole, nothing else can return, not even light.
- It also absorbs all light that strikes it and does not reflect any light, which is why it is dubbed "black."

Creation:

- When a star with more than 20 solar masses runs out of nuclear fuel in its core and falls under its own weight, a stellar-mass black hole is created.
- The star's outer layers are blasted off as the collapse causes a supernova explosion.
- Although their formation is poorly understood, supermassive black holes have been known to exist since the very beginning of a galaxy's existence.
- It resembles a perfect black body in thermodynamics precisely.
- Many black holes have been observed in two primary classes.

Supermassive objects, which weigh between 100,000 and billions of solar masses, are located in the centers of most large galaxies, whereas stellar-mass black holes, which have masses ranging from three to dozens of times that of the Sun, are dispersed throughout the Milky Way galaxy.

4.12 Helicobacter pylori

Recently, the National Institute of Cholera and Enteric Diseases made it possible to quickly identify drug-resistant *Helicobacter pylori*.

An Overview:

- Researchers from the National Institute of Cholera and Enteric Diseases (ICMR-NICED), Kolkata, have developed a two-step PCR-based assay of a small region of the *Helicobacter pylori* (*H. pylori*) bacteria that can help detect *H. pylori* infection and also identify clarithromycin-resistant bacteria and those that are drug-sensitive in six-seven hours.

About Helicobacter pylori:

- A bacterium called *H. pylori* causes lining infections in the stomach.
- It has been connected to stomach cancer and gastrointestinal problems like peptic ulcers.
- It is present in the body of almost two thirds of people on the planet.
- Most people never have any symptoms from it.
- 60–70% of people in India suffer from *H. pylori* infection.
- This typically occurs in childhood and, if antibiotics are not used correctly, stays in the stomach for the rest of the person's life.

Symptoms:

- A discomfort or scorching sensation in your abdomen
- stomach ache that could worsen if you don't have food in your stomach
- emesis
- diminished appetite
- Often burping
- Swelling
- Inadvertent loss of weight

Treatment:

- Antibiotics like clarithromycin are frequently used to treat *H. pylori* infections, however their efficacy has been called into question due to drug-resistant strains found in India.

Diagnosis:

- Conventional methods for diagnosing *H. pylori* infections and determining antibiotic sensitivity required weeks of laborious bacterial culture.
- Antibiotic resistance and inadequate therapy may arise from delayed diagnosis and sensitivity testing.
- A two-step PCR-based assay was developed by the National Institute of Cholera and Enteric Diseases (ICMR-NICED) in Kolkata to diagnose *H. pylori* infection.
- This assay targets a crucial mutation connected to clarithromycin resistance by amplifying a particular DNA region.

Significance of discovery:

- In comparison to conventional culturing techniques, the PCR-based assay is quicker and more accurate, facilitating early diagnosis and successful therapy.
- The assay's sensitivity and specificity have both shown to be 100%.

4.13 Crab Nebula

- Recently, fresh images of the magnificent Crab Nebula have been obtained by NASA's James Webb Space Telescope (JWST).

An Overview:

- A small white dot is clearly visible at the center of the newly released photograph of the Crab Nebula by NASA.

Concerning Crab Nebula:

- A supernova remnant called the Crab Nebula about 6,500 light-years away.
- It can be seen in the Taurus constellation. (SpIN, the SpaceTech Innovation Network)
- A nebula is a space formation mostly composed of different concentrations of dust, helium, and other gasses.
- Nebulae vary in size and shape, hence many kinds of formations with varying sizes can occur.
- The Crab Nebula has garnered sustained interest and investigation as researchers endeavor to comprehend the circumstances, actions, and aftermaths of supernovae by means of an extensive examination of the Crab, a relatively close example.
- The English physician and amateur astronomer John Bevis is credited with identifying the item as a nebula in or around 1731.
- It is one of the few celestial objects from which radiation has been found at every wavelength in the observable spectrum, ranging from radio waves to visible, infrared, and ultraviolet light to X-rays and gamma rays.

4.14 Niobium

- The Union Cabinet has approved royalty rates for rare earth elements and three strategically important minerals, including niobium.

An Overview:

- Lithium and rare earth elements were the other two.

About Niobium:-

- Niobium is a stunning white metal that, when exposed to the air and environment, takes on a variety of blue, yellow, and green hues.
- It's a rare grey-white metal that's soft, malleable, and ductile.
- Its melting point can reach 2,468 °C in its elemental state, which is a significantly high melting point.
- The density of niobium is lower than that of the majority of other refractory metals.
- It resists corrosion.
- Its superconducting properties are high.
- When exposed to air, it typically develops layers of dielectric oxides.
- It displays lanthanide contractions and is about the same size as tantalum atoms.
- It is present in minerals like tantalite and columbite rather than freely in the environment.
- Niobium is extracted commercially by first producing the oxide (Nb₂O₅).
- The oxide is subsequently reduced with hydrogen or carbon.

- Canada is far behind Brazil as the largest provider in the globe.

Applications:-

- It is used in the production of some stainless steels and alloys resistant to high temperatures.
- In its pure form, it is also used to build superconducting accelerating structures for particle accelerators.
- Surgical implants use niobium alloys because they don't react with human flesh.
- Cutting tools are manufactured with niobium carbide.
- Niobium-tin and niobium-titanium alloys are used as wires for superconducting magnets, which are devices that can generate extraordinarily strong magnetic fields.

4.15 Alzheimer's Disease

- The world's most popular theory of Alzheimer's disease just failed major drug trials.

An Overview:

- A medication intended to remove sticky plaques has not been able to maintain the cognitive capacities of those with early-stage Alzheimer's disease when compared to those who received a placebo in two trials.
- Although the expected reduction in amyloid beta in the brain was achieved with the monoclonal antibody gantenerumab, benefits in cognitive performance were not observed.

About Alzheimer's Disease:-

- Alzheimer's is a neurological condition.
- Brain cells deteriorate and die as a result of it.
- This results in memory loss, difficulty pronouncing or writing words, poor judgment, personality and mood changes, confusion about location and time, and other issues.
- It is a progressive neurological condition.
- The most prevalent cause of dementia in older persons is Alzheimer's disease.
- Since brain cells cannot be saved, Alzheimer's is an incurable illness.
- Compared to men, women are more likely to develop Alzheimer's disease.

Causes:-

- It is believed that aberrant protein accumulation within and around brain cells is the root cause of Alzheimer's disease.
- The two proteins that are implicated are tau and amyloid, deposits of which surround brain cells in the form of plaques.
- The protein tau interferes with neurons' capacity to communicate with one another in the brains of Alzheimer's sufferers when it accumulates in tangled forms.

Symptoms:

- A progressive decrease in any, all, or most of the following:
- Reasoning and managing difficult assignments.
- Knowing the link between form and space in images.

4.16 SATURN

Astronomers have just provided an explanation for the potential disappearance of Saturn's rings.

Regarding Saturn:

- Six planets orbit the Sun, starting with Saturn.
- In our solar system, it is the second-largest planet.
- With its brilliant system of ice rings, Saturn stands out from the other planets.
- Saturn is a huge sphere primarily composed of helium and hydrogen.
- Saturn is the planet that has been known since ancient times and is the furthest from Earth that has been found by unaided human sight.
- The Roman god of agriculture and prosperity, Jupiter's father, is honored in the planet's name.
- There are more planets with rings than Saturn.
- The rings that surround Saturn are composed of clusters of small ringlets.
- They are composed of ice and rock fragments.
- Saturn's atmosphere is dense.
- On Saturn, a day lasts for just seven hours.
- On Saturn, a year is equal to 29 Earth years.
- Because it can be seen without the need of sophisticated telescopes, Saturn has been known since antiquity.
- Saturn has been visited by four robotic spacecraft: Pioneer 11, Cassini, and Voyager 1 and 2.

4.17 Measles

According to recent data, the number of measles deaths increased by 43% between 2021 and 2022.

An Overview:

- A recent review by the World Health Organization (WHO) and the US Centers for Disease Control and Prevention (CDC) found that after years of declining vaccination rates, the number of measles deaths globally increased by 43% between 2021 and 2022.

Regarding measles:

- A virus is responsible for the highly contagious, fatal measles, which is spread through the air and can have major repercussions.
- A virus that is present in an infected child or adult's nose and throat is what causes measles.
- When an infected individual breathes, coughs, or sneezes, it can spread quickly.
- Severe illness, complications, and even death may result from it.
- While measles can strike anyone, children are most commonly affected.
- After affecting the respiratory system, measles spreads to other parts of the body.
- A high temperature, cough, runny nose, and body-wide rash are among the symptoms.
- Between 2000 and 2021, the measles immunization prevented 56 million deaths.
- In 2021, there were an estimated 128,000 measles deaths worldwide, despite the availability of a safe and affordable vaccine. The majority of these deaths were in children under the age of five who were either undervaccinated or not vaccinated at all.
- By the time they turned one year old in 2022, 83% of children worldwide had received one dose of the

measles vaccine through regular health care, which is the lowest percentage since 2008.

Risk elements:

- Without a vaccination.
- Visiting other countries.
- Being lacking in vitamin A.

4.18 NISAR

NASA and ISRO have finished important experiments in preparation for the early launch of NISAR in 2019.

An Overview:

Every twelve days, the three-year mission will survey the entire land and ice-covered surface of Earth.

Regarding NISAR:

- Year of launch: 2024.
- Agency: ISRO and NASA.
- By measuring the dynamic surfaces, ice masses, and shifting ecosystems on Earth, the NASA-ISRO SAR (NISAR) Mission will gather data on groundwater, natural disasters, biomass, and sea level rise.
- It will work with a wide range of other programs.
- NISAR will sample Earth on average every 6 days for a baseline 3-year mission, monitoring the planet's land and ice-covered regions with a 12-day regularity on ascending and descending passes.
- GPS receivers, a high-rate communication subsystem for scientific data, one of the satellite's radars, and a payload data subsystem will all be provided by the National Aeronautics and Space Administration.
- The largest reflector antenna that NASA has ever launched will be installed on NISAR.
- The second kind of radar, known as the S-band radar, the launch vehicle, and related launch services will all be supplied by the Indian Space and Research Organization (ISRO).

Objectives:-

- Monitoring minute alterations on the surface of the Earth,
- Recognizing early indicators of impending volcanic eruptions,
- Tracking the rate at which ice sheets are melting and assisting in the monitoring of groundwater supplies.

Significance:-

Scientists may use NISAR data to better understand the effects and speed of climate change, and people around the world can benefit from better management of natural resources and dangers.

4.19 Euclid Space Telescope

The first photos from the freshly launched Euclid space telescope were made public by European astronomers.

An Overview:

- The photographs were released in Darmstadt, Germany, on the eve of the second day of two-day European space discussions in Spain, which were dominated by the continent's ongoing reliance on

foreign launches.

About the Space Telescope Euclid:

- Start date: July 1, 2023.
- Launched from Florida's Cape Canaveral.
- Launch vehicle: A Falcon 9 rocket from SpaceX.
- European Space Agency (ESA) was the launch agency.
- Duration: A nominal operational lifetime of six years is anticipated for the mission.
- The goal is to learn more about dark energy and dark matter, which together make up a sizable percentage of the universe, and their characteristics.
- The surprising acceleration of the universe's expansion can be explained by dark energy, which was discovered in 1998.
- A more accurate measurement of this acceleration is what Euclid's mission seeks to deliver, maybe revealing fluctuations across cosmic history.
- The Lagrange point L2, which is approximately a million kilometers from Earth, will be reached by the telescope.
- The Lagrange point is the point at which the force needed to keep a tiny object in a relatively steady position behind Earth as viewed from the sun exactly equals the gravitational pull of two enormous masses, in this case, the sun and Earth.
- By viewing billions of galaxies up to 10 billion light-years away, it will provide a 3D map of the cosmos that will be helpful in closely researching dark matter.

4.20 INFUSE Mission

- NASA recently launched the payload mission known as "INFUSE."

Context:

- Integral Field Ultraviolet Spectroscopy Experiment is the mission that goes by the acronym INFUSE.
- NASA's INFUSE Probes Reveal Secrets About Supernovae.

About INFUSE Mission:

- NASA was the launch agency (India – USA space cooperation)
- Studying the Cygnus Loop, a 20,000-year-old supernova remnant 2,600 light-years from Earth, is the goal.
- Because of its conspicuous placement close to the constellation Cygnus, sometimes known as the "swan," the Cygnus Loop is a favorite location for both amateur and professional astronomers.
- Scientists are still fascinated by the remnants of this massive supernova, also referred to as the Veil Nebula or the Cygnus Loop.
- Under the direction of Brian Fleming of the University of Colorado Boulder, the INFUSE mission aims to investigate the star's life cycle.
- For a few minutes, the INFUSE mission will gather vital information about the Cygnus Loop from a height of 150 miles (240 km). The Cygnus Loop's far-ultraviolet light wavelengths will be recorded by the mission's sensor.
- Determining how the supernova releases energy into our Milky Way galaxy is one of the main goals.
- It will track the light release as pockets of cold gas scattered around the galaxy clash with the blast wave of the supernova.

- The INFUSE mission advances our knowledge of the complex processes involved in stellar life cycles and their significant influence on the evolution of galaxies by examining the Cygnus Loop and its remnants.

4.21 Zika

SCIENCE AND TECHNOLOGY

- It was recently discovered that a 64-year-old Pune woman was infected with Zika.

Context:

- It has been discovered that a 64-year-old woman in Pune's Yerawada neighborhood is infected with the mosquito-borne Zika virus.
- Dr. Pratap Singh Saranikar, the co-director of the epidemiology department, saw the patient and gave her health-related advice.

About Zika:-



- A flavivirus spread by mosquitoes is the Zika virus.
- It was originally discovered in 1947 in monkeys in Uganda.
- Later, in 1952, cases were discovered in people in Uganda and the United Republic of Tanzania.
- Human infections typically have no symptoms at all or very minor ones, such as fever, rash, and joint pain.

Transmission:

- The primary method of human transmission is by means of the bite of an infected Aedes mosquito, specifically Aedes aegypti and Aedes albopictus.

- Additionally, blood transfusions, sexual contact, and transmission from an infected woman to her fetus during pregnancy or childbirth can all spread the virus.
- The Zika pandemic that ravaged the Americas from 2015 to 2018 made the virus well-known.
- Early in 2016, the World Health Organization declared the epidemic a public health emergency of international concern due to an alarming rise in the number of newborn cases of microcephaly.

Treatment:-

- There isn't a Zika vaccine or treatment.

Rather, the emphasis is on treating the symptoms, which includes acetaminophen for pain and fever, rest, and dehydration.

4.22 Amaterasu

- Astronomers have recently discovered a rare, incredibly high-energy particle that is descending on Earth.
- Known as "Amaterasu" after the Japanese sun goddess, it is one of the most potent cosmic rays to strike Earth.
- These particles of extremely high energy flow through the atmosphere without being deflected by magnetic fields.
- The Telescope Array observatory in Utah, a joint venture between the United States, Japan, Korea, Russia, and Belgium for the purpose of observing cosmic rays, made the discovery.
- Power – It is millions of times more powerful than the particles produced by the Large Hadron Collider, the most powerful accelerator ever constructed, with a power output exceeding 240 exa-electron volts (EeV).
- Only the 'Oh-My-God' particle, a different high-energy cosmic ray identified in 1991 at 320 EeV, is more powerful than this one.
- Source: It is believed that only the strongest cosmic events—on a scale much larger than a star's explosion—are able to produce particles with such high energy.
- However, Amaterasu seems to have come from the Local Void, a barren region of space that abuts the Milky Way galaxy.

Reasons for non-detection

- It might originate from a source that we are still unaware of.
- It could have been magnetically deflected far more than predicted by existing models.
- It may be necessary for scientists to revise their incomplete knowledge of high-energy particle physics.

4.23 Wasp-107b

SCIENCE AND TECHNOLOGY

- NASA just found "Wasp-107b," an exoplanet around the size of Jupiter.

Context:

- The James Webb Telescope of NASA has found a new exoplanet that is about Jupiter's size.

About Wasp-107b:-

- It is an exoplanet, WASP-107b.

- 2017 saw its discovery.
- It revolves around WASP-107.
- From Earth, it is 200 light years away.
- It can be found in the Virg constellation.
- In the past, astronomers thought that the planet's massive gas envelope surrounding it gave rise to its enormous size.
- Furthermore, the scientists thought that only gigantic, dense cores could support such enormous gas envelopes.
- Nevertheless, a new study claims that WASP-107b's cores are not as dense as previously believed.
- It revolves around WASP-107.
- From Earth, it is 200 light years away.
- It can be found in the Virg constellation.

Edge IAS

5. Environment & Ecology

5.1 Air Quality Index (AQI)

With the city's overall Air Quality Index (AQI) reaching 322 lately, Delhi's air quality remained dangerous.

About Air Quality Index (AQI):-

AQI LEVEL	HEALTH ISSUES	WHAT DOES IT MEAN?
0-50	Good	The air quality is safe and poses no health risks to anyone.
51-100	Unhealthy	The air quality is fine. However, sensitive people are still prone to health risks due to minor pollutants present in the air.
101-150	Poor	People who are sensitive to the air pollution are at health risk. The air quality is safe for healthy fit people.
151-200	Severe	Fit and healthy people will catch hold of infections and viral due to many harmful air pollutants present in the air. Highly sensitive people are exposed to severe health risk.
201-300	Dangerous	The contaminated air threatens everyone with various health issues.
301-500	Hazardous	High Alert Emergency: This level of air quality is a serious threat to life both for sensitive and healthy people. It can severely affect the health or even lead to death.

- Government organizations use the Air Quality Index (AQI) to calculate air pollution levels and notify the public about them. (Pollution of air)
- The AQI is divided into six categories: Very Poor, Severe, Good, Satisfactory, and Moderately Polluted.
- Health breakpoints, or ambient concentration values of air pollutants, are used to determine the likely health effects of each of these categories.
- Eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb) for which short-term (up to 24 hours) National Ambient Air Quality Standards are mandated have evolved AQ sub-indices and health breakpoints.
- A significant portion of the populace will suffer from serious adverse health effects when the AQI rises.
- Ranges are used to group the results.
- A standardized public health advice, a color code, and a descriptor are assigned to each range.
- In India, as in most Asian countries, there are many different and poorly understood sources of pollution.
- For instance, the main sources of pollution in Delhi include the traffic of light and heavy-duty vehicles, road dust, the burning of solid fuels for cooking and heating, biomass, garbage burning, thermal power plants, diesel generators, building, and small-scale local enterprises.

Government Initiatives:

- The standard for the National Air Quality Index (NAQI): On September 17, 2014, Shri Prakash Javadekar, the Minister of Environment, Forests, and Climate Change, gave it his debut.
- The program is a component of the government's effort to establish a "culture of cleanliness," since air pollution has become a major national issue, particularly in urban areas.
- The Central Pollution Control Board (CPCB) oversees the 240 cities in the nation through the National Air Monitoring Program (NAMP), which was created by the Indian Institute of Technology, Kanpur (IIT) and

makes real-time data available to the public.

- The SAFAR Portal is the system for air quality and weather forecasting and research.
- Graded Response Action Plan.
- Commission for Air Quality Management (CAQM)
- Reducing Vehicular Pollution: BS-VI Vehicles, Push for Electric Vehicles (EVs), Odd-Even Policy as an emergency measure.
- Subsidy to farmers for buying Turbo Happy Seeder (THS) Machine.

5.2 United Nations Forum on Forests (UNFF)

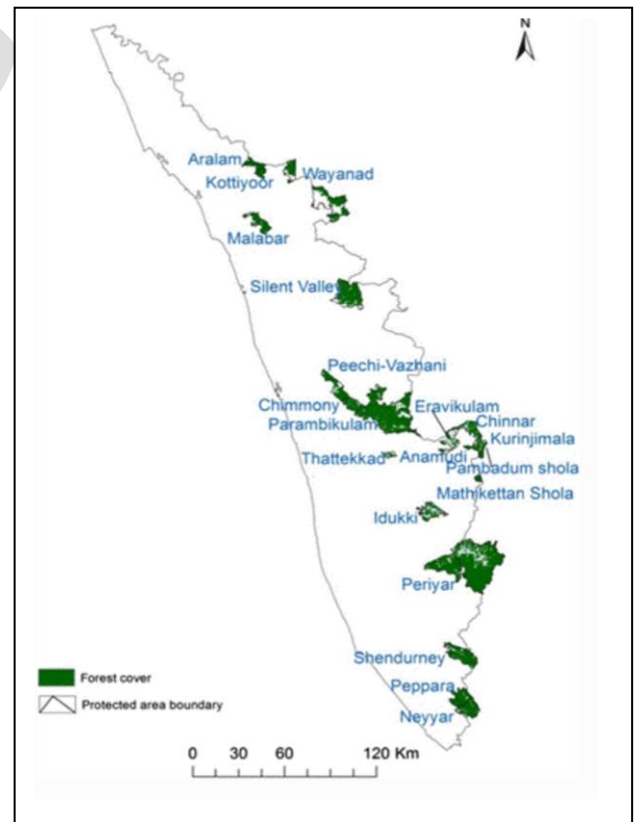
At the Forest Research Institute in Dehradun, Uttarakhand, the Ministry of Environment, Forests, and Climate Change is organizing a Country-Led Initiative (CLI) event in conjunction with the United Nations Forum on Forests (UNFF).

The initiative's goal is:

- With an emphasis on topics like forest certification and forest fires, the event seeks to further conversations about Sustainable Forest Management and the UN Strategic Plan for Forests (UNSPF).
- Frameworks and proposals for managing forest fires and forest certification are anticipated to come out of the meeting and be deliberated upon at the 19th UNFF session in May 2024.

5.3 Kerala's Aralam Wildlife Sanctuary

- Attackers posing as Maoists recently attacked forest watchers in Kerala's Aralam Wildlife Sanctuary, which is close to the Chavachi region.
- In and around the Aralam Wildlife Sanctuary, these Maoists have been more and more active. They have even broken into nearby homes and started doing things like passing out propaganda. To find the culprits, the Kerala government sent out helicopters and the Kerala Thunderbolts force.
- The northernmost wildlife sanctuary in Kerala is located in the Kannur District and is called Aralam Wildlife Sanctuary. Situated on the western side of the Western Ghats, it spans an area of 55 km². It was founded in 1984 and has its main office close to Iritty. The sanctuary, which has Katti Betta as its highest point, borders the woods of Coorg, Karnataka's Brahmagiri Wildlife Sanctuary, Wayanad-Brahmagiri, and the north slopes of Wayanad.



5.4 UN report on groundwater extraction: Every drop counts

According to a recent analysis by the United Nations University, unsustainable groundwater extraction in India is causing 27 out of 31 aquifers to deplete faster than they can be refilled.

What Do Aquifers Mean?

- These are subterranean sedimentary or rock strata with the ability to transfer and store groundwater. They function as natural water reservoirs, essential for the supply of freshwater to springs, wells, and other water sources.

Important Groundwater (GW) Status:

- India is the country that uses groundwater the most, using one-fourth of the entire amount extracted.
- The utilization of GW for irrigation is 87%.
- Of the GW units now in use, 67% are safe (extraction < 70% of recharge), 14% are overexploited, and 4% are at the critical
- Extraction is very high in Haryana, Punjab (78% of wells are overexploited), Rajasthan
- Climate Concerns: In southwest India, increasing temperatures might hinder groundwater replenishment.

Initiatives:

International:

- The purpose of the 2022 United Nations-Water Summit on Groundwater is to increase public awareness of groundwater conservation.
- UN-Water is running a campaign called "Groundwater: Making the invisible visible" through 2022.

National:

- Launched in 256 water-stressed districts, the Aquifer Mapping and Management Programme Jal Shakti Abhiyan (2019) aims to enhance groundwater conditions in these areas.
- In 2019, the Atal Bhujal Yojana was introduced as a groundwater management initiative.

5.5 Mercury contamination

- A recent study found that artisanal and small-scale gold mining operations in Central and South America are causing mercury pollution in tropical birds.
- Mercury concentrations in birds were found to be more than four times greater in those residing near 7 km of gold mining activities than in other locations.

Why is mercury used in the mining of gold?

- Mercury and gold combine to produce an amalgam, gold can be extracted from ore by the use of mercury in gold mining. Although amalgamation is a straightforward and efficient method of capturing tiny gold particles, mercury pollution from this process poses serious risks to human health and the environment.

Key Results:

- According to the research, there may be a connection between mercury exposure and the decline in tropical bird species that has been seen in recent years.

Mercury poisoning has been connected to immunological disorders, neurological conditions, and infertility in birds and humans. Because of their capacity to detect environmental problems, birds are regarded as sensitive

indicators of the health of ecosystems and are sometimes referred to as the "canary in the gold mine."

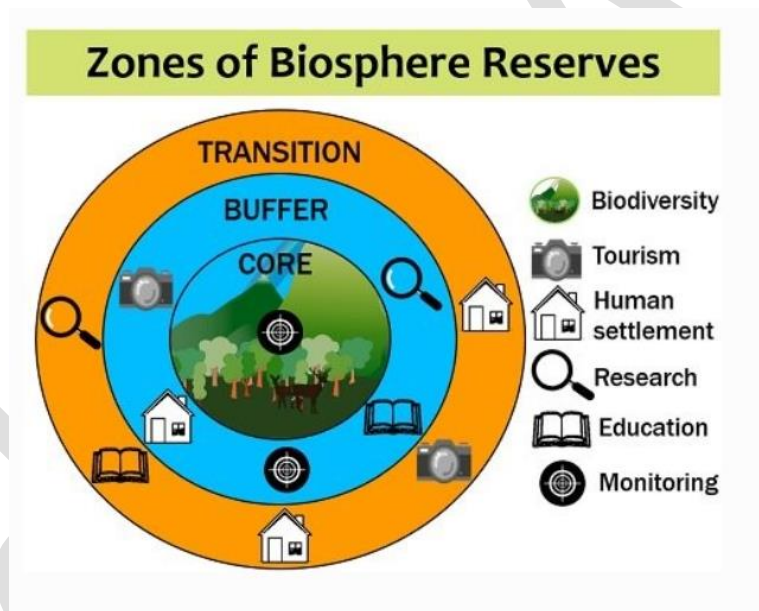
5.6 Biosphere reserves: Pockets of hope

- The article explains the critical role that biosphere reserves play in protecting biodiversity, cutting pollution, and improving climate resilience.
- World Biosphere Reserve Day is observed on November 3 in order to increase public awareness of the value of biosphere reserves.

Biosphere reserves: what are they?

UNESCO declared biosphere reserves as places that support scientific research, sustainable development, and biodiversity protection. There are three zones in them:

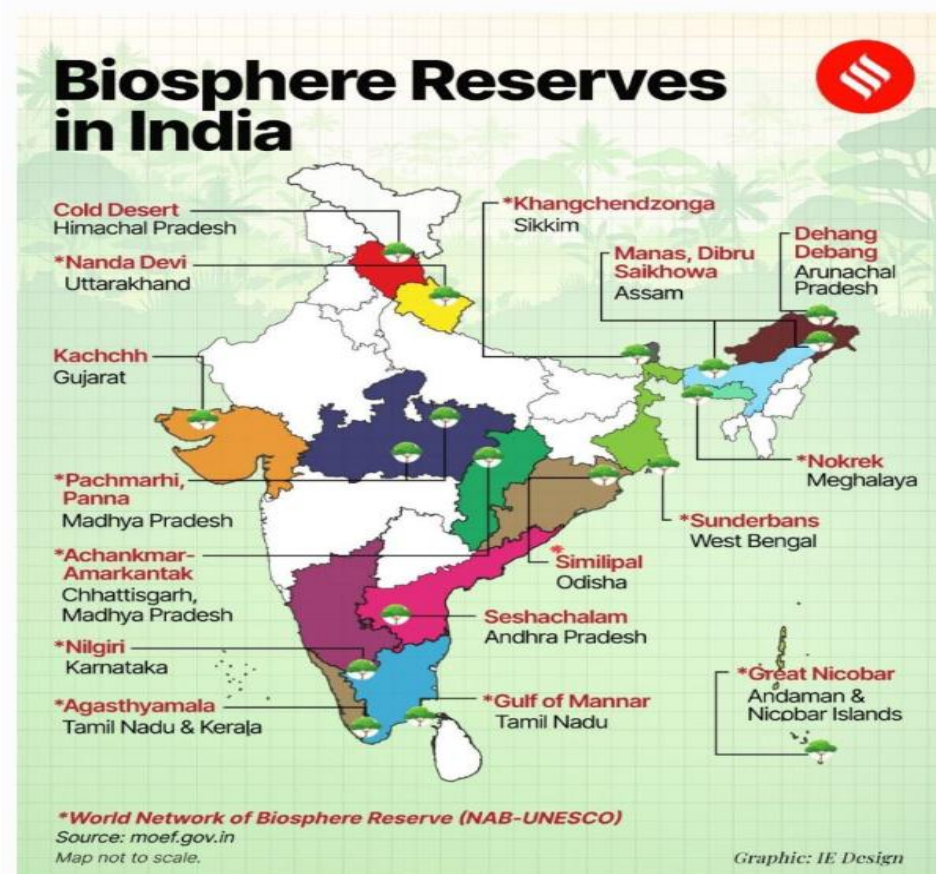
- ❖ A core zone for the strict protection of ecosystems
- ❖ A buffer zone where people live and work in harmony with nature
- ❖ A transition zone for sustainable activities.



Aim: Biosphere Reserves try to balance economic and social development and maintenance of associated cultural values along with the preservation of nature.

Status of Biosphere Reserves in India:

- 134 countries have 748 reserves, including 22 transboundary locations. India has eighteen Biosphere reserves recognized by the international community, the first being the Nilgiri reserve. The most recent addition is Madhya Pradesh's Panna.
- According to the UNESCO Man and the Biosphere (MAB) Programme list, twelve of the eighteen biosphere reserves are a part of the World Network of Biosphere Reserves.



- The threats to Biosphere Reserves (BRs) include: Deforestation, Invasive species,
- Land use changes like mining, Urbanization and population growth causing exploitation.

5.7 The world is getting older. Can India cope?

India is quickly aging and will soon have the largest population. This presents difficulties such as a shift in the global role and fewer staff. To address this, we need to make plans for more children, develop senior citizen initiatives, and get ready for India's new role in the world.

Key Highlights:

- By 2027, India is expected to overtake China as the nation with the largest population.
- The world is "greying," with an increase in the number of older people.
- By 2050, the number of elderly people in India is predicted to double, making up 20% of the country's overall population.
- The old age dependence ratio is being impacted by the dropping fertility rates in both industrialized and developing nations.
- Global geopolitics is changing; by 2100, the US, China, India, and Nigeria are expected to be the main players.

Challenges and Concerns:

- A nation's capacity to create wealth is impacted by aging populations since they produce fewer workers and taxpayers.
- Economic difficulties are brought on by declining fertility rates, particularly in developing nations like

India.

- The increasing number of elderly people has a big impact on society, the economy, and health.
- Compared to developing nations like India, developed countries have higher per capita incomes as their populations grew older.
- By the turn of the century, India's population could be declining, which would affect its geopolitical position.

Way ahead:

- Policies that encourage childcare, reproductive choice, and work-life balance can help address the dropping fertility rates.
- Create plans to handle the financial and medical difficulties brought on by an aging population.
- Think about the geopolitical ramifications of changing demographics and make plans for a time when India will be very important.
- Stress the role that immigration and women's reproductive rights have in determining the makeup of the world's power structures.
- Promote a comprehensive approach to demographics that considers geopolitical, economic, and social concerns.

5.8 Awaous Motla

Context:

In Odisha's Mahanadi River, scientists have discovered a new species of freshwater fish called "Awaous Motla."

An Overview:

- Scientists have found that a river fish that is edible and sold in western Odisha's marketplaces is actually an unregistered species.

About Awaous Motla:

- Because it is a member of the Oxudercidae family, fishermen refer to this species as Awaous motla or just "motla."
- The fish has a plump top lip and a vivid yellow body.
- Is edible both dried and fresh.
- The Mahanadi River yielded the discovery.
- It is one of India's principal rivers that flows eastward throughout the peninsula.
- The river rises in the Sihawa range of hills in the state of Chhattisgarh's Dhamtari district.

5.9 Indian Porcupine

Context:

- An adult male tiger was recently slain in Tamil Nadu by an Indian porcupine.

Concerning Indian Porcupine:

- *Hystrix indica* is the scientific name.

- Large, prickly rodents are called porcupines.
- They are protected from predators by their quills or sharp spines on their coats.
- They are the rodents that live the longest.
- A porcupine's defensive behavior is based on sight, smell, and sound perception.
- The largest rodent in India is the Indian Crested Porcupine, which is found throughout the Indian Subcontinent.
- It can be found in nations including India, Nepal, Bhutan, Bangladesh, Sri Lanka, Pakistan, Israel, Iran, and Saudi Arabia, as well as in regions of Southeast and Central Asia and the Middle East.
- It is found in tropical and temperate scrublands, grasslands, and woodlands, but it is primarily found on rocky hillsides.

Protection status:

- IUCN Red List: least concern
- Wildlife Protection Act 1972: Schedule IV

5.10 Tiger

There has been a 60% increase of tigers overall recently.

An Overview:

- Southeast Asian large cats are under peril due to habitat degradation and biodiversity loss.

Regarding Tiger:

- *Panthera tigris* is its scientific name.
- Subspecies of Indian origin: *Panthera tigris tigris*.
- Weight range: 220–660 lbs.
- LENGTH: ten to twelve feet.
- HABITATS: Mangrove swamps, grasslands, savannas, tropical rainforests, evergreen forests, and temperate woods.
- It belongs to the genus *Panthera* and is the largest species of cat.
- Distribution: Its natural habitat ranges from temperate woods in Siberia to tropical and subtropical forests in Sumatra and the Indian subcontinent.
- There are currently eight recognized subspecies of tigers, three of which are extinct.
- Bengal Tigers: Indian Subcontinent
- Caspian tiger: Turkey through central and west Asia (extinct).
- Amur tiger: Amur Rivers region of Russia China, and North Korea
- Javan tiger: Java, Indonesia (extinct).
- South China tiger: South central China.
- Bali tiger: Bali, Indonesia (extinct).
- Sumatran tiger: Sumatra, Indonesia.
- Indo-Chinese tiger: Continental south-east Asia.
- With the exception of relationships between a mother and her young, tigers live solitary lives.
- Tigers primarily hunt huge prey such as deer and wild pigs, but they sometimes occasionally consume small species like porcupines.

Hazards:

- Destroying habitats
- Poaching and fragmentation of habitats.

Status of Conservation:-

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

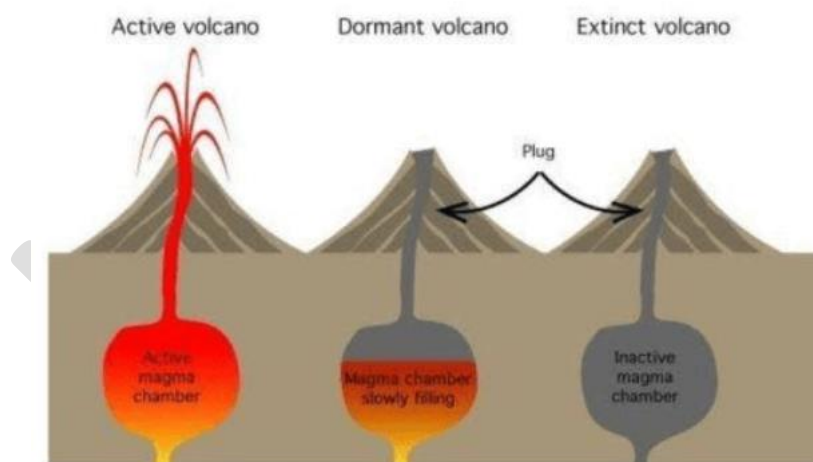
5.11 Volcano

Recently, a volcanic eruption forced Iceland to declare a state of emergency.

An Overview:

- An impending volcanic eruption in Iceland might wipe out a town with 4,000 residents, according to scientists.

Regarding Volcano:



- A volcano is a crack or vent in the crust where gasses, ash, molten rock, and pieces of rock erupt from a subterranean magma chamber.

Reasons for Volcanism:

- The earth's outer and inner layers varies greatly in temperature because of the varying levels of radioactivity in each layer.
- Convectional currents originate from this temperature differential in the mantle.
- Weak zones, or convergent and divergent borders, are produced by the convection currents in the mantle.
- Molten, semi-molten, and occasionally gaseous material emerges on Earth at the earliest possible moment at the diverging boundary.
- The subduction of denser plates along the convergent boundary produces high-pressure magma that will violently erupt to the surface.

Types of Volcanoes:

- Large, steep-sided volcanoes that can reach elevations of more than 8,000 feet are known as

stratovolcanoes or composite volcanoes. They can create lava that flows at extremely high temperatures and speeds, endangering neighboring property and people.

- Shield Volcanoes: These volcanoes spew forth lava quickly and with non-explosive eruptions. There is little chance of their dying or becoming hurt, even though they can destroy property.
- Dome Volcanoes: Because the lava from these volcanoes is thick and viscous, it doesn't spread very far.

India's Volcanoes:

- Barren Island: The National Disaster Management Authority (NDMA) describes the Andaman Islands as the only active volcano in India.
- Andaman Islands are Narcondam.
- Baratang: Islands of Andaman
- Maharashtra in the Deccan Traps
- Hills of Dhinodhar, Gujarat
- Dhosi Hill, Punjab

5.12 Orionid Meteor Shower

The Orionid Meteor Shower was observed recently.

About the Meteor Shower in Orion:

- Every year in October, Earth travels through the comet Halley's tail of debris.
- This comet completes one orbit of the sun every 76 years.
- An annual event that brightens the night sky in October is the Orionid meteor shower.
- It is created as Earth moves through the debris that Halley's Comet has left behind.
- The outcome is the Orionid meteor shower, which NASA refers to as "one of the most beautiful showers of the year." (The comet Bernardinelli-Bernstein)
- Although this shower will continue until November 22nd, this weekend is going to be its climax, so don't wait to go outside and look up.
- Edmond Halley, an English astronomer, made the prediction that Halley's Comet would exist.
- Remarkably, the comet's name derives from its orbit calculator instead of its discoverer.
- The dimensions of Halley's Comet are approximately five by nine miles, and it loses three to ten feet of material every time it passes through the inner solar system.
- Predictable return periods have distinguished Halley's Comet from other comets in its unique historical record, which dates observations to 240 CE.

5.13 Mycena chlorophos

Mycena chlorophos, a rare bioluminescent mushroom, was recently discovered.

An Overview:

- Interpreting the Context: In the Kanyakumari Wildlife Sanctuary (KKWLS), a group of scientists and the forest department have discovered a unique bioluminescent mushroom.

About Mycena chlorophos:-

- One species of agaric fungus in the Mycenaceae family is called Mycena chlorophos.
- In 1860, it was initially characterized.
- Subtropical Asia, which includes Polynesia, India, Japan, Taiwan, Indonesia, Sri Lanka, Australia, and Brazil, is home to the fungus.
- The mushroom is referred to as yakoh-take, or "night-light mushroom," in Japan.
- The Bonin Islands refer to it as "Green Pepe."
- Caps can be flat or conical.
- This fungus is bioluminescent.
- Seven of the approximately 103 species of bioluminescent fungi that exist worldwide are found in India.

5.14 Bengaluru's Climate Action Plan (CCAP)

- Following the lead of C40 Cities, Bengaluru unveiled its Climate Action Plan (CCAP) to address climate change.
- Bruhat Bengaluru Mahanagara Palike (BBMP) is the implementation agency.

About the objectives:

- There were 269 steps listed to lessen the effects of climate change in areas such as air pollution, thunderstorms, lightning, flooding, and heat in cities.
- Bengaluru pledges to reduce carbon emissions by 2030 and achieve carbon neutrality by 2050.
- In order to create the CCAP for 2050, the BBMP has hired the World Resources Institute (WRI) as a global consultant.

What is CCAP?

- It is a component of international initiatives to identify and carry out climate actions, addressing climate vulnerabilities such as pollution and urban flooding.

What is C40?

- It is a global network of around 100 mayors from the most influential cities on Earth who have come together to take action against the climate catastrophe. Parties to it are Delhi NCT, Mumbai, Chennai, Kolkata, Bengaluru, and Ahmedabad.

5.15 Lemru Elephant reserve

- The 40 coal blocks owned by Coal India Limited (CIL) in and around the Lemru Elephant Corridor (LEC) would not be put up for sale, as per the Chhattisgarh government's request, according to a recent statement from the Union coal ministry.

Context:

- According to the ministry, the state government has requested that places outside of the LEC be exempted from mining.

About Lemru Elephant Reserve:-

- Location: Chhattisgarh's Korba district.
- The reserve aims to lessen property destruction and conflict between humans and animals.
- Additionally, it seeks to give the elephants a permanent home.
- In accordance with Section 36A of the Wild Life (Protection) Act, 1972 (WLPA), the state government has already notified the reserve (Conservation Reserve) in October 2020.
- The reserve is a part of the Badalkhol (Jashpur), Tamorpingla (Surguja), and Lemru (Korba) elephant corridor.

India's elephant reserves:

- Over 14 states in the nation, there are 33 Elephant Reserves (ERs) that have been notified. (Conservation of Elephants)

Importance:

- In just North Chhattisgarh, there are more than 240 elephants.
- Over the past 20 years, the state has seen the deaths of over 150 elephants, 16 of which occurred between June and October 2020.

5.16 Laodracon carsticola

- *Laodracon carsticola*, a new species of "dragon lizard," was discovered in Southeast Asia recently and has remarkable camouflage skills.

Context:

- An international group of geneticists, forestry managers, biologists, and experts in animal management has found a new species of "dragon lizard" in Laos, one with extremely good camouflage.

About *Laodracon carsticola*:-

- The Khammouane Karst dragon, or *Laodracon carsticola*, is the name of this recently found species.
- It was initially found in August 2022 when a group of botanists surveying plants in the area saw a "unusual"-looking lizard on some adjacent karst rocks.
- The Khammouane karst dragon is regarded as "medium-sized," with a length of roughly one foot (or thirty centimeters).
- It features bluish-grey eyes, roughly textured scales, a triangular head, and long, slender limbs.
- Its black body is speckled with white on its head and limbs, with a few bigger white bands on its back.
- It has a blue hue to its belly and the area under its throat.
- Ants are said to be the lizards' primary source of food.
- It has exceptional ability to blend in.
- It is a member of the Draconinae subfamily of continental Asia.
- There are about 256 species in this subfamily, all of which are found in Asia. According to the Animal Welfare Board of India (AWBI), the lizards are "rare," only found on the rocks, and are most active in the afternoon.

5.17 Black Stork

- The Black Stork was recently sighted in Hastinapur for the first time.



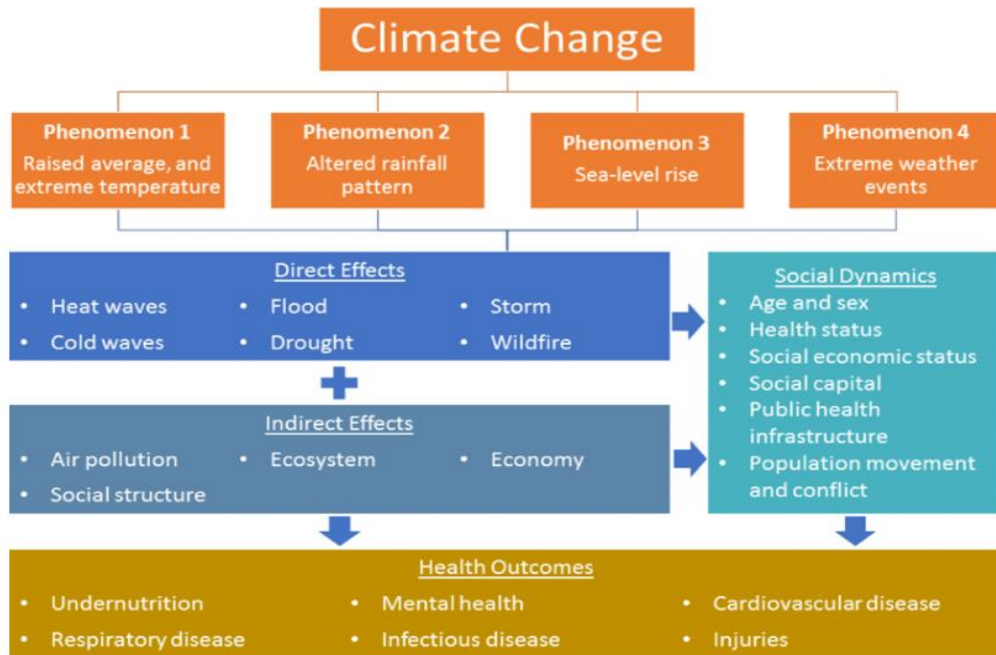
An Overview:

- It is rare to witness a Black Stork, but one has been sighted in Uttar Pradesh, India's Hastinapur Wildlife Sanctuary.

About Black Stork:-

- *Ciconia nigra* is its scientific name.
- Ciconiidae is the family.
- Within the Ciconiidae family of storks, the black stork is a huge bird. (Blackbuck)
- Carl Linnaeus originally characterized it in the tenth edition of *Systema Naturae*.
- Has an average length of 95 to 100 cm (37 to 39 in) from tip of beak to tail tip, and a wingspan of 145 to 155 cm (57 to 61 in).
- The adult black stork has long, pointed red beak, white underparts, and primarily black plumage.
- Although widespread, the species is rare.
- Breeding grounds are dispersed throughout Europe (mostly in Portugal, Spain, and the central and eastern regions), as well as eastward across the Palearctic to the Pacific Ocean.
- It is a long-distance migrant, with populations from Asia and Europe spending the winter in the Indian subcontinent and tropical Sub-Saharan Africa, respectively.
- It takes a detour via the Levant in the east or the Strait of Gibraltar in the west to avoid traversing the Mediterranean Sea during its migration between Europe and Africa.
- It is found in Southern Africa; the population is isolated and non-migratory.
- IUCN classification for conservation: least concern

5.18 Recognising the impact of climate change on health



- Examining the impact of climate change on India's health is crucial as the nation prepares for the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28). India's population is especially susceptible to the negative effects of climate threats on health because of our country's subpar healthcare services. Health is directly impacted by climate change, which increases illness and mortality. More subtly, it impacts diet, shortens workdays, and heightens stress brought on by the environment.

Key Highlights:

- Vulnerability of Health Systems:** India's inadequate health infrastructure makes the country more vulnerable to the negative effects of climate change on health.
- Fears Regarding Temperature Rise:** If global warming continues unchecked, there could be 2°C increase that renders parts uninhabitable.

Challenges:

- Double Morbidity Burden:** Health issues are made worse by the convergence of communicable and non-communicable diseases.
- Neglected Non-Communicable Diseases:** In India, non-communicable diseases and the effects of climate change on mental health are frequently disregarded.

Key Phrases and Analysis:

- Urban Heat Island Effect:** As a result of unplanned urbanization, the urban health system is put under pressure.
- Negligently Handled Health Risks:** Insufficient identification and handling of health hazards linked to elements causing climate change.

Way Forward:

- Holistic Mitigation Strategies:** Upstream actions, altering health information systems, and comprehending the pathways of climate change are all part of mitigation.
- Multi-level Action:** Coordinated efforts to bring about significant change at the local, regional, and international levels involving governments, policymakers, and scholars.

6. Security issues

6.1 Jericho Missile System

- An Israeli lawmaker recently called for the use of the "Jericho Missile System" in the continuing conflict against Palestine and Hamas.

About the Missile System in Jericho:

- Israel's first ballistic missile program, known as Jericho, was started in the 1960s.
- It was given the name of the West Bank-based biblical city.
- Originally a project of the French aerospace corporation Dassault, Israel carried on with its development after France withdrew in 1969.

The Missile System Jericho-1:

- The missile system known as Jericho-1 was discontinued in the 1990s.
- It measured 13.4 meters in length, 0.8 meters in diameter, and 6.5 tons in weight.
- Within 500 kilometers was the range of the Jericho-1 missile system.
- It was capable of carrying a 1,000 kg payload, but its chances of hitting a target within a 1,000 m radius were only 50%.

The Missile System Jericho-2:

- The late 1980s saw its development.
- It has the same payload capacity and range between 1,500 and 3,500 kilometers but is 15 meters long and 1.35 meters wide.
- It can carry the same amount of payload as Jericho-1.

The Missile System Jericho-3:

- Israel has launched its first intercontinental missile (ICBM).
- 2008 saw its initial testing, and in 2011 it was put into use.
- It was able to carry up to 1,300 kg of payload.
- It can travel between 4,800 and 6,500 kilometers.

6.2 Dubai Airshow 2023

The 18th Dubai Airshow 2023 edition recently got underway.

An Overview:

- Under the patronage of Sheikh Mohammed bin Rashid Al Maktoum, the Vice President and Prime Minister of the United Arab Emirates as well as the Ruler of Dubai, the 18th edition of the much awaited Dubai Airshow is scheduled to begin on November 13 at Dubai World Central (DWC).

About the 2023 Dubai Airshow:.

- Date: Thirteen November 2023.
- Location: Dubai World Central (DWC), United Arab Emirates.

- Theme: The Aerospace Industry's Future.
- Period of time: two years.
- More than 1,400 exhibitors from the aviation industry are expected to participate in the airshow, and more than 180 aircraft will be on display.

Key Highlights:

- Dubai Airshow is strictly open to trade and media guests only but does offer a public grandstand to view the daily flying display with prior registration.
- The static display, which features over 180 commercial aircraft, including Airbus's A320P2F, A321neo, A330neo, A400M Atlas CMk1, H225 (Helicopter), and C295, is a highlight of the Dubai Airshow this year.
- It sets a new record. The E195-E2 aircraft from Embraer will debut in public with a new livery. Boeing is going to present a flight demonstration of their much awaited 777-9.
- Prominent global airlines and up-and-coming airlines will demonstrate novel ideas; Saudia will display an Airbus 320neo from flyadeal and a Boeing 787-10 with a new brand livery.
- Along with other cutting-edge aircraft, Beyond, the first premium leisure airline in the world, will have its cutting-edge Airbus A319 on static display.
- Unique passport stamps at airports in Dubai
- Passengers arriving at Dubai International Airport and Dubai World Central Airport between November 6 and November 18 will have their passports specially stamped with a commemorative Dubai Airshow logo, according to a statement from Dubai Airports.

The G700 Private Jet from Gulfstream will make its debut at the Dubai Airshow.

6.3 INS SUMEDHA

- The INS Sumedha stopped at Walvis Bay, Namibia, recently.

An Overview:

- From November 10–13, INS Sumedha, as part of the Indian Navy's mission-based deployment to West Africa and the Atlantic, called at Walvis Bay, Namibia.
- India's warm connections to Namibia, its dedication to improving maritime security, and its solidarity with friendly nations are all demonstrated by this port call.

Concerning INS SUMEDHA:

- Goa Shipyard Limited was the builder.
- An indigenously constructed naval offshore patrol vessel is called INS Sumedha.
- It is a component of the Visakhapatnam-based Eastern Fleet of the Indian Navy.
- It is the third ship to be inducted into the Indian Navy as part of the domestic Naval Offshore Patrol Vessel (NOPV) Project.
- It is used independently and in support of Fleet Operations for a variety of purposes.
- Its main responsibilities include conducting anti-piracy patrols, EEZ surveillance, fleet support operations, maritime security for offshore assets, and escort operations for valuable assets.

Significance:

- It is an extremely powerful platform that may be used for numerous operational tasks.
- It is evidence of the shipbuilding industry in India's capacity.

6.4 Ohio-class Submarine

Recently, an American nuclear-powered Ohio-class submarine that can launch precise missile attacks across long distances joined a fleet of Navy vessels in Middle Eastern waters.

An Overview:

- The U.S. Central Command verified the arrival of an Ohio-class submarine in its assigned area of responsibility on November 5 in an uncommon public statement.
- CENTCOM, which is in charge of overseeing American military activities in the Middle East, provided a concise version of this information on social media.

About Ohio-class Submarine:-

- One class of nuclear-powered submarines is the Ohio class.
- They are serving in the US Navy at the moment.
- During the Cold War, the Ohio class submarines were constructed to give the US a strong and durable sea-based strategic deterrent.
- USS Ohio (SSBN-726), the first submarine of the Ohio class, was put into service in 1981.
- In all, eighteen submarines were constructed between 1976 and 1997.
- The purpose of these submarines is to conduct prolonged underwater missions.
- They have cutting-edge technology to support a range of missions, including as special operations, surveillance, and strategic deterrent.
- Two full crews, known as the Blue Crew and the Gold Crew, are assigned to each of these submarines, and their average patrols last between seventy and ninety days.
- They have a top speed of almost thirty knots.
- They can stay underwater for a very long time.

Significance:-

- Submarine-launched ballistic missiles (SLBMs) carrying nuclear warheads are launched from Ohio class submarines, which are an essential component of the US nuclear triad.

Ohio-class submarines are vital to the country's defense because they give the Navy unmatched strike and special operation mission capabilities from a covert, clandestine platform.

6.5 Igla-S

- India has declared that it would be purchasing Russia's formidable Igla-S air defense system.

Context:

- India's primary weapons supplier, Russia, is about to provide it with a potent anti-aircraft missile system that will strengthen its defenses along Pakistan's and China's borders.

About Igla-S:-

- Russia produced the well-known and incredibly powerful man-portable Igla-S air defense system.
- The Russian state-owned defense corporation KBM, which specializes in missile system design, is responsible for the development and production of the Igla-S.
- In 2004, the Russian Army started using it. (Missiles with ballistics)

- An individual or crew can fire it to down an opposing aircraft.
- This is a cutting-edge surface-to-air missile made to take on cruise missiles, drones, helicopters, and low-flying aircraft.
- In comparison to earlier SA-18 missiles given to India, it performs better.
- It is intended for use in the presence of natural (background) clutter and countermeasures against visible aerial targets at short ranges, such as tactical aircraft, helicopters, unmanned aerial vehicles (UAVs), and cruise missiles, either head-on or retreating.
- The 9M342 missile, a piece of military gear, is what makes up the Iglá-S system.

Edge IAS

7. Social issues

7.1 Amazon Women of the World (WoW) programme

Amazon WoW is a platform that facilitates networking between female engineering students in India and recruiters and leaders at Amazon. It provides information about Amazon's culture, career advice from graduates, and skill-building workshops.

Aim:

- It seeks to support women in STEM fields (science, technology, engineering, and mathematics) by upskilling them, encouraging them to pursue tech careers, and optimizing the use of resources.

7.2 Oxfam Report: Climate Equality: A Planet for the 99%

- According to the most recent Oxfam research (Climate Equality: A Planet for the 99%), 1.3 million people died from heat-related causes worldwide because the richest 1% of people exhaled carbon comparable to the poorest 66%.

What is Climate inequality?

- Climate inequality pertains to the uneven allocation of the consequences of climate change, whereby underprivileged and susceptible populations bear a disproportionate share of the brunt. It includes differences in the amount of greenhouse gas emissions produced, the vulnerability to dangers associated with climate change, and the availability of resources for adaptation.

Principal conclusions of the report:

- 16% of the world's carbon emissions in 2019 came from the richest 1% of people, which is equal to the emissions of the poorest 66% of people on Earth.
- The wealthiest 1% has released twice as much carbon dioxide since the 1990s as the bottom half.
- Nearly a million onshore wind turbines' carbon savings are offset by the super-rich 1%'s annual worldwide emissions.
- The carbon equivalent of more than the UK's entire emissions would be reduced by a tax of 60% on the incomes of the wealthiest 1% of earners worldwide, which would also raise almost US\$6 trillion to finance the switch from fossil fuels to renewable energy.

India's Global Talent Competitiveness Ranking falls to 103

- In the most recent study this month, India's ranking in the Global Talent Competitiveness Index (GTCI) dropped dramatically from 83 a decade ago to 103.
- India is currently placed 102nd, behind Guatemala (ranked 104) and Algeria (102)—all lower-middle-income nations.

Regarding the GTCI (Global Talent Competitiveness Index)

- 134 nations are ranked by the GTCI according to how well they can develop, draw in, and hold onto talent.
- It was just released in Davos, Switzerland by INSEAD, a partner and supporter of the Sustainable Development Goals (SDGs) of the United Nations.

- With locations across the globe and partnerships with prestigious universities, INSEAD is one of the biggest and most prestigious graduate business schools in the world.

The report ranks countries based on 6 pillars:

1. enable
2. attract
3. grow
4. retain talent
5. vocation and technical skills
6. global knowledge skills

India's Ranking and Comparisons

- **Rank 103:** India's current standing is significantly lower than the GTCI's median score among the nations evaluated.
- **BRICS Nations:** India has the lowest GTCI score of all the BRICS nations. China is ranked 40th in the group, ahead of Brazil at 69, South Africa at 68, and Russia at 52.
- The top three countries are the US, Switzerland, and Singapore.
- **Skills Mismatch:** India ranks poorly in the areas of "Employability" and "Vocational and Technical Skills" due to a growing skills mismatch and challenges in locating skilled workers.
- India's top-performing sector in the GTCI is "Global Knowledge Skills," which is fueled by software development and innovation. This helps the country rank 69th in the "Talent Impact" sub-pillar.

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7.3 Eklavya Model Residential School

- In the Mayurbhanj district's Kuliana, President Droupadi Murmu recently opened an Eklavya Model Residential School and attended the 36th Annual Conference and Literary Festival of the All India Santali Writers' Association's opening session at Baripada, Odisha.

Context:

- With 19 schools in Mayurbhanj district alone—one in every block—of the 87 new Eklavya Model Residential Schools authorized in Odisha, it is the largest district in India.

About Eklavya Model Residential School:-

- The Indian government's Eklavya Model Residential School program establishes model residential schools for Scheduled Tribes (ST) in India.

Objectives of EMRS:-

- Complete development of all pupils enrolled in each and every EMRS, including mental, physical, and socially important growth.
- Pupils will be given the authority to effect change, first at their school, then in their homes, villages, and ultimately in a wider setting.
- In order to meet the unique needs of those in Standards XI and XII and those in Standards VI to X, pay particular attention to the educational support that must be provided. Support the development of infrastructure that meets the physical, environmental, and cultural needs of students' daily lives.

Salient Features:-

- EMRS was founded between 1997 and 1998.
- It is among the Ministry of Tribal Affairs' premier interventions.
- In addition to academic instruction, schools prioritize students' overall growth.
- With 480 seats available, each school can accommodate students in Classes VI through XII.
- For ST children, Eklavya Model Residential Schools (EMRSs) are established in the States and UTs using funding provided by "Grants under Article 275(1) of the Constitution."
- The need of the relevant States and UTs is what drives the construction of EMRSs, with land availability being a necessary component.
- To manage the EMRSs, an autonomous society akin to Navodaya Vidyalaya Samiti will be housed under the ministry of tribal affairs.
- The plan also includes playgrounds, computer labs, teacher resource rooms, and housing for staff and hostels in addition to school buildings.

Significance:-

- Education quality for children from Scheduled Tribes (ST) might be impacted by EMRS.

7.4 Women's political empowerment — more talk, less action

Women's Reservation Bill
Two decades and still pending

20 years after it was first introduced on Sept 12, 1996, the constitutional amendment bill to reserve 33% seats for women in Lok Sabha and state legislatures is still a work in progress

A look at the major milestones of Women's Reservation Bill

- Introduced in the Lok Sabha by the Deve Gowda government on Sept 12, 1996
- Referred to a Joint Parliamentary Committee chaired by Geeta Mukherjee, which presented its report to the Lok Sabha on Dec 9, 1996. The bill got lapsed with the term of the 11th Lok Sabha
- Atal Bihari Vajpayee-led NDA government re-introduced the bill in the 13th Lok Sabha in 1999. It moved the Bill second time amid pandemonium in 2002, but failed and Bill lapsed with the tenure of the House
- In 2004, the new UPA government included the passing of the Bill as part of its Common Minimum Programme, the touchstone of the UPA coalition working with the outside support of the Left parties
- On May 6, 2008, a resolute Manmohan Singh-led UPA government introduced the legislation in the Rajya Sabha
- Rajya Sabha passed the Bill on Mar 9, 2010 and sent to Lok Sabha for ratification
- 15th Lok Sabha could not take up the Bill and it got lapsed again
- For the Bill to become a law, it will now have to be again introduced and passed by both Houses and then have to be passed by half of India's state legislatures and signed by the President

KBK Infographics

- Even with the 2023 Women Reservation Act, political parties have not done enough to field more female candidates in the most recent Assembly elections, indicating that obstacles still remain for women's political empowerment in India.

Key Highlights:

- Quotas inside political parties and legislative reservations are two avenues for women to become more empowered in politics.
- Legislative reservation examples from Pakistan, Bangladesh, and Nepal.
- Women are represented in countries like Australia, Canada, South Africa, and Sweden without the need for legally mandated quotas.
- The 2023 Act in India allots 33% of the seats in State Assemblies and the Parliament to women.
- Recent Assembly elections demonstrate that political parties have not demonstrated enough devotion to the Act.

Key Challenges:

- Out of 230 seats in Madhya Pradesh after the Act, the BJP and Congress fielded 28 and 30 female candidates, respectively.

- There is a little increase in Telangana, where 12 women candidates each from the BJP and Congress are running for 119 seats.
- Not a single state's party gets the required 33 percent of female candidates.
- Overall progress is inadequate, even with creative approaches like Congress reserving 40% of the seats in the UP in 2022.
- The triumph of TMC in West Bengal and Odisha indicates that regional parties are taking a more aggressive approach to women's political representation.

Key Facts and Data:

- Act approved by a large majority of the Lok Sabha, with only two MPs voting against it.
- In a daring step, the Congress set aside 40% of the seats for women in the Uttar Pradesh 2022 elections.
- Success of BJD and TMC in the elections held in West Bengal and Odisha with a larger number of female candidates.

Critical Analysis:

- The Act is excellent, but because it links delimitation after 2026, it appears nice on paper.
- National parties' unwillingness to support more women candidates has been questioned by regional parties like TMC, who have proven their dedication and won.

Way Forward:

- By fielding more female candidates, national and local parties must show that they genuinely support the political empowerment of women.

Taking note of the achievements of local parties such as TMC, other political organizations ought to aggressively encourage and assist women in politics.

8. Miscellaneous

8.1 Bani festival

At the annual Banni celebration, three individuals recently died and over a hundred were injured.

About Bani festival:

- The place is Andhra Pradesh.
- Every year on the eve of Vijaya Dasami, the Dussehra celebration, it is commemorated.
- It's a classic stickfight.
- The Banni Fight was a bloody conflict that resulted from the event's goal of stealing the idols from God's team.
- Historical significance: Those living under the Vijayanagara Empire observed this event.
- Axes and spears were utilized in the battle, making it extremely riskier at the time.
- It is commemorated because of the triumph of Goddess Parvati and Lord Mala Malleswara Swamy against the demonic forces of Mallasura and Mani, who caused problems for the residents of the Devaragattu area.

Process of ritual:-

- Kurnool's communities split up into groups and engage in a customary stick fight.
- Following their "kalyanam" and prayers at the temple, followers carry the gods down the hill on their shoulders in a thick cloth bag.
- A small group of devotees surrounds the idols with a circle of protection.
- A violent conflict breaks out as thousands of the opposing group's lathi-wielding members attempt to stop the parade from continuing as they descend.
- These locals, who are often farmers, continue their stick fight while marching down the hill while their clothing are covered in blood!

The procession continues till dawn with various artistic performances by artists, dancers, singers, and composers happening alongside eventually creating a phenomenal journey.

8.2 Ambaji temple

While in Gujarat, the Prime Minister will pray at the well-known Ambaji temple in Banaskantha.

About Ambaji temple:-

- Location: Gujarat, India's Ambaji.
- Time frame: the eighth century A.D.
- Administration: A temple trust is in charge of the temple's administrative operations.
- One of the main Shakti Peethas in Hinduism is the Shri Ambaji Mata Temple. (Temple Kalika Mata)
- Ambaji, an avatar of Amba Mataji, is honored in this temple.
- Out of the fifty-two Shakti Peeths, this one is.
- It is most renowned for its joyful celebrations and poojas held in honor of festivals like Navratri and Diwali.
- Many consider the famed Shree Visa Yantra, which is housed in the main temple complex, to be a symbol

of divine grace and power.

8.3 Asian Para Games 2023

The para-athletes from India received congratulations from Prime Minister Narendra Modi recently for their remarkable performances at the Asian Para Games 2023.

Regarding the 2023 Asian Para Games:

- Date range: October 22–28, 2023.
- Location: Hangzhou in China.
- The 2018 Asian Games in Jakarta, Indonesia, were the most recent event.
- The largest delegation from India has ever been sent to the fourth Asian Para Games.
- There were 303 competitors total—112 women and 191 men.
- Compared to the 190 competitors India sent to the 2018 Asian Para Games, where they had their best-ever performance and won 72 medals, including 15 gold, this is a significant rise.

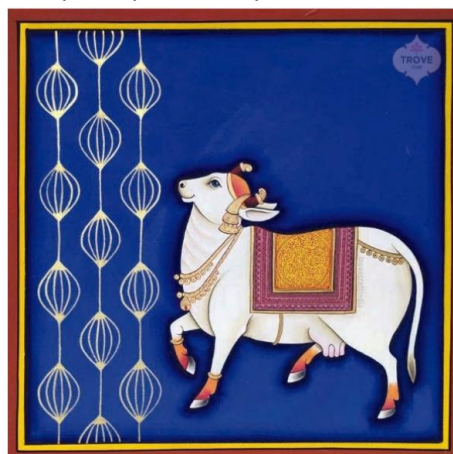
India finished with 111 medals at the Asian Para Games:-

- 29 gold
- 31 silver and
- 51 bronze

The Asian Para rich haul is also a hat-tip to the parents, coaches and administrators who spotted and nurtured the sporting passion in the hearts and minds of children with physical disabilities.

8.4 Pichwai Painting

- 350-year-old Pichwai paintings are on display in an art exhibition at Collage in Chennai.
- Pichwai art was first produced on cloth, usually khadi, in Nathdwara, which is close to Udaipur.
- Features: Vegetable dyes are used to create vivid colors like orange, red, chrome yellow, and kesari, while stone pigments are used to get gold and silver tones in the paintings.
- A single piece of the painstaking, time-consuming work takes several months to finish.
- Over time, the art genre has changed as a result of artists incorporating contemporary topics and ideas.
- Pichwai art has seen a comeback in recent years, drawing in younger collectors and inspiring artists to return to their native Rajasthan to pick up and carry on the old skills.



8.5 Kozhikode as 'City of Literature' and Gwalior as the 'City of Music'

- The cities of Gwalior, in Madhya Pradesh, and Kozhikode, in Kerala, are part of the UNESCO Creative Cities Network (UCCN).
- These cities were selected to symbolize particular artistic disciplines; for example, Gwalior was selected to symbolize music, and Kozhikode to represent literature.
- This network includes the following Indian cities: Hyderabad (gastronomy), Jaipur (crafts and folk arts), Varanasi (music), Chennai (music), and Srinagar (crafts and folk arts).

About Kozhikode

- It is renowned for turning out well-known authors and cultural icons and has a strong literary heritage. The city has a long history of making important literary contributions; in 1887, Kundalatha, the first Malayalam book, was written there.

Creative Cities Network of UNESCO:

- There are 350 cities in more than 100 countries that are part of the UNESCO Creative Cities Network, which was founded by UNSECO in 2004. Its goal is to promote collaboration between cities that understand that innovation is essential to long-term, sustainable urban growth.
- Categories include: Crafts and folk arts 2. Media arts 3. Film 4. Design 5. Gastronomy 6. Literature and 7. Music.
- The network aims to leverage the creative, social, and economic potential of cultural industries, aligning with UNESCO's objectives of promoting cultural diversity and enhancing resilience to challenges like climate change, inequality, and rapid urbanization.
- It promotes a culture of creativity in urban planning and solutions to urban issues.

8.6 2023 British Academy Book Prize: Nandini Das

The 2023 British Academy Book Prize for Global Cultural Understanding has been awarded to Indian-born author Nandini Das. She will receive GBP 25,000 for her book, "Courting India: England, Mughal India, and the Origins of Empire."

Regarding the book

- The novel tells the tale of Sir Thomas Roe, the first English envoy to India in the seventeenth century, offering a novel viewpoint on the beginnings of the British Empire. The award honors nonfiction publications that advance knowledge of many global cultures and their interactions.

About the Prize:

Renamed the Nayef Al-Rodhan Prize in 2013, the British Academy Book Prize honors exceptional non-fiction books in the humanities and social sciences. It honors works of literature that are rigorous, innovative, and contribute to our understanding of world cultures and interactions.

8.7 Sharjah International Book Fair 2023

The 42nd Sharjah International Book Fair (SIBF) is happening right now.

An Overview:

- Impressively, 2,033 publishers from 109 countries have participated in the current SIBF edition.
- At the book fair, the India Pavilion is a lively and busy center that showcases the rich literary diversity of the nation.

Regarding the 2023 Sharjah International Book Fair:

- Date: November 12, 2023.
- Sharjah Book Authority (SBA) is the organizing body.
- Location: UAE's Sharjah Expo Centre. (The CEPA between the UAE and India)
- Theme: "Books We Speak"
- The 12-day schedule is an extensive artistic, cultural, and entertainment extravaganza.
- 215 visitors from 69 countries are in charge of almost 1,700 events that appeal to a broad spectrum of interests and age groups.
- The presence of 600 authors who are there to autograph their most recent publications is one of the event's highlights.
- As this year's SIBF Guest of Honor, South Korea is putting on a show.
- The festival, which covers literature, art, technology, and culture, is putting the spotlight on South Korea's distinctive knowledge base and cultural landscape.

About:

- Under the patronage of His Highness Dr. Sheikh Sultan bin Muhammad Al-Qasimi, the 10-day festival began in 1982 and is a premier literary event that highlights literature from the Middle East, Asia, and Africa.
- With 2.4 million attendees in 2021, the book fair is regarded as the third largest expo in the world.
- In addition, there will be panel talks, seminars, and book signings at the event.

Significance:

Publishers from the UK and Europe who have attended previous Sharjah International Book Fairs have reportedly stated that the fair has opened up new economic opportunities for them.

8.8 Rabhindra Bhavan

- Rabhindra Bhavan recently hosted the opening of two curated exhibitions by seasoned artist Jatin Das.

An Overview:

- The two exhibitions, "Imag(in)ing the Immediate- Curating from a National Collection" and "The Afghan Journal," are being presented by Lalit Kala Akademi, the highest cultural body under the Ministry of Culture, Government of India. They are both organized by JohnnyML, a renowned curator and art historian who also serves as assistant editor at Akademi.

About Rabhindra Bhavan:-

- Ar. Habib Rahman is the architect.
- Location: Mandi House, Feroz Shah Marg, New Delhi
- 3.5% of an acre
- Year of project: 1961

- Concept: constructing a structure to commemorate Rabindranath Tagore's centennial.
- To commemorate the centennial of Tagore's birth, Rabindra Bhavan was constructed. Tagore was not only a poet and novelist but also an artist, playwright, and composer.
- Thus, three National Academies are housed in the building: Sahitya (Literature), Sangeet Natak (Dance, Drama, and Music), and Lalit Kala (Plastic Arts).
- The structure is separated into three main sections: the theater, the exhibition gallery, and the administration building.
- The largest of all the blocks, the administrative block, takes up a significant amount of space on the property.
- The Y shape was carefully planned to occupy the most space possible on the location. The chajjas in continuous horizontal louvers have been reinterpreted.
- lighting produced by nature.
- In addition, this structure houses a memorial museum dedicated to Tagore studies.
- It serves as the focal point for Rabindranath Tagore study projects.
- Among these are antique photos that depict his way of life.
- Several people are drawn to the larger collection of artifacts and personal belongings belonging to Shri Rabindranath Tagore.

8.9 Dr SS Badrinath

- The founder of Sankara Nethralaya, Dr. SS Badrinath, passed away recently. The PM expressed condolences.

Context:

- Dr. S.S. Badrinath, the founder of Sankara Netralaya, passed away in Chennai.

About

- He established Sankara Netralaya.
- He was sick and lived to be 83.
- on February 24, 1940, was born.
- Madras Medical College awarded S.S. Badrinath a degree in 1962.
- In the US, he pursued his post-graduation studies.
- In 1970, upon his return to India, he was employed by the Adyar Voluntary Health Services.
- He operated on his spiritual mentor Chandrasekara Saraswathi Swamigal, a cataract surgeon, and was so closely affiliated with the Sankara Mutt.
- In 1978, he established the Sankara Nethralaya within the Medical Research Foundation.
- His establishment of the now-iconic institution serves as a testament to the advancement of contemporary medicine.

Achievements:-

He was a recipient of:-

- Padma Shri:1983
- Padma Bhushan: 1999.

8.10 Yoga

- According to a recent AIIMS study, persons with epilepsy who practise yoga report feeling less stigmatised.

Context:

- According to Manjari Tripathi, Head of the Neurology Department at AIIMS, the results indicate that yoga improves overall quality of life in those with epilepsy who are on medication by lessening the burden of epilepsy and stigma.

About YOGA:-



- The Sanskrit term for "yoga" means "to join" or "to unite."
- It represents the fusion of the physical and mental selves.
- Yoga is a traditional physical, psychological, and spiritual discipline.
- India is where it all began.
- In 2016, UNESCO added it to the Representative List of the Intangible Cultural Heritage of Humanity.
- Expressions that highlight the significance of intangible heritage and show off its diversity are included in the UNESCO List of the Intangible Cultural Heritage of Humanity.
- Yoga is one of India's thirteen intangible cultural heritages.

8.11 Silkyara Tunnel

- The 16th day of the Silkyara tunnel rescue operations commenced recently.

Context:

- The incident involving the workers who became stuck in the Silkyara Tunnel on the Yamnotri-Utrakashi Road.
- The fall occurred approximately 270 meters from the Silkyara side entrance.
- Among the key players in the multi-agency rescue operations are the police, the State Disaster Relief Force (SDRF), and the National Disaster Response Force (NDRF).

About Silkyara Tunnel:-

- It's in Uttarakhand.
- The tunnel is five kilometers long overall.
- Its purpose is to link Silkyara with the Uttarkashi district's Dandal Gaon.

- As part of the Char Dham all-weather road project, the double-lane tunnel is expected to be among the longest.
- Its goal is to cut 26 kilometers off the trip from Uttarkashi to Yamunotri Dham.
- A 2.3 kilometer tunnel has been built from the Silkyara end, while a 1.6 km tunnel from the Barkot end has been finished.
- Roughly 400 meters of the tunnel still need to be built.
- The Silkyara tunnel is being built as part of the Char Dham project's ongoing work on the Brahmakhal-Yamunotri section of the National Highway, between Silkyara and Dandalgaon.
- Project Char Dham: It was introduced in December 2016 with the goal of improving communication amongst the four Char Dham pilgrimage sites: Kedarnath, Badrinath, Yamunotri, and Gangotri.

8.12 Dead Sea

- A brand-new school for 400 kids who were evacuated from the Gaza region opened its doors not far from the Dead Sea.

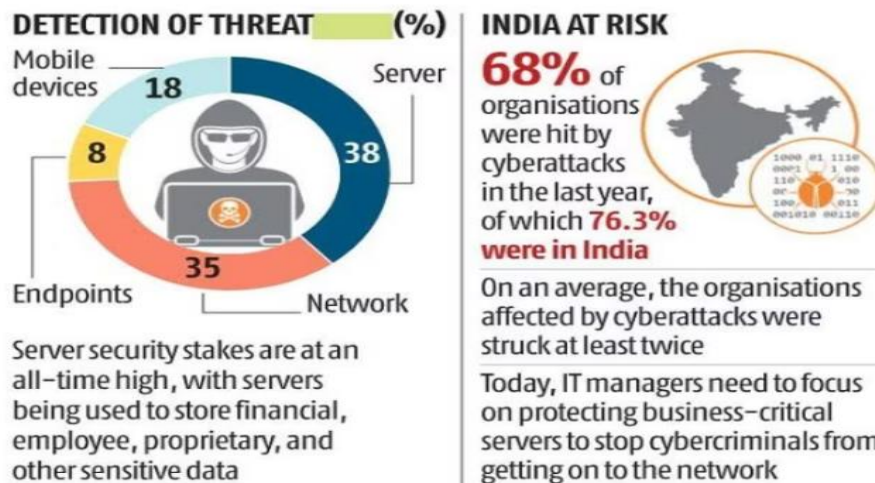
Context:

- Israel's Minister of Education, Yoav Kish, presided over the formal opening ceremony of the first school in the Tamar Regional Council (near the Dead Sea), catering to first through twelfth grade pupils who were evacuated from their homes, one month after the war in Gaza broke out.

About Dead Sea:-

- In southwest Asia, the Dead Sea is a landlocked salt lake that is situated between Israel and Jordan.
- The Salt Sea, or Dead Sea as it is also called.
- It is the world's lowest body of water and has the lowest elevation on land.
- Compared to ordinary ocean water, the water in the Dead Sea is around ten times saltier.
- Its name comes from the harsh environment that this salinity creates, which prevents species from thriving.
- It is located south of the Sea of Galilee and east of the Mediterranean Sea.
- It's located in the Rift Valley of Jordan.
- The Jordan River, which enters the lake from the north, provides the majority of its water.
- The world's deepest hypersaline lake, reaching a depth of 306 meters.
- Clinical research has demonstrated that the high mineral content of its mud and water, zinc, and oxygen-rich air can be used to treat a wide range of illnesses, such as rheumatism, asthma, high blood pressure, and psoriasis and other skin disorders.

8.13 In cyber-attacks, terror has found a new face



Key highlights:

- Regrettably, Mumbai is the city targeted by terrorist attacks the most in the whole world.
- The most daring attacks occurred on November 26, 2008 (26/11), and they lasted for three days.
- Although there had intelligence prior to the 26/11 assaults, preventative actions were unsuccessful.
- Significant alterations were made to the security apparatus and police agency following the attack.

Key Challenges:

- The terrain of terror warfare has changed to cyberspace in spite of reforms.
- The wars between Israel and Hamas and Russia and Ukraine show how dangerous cyberwarfare is becoming.
- Between March 2021 and September 2023, state-sponsored cyberattacks on India surged by 278%.

Critical Analysis:

- In a world that is heavily digitalized, cybersecurity is crucial.
- Apple's warning and other recent occurrences emphasize how urgent it is to implement strong cybersecurity safeguards.
- It is imperative that there be a national education and training program on cyber risks.

Way Forward:

- Strong cybersecurity measures must be immediately invested in by the public, commercial, and governmental sectors.
- Comprehensive education initiatives to increase public understanding of cyberthreats should begin in schools.

Government organizations should receive sufficient funding and training to improve cybersecurity.

9. Mapping

9.1 Agartala-Akhaura railway

- Recently, the roughly 12-kilometer railway link between Bangladesh and Tripura was opened. The Agartala-Akhaura railway project has the potential to significantly cut the time it takes to travel from 31 hours to just 10 hours between Agartala and Kolkata, creating new opportunities for trade, tourism, and people-to-people interactions between the two nations. With contributions from the Ministries of External Affairs and Development of the North East Region, India is the project's sole funder.



9.2 Rafah border crossing

Egypt consented to take in injured Palestinians from Gaza and dual nationals from Palestine via the Rafah border crossing. This decision is a reaction to the recent confrontation between Israel and Hamas fighters.

Regarding the Rafah Bridge:

- The Rafah Crossing connects the Sinai Peninsula of Egypt with the Gaza Strip, making it the southernmost point of departure. It is the sole outlet that does not lead into Israeli territory, and it is under Egyptian authority. The Israeli-controlled border crossings at Erez and Kerem Shalom are now closed, making Rafah the main point of entry and exit for Gaza residents and humanitarian aid.



9.3 Pakistan-Afghanistan Border

- Pakistan has imposed the deportation of Afghan migrants, concentrating mostly on Afghans, who make up the majority of the nation's refugees.
- Pakistan is home to more than 4 million Afghans, of whom an estimated 1.7 million do not have the necessary papers. The UN, human rights organizations, and Western embassies have all made appeals, but Pakistan is steadfast in its determination to deport Afghan migrants, claiming financial hardship and security concerns. Some have petitioned the Supreme Court to protest the mass expulsion in response to criticism of the deportations.
- The 2,670-kilometer international border separating Afghanistan and Pakistan in South Asia is formed by the Durand Line. The eastern end ends at the Chinese border, while the western end goes to the Iranian border.



9.4 Horn of Africa

Recently, "above average" rains connected to El Nino caused devastating floods in the Horn of Africa.

An Overview:

- According to officials, the region's intense rains have caused many persons in the Greater Horn of Africa to be presumed dead, millions of dollars' worth of property to be destroyed, and thousands of people to be displaced.

About Horn of Africa:



- Countries: Djibouti, Ethiopia, Eritrea, and Somalia.
- Where: to the northeast of Africa
- It is located at the Red Sea's southern border.
- It stretches over several hundred kilometers into the Indian Ocean, the Gulf of Aden, and the Guardafui Channel.
- It is located halfway between the Tropic of Cancer and the Equator.
- It stretches for hundreds of kilometers into the Arabian Sea.
- It is situated near the Gulf of Aden's southern shore.
- One of the two fully arid UNESCO Biodiversity Hotspots is the Horn of Africa.
- Hotspot for Biodiversity: Two rigorous requirements must be met for an area to be designated as a biodiversity hotspot:- Have at least 1,500 vascular plant species (often referred to as "endemic") that are unique to this planet.
- The Greater Horn of Africa region includes Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda.

9.5 Myanmar

- Because of the ongoing civil conflict in Myanmar, there has been an influx of people from that country into Mizoram, India.
- After a military coup toppled the civilian administration in February 2021 and sparked massive protests and resistance, the country of Myanmar entered a civil war. Different ethnic armed groups in Myanmar have responded differently to the coup; some have sided with the government in maintaining a ceasefire, while others have backed the pro-democracy movement.

Regarding Myanmar, the erstwhile Burma:

- It is a country in Southeast Asia with over 100 different ethnic groups that shares borders with Bangladesh, China, India, Laos, and Thailand. The largest city in the nation, Yangon (formerly Rangoon), is home to the magnificent Shwedagon Pagoda, which was constructed in the sixth century and houses Buddhist relics.



9.6 Liberia

- The results of Liberia's presidential election show that Joseph Boakai defeated incumbent George Weah.
- West African nation of Liberia borders the Ivory Coast to the east, Sierra Leone to the northwest, and Guinea to the north.
- Liberia's southern, southwest border is shared with the Atlantic Ocean.



9.7 Mount Etna

- Lava has lately started to spew from Italy's Mount Etna eruption, which was recently seen on camera as ash.

Context:

- The Copernicus Sentinel-2 mission, which utilized shortwave-infrared bands to emphasize the lava flow at the time of collection, was able to see the occurrence from orbit due to its significance.

About Mount Etna:-

- The tallest island mountain in the Mediterranean is Mount Etna.
- Its height is roughly 3,326 meters.
- It is located on Sicily's eastern coast.
- South of the Alps, it is Italy's highest peak.
- In addition, it is the world's most active stratovolcano.
- Volcanic activity there has been documented since 1500 B.C. It has erupted almost 200 times since then.
- Another name for a stratovolcano is a composite volcano. (Volcano) The conical shape of this volcanic landform is the result of layers of volcanic material deposited over time during consecutive eruptions.
- Moreover, the volcano sustains significant terrestrial ecosystems with endemic species of plants and animals.
- Etna has erupted in many different ways, causing enormous lava flows and powerful explosions.

9.8 New Zealand

- Christopher Luxon took the oath of office as prime minister of New Zealand recently.

Context:

- Cindy Kiro, the governor general, presided over the swearing-in event.

About New Zealand:-



- In the southwest of Polynesia, in the South Pacific Ocean, is the island nation of New Zealand.
- The closest neighbor, Australia, is located more than 1,000 miles (1,600 km) southeast of it.
- The nation is made up of several smaller islands, some of which are hundreds of miles away from the two main islands, the North and the South Island.
- The largest urban area in Auckland is the capital city.
- With gently undulating farmland on both sides, the North Island of New Zealand is divided by a "spine" of mountain ranges.
- The Volcanic Plateau, an area of active volcanic and thermal activity, dominates the middle North Island.
- The South Island is anchored by the enormous Southern Alps. The wide, level Canterbury Plains and the undulating farmlands of Southland and Otago are to the east of the Southern Alps.

New Zealand-India Relations:

- Historical Relations: There has long been a cordial and developing relationship between India and New Zealand. Indians first arrived in Christchurch in the 1850s, thus our connections date back to the 1800s.
- Political ties: The Commonwealth, parliamentary democracy, and English language all contribute to the amicable and friendly relations between India and New Zealand.
- Economic relations: The two well-known groups promoting trade and investment links between India and New Zealand are the India-New Zealand Business Council (INZBC) and the India-New Zealand Trade Alliance (INZTA).
- Cultural Relations: New Zealanders celebrate all Indian holidays with great fervor, including Diwali, Holi, Rakshabandhan, Baisakhi, Guruparv, Onam, Pongal, etc.

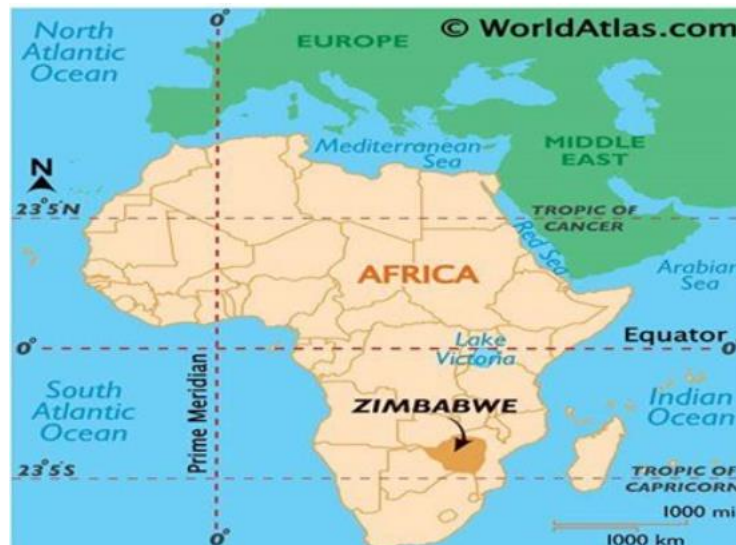
9.9 Zimbabwe

- Zimbabwe recently said that it will be building its first utility-scale geothermal power plant.

An Overview:

- The initiative intends to lessen Zimbabwe's reliance on energy sources that are threatened by climate change, namely hydropower.

About Zimbabwe:-



- Southern Africa is the location.
- Capital: Harare.
- Zimbabwe is a nation that is landlocked.
- Zimbabwe is bordered by South Africa, Botswana, Mozambique, and Zambia.
- The nation is home to a variety of topography, including plateaus, mountains (like those in the Eastern Highlands), and savannas.
- On the Zambezi River, it is home to the famous Victoria Falls.
- Zimbabwe is located north of the Capricorn Tropic.
- Despite being entirely in the tropics, it experiences subtropical weather.
- The grasses of the Savvanah dominate it.

Major Rivers:-

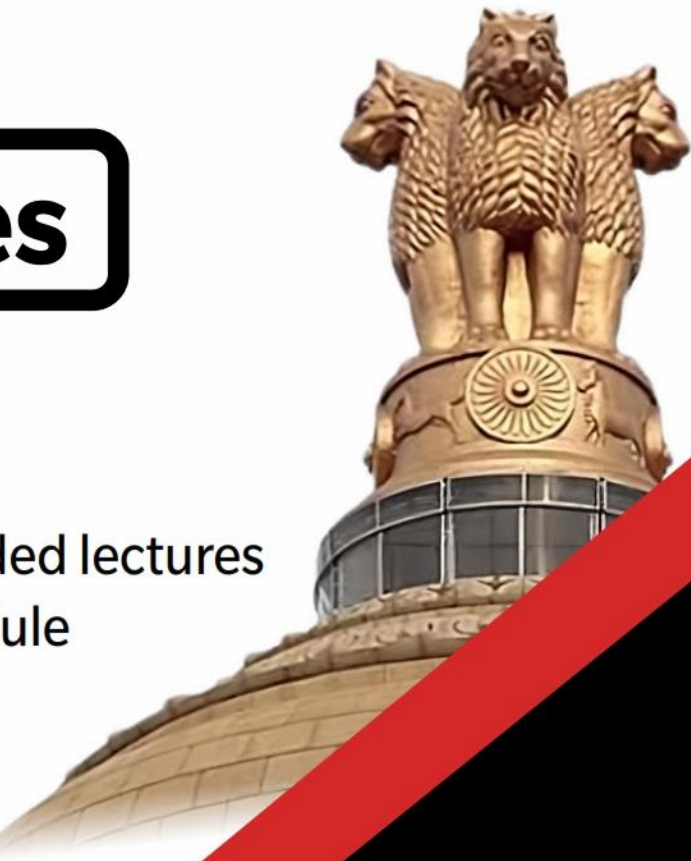
- Zambezi River: The famous Victoria Falls, one of the biggest waterfalls in the world, is created by the Zambezi, one of Africa's greatest rivers, flowing through Zimbabwe.
- The Limpopo River is an essential water source for the region and forms a portion of Zimbabwe's southern border with South Africa.
- Save River: A significant river in southeast Zimbabwe, it provides vital water for the area's wildlife and agriculture.

Highlands and Mountains:

- Eastern Highlands: Boasting tall peaks, verdant forests, and bountiful valleys, this hilly area shares a border with Mozambique. Zimbabwe's tallest mountain, Mount Nyangani, is a part of the Eastern Highlands.
- Chimanimani Mountains: Part of the Eastern Highlands subrange, renowned for its varied vegetation, picturesque scenery, and well-traveled hiking paths.
- Matobo Hills: These granite hills in the southwest are well-known for their unusual rock formations, prehistoric rock art, and spiritual value to the surrounding people.

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