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PRELIMS BYTES

1. ART AND CULTURE

1.1 Yakshagana Mela

Why in the news?

Recently, the over-a-century old Yakshagana mela, the Kateel Durgaparameshwari Prasadita Yakshagana Mandali, in Dakshina Kannada will revert to all-night shows after the High Court of Karnataka gave permission subject to adherence to noise pollution rules.

About Yakshagana mela:

- It is a traditional form of theater performance known as Yakshagana.
- It is predominantly performed in Karnataka.
- Kateel refers to a town in Karnataka, which is unique for its melas.
- Theme of this yakshagana mela is mostly Ramayana and Mahabharatha.
- Musical instruments like Chande, Harmonium, Maddale, Taala, and flute accompany these performances.
- Both men and women are participating in this yakshagana. Traditionally men portrayed all the roles.

1.2 Yama niyama

Why in the news?

Recently, Prime Minister Narendra Modi started a special 11-day ritual leading up to the Ram Temple consecration ceremony in Ayodhya.

- Further he said that he is going to follow Yama niyama as part of his journey.
- **About Eight limbs of Yoga:**
- Yama (Restraints)
- Niyama (Observances)
- Asana (Posture)

- Pranayama (Breath Control)
- Pratyahara (Withdrawal of the Senses)
- Dharana (Concentration)
- Dhyana (Meditation)
- Samadhi (Pure Contemplation).

About Yama and Niyama:

- Yama Niyama", which are described as **ethical guidelines mentioned in the Gita and by sage Patanjali's** as the first two limbs of the "eight limbs of Yoga".
- **Yama**, the first limb is about five ethical principles like ahimsa (non-violence), truthfulness, asteya (not stealing), brahmacharya (abstinence), and aparigraha (non-accumulation).
- **Niyama** includes soucha or cleanliness inside and outside, santosha (contentment), tapas (penance), swadhyaya (self-study) and ishvarapranidhana (surrender to the divine, higher power)

Patanjali:

- He was a hindu author, philosopher and mystic.
- He is the author of '**Yoga sutra**', a classical yoga text.
- Estimates suggest that he may have lived between the **2nd century BCE and the 4th century CE**.
- Patanjali is **one of the 18 siddhars in the Tamil siddha** (Shaiva) tradition.

Ramcharitmanas:

- It was an epic poem, developed based on the Ramayana.

- It was written in the **16th century in Awadhi language**.
- Author of this book is **Tulsidas**.
- The word Ramcharitmanas literally means "**Lake of the deeds of Rama**".
- It is considered as a work belonging to the **saguna school** of bhakthi movement.

1.3 Sankranti

Why in the news?

Recently, Sankranti, the harvest festival began with the rooster fights.

About Sankranti:

- Sankranti refers to the transmigration of the sun from one zodiac to another in Indian astronomy.
- Sankranti is marked as the beginning of a month in the sidereal solar calendars followed in Andhra Pradesh, Telangana, Uttarakhand, Tamil Nadu, Kerala, Karnataka, Punjab, Odisha, Mithila Region of Bihar and Nepal.
- On the other hand, in the sidereal solar Bengali calendar and Assamese calendar, a Sankranti is marked as the end of each month and the day following as the beginning of a new month.

Rooster fight:

- Rooster fight is a traditional cock fight in India.
- Local name of the sport is '**Kodi Pandalu**'.
- This fight is famous in **Andhra Pradesh, Telangana and parts of Tamil Nadu**.

1.4 Bogali Bihu

Why in the news?

Recently, people take part in a community fishing event in the Bamuni Lake in Guwahati as part of the harvest festival known as Bhogali Bihu.

About Bhogali bihu:

- Bhogali bihu is a harvest festival, which marks the end of harvesting season in the month of Magh (January–February).
- It is mostly celebrated in Assam, North East India.
- Other name of this festival is Magh bihu.
- The festival is a regional variant of Makar Sankranti.
- Traditional Assamese games, including Tekeli bhonga (pot-breaking) and buffalo fighting, adds a cultural flair to the celebrations.

Lake Bamuni:

- This lake is located in Assam.
- This lake is famous for community fishing during the time of Bhogali bihu.

1.5 Ganga Sagar Mela

Why in the news?

Recently, rising of sea level and erosion of the beach in front of the Kapil Muni temple on Sagar Island are turning out to be a damper on the Ganga Sagar Mela.

About Ganga Sagar Mela:

- It is an annual cultural and religious fair held in Sagardwip, West Bengal.
- It is the second largest fair after Kumbh mela in terms of people gatherings.
- The festival draws a massive influx of devotees who converge to partake in rituals, seek spiritual purification, and celebrate with immense fervor.
- Post the sacred bath, pilgrims often visit the temple of Kapil Muni, a revered sage in Hindu mythology.

1.6 Ayodhya Ram Temple

Why in the news?

Recently, the Ayodhya temple consecration was held.

About Temple Architecture and features:

- The temple complex, built in the traditional **Nagara style**, will be 380 feet long from east to west, 250 feet wide and 161 feet high.
- Each floor will be 20 feet high and will have 392 pillars and 44 gates.
- The entire temple superstructure will eventually be **three storeys, ground plus two floors**.
- **No iron or steel** has been used in the construction of the grand structure.
- Around the grand temple is a **rectangular periphery called the Percota, a feature found in temples in South India, but not generally in the north**.
- Idols of hanuman, Lion and Peacock were carved out from **sandstone**.

1.7 Hampi Temple

Why in the news?

Recently, the visitors of the famed Virupaksha temple at the UNESCO World Heritage site of Hampi are being given a Panche (dhoti) and towel at the door by the Vijayanagara district administration.

About Hampi temple:

- It is designated as a UNESCO world heritage site.
- These temples are mostly located on the banks of Tungabhadra River.

Krishna Temple:

- The Krishna Temple here is a grand temple in Hampi known for its artistic value.

- It's an architectural marvel! The intricately carved pillars and sculptures are simply gorgeous.

Hazara Rama Temple:

- Dating back to the 15th century, Hazara Rama Temple is dedicated to Lord Rama.
- The outer walls of the temple are adorned with scenes from the epic Ramayana.

Achyutaraya Temple:

- The Achyutaraya Temple is also known as the Tiruvengalanatha Temple.
- The temple is dedicated to Lord Venkateswara, a form of Lord Vishnu and boasts impressive architecture.
- The temple is located at the foothills of Matanga Hill.

Vitthala Temple:

- The Vitthala Temple is the most famous one here.
- It is dedicated to Lord Vitthal, an incarnation of Lord Krishna.
- The temple is known for its musical pillars within the temple complex. When tapped gently, these pillars produce musical notes.
- This temple was built by Devaraya II and expanded by King Krishna Deva Raya.
- It was built in the dravidian style of architecture.

Virupaksha Temple:

- Virupaksha Temple is the most iconic of all the temples.
- The temple, dedicated to Lord Shiva, dates back to the 7th century and is noted for its stunning architecture.
- The temple complex is all about beautiful sculptures and ornate pillars.
- This temple was also built by King Devaraya II.

1.8 Vadnagar

Why in the news?

Recently, a joint study by five prominent institutions has found evidence of a cultural continuity in Vadnagar in present-day **Gujarat** even after the collapse of the Harappan civilisation, thus making it likely that the "Dark Age" was a myth.

Key points:

- The study also indicates that the rise and fall of different kingdoms during the 3,000-year period and recurrent invasions of India by central Asian warriors were driven by severe changes in climate like rainfall or droughts.

About Vadnagar:

- Vadnagar was a **multicultural and multireligious (Buddhist, Hindu, Jain and Islamic) settlement**.
- Excavation in several deep trenches revealed the presence of seven cultural stages (periods) namely, **Mauryan, Indo-Greek, Indo-Scythian or Shaka-Kshatrapas ('Satraps'), descendants of provincial governors of ancient Achaemenid Empires, Hindu-Solankis, Sultanate-Mughal (Islamic) and Gaekwad-British colonial rule and the city endures even today.**
- One of the **oldest Buddhist monasteries** has been discovered during our excavation.
- The study also found **coin molds of the Greek king Appollodatus during the Indo-Greek rule** at Vadnagar.

1.9 Maratha Military Landscapes

Why in the news?

Recently, India has nominated the "Maratha Military Landscapes", a network of forts that showcase the strategic military powers of

Maratha rule, for inclusion on the UNESCO World Heritage List for 2024-25.

Key details:

- The 12 forts included in this nomination are the forts of **Salher, Shivneri, Lohagad, Khanderi, Rai gad, Rajgad, Pratapgad, Suvarnadurg, Panhala, Vijay durg and Sindhudurg in Maharashtra and Gingee in Tamil Nadu.**
- These components, distributed across diverse geographical and physiographic regions, showcase the strategic military powers of the Maratha rule.

About Maratha Military Landscape:

- The "Maratha Military Landscapes", which developed between the **17th and 19th centuries**, represent an extraordinary fortification and military system envisioned by the Maratha rulers.
- The inception of the Maratha Military ideology dates back to 17th Century during the reign of the Maratha King Chhatrapati Shivaji Maharaj by the 1670 CE and continued through subsequent rules until Peshwa rule till 1818 CE.
- This extraordinary network of forts, varying in hierarchies, scales and typological features, is a result of integrating the landscape, terrain and physiographic characteristics distinctive to the **Sahyadri mountain ranges, Konkan Coast, Deccan Plateau and Eastern Ghats in the Indian Peninsula.**
- There are more than 390 forts in Maharashtra out of which only 12 forts are selected under the Maratha Military Landscapes of India, of these eight forts are protected by the Archaeological Survey of India.
 - These are Shivneri fort, Lohgad, Raigad, Suvarnadurg, Panhala fort,

Vijaydurg, Sindhudurg and Gingee fort whereas Salher fort, Rajgad, Khanderi fort and Pratapgadh are protected by the Directorate of Archaeology and Museums, Government of Maharashtra.

- In the Maratha Military Landscapes of India Salher fort, Shivneri fort, Lohgad, Raigad, Rajgad and Gingee fort are **hill forts**, Pratapgadh is **hill-forest fort**, Panhala is **hill-plateau fort**, Vijaydurg is **coastal fort** whereas Khanderi fort, Suvarnadurg and Sindhudurg are **island forts**.
- Maratha Military Landscapes is the **sixth cultural property nominated for inclusion in the World Heritage List from Maharashtra**.

UNESCO World heritage list in India:

- At present in India there are 42 World Heritage sites, out of which 34 are cultural sites, seven are natural sites whereas one is mixed site.
- In Maharashtra there are six World Heritage Sites, five cultural and one natural these are, Ajanta Caves (1983), Ellora Caves (1983), Elephanta Caves (1987), Chhatrapati Shivaji Maharaj Terminus (formerly Victoria Terminus) (2004), Victorian Gothic and Art Deco Ensembles of Mumbai (2018) and western Ghats of Maharashtra, Karnataka,

Tamil Nadu and Kerala is serial property in natural category (2012).

- The Maratha Military Landscapes of India included in the Tentative List of World Heritage sites in 2021 is the sixth cultural property nominated for inclusion in the World

Heritage List from Maharashtra.



Scan here for **UNESCO World heritage list in**

1.10 Warli tribes

Why in the news?

Recently, due to the announcement of Shivaji Museum Project, the shops of around 300 Warli tribes have been torn down.

About Warli tribes:

- Warli Tribes are an Adivasi indigenous tribe who live in the mountainous, coastal, and bordering regions of **Gujarat and Maharashtra**.
- The word 'Warli' is derived from the word 'Warla,' which means '**piece of land**'.
- The Warli people speak **Varli or Warli, an Indo-Aryan language**.
- The language is typically classified as Marathi, but it is also known as Konkani or Bhil.
- They lived in thatched mud huts and created their **art on the walls of their homes with rice paste**.
- The Warli have their own animistic beliefs, way of life, customs, and traditions, and they have adopted many Hindu beliefs as a result of acculturation.
- The **Warli culture is centered on the concept of Mother Nature**, and natural elements are frequently depicted as focal points in Warli painting.
- The Warli tribe values folk art as well as gods, goddesses, and ritual culture.
- They use painting to depict their traditional way of life, customs, and traditions.
- The **majority of these paintings are created by women**.
- **Bohada** is a three-day mask festival held by the Warli tribes. During this celebration, mask owners wear these masks and perform several times.
- The Warli Tribes perform **Tarpa Dance** along with Tarpa music instruments.

- They **usually perform in groups**. One person plays music with a Tarpa instrument and the rest of the people form a circle keeping the musician in the center and dance with people.

1.11 Padma Awards

Why in the news?

Recently, the Union government announced that former Vice-President M. Venkaiah Naidu, actors Chiranjeevi and Vyjayanthimala Bali, and Bharatanatyam dancer Padma Subrahmanyam will be conferred the Padma Vibhushan.

About Padma Awards:

- The Padma Awards are one of the highest civilian honors of India announced annually on the eve of Republic Day.
- The Awards are given in three categories:
 - **Padma Vibhushan** (for exceptional and distinguished service),
 - **Padma Bhushan** (distinguished service of higher order)
 - **Padma Shri** (distinguished service).
- The award seeks to recognize achievements in all fields of activities or disciplines where an element of public service is involved.
- The Padma Awards are conferred on the recommendations made by the Padma Awards Committee, which is constituted by the Prime Minister every year.
- The **Padma Awards Committee** is headed by the **Cabinet Secretary** and includes Home Secretary, Secretary to the President and four to six eminent persons as members.
- The recommendations of the committee are submitted to the Prime Minister and the President of India for approval.
- The nomination process is open to the public. Even self-nomination can be made.
- Padma Awards, which were **instituted in the year 1954**, are **announced every year** on the **occasion of Republic Day** except for brief interruption(s) during the years 1978 and 1979 and 1993 to 1997.
- Government servants including those working with PSUs, except doctors and scientists, are not eligible for these Awards.
- The total number of awards to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) should not be more than 120.
- The award does not amount to a title and cannot be used as a suffix or prefix to the awardees' name.

1.12 Indian History Congress

Why in the news?

Recently, the Indian History Congress (IHC) has raised its voice for the late medieval age Sunehri Masjid in New Delhi, facing demolition.

Key details:

- The IHC said the mosque should not be demolished.
- A resolution was passed by the IHC at its conclave.

About Indian History Congress:

- The Indian History Congress (IHC) is the largest association of professional historians in South Asia.
- It was started in **1935**.
- It has been holding its sessions very regularly from its inception and publishing its proceedings **every year** since 1935.
- **Objective:** Its main objective is to promote secular and scientific writing of history.

- The **first session** took place in Bharat Itihas Sanshodhak Mandal, **Poona**, in 1935.
- Historians such as Datto Vaman Potdar, Surendra Nath Sen and Sir Shafaat Ahmad Khan attended the first session.

1.13 Tableau selection

Why in the news?

Recently, some opposition party ruling State governments have accused the central government of following political biases in the tableaux selection.

About Tableaux selection:

- The parade during the Republic Day, led by the President in New Delhi, showcases military strength and cultural heritage, featuring tableaux from States, Union Territories, Ministries, and departments.
- The **Ministry of Defence oversees parade coordination and preparations.**
- Selection process of tableaux is an elaborate and time-consuming exercise. Ministry of Defence constitutes a committee of distinguished persons drawn from various fields of the arts to help in short listing the best proposals. This necessitates that the selection process commences well in advance.
- For encouraging the participants, the best three tableaux are given trophies by this Ministry.
- **Ministry of Culture** will finalize a panel of Institutions/Agencies for design & fabrication of tableaux and this panel will be shared shortly with all Ministries/Departments to select the Institutes/Agencies for design & fabrication of their tableaux.

- This process includes the selection and shortlisting of tableaux.
- Proposals undergo expert evaluation, including a basic assessment and a presentation of three-dimensional models.
- Factors like visual appeal, theme alignment, and local resource use contribute to final selections.
- A State can pitch multiple proposals to the committee, but only one is chosen for the final parade.

1.14 Khelo India Youth Games

Why in the news?

Recently, the Khelo India Youth Games under 17 was held in Tamil Nadu.

About Khelo India Youth Games:

- Khelo India Youth Games (KIYG), are the annual national level multidisciplinary grassroot games in India held in January or February for two categories, namely under-17 years school students and under-21 college students.
- Inaugural event started in 2018.
- Apart from modern games, four indigenous games were added in 2020.
 - Gatka, Mallakhamb, Thang Ta, Kalaripayattu.



2. GEOGRAPHY

2.1 Fog

Why in the news?

Recently, dense fog has enveloped the whole or part of North India.

- Visibility in some parts of North India has reduced to 50 meters.

What is Fog?

- A fog is a collection of small droplets of water produced when evaporated water has cooled down and condensed.
- For a thick fog to form, temperatures should be lower and abundant moisture should be available near the surface.

Why is northern India prone to fogging?

The entire Indo-Gangetic plains are prone to formation of fog during winter season, as all the conditions of fog formation is there in north India.

- Low temperatures,
- Low wind speed,
- Moisture availability
- Plenty of aerosols

2.2 Arctic blast

Why in the news?

Recently, millions of Americans awoke to snow, freezing rain, and frigid temperatures as an Arctic blast gripped much of the United States, ending a nearly two-year "snow drought" in New York City and putting much of the West into a deep freeze.

What is Arctic blast?

- An Arctic blast is a sudden and intense

surge of cold air from the North Pole that affects parts of the US, especially the Midwest and the Northeast.

- It is often **associated with a piece of the polar vortex**, a large area of low pressure and cold air that swirls around the Arctic region.
- When the polar vortex weakens, it can split and send cold air southward, resulting in an Arctic blast.

Consequences:

- It brings cold weather, which is below zero degree celsius to most parts of the USA.
- The US weather advisory agency has described this as the life-threatening winter weather.

About Rocky Mountain:



- The Rocky Mountains are a massive mountain range of western North America.
- The Rockies are more than 3,000 miles (4,800 kilometers) long. In some places they are 300 miles (480 kilometers) wide.
- **Countries: Canada, USA and Mexico.**
- **Mount Elbert**, in Colorado, is the highest peak in the Rockies.

2.3 Ice sheets

Why in the news?

Recently, a study showed that Greenland might have lost 20 times more ice than previously thought.

What is a Glacier?

- A glacier is an accumulation of ice and snow that slowly flows over land.
- There are two main categories of glaciers: alpine glaciers and ice sheets.
- Alpine glaciers are frozen rivers of ice, slowly flowing under their own weight down mountainsides and into valleys.
- Unlike alpine glaciers, ice sheets, which exist only on Greenland and Antarctica.

Other Facts about Glaciers:

- Presently, 10 percent of land area on Earth is covered with glacial ice, including glaciers, ice caps, and the ice sheets of Greenland and Antarctica.
- Glaciers and ice caps store about 68.7 percent of the world's fresh water, according to the US Geological Survey.

- Together, the Antarctic and Greenland Ice Sheets contain over 99 percent of the freshwater ice on Earth.
- The amount of fresh water stored in both the Antarctic and Greenland Ice Sheets totals over 68 percent of all the freshwater on Earth.

Why Glacier ice is blue?

- Glacier ice is blue because the red (long wavelengths) part of white light is absorbed by ice and the blue (short wavelengths) light is transmitted and scattered.
- The longer the path light travels in ice, the bluer it appears.
- The denser the ice, the bluer the color will appear.
- In the denser ice, air bubbles will not be there, so the light has to travel a long path to reflect or refract.
- In the less dense ice, due to the presence of air bubbles, the light is reflected back very quickly.

3. POLITY AND GOVERNANCE

3.1 Section 106 of Bharatiya Nyay Sanhita

Why in the news?

Recently, the Secretary to the Ministry of Home Affairs said that the new section 106 of Bharatiya Nyay Sanhita will be invoked only after consultation with All India Motor Transport Congress.

About Section 106 of Bharatiya Nyay Sanhita (BNS):

- It prescribes a prison term of up to five years, besides a fine, for causing death due

to rash or negligent acts.

- It Provides for reduced criminal liability for registered medical doctors of two years in jail, if death occurred in the course of a medical procedure.
- The second clause concerns road accidents in which, if the person involved in rash and negligent driving "escapes without reporting it to a police officer or a Magistrate soon after the incident", after the incident", the imprisonment may extend to 10 years and a fine.

Issues:

- Transport workers will be affected more than the business owners.
- Increasing jail sentence from 2 years to 5 years.

3.2 Implementation of criminal laws

Why in the news?

Recently, a senior government official said that the date of implementation of the three criminal codes that were passed by the Parliament in December 2023 will be notified before January 26.

key points from the news:

- The official added that it will take nine months to a year for the three criminal laws to be implemented across the country, and a pilot project is all set to begin in Ahmedabad in the next two months.
- Except some areas that have connectivity problems, in the next one year, 90% of the area will have the reach of the new laws.
- Around 3,000 master trainers will train the police personnel who will work in a pyramid set-up percolating to each district in the next few months.
- A task force has been constituted under the **Bureau of Police Research and Development** to oversee the training.
- The **National Crime Records Bureau (NCRB)** will coordinate the integration of the other wings of the criminal justice system, including the **Interoperable Criminal Justice System, the National Automated Fingerprint Identification System, the Adjournment Alert Module, and the Crime and Criminal Tracking Network and System.**

About Bureau of Police Research and Development:

- It was established in **1970** through government notification.
- Nodal Ministry: Union **Ministry of Home Ministry**

Objectives:

- To take direct and active interest in the issues
- To promote a speedy and systematic study of the police problems,
- To apply science and technology in the methods and techniques used by police.

Interoperable Criminal Justice System (ICJS):

- The Inter-operable Criminal Justice System (ICJS) is an initiative of the e-Committee of the Supreme Court to enable seamless transfer of data and information among different pillars of the criminal justice system, like courts, police, jails and forensic science laboratories, from one platform.
- With the aid of the ICJS platform, the metadata of FIR and charge sheet can be accessed by all the High Courts and subordinate courts.
- Documents like FIR, case diary and charge sheet are uploaded by police in PDF format for utilization by the courts.

Crime and Criminal Tracking Network and System (CCTNS):

- This project was started by the Ministry of Home Affairs in 2009.
- CCTNS aims at creating a comprehensive and integrated system for enhancing the efficiency and effective policing at all levels and especially at the Police Station level through adoption of principles of e-Governance, and creation of a nationwide networked infrastructure for evolution of IT-enabled state-of-the-art tracking system around "investigation of crime and detection of criminals" in real time, which is a critical requirement in the context of the present day internal security scenario

National Automated Fingerprint Identification System (NAFIS):

- The National Automated Fingerprints Identification System (NAFIS) project is a country-wide searchable database of crime- and criminal-related fingerprints.
- The web-based application functions as a central information repository by consolidating fingerprint data from all states and Union Territories.
- According to a 2020 report by the NCRB, it enables law enforcement agencies to upload, trace, and retrieve data from the database in real time on a 24×7 basis.
- NAFIS assigns a unique **10-digit National Fingerprint Number (NFN)** to each person arrested for a crime.
- This unique ID will be used for the person's lifetime, and different crimes registered under different FIRs will be linked to the same NFN.
- National Automated Fingerprint Identification System (NAFIS) has been established at 1022 locations across the country as of 2023.

3.3 Article 3 and Article 144

Why in the news?

Recently, a judgment which highlights Article 3 and Article 144 regarding restoration of statehood in Jammu and Kashmir have seen the Supreme Court bank on the government's assurances to set things on track.

About Article 3:

Parliament may by law:

- Form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State;
- Increase the area of any State;
- Diminish the area of any State;
- Alter the boundaries of any State;

- Alter the name of any State;
- The bill can be introduced in either house of the Parliament with proper recommendation of the President.
- The president before giving his assent to the bill, should take the opinion of the concerned state government within such a period allowed by him.

Article 144:

- It mandates that all authorities, civil and judicial, in the territory of India shall act in aid of the Supreme Court.

3.4 Article 329(b)

Why in the news?

Recently, the Madras High Court refused to declare as null and void the election of four MPs and eight MLAs, who had contested on reserved symbols belonging to other political parties in the 2019 general election and the 2021 Assembly election, respectively.

About Article 329(b):

- This means that any questions or challenges related to the conduct or results of an election to any Parliament or state legislatures can only be made through an "election petition" as specified by law, and can only be presented to the authority that is designated by that law.

3.5 Article 30

Why in the news?

Recently, a seven-judge Bench headed by Chief Justice of India D.Y. Chandrachud observed that an educational institution does not lose its minority status merely on the ground that its administration is regulated by a statute.

Key points from the news:

- If the right of administration is regulated by statute, there is no bar to minority status.
- The court noted that an educational institution need not offer just religious courses.
- **Article 30 (the right of minorities to establish and administer educational institutions)** of the Constitution does not envisage that the administration of the educational institution ought to be absolutely by the members of a minority community.
- The administration could be secular and students from any community could get admission.
- The Chief Justice said minorities have a right under Article 30 of the Constitution to establish and administer educational institutions.
- The Bench asked whether even the right to establish such an institution or university would be contingent on the state recognising it through an enabling statute.
- The court asked whether State recognition of a university or setting up of one under a law would necessarily deny an institution minority status despite the fact that it was founded by members of a religious or linguistic minority.
- A five-judge Bench, in **S. Azeez Basha versus Union of India case in 1967**, had held that AMU was a Central university and cannot be considered a minority institution.

About Article 30:

- All minorities, whether based on **religion or language**, shall have the right to establish and administer educational institutions of their choice.
- The State shall not, in granting aid to educational institutions, discriminate against any educational institution on the ground

that it is under the management of a minority, whether based on religion or language.

3.6 Parliamentary Committees

Why in the news?

Recently, the Parliamentary committee examining a Bill seeking to raise the age of marriage of women from the present 18 to 21 has been given another extension to table its report.

About Parliamentary committee:

- Parliamentary Committee means a committee which is appointed or elected by the House or nominated by the Speaker and which works under the direction of the Speaker and presents its report to the House or to the Speaker.
- Tenure of the committees are varied for different committees.
- **By their nature, Parliamentary Committees are of two kinds:**
 - Standing Committees
 - Ad hoc Committees.
- **Standing Committees:**
 - Standing committees are permanent and regular committees which are constituted from time to time in pursuance of the provisions of an Act of Parliament or Rules of Procedure and Conduct of Business in Lok Sabha.
 - The work of these Committees is of continuous nature.
 - The Financial Committees, Department Related Standing Committees and some other Committees come under the category of Standing Committees.

- **Ad hoc Committees:**

- Ad hoc Committees are appointed for a specific purpose and they cease to exist when they finish the task assigned to them and submit a report.
- The principal Ad hoc Committees are the Select and Joint Committees on Bills. Railway Convention Committee, Joint Committee on Food Management in Parliament House Complex etc also come under the category of ad hoc Committees.

- **Constitutional Provisions:**

- **Article 105** deals with the privileges of the MPs
- **Article 118** gives the Parliament authority to make or regulate its own business.

3.7 Privileges committee

Why in the news?

Recently, the Privileges Committee of the Rajya Sabha, in a meeting held in New Delhi, decided to seek responses from 11 members suspended on charges of breach of privilege during the recently concluded Winter Session of Parliament.

About Privileges Committee:

- This Committee consists of 15 members nominated by the Speaker.
- Its function is to examine every question involving breach of privilege of the House or of the members of any Committee thereof referred to it by the House or by the Speaker.
- A report is then presented to the House for its consideration.
- The Speaker may permit a half-hour debate while considering the report.

- The Speaker may then pass final orders or direct that the report be tabled before the House.
- A resolution may then be moved relating to the breach of privilege that has to be unanimously passed.
- In the Rajya Sabha, the deputy chairperson heads the committee of privileges, that consists of 10 members.

3.8 Pardoning power

Why in the news?

Recently, the Supreme Court set aside the remission of 11 convicts sentenced to life imprisonment in the Bilkis Bano case.

Key details in the judgment:

- The court said Gujarat did not have the jurisdiction to grant remission to the convicts. Justice Nagarathna said Gujarat was not the “appropriate government” under Section 432(7)(b) of the Code of Criminal Procedure, which covered the subject of power to suspend and remit sentence.
- The case was transferred by the Supreme Court in August 2004 from Gujarat to Maharashtra.
- The court clarified, it was the State of Maharashtra, where the 11 men were tried and sentenced, and not Gujarat, where the crime had occurred or the convicts were imprisoned, which was the “appropriate government” to grant remission under Section 432(7)(b).
- This tenet of law extended even to transferred cases.

What is Pardoning power under the constitution?

- Article 72 and 161 of the Constitution provide powers to the President and

Governor respectively to grant pardon, commutation, remission, respite or reprieve to a convict.

- These are sovereign powers vested in the heads of the Union and State executive to be exercised on the advice of the council of ministers.

What is the remission power of the State government under CrPc?

- State governments under Section 432 of the Criminal Procedure Code, 1973 (CrPC) may remit the whole or part of the punishment to which a convict has been sentenced.
- In case of life imprisonment convicts, this remission can be done only after a period of 14 years in jail as per Section 433A of the CrPC.

3.9 Non- Constitutional powers of the Governors

Why in the news?

Recently, some States have passed an act to remove Governors from the University chancellor position.

About Governor's chancellor position:

- The Supreme Court in November 2023 said in its judgment that the Governor as a chancellor of the State University can act independently and not with the aid and advice of the Council of Ministers.
- The chancellor has the power to appoint any person as a vice chancellor without any advice from the state government.
- The governor is not merely a titular head. In the selection of the Vice-chancellor, he is the sole judge and his opinion is final in all respects.
- According to the **UGC (Minimum Qualifications for Appointment of**

Teachers and other Academic Staff in Universities and Colleges and other Measures for the Maintenance of Standards in Higher Education) Regulations, 2018, the "Visitor/Chancellor", mostly the Governor in states, shall appoint the VC out of the panel of names recommended by search-cum-selection committees.

- **M.M. Punchchi commission** recommended against the decision of conferring statutory powers to the governors.

3.10 Supplementary Demands for Grants

Why in the news?

Recently, the Finance Ministry has sought expenditure proposals for the second and final batch of Supplementary Demands for Grants from various Ministries and departments ahead of the Budget Session.

Supplementary Demands for Grants:

- The additional grant required to meet the required expenditure of the government is called Supplementary Grants.
- It is mentioned in **Article 115** of the Constitution.
- These grants are presented and passed by the Parliament before the end of the financial year.

Vote on account:

- According to **Article 116** of the Indian constitution, vote on account is a grant in advance for the Central government to meet short-term expenditure, generally lasting for a few months till the new financial year starts.
- To be simply put, when an outgoing government seeks interim permission from the Parliament to withdraw funds from the

Consolidated Funds of India and spend that on expenditures and important government schemes for a few months until a new government is formed is called a vote on account.

Contingency Fund of India:

- Contingency Fund is created as an imprest account to meet some urgent or unforeseen expenditure of the government.
- This fund was constituted by the government under **Article 267** of the Constitution of India.
- This fund is at the disposal of the President.
- Any expenditure incurred from this fund requires a **subsequent approval from the Parliament** and the amount withdrawn is returned to the fund from the Consolidated Fund.

3.11 India and European Secularism

Why in the news?

Recently, Akeel Bilgrami, Professor, Committee of Global Thought, Columbia University,

at a lecture in Chennai stated, "Secularism in Europe is just the same as the one India adopted".

Key details:

- He said that India's secularism is the same as the one adopted in Europe.
- Secularism consists of three commitments:**
 - Freedom of religious belief and practice,
 - Principles enshrined in the Constitution that make no mention of religion (or opposition to religion) such as equality, freedom of speech, gender equality,
 - Meta-commitment, which says if there is a clash between the first and second commitments, the second commitment must get priority.
- He also rejected the oft-repeated popular notion of "Indian" secularism as "acceptance of all religions". He added that it was pluralism, not secularism.

Indian Secularism	European Secularism
<ul style="list-style-type: none"> It advocates principled distance of state from religion. 	<ul style="list-style-type: none"> It advocates mutual exclusion of state and religion.
<ul style="list-style-type: none"> It is known as a positive concept of secularism. 	<ul style="list-style-type: none"> It is known as a negative concept of secularism.
<ul style="list-style-type: none"> Equal protection and equal respect to all religions. 	<ul style="list-style-type: none"> Strict separation of religion
<ul style="list-style-type: none"> A state can aid educational institutions run by minorities. 	<ul style="list-style-type: none"> No state support to any educational institution run by religious minorities.

The distinction between the idea of secularization and secularism.

- **Secularization:** The word secularization is a social process of loss of belief in religious doctrines, ceasing to carry out standard rituals, changing diets and so on and so forth.
- **Secularism:** Secularism is a different idea. It's a political doctrine and its main idea is that religion should be kept out of the orbits of politics.
- So, it's not the name of a social process, it has nothing to do with religious practices.
- It's got to do with keeping religious practice out of direct influence on politics.

3.12 National Commission for Women (NCW)

Why in the news?

Recently, the National Commission for Women (NCW) registered 28,811 complaints of crime against women last year and about 55 per cent were from Uttar Pradesh.

Key points:

- The highest number of complaints were received in the 'right to dignity' category that involves harassment other than domestic violence and it stood at 8,540.
- 6,274 complaints of domestic violence cases have been registered
- The total number of complaints have seen a drop since 2022 when 30,864 complaints were received, the highest since 2014.
- **States with highest number of complaints:** Uttar Pradesh, Delhi, Maharashtra.

About National Commission for Women (NCW):

- The National Commission for Women (NCW) is concerned with advising the government on all policy matters affecting women.
- It is a **statutory body** established under the **National Commission for Women Act 1990**.
- **Objective:** The objective of the NCW is to represent the rights of women in India and to provide a voice for their issues and concerns.
- The commission regularly publishes a monthly newsletter, **Rashtra Mahila**, in both Hindi and English.
- **Composition:** One chairman and five members are appointed by the government of India.
 - Jayanti Patnaik is the first chairman and Rekha sharma is the current chairman of this commission.
 - One SC and ST category women should be a member.
- **Term:** Term is three years
- **Removal:** The Central Government may by order remove the Chairperson or any other Member from office.
- It has the **power of civil court**.

3.13 Places of Worship Act

Why in the news?

Recently, the Anjuman Intazamia Masjid has appealed in the Supreme Court to protect the Places of Worship (Special Provisions) Act of 1991 from becoming a dead letter.

About Places of Worship Act, 1991:

- It is an Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of

any place of worship as it existed on the 15th day of August 1947.

Exemptions:

- The disputed site at Ayodhya was exempted from the Act. Due to this exemption, the trial in the Ayodhya case proceeded even after the enforcement of this law.
- Besides the Ayodhya dispute, the Act also exempted any place of worship which is an ancient and historical monument, or an archaeological site covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- A suit that has been finally settled or disposed of.
- Any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commence.
- **Section 4** of the act says any suit or legal proceeding with respect to the conversion of the religious character of any place of worship existing on 15th August, 1947, pending before any court, shall abate and no fresh suit or legal proceedings shall be instituted.
- **Section 6** of the Act prescribes a punishment of a maximum of **three years imprisonment** along with a fine for contravening the provisions of the Act.

3.14 Ease of Justice

Why in the news?

Recently, Prime Minister Modi said that ease of justice is the right of every Indian citizen and the Supreme Court is its medium.

What is Ease of Justice?

- Ease of Justice means justice is accessible

and affordable to all the people irrespective of religion, caste, gender etc.

Measures taken by Government to ensure Ease of Justice:

- **NALSA:** The National Legal Services Authority (NALSA) was established so that even the weakest of the weak could get the right to justice.
- **Article 39A:** It deals with the provisions of equal justice and free legal aid.
- **Virtual courts:** Under the e-courts mission, virtual courts are being started in the country.
- Use of regional languages in the legal system.

3.15 Addition and Deletion of a community in ST list

Why in the news?

Recently, Manipur Chief Minister N. Biren Singh said that an all-tribe committee would be formed to decide if the Chin Kuki community should be excluded from the State's Scheduled Tribes list.

Key points:

- The Union government said the process of inclusion or exclusion from ST list requires the proposal to originate from the concerned State government.
- The criteria used by the government to declare communities as STs were decided upon by the **Lokur Committee in 1965** and continue to be in use today.
- **These are:**
 - Primitive traits,
 - Distinctive culture,
 - Geographical isolation,

- Shyness of contact with the community at large,
- Backwardness.

Constitutional provisions for addition and Deletion of a community in ST list:

- **Article 366(25) of the Constitution only provides process to define Scheduled Tribes not directly defined who are Scheduled tribes:** "Scheduled Tribes means such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this Constitution."
- **Article 342(1):** The President may with respect to any State or Union Territory, and where it is a State, after consultation with the Governor, by a public notification, specify the tribes or tribal communities or part of or groups within tribes or tribal communities as Scheduled Tribe in relation to that State or Union Territory.
- Parliament may by law include in or exclude from the list of Scheduled Tribes specified in a notification issued under clause (1) any tribe or tribal community or part of or group within any tribe or tribal community, but save as aforesaid a notification issued under the said clause shall not be varied by any subsequent notification.

Procedures:

- According to the modalities for inclusion first framed in 1999, the proposal for inclusion must **originate from the respective State or Union Territory government.**
- Following this, the proposal is sent to the **Union Tribal Affairs Ministry**, which sends it to the **Office of the Registrar General of India (ORGI).**

- If the ORGI approves the inclusion, the proposal is forwarded to the **National Commission for Scheduled Tribes.**
- Only after the concurrence of these institutions, will the proposal go forward to the Cabinet to bring in the appropriate amendment to the Constitution (Scheduled Tribes) Order, 1950.

3.16 National Skill Development Corporation

Why in the news?

Recently, five IITs, Ropar, Guwahati, Mandi, Patna and Kanpur are set to provide short term skill development courses to students from far flung areas in partnership with National Skill Development Corporation.

About National Skill Development Corporation (NSDC):

- National Skill Development Corporation (NSDC) is a not-for-profit public limited company incorporated in **2008** under section 25 of the **Companies Act, 1956.**
- NSDC was set up by the **Ministry of Finance** as a Public Private Partnership (PPP) model.
- The **Government of India through the Ministry of Skill Development & Entrepreneurship (MSDE) holds 49% of the share capital of NSDC**, while the private sector has the balance 51% of the share capital.
- NSDC aims to promote skill development by catalyzing creation of large, quality and for-profit vocational institutions.
- Further, the organization provides funding to build scalable and profitable vocational training initiatives.

Skill India Digital (SID):

- It is a comprehensive digital platform that aspires to provide every Indian with access

to quality skill development, relevant opportunities, and entrepreneurial support.

- Skill India Digital, functioning as the Digital Public Infrastructure (DPI) for skilling, education, employment, and entrepreneurship in India, focuses on leveraging digital technology and Industry 4.0 skills.
- It is designed to accelerate the hiring of skilled talent, facilitate lifelong learning, and promote career advancement.
- The platform aligns with the G20 framework for building DPI and the digital economy, emphasizing digital skills and literacy.

3.17 Emigration check requirement scheme

Why in the news?

Recently, some trade unions accused the union government of facilitating semi-skilled workers' immigration to Israel.

Key details:

- Uttar Pradesh and Haryana governments, with the help of the National Skill Development Corporation (NSDC), have started the process of recruiting about 10,000 workers to go to Israel, primarily for construction activities.
- Workers going to conflict zones or places without sufficient labor protections are required to register with the Ministry of External Affairs' 'emigrate' portal.
- Passports issued under the ECR (Emigration Check Required) scheme cover workers traveling to 18 countries: **Afghanistan, Bahrain, Indonesia, Iraq, Jordan, the Kingdom of Saudi Arabia, Kuwait, Lebanon, Libya, Malaysia, Oman, Qatar, South Sudan, Sudan, Syria, Thailand, the UAE, and Yemen.**

- **Israel is not on this list** and the 'emigrate' system will not be used for those going to Israel despite continuing violence due to Israel's bombing of Gaza.

International rules to protect migrant workers:

- The international practices for protection of migrant workers are governed by two conventions of the **International Labour Organisation**:
 - Migration for Employment Convention (Revised), 1949 (**No. 97**)
 - Migrant Workers (Supplementary Provisions) Convention, 1975.
- **India has not ratified both the conventions.**

3.18 National Voters Day

Why in the news?

Recently, the Chief Election Commissioner, in his customary address on the eve of National Voters Day, which is celebrated on January 25 flagged the threat from deep fakes, artificial intelligence (AI), and misinformation as instruments being deployed to undercut the faith of the people in the electoral process.

Key points Rationale behind National Voters Day:

- It was started in 2011 to encourage more young voters to take part in the political process.
- The 2024 theme is '**Nothing Like Voting, I Vote for Sure**'.
- This day serves as a tribute to the essence of democracy, outlining the vital role played by voters in shaping the nation's identity.
- The main goals are to educate voters, create awareness and engage in outreach activities.

3.19 Aadhar

Why in the news?

Recently, new Aadhaar cards and PDF versions of the identity document have started including a more explicit and prominent disclaimer that they are a proof of identity, not of citizenship or date of birth.

What is Aadhar?

- Aadhaar is a 12-digit individual identification number issued by the **Unique Identification Authority of India** on behalf of the Government of India.
- The number serves as a **proof of identity and address**, anywhere in India.
- It is not mandatory for every Indian resident who has identification documents
- Various government agencies clarified that the Aadhaar is not a proof of citizenship or proof of date of birth.

Its mandate:

- Enables identification for every resident Indian
- Establishes uniqueness of every individual on the basis of demographic and biometric information
- It is used for **Direct Benefit Transfer (DBT)** of various government schemes.

Conditions:

- Every resident of India, who resides for 180 days can get Aadhaar.
- There is no age limit defined for Aadhaar Enrolment. Even a newborn baby can also get Enrolled for Aadhaar.

3.20 National Exit Test

Why in the news?

Recently, the National Medical

Commission (NMC), which regulates medical education and medical professionals, is seeking comments on the preparation for bringing the National Exit Text exam.

About National Exit Test (NExT):

- The National Exit Test (NExT) will be conducted to certify the eligibility of medical graduates to register to practice the modern system of medicine in India. It will serve as a licentiate exam.
- It will also determine the eligibility and rank of candidates for admission to postgraduate medical courses and serve as an entrance exam to postgraduate medical education courses in India.
- NExT shall be undertaken by all undergraduate medical students pursuing MBBS in all medical colleges approved by NMC including Institutes of National Importance (INI).
- All **Foreign Medical Graduates (FMG)** who fulfil the requirement of foreign medical graduate licentiate regulation by NMC can **take this exam**.
- There is **no restriction on the number of attempts** to appear in NExT.
- The scores are **valid for five years**.
- As per the regulations, candidates have to clear NExT (step 1 and 2) **within 10 years of joining the MBBS course**.

Concerns:

- There is no uniform standard of education across the country's medical colleges.

3.21 National Essential Diagnostics List

Why in the news?

Recently, the **Indian Council of**

Medical Research (ICMR) has begun the process of revising the current National Essential Diagnostics List.

About National Essential Diagnostics List (NEDL):

- The NEDL lists the **essential and most basic tests** that should be available at various levels of healthcare facilities in the country, including at the **village level, in sub-health centers, health and wellness centers, and primary health centers.**
- In 2018, the **World Health Organization recommended** the development and implementation of the NEDL to facilitate the availability of in-vitro diagnostics across the various tiers of the healthcare pyramid, in facilities with or without an onsite laboratory.
- The ICMR then released India's first NEDL in 2019 to make the availability of diagnostics an essential component of the healthcare system.

About Indian Public Health Standards, 2022:

- Indian Public Health Standards (IPHS) have been developed for Sub-centres, Primary Health Centres (PHCs), Community Health Centres (CHCs), Sub-District and District Hospitals.
- IPHS are a set of uniform standards envisaged to improve the quality of health care delivery in the country and have been used as the reference point for public health care infrastructure planning and up-gradation in the States and UTs.
- IPHS guidelines are **recommendatory in nature and not mandatory.** Health being a State subject, the primary responsibility of bringing up facilities to IPHS norms is that of the States government. Under National Health Mission (NHM), financial support is provided to States inter-alia to bring up facilities to IPHS norms.

3.22 Trade Unions Strike

Why in the news?

Recently, the Joint Platform of Central Trade Unions (CTUs) have announced an industrial strike.

Legal provisions about strike:

- Strike is the collective refusal by employees to work under the conditions required by employers.
- Right to protest is a fundamental right under Article 19 of the Constitution of India.
- **Right to strike is not a fundamental right but a legal right under the Industrial Relations Code 2020.**
- An employee cannot go on strike unless he gives notice for a strike within six weeks before striking, and within 14 days of giving such notice.
- Right to strike has also been **recognised by the conventions of the International Labour Organization (ILO).**

3.23 Director General of Civil Aviation

Why in the news?

Recently, the DGCA has issued the revised Civil Aviation Requirement (CAR) on Flight Duty Time Limitations (FDTL) and all the aviation companies have to comply with these rules by June 1.

About Director General of Civil Aviation:

- The DGCA was established to regulate Civil aviation in India.
- It is a **statutory body**; Statutory body status was given under the **Aircraft Amendment Act 2020.**
- **Headquarters:** New Delhi

- **Functions:**

- Investigate aviation accidents
- Maintains aviation regulations
- Issuance of licenses to all aviation companies and pilots
- Certification of airports

- Management of aircraft maintenance

- The Director General of Civil Aviation was **appointed by the Central Government.**

4. INTERNATIONAL RELATIONS

4.1 Vienna Convention on Consular Relations

Why in the news?

Recently, Qatar has commuted the death sentence for eight Indian Navy veterans and turned that into "varying quantum" of jail terms, the Ministry of External Affairs (MEA) said.

About Consular access:

- It is the ability of foreign nationals to have access to consulate or embassy officials of their country in the host nation.
- It is granted under the rules of **Vienna Convention on Consular Relations** of 1963.
- All Indians in foreign nations can get this consular access facility.

About Vienna Convention on Consular Relations 1963:

- **On 24 April 1963, the United Nations Conference on Consular Relations adopted** and opened for signature the Vienna Convention on Consular Relations, the Optional Protocol concerning Acquisition of Nationality and the Optional Protocol concerning the Compulsory Settlement of Disputes.
- The Convention and both Optional Protocols came **into force on 19 March 1967.**
- The Vienna Convention consists of 79 articles, most of which provide for **the**

operation of consulates; outline the functions of consular agents; and address the privileges and immunities granted to consular officials when posted to a foreign country.

- A few other articles specify consular officials' duties when citizens of their country face difficulties in a foreign nation.
 - Of particular interest for the right of individuals is **article 36**, providing for certain obligations for competent authorities in the case **of an arrest or detention of a foreign national**, in order to guarantee the inalienable right to counsel and due process through consular notification and effective access to consular protection.

4.2 UN Genocide Convention

Why in the news?

Recently, the South Africa has filed the case against Israel because both countries have signed the UN Genocide Convention, created in 1948 as a response to the Holocaust.

About UN Genocide Convention 1948:

- The convention on the prevention and punishment of the crime of genocide is the first convention that made genocide a crime.

- It was the **first human rights treaty adopted by the UN General Assembly** in 1948.
- According to the Genocide Convention, **genocide is a crime that can take place both in time of war as well as in time of peace.**
- The definition of the crime of genocide, as set out in the Convention, has been widely adopted at both national and international levels, including in the 1998 Rome Statute of the International Criminal Court (ICC).
- **India is a signatory to this convention.**

4.3 UNRWA

Why in the news?

Recently, the UN agency for Palestinian refugees said it had sacked several employees accused by Israel of involvement in Hamas's October 7 attack, prompting the United States to suspend critical funding.

About United Nations Relief and Works Agency for the Palestine Refugees:

- **About:** It was established by the United Nations General Agency to carry out direct relief and work programmes for Palestine refugees.
- **Year:** 1949
- **Headquarters:** Amman, Jordan and Gaza.
- **Funding:** The United Nations Relief and Works Agency for Palestine Refugees (UNRWA) is funded almost entirely by voluntary contributions from UN Member States.
 - UNRWA also receives some funding from the Regular Budget of the United Nations, which is used mostly for international staffing costs.

- It is **not a permanent body**. It is frequently extended by the UN General Assembly for three years.

4.4 Intergovernmental Authority on Development

Why in the news?

Recently, Sudan's Army-aligned government declined an invitation to an east African summit and rebuked the United Nations for engaging with the commander of rival paramilitary forces.

About Intergovernmental Authority on Development:

- The Intergovernmental Authority on Development (IGAD) is an eight-country trade bloc in Africa.
- **Year:** 1986
- **Headquarters:** Djibouti
- **Members:** Djibouti, Eritrea, Ethiopia, Somalia, South Sudan, Kenya, Uganda, Sudan (Withdrew in 2024).

4.5 Universal Periodic Review

Why in the news?

Recently, China faced stinging criticism from Western countries during a review of its rights record at the United Nations.

key points:

- Eritrea urged China to "continue to uphold the regional ethnic autonomy system and comprehensively promote ethnic unity and progress".
- Western countries criticized the situation in Xinjiang, where China is accused of incarcerating more than a million Uighur and other Muslim minorities.

About Universal Periodic Review (UPR):

- Universal Periodic Review (UPR) is an examination **all 193 UN member states must undergo every four to five years to assess their human rights record.**
- It was started in **2005** as a part of the UN reform process.
- It is carried out by the **UN Human Rights Council.**
- The working group consists of **47 members.**

4.6 Sweden NATO membership

Why in the news?

Recently, Turkey's Parliament ratified Sweden's NATO membership after more than a year of delays.

About Sweden's NATO membership:

- Sweden attempts to become the **32nd member of the security alliance.**
- Sweden and Finland pursued a policy of military non-alignment during the Cold War era between the Soviet Union and the West.
- But the Ukraine war upturned geopolitical calculations and forced the two to seek the nuclear protection afforded by the world's most powerful defense bloc.
- Turkey's objections to Sweden's bid initially focused on Stockholm's perceived acceptance of Kurdish groups that Ankara views as "terrorist".
- Sweden responded by tightening its anti-terrorism legislation and taking other security steps demanded by Turkey.

4.7 Red Sea Trade Crisis

Why in the news?

Recently, the Commerce Ministry has called a high-level inter-ministerial meeting to

discuss the way forward on the trade front in the wake of ongoing problems in the Red Sea

What is the Red Sea trade crisis?

- The trade route in the red sea and Mediterranean Sea has been affected due to the Yemen based Houthi attacks recently.
- So, the goods consignments have to trade through the cape of good hope route.

Implications:

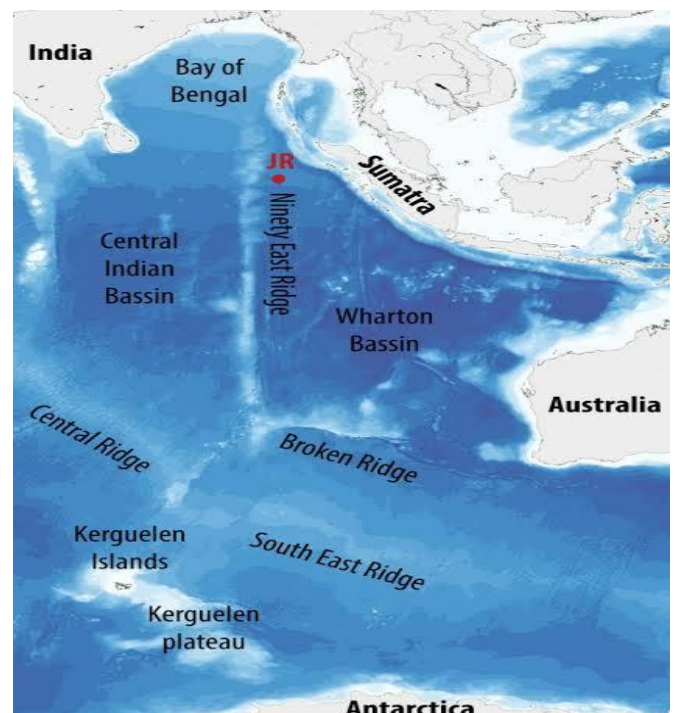
- It takes additional 14 days to pass through this cape of good hope trade route.
- Cost of exports have increased.

4.8 Issues of Chinese vessels entering Indian Ocean

Why in the news?

Recently, the Open-Source Intelligence observers said that China's research vessel Xiang Yong Hong03 is entering into the Indian Ocean.

Map Ninety Degree East Ridge and Southwest Indian Ridge:



Significance:

- This research ship was built to gather data in the Indian Ocean Region.
- There is an allegation that the research vessels of China are used by the Chinese military for spy activities.
- It is also a threat to national security.

4.9 Social Security Pact

Why in the news?

Recently, the U.S. Trade Representative (USTR), Katherine Tai said the U.S. had received information from India recently on the proposed social security agreement.

About Social Security Pact:

- This Social Security Pact was signed between India and USA.
- Under the agreement, an expatriate in either country need not contribute to the social security scheme of the host country.
- It will benefit a number of Indians, particularly from the IT sector, who are working in America and paying social security but are unable to get any benefit out of it.

Significance:

- This can lead to significant **financial savings** and **reduce the double burden of social security contributions in both the home and host countries.**

4.10 Agreement on exchange list of nuclear installations

Why in the news?

Recently, India and Pakistan exchanged a list of their nuclear installations.

What is the agreement?

- It is an **annual practice**, started in **1991**.
- The pact mandates the **two countries to inform each other of nuclear installations and facilities** to be covered under the agreement every New Year.
- The exchange of the list took place under provisions of an agreement on the **prohibition of attack against nuclear installations and facilities.**
- According to the agreement the term '**nuclear installation or facility**' includes nuclear power and research reactors, fuel fabrication, uranium enrichment, iso-topes separation, and reprocessing facilities as well as any other installations with fresh or irradiated nuclear fuel and materials in any form and establishments storing significant quantities of radioactive materials.

4.11 UN peacekeeping mission

Why in the news?

Recently, the UN mission in Mali ended a decade of deployment in the crisis-wracked country.

- Mali's military junta ordered the UN mission to leave.

About UN peacekeeping mission:

- Peacekeeping by the United Nations is a role of the UN's Department of Peace Operations as an "instrument developed by the organization as a way to help countries torn by conflict to create the conditions for lasting peace".
- It is distinguished from peacebuilding, peacemaking, and peace enforcement although the United Nations does acknowledge that all activities are "mutually

reinforcing" and that overlap between them is frequent in practice.

- The U.N. began its Peacekeeping efforts in **1948** when it deployed military observers to West Asia.
- UN peacekeepers are often referred to as **Blue Berets or Blue Helmets** because of their light blue berets or helmets.
- It served in around **71 countries**.
- It is acting under the aegis of the **UN Security Council** and **UN General Assembly**.
- India has been among the largest troop-contributing countries to the U.N. peacekeeping missions.
- The **three basic principles** that guide U.N.'s Peacekeeping missions are:
 - Consent of the parties
 - Impartiality
 - Non-use of force except in self-defense and defense of the mandate.

Responsibilities of UN Peacekeeping mission:

- Protecting civilians and other U.N. personnel
- Monitoring disputed borders
- Observing peace processes in post-conflict areas
- Providing security in conflict zones
- Providing security during elections
- Assisting in-country military personnel with training and support
- Assisting ex-combatants in implementing the peace agreements.

4.12 Coalition for Epidemic Preparedness Innovations

Why in the news?

Recently, the Serum Institute of India said that it will join the Coalition for Epidemic Preparedness Innovations.

About Coalition for Epidemic Preparedness Innovations (CEPI):

- Coalition for Epidemic Preparedness Innovations is an innovative global partnership working to accelerate the development of vaccines and other biologic countermeasures against epidemic and pandemic threats.
- Aspirational goal: Vaccines should be ready for initial authorisation and manufacturing at scale within 100 days of recognition of a pandemic pathogen, when appropriate.
- **Year of formation:** 2017
- **Headquarters:** Oslo, Norway.
- CEPI is focused on the World Health Organization's (WHO) "**blueprint priority diseases**".

Middle East respiratory syndrome-related coronavirus (MERS-CoV), the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the Nipah virus, the Lassa fever virus, and the Rift Valley fever virus, as well as the Chikungunya virus.

4.13 Pravasi Bharatiya Divas

Why in the news?

- Recently, Pravasi Bharatiya Divas is celebrated. It has been celebrated on January 9 every two years once.

About Pravasi Bharatiya Divas:

- This day is celebrated on January 9 every two years once.

- Main reason for the selection of this day is **Gandhi's return from South Africa in 1915.**
- This day honors the overseas Indian community and their significant contributions to India's development.
- Originally it was an annual event, but in 2015 it was changed into a **biennial celebration.**
- **Theme:** Diaspora: Reliable Partners for India's Progress in Amrit Kaal.

4.14 Yukthiya operation

Why in the news?

Recently, the Sri Lankan government started an operation called 'Yukthiya'

About Yukthiya Operation:

- It is an anti-drug operation in Sri Lanka.
- It was started in December 2023 to identify and take actions against the drug peddlers in the country.
- The United Nations Human Rights Commission warned Sri Lanka against this anti-drug operation being used for political purposes.

5. ECONOMY

5.1 Indian Economy: A review

Why in the news?

Recently, the Department of Economic Affairs has released a report 'The Indian Economy: A Review'.

Key details from the report:

- Real GDP growth rate of India will be 7% in 2024-25 and will outpace 7% by 2030.
- The size of the Indian economy would be \$5 trillion and the third biggest economy in the world in the next three years.
- The review split India's growth story into two phases - 1950 to 2014 and 2014 - 2024.

Decade of transformative growth:

- 2014-2024 is called the decade of transformative growth.
- Since 2014, the Indian economy has undergone many structural reforms that have strengthened its macroeconomic fundamentals.

- These reforms have led to India emerging as the fastest growing economy among G20 economies.

• Key reforms initiated in this decade:

- Introduction of Goods and Services Act
- Insolvency and Bankruptcy Code of India
- Demonetization, which led to non-cash economy
- Push for digital payment initiatives.

5.2 Short selling

Why in the news?

Recently, the Supreme Court in the Adani - Hindenburg case said that the Central government would regulate the issue of 'Short selling'.

What is short selling?

- Short selling is a sale of securities which the seller does not own but borrows from another entity.

- Here the seller borrowing a security whose price (Speculating) is going to fall and then selling it on the open market. He then buys the same stock back later, hopefully for a lower price than you initially sold it for, return the borrowed stock to your broker, and pocket the difference.
 - For example, let's say a stock is trading at ₹50 a share. You borrow 100 shares and sell them for ₹5,000. The price subsequently declines to ₹25 a share, at which point you purchase 100 shares to replace those you borrowed, netting ₹2,500.

5.3 Masala Bonds

Why in the news?

Recently, the Enforcement Directorate has rejected former finance minister T.M. Thomos Isaac's that he was not solely responsible for the decision taken by the Kerala Infrastructure Investment Board to issue masala bonds.

About Masala bonds?

- Masala Bonds are rupee-denominated bonds issued outside India by Indian entities.
- They are debt instruments which help to raise money in local currency from foreign investors.
- Both the government and private entities can issue these bonds.
- Multilateral and Regional Financial Institutions which India is a member country can also subscribe to these bonds.
- The issue of these bonds is in Indian currency rather than local currency.

- Thus, if the rupee rate falls, the investor will bear the loss.

Purpose:

- Borrowers need not worry about rupee depreciation as the issuance of these bonds is in Indian currency rather than foreign currency.
- It helps the Indian entity issuing these bonds to diversify their portfolio.
- It helps strengthen the foreign investments in the country.

5.4 Variable Repo Rate

Why in the news?

Recently, market experts said that the Reserve Bank of India will infuse liquidity amounting to ₹2.50-lakh crore via a 15-day variable rate repo (VRR) auction.

What is Variable Repo Rate (VRR)?

- Variable repo rate is a monetary policy tool of the RBI to **inject money into the economy**.
- This action is done by the Reserve Bank, when banks are reluctant to borrow money at repo rate.
- **Variable repo rate is always lower than the repo rate but should be more than variable reverse repo rate.**
- It is usually done for **more than one day**.

5.5 Guarantee

Why in the news?

Recently, a working group constituted by the Reserve Bank of India (RBI) made certain

recommendations to address issues relating to guarantees extended by State governments.

What constitutes a 'guarantee'?

- A 'guarantee' is contingent liability of a State, processed by an accessory contract, that protects the lender/investor from the risk of borrower defaulting.
- They promise to be answerable for the debt, default or miscarriage of the latter.
- The entity to whom the guarantee is given is the 'creditor', the defaulting entity on whose behalf the guarantee is given is called the 'principal debtor' and the entity giving the guarantee (State governments in this context) is called the 'surety'.
- State governments are often required to sanction, and issue guarantees, on behalf of State-owned enterprises, cooperative institutions, urban local bodies and/or other State-governed entities, to respective lenders.

Key points:

- Database of borrowers: The working group has also sought a proper database capturing all extended guarantees.
- Risk weight: The Group suggested that States assign appropriate risk weights before extending guarantees.
 - The categorisation could be high, medium or low risk. These must also consider the past record of defaults.
- To manage the potential stress, for incremental guarantees (additional guarantees) issued during a year, it proposes a ceiling at 5% of Revenue Receipts or 0.5% of GSDP, whichever is less.

5.6 Direct Tax Collections

Why in the news?

Recently, the Central Board of Direct Taxes said that India's net direct tax collections touched ₹14.7 lakh crore by January 10, 2024 meeting over four fifths of this year's target.

Tax collection:

- Net Direct Tax Collections have increased by 160.52% from Rs. 6,38,596 crores in F.Y. 2013-14 to Rs. 16,63,686 crores in F.Y. 2022-23.
- Direct Tax to GDP ratio has increased from 5.62% in F.Y. 2013-14 to 6.11% in F.Y. 2022-23.

Both Direct and Indirect Tax collection descending order wise:

- Personal Income Tax > Goods and Services Tax > Corporate Tax > Union Excise duty > Customs Duty.

5.7 GST Contribution states

Why in the news?

Recently, the National Statistical Office estimated Private Final Consumption Expenditure (PFCE) would grow just 4.4% this year.

Key points:

- It is the slowest since 2002-03, barring the pandemic-affected year of 2020-21.
- While GST revenues have been robust through April to December 2023, growing at 11.7%, State GST collections have grown at a sharper pace of 15.2%.
- Among the **20 largest States that account for nearly 97% of State GST collections**, two large States, Gujarat (9.5%) and West Bengal (9.8%) are the only ones to clock less than double-digit growth, while 10 others

have grown at rates lower than the national average of 15.2%.

- Eight States, led by Madhya Pradesh, Maharashtra, Karnataka, Haryana, Uttar Pradesh, Tamil Nadu and Telangana have seen State GST revenues rise in a range of 17% to 18.8%.
- Gujarat, West Bengal, Delhi and Odisha are among the top 10 GST contributors where growth was slower.
 - Tepid rural demand due to weaker farm sector outcomes could have played a factor.
 - Lack of wage growth.
- This is indicative of consumption being uneven across geographies.
- The report said that an improvement in consumption across some of the States that are lagging today will help boost both GDP growth and GST collections.
- Among the smaller States and union territories, most registered higher growth in State GST collections than the 15.2% national average.
- The erstwhile State of Jammu and Kashmir has clocked a 29.8% uptick, while all the north-eastern States, including strife-torn Manipur (17.5%), recorded robust growth.

Top GST contributing states:

- **Maharashtra > Karnataka > Gujarat > Tamil Nadu**

About Private Final Consumption Expenditure (PFCE):

- The Private final consumption expenditure (PFCE) is defined as the expenditure incurred by the resident households and non-profit institutions serving households (NPISH) on final consumption of goods and services,

whether made within or outside the economic territory.

- In India, the PFCE accounts for 55-56% of all national GDP in a year and is, quite obviously, the biggest driver of economic growth.

5.8 Input Tax Credit

Why in the news?

Recently, over 29,000 bogus firms, involved in evading Goods and Services Tax (GST) dues of more than ₹44,000 crore, have been busted over the past seven months, leading to 121 arrests, the Finance Ministry said.

Key points:

- This is a result of a special drive against fake invoices supplied by non-existent firms, being carried out by the Central Board of Indirect Taxes and Customs with State governments.
- Fake invoices are used by firms to avail **Input Tax credit (ITC)** without any underlying supply of goods and services taking place.

About Input Tax Credit (ITC):

- Input tax credit means the GST paid by a registered person on the purchase of goods or services that are used for the furtherance of business. The input tax credit can be used to offset the GST liability on the supply of goods or services by the registered person.
- For example, if you are a manufacturer and you buy raw materials worth Rs. 10,000 and pay GST of Rs. 1,800 (18%), you can claim an input tax credit of Rs. 1,800. If the finished goods are worth Rs. 15,000 and collect GST of Rs. 2,700 (18%), you can use the input tax credit of Rs. 1,800 to pay only Rs. 900 as GST.

Purpose:

- Ease of doing business
- Simplified tax system

5.9 Anti-Profiteering clause of GST

Why in the news?

Recently, the Delhi High Court upheld the anti-profiteering provisions of the GST laws.

The High Court further ordered that all the cases would be resolved by the Competition Commission of India.

What is an anti-Profiteering clause?

- Section 171 of the CGST Act deals with anti-profiteering measures and prescribes that any reduction in the rate of tax on supply of goods or services or the benefit of input tax credit should be passed on to the recipient by way of a commensurate reduction in prices.
- The wilful action of not passing on the above benefits to the recipients in the manner prescribed is known as "profiteering".
- **Example:** The government decides to reduce the tax rate on smartphones from 18% to 12%. Previously, a smartphone that cost ₹500 included ₹90 (18% of ₹500) as tax. Now, with the new tax rate of 12%, the tax component would be ₹60 (12% of ₹500).
 - According to Section 171 of the CGST Act, the smartphone company should pass on this benefit of reduced tax to the consumers. So, instead of keeping the price of the smartphone at ₹500, the company should adjust the price to reflect the reduced tax burden.

- Thus, if the company follows the anti-profiteering measure correctly, they might reduce the price of the smartphone from ₹500 to ₹490, passing on the benefit of the tax reduction to the consumers. This way, consumers pay less for the smartphone, and the benefit of the tax reduction is passed on to them.

About National Anti-Profiteering Authority:

- The National Anti-Profiteering Authority was established under the Central Goods and Services Act 2017.
- **Year:** 2017
- **Function:** It is required to determine whether the benefit of input tax credit or reduction in the tax rate has actually resulted in a commensurate reduction in the price of the goods or services or both.
- **Composition:** It consists of a chairman and four technical members.
- It functions under the aegis of the **Ministry of Finance**.

5.10 Rising income gaps

Why in the news?

A recent report from the SBI, examining taxpayer data, claims that the Gini coefficient has fallen from 0.472 in 2014-15 to 0.402 in 2022-23.

Key points of rising income gaps:

- The reduction in inequality has been accompanied by a polarization in incomes.
- Incomes of the top 10% have grown faster than the bottom 30%, with polarization largely seen amongst self-employed workers.
- The Gini coefficient falls for regular wage

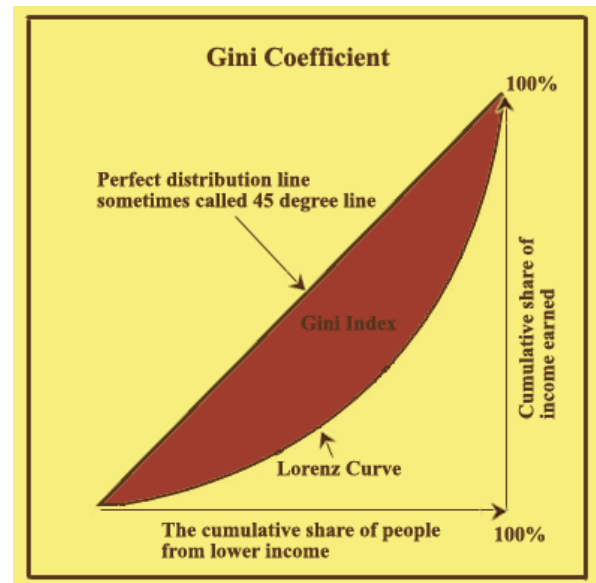
and casual wage workers, but rises for the self-employed.

- The Gini for the self-employed workers rises from 0.37 to 0.3765, an increase of 1.5%.
- For regular and casual wage workers, the Gini coefficient register falls of 1.7% and 4.8%, respectively.
- The issue is 80% of the income earners fall outside the tax ambit.

Gini coefficient:

- The Gini coefficient (Gini index or Gini ratio) is a statistical measure of economic inequality in a population. The coefficient measures the dispersion of income or distribution of wealth among the members of a population.
- A **Lorenz curve** is a graphical representation of the distribution of income or wealth within a population.

- Mergers of companies are happening under the provisions of the **Companies Act 2013**.
- **National Company Law Tribunal** is the **nodal agency** who oversees the companies' mergers in India.
- The merger plan approved by the NCLT can be challenged in the National Company Law Appellate Tribunal (NCLAT) by the dissenting parties (if any).



5.11 Mergers and Acquisitions

Why in the news?

Recently, the National Company Law Tribunal (NCLT) accepted a petition by a Zee Entertainment shareholder seeking the merger of its Indian entity with Sony.

About Merger and Acquisition process:

- **Merger:** A merger means combining two or more companies to form a new company in an expanded form. Both companies will cease to exist in a merger as they operate as another new company.
- **Acquisition:** The acquisition is the process of selling one company to another, i.e. buying and selling the entire business between the entities.
 - Two types of acquisition are **stock purchase** and **asset purchase**.

5.12 National Infrastructure Investment Fund

Why in the news?

Recently, the Mahindra & Mahindra Ltd. (M&M) and India Japan Fund (IJF), a fund managed by National Investment and Infrastructure Fund Ltd. (NIIF), have executed a binding agreement for IJF to invest ₹400 crore in Mahindra Last Mile Mobility Ltd. (MLMML).

About National Infrastructure Investment Fund:

- National Investment and Infrastructure Fund Limited (NIIFL) is a **Government owned company** which maintains infrastructure investments funds for international and Indian investors anchored by the Government of India.

- It was created in **2015** by the Union government.
- It has been registered as a **category II Alternative Investment Fund**.
- **Governing council:**
 - The Finance Minister of India is the ex officio chairman.
 - Members are drawn from corporate bodies, investments and policy holders.
 - It meets once a year.
- **Funds managed by the NIIF:**
 - Master Fund
 - Private Markets Fund
 - Strategic Opportunities Fund
 - India Japan Fund
- **Government of India holds 49% share** in all the above funds.
- **Investment committee:** The Investment Committee (IC) of NIIF's Funds comprises senior management team members from NIIF and includes the Managing Director and CEO.
 - The IC is responsible for all investments and divestment decisions and reviews investment performance periodically.

5.13 Credit Information Companies

Why in the news?

Recently, the Reserve Bank of India (RBI) Deputy Governor Swaminathan J flagged the central bank's concern over Credit Information Companies (CICs) which provide credit scores to

individuals for availing loans and asked them to focus on six key areas to improve services.

About Credit Information Companies (CICs):

- CIC or Credit Information Company is an independent third party institution that collects financial data regarding loans, credit cards and more about individuals and shares it with its members.
- Banks, Non-Banking Financial institutions are usually the customers of Credit Information Companies.

Purpose:

- Collect, analyze and provide data of borrowers, companies, etc.
- Smoothen the credit delivery process of banks.
- Provide credit scores to the individual customers
- Research project

Examples:

- CIBIL, Equifax, Experian and High Mark Credit Information Services Are the well-known CICs in India.

5.14 Credit Rating Agencies

Why in the news?

Recently, India Ratings and Research revised its GDP growth estimate for 2023- 24 to 6.7% from an earlier projection of 6.2%.

Key details:

- This increased growth projection was due to strong second quarter growth, sustained government capex and the prospect of a new private capex cycle.
- Risks to global growth and merchandise

trade volumes will continue to weigh on and restrict India's GDP growth to 6.7% this year.

About India Ratings and Research:

- India Ratings and Research (Ind-Ra) is committed to providing India's credit markets accurate, timely and prospective credit opinions.
- Ind-Ra currently maintains coverage of corporate issuers, financial institutions (including banks and insurance companies), finance and leasing companies, managed funds, urban local bodies, and structured finance and project finance companies.
- It is **not a government rating agency**.
- Ind-Ra is **recognised by the Securities and Exchange Board of India and Reserve Bank of India**.
- Credit rating agencies give investors information about bond and debt instrument issuers. Agencies provide information about countries' sovereign debt.
- While Indian credit rating agencies (CRAs) evaluate the safety or risk of investment options offered by companies or institutions, credit information companies in India, commonly referred to as credit information bureaus (CIBs), generate credit scores and reports related to borrowers in the country. The latter evaluate borrowers' creditworthiness and debt repayment ability to help lenders assess risk better, while the former rate an organisation's offerings to help investors.
 - The global credit rating industry is highly concentrated, with three leading agencies: Moody's, Standard & Poor's, and Fitch.

5.15 Export Credit Guarantee Corporation

Why in the news?

Recently, the Union Minister of Commerce said that the center is keen on expanding the provisions of the Export Credit Guarantee Corporation cover.

Key details:

- This export credit guarantee is now provided for banks only.
- But the government is going to expand its coverage to export organizations and individual exporters in gems and jewellery.

About Export Credit Guarantee Corporation:

- It is wholly owned by the Government of India, was set up in 1957 with the objective of promoting exports from the country by providing Credit Risk Insurance and related services for exports.
- **Nodal Ministry:** Ministry of Commerce and Industry

Functions:

- Provides a range of credit risk insurance covers to exporters against loss in export of goods and services
- Offers Export Credit Insurance covers to banks and financial institutions to enable exporters to obtain better facilities from them
- Provides Overseas Investment Insurance to Indian companies investing in joint ventures abroad in the form of equity or loan

5.16 Generalised System of Preferences

Why in the news?

Recently, an Indian official said that India wants to set up a dialogue mechanism between the trade remedy bodies of the two countries (India and USA) for better understanding of perspectives of both the countries.

About Generalised System of Preferences (GSP):

- It is one of the trade programs of the USA to provide opportunities to the world's poorest countries to use this mechanism to come out of poverty.
- It was established by the Trade Act of 1974.
- GSP promotes economic development by eliminating duties on thousands of products when imported from one of 119 designated beneficiary countries and territories.
- Before 2019, India was one of the beneficiaries of this GSP system.
- The USA took away the GSP status from India.

5.17 WTO concerns on RoDTEP Scheme

Why in the news?

Recently, the Centre has no plans of re-working the popular Remission of Duties and Taxes on Exported Products (RoDTEP) scheme for exporters.

WTO concerns on RoDTEP Scheme:

- US and EU have imposed countervailing duties on Indian products claiming the Remission of Duties and Taxes on Exported Products provides subsidies to the exporters.
- The US argues that the scheme lacks transparency in calculating reimbursement

rates and that Indian exporters often lack proper documentation to prove they paid the claimed taxes.

- This makes it difficult to differentiate between legitimate tax refunds and prohibited subsidies.

What is ongoing?

- India doesn't have a plan to rework the scheme, as it believes that the scheme is already WTO compliant.
- Government told the exporters that they should have all the documents related to the remission on input items.

5.18 WTO rules about fishing

Why in the news?

Recently, the Indian Government officials said that India would not agree to an "asymmetrical" agreement on reducing fisheries subsidies.

What are WTO rules about fishing?

- It will prohibit subsidies from being provided for Illegal, Unreported and Unregulated (IUU) fishing and overfished stocks.
- The agreement also prohibits providing subsidies for fishing on high seas, which are outside the jurisdiction of coastal countries and Regional Fisheries Management Organizations.
- Under the Special and Differential Treatment (S&DT), Developing Countries and Least Developed Countries (LDCs) have been allowed a transition period of two years from the date of entry into force of this Agreement.
- They will have no obligation to implement disciplines for the specified period.

India's demand:

- India has demanded that **poor fishers should be exempt from all subsidy cuts** irrespective of where they fish.
- All fishers in **developing nations should be exempt from subsidy cuts for fishing within the exclusive economic zone (EEZ) of 200 nautical miles.**
- A third demand has also been made for a **25- year exemption to developing nations from subsidy cuts** for fishing in RFMO (waters beyond EEZ).

5.19 Public Stock Holding

Why in the news?

Recently, the US argued in the World Trade Organization that India has become the largest rice exporter on account of its high price support through MSP.

Key points:

- Several developing countries, including members of the G33 group, of which India is a part, the ACP group and the African Group, have called for a permanent solution to the problem of public stock holding as **the Agreement on Agriculture** does not allow them to provide food security subsidies for programmes such as the MSP beyond 10% of production value.

What is Public Stock Holding (PSH)?

- Public stockholding is a government policy of procurement, storage and release of food stocks to the public to meet the needs of the public.
- Ex. MSP programme. **About G33 group:**
- The G33 (or the Friends of Special Products in agriculture) is a coalition of developing and least developed countries.

- Currently, there are 48 members including China, Nigeria, India.
- The group has “defensive” concerns regarding agriculture in relation to World Trade Organization negotiations, and seeks to limit the degree of market opening required of developing countries.

Agreement on Agriculture:

- It is an international agricultural treaty of the World Trade Organization.
- It entered into force in 1995.

Three pillars:

- **Export Subsidy:** Subsidy on inputs of agriculture, making export cheaper or other incentives for exports such as import duty remission etc are included under export subsidies.
- **Market access:** Market access in the WTO means, all the countries should gradually reduce the tariff and non-tariff barriers on agricultural imports.
- **Domestic support:** This agreement calls for reduction in domestic subsidies that distorts free trade.
 - Under this provision, the Aggregate Measurement of Support (AMS) is to be reduced by 20% over a period of 6 years by developed countries and 13% over a period of 10 years by developing countries

5.20 Optical Fiber Connection

Why in the news?

Recently, Prime Minister Modi inaugurated the Kochi - Lakshadweep Islands Submarine Optical Fibre Connection.

About Kochi-Lakshadweep Islands Submarine Optical Fibre Connection:

- This Kochi-Lakshadweep Islands Submarine

Optical Fibre Connection would ensure faster and reliable Internet on the islands while promoting digital initiatives like telemedicine, e-governance, e-learning and digital banking.

- The project is funded **by Universal Services Obligation Fund (USOF)**, Department of Telecommunication.
- Bharat Sanchar Nigam Limited (BSNL) was the Project Executing Agency and the work was awarded to M/s NEC Corporation India Pvt Ltd through Global Open Tendering process.

About Lakshadweep:

- Lakshadweep is a tropical archipelago of 36 atolls and coral reefs in the Laccadive Sea, off the coast of Kerala, India.
- Not all of the islands are inhabited, and only a few are open to visitors.
- It is located 200 to 440 km (120 to 270 mi) off the Malabar Coast of India.
- Jeseri is the widely spoken language in the Union Territory.

About **Universal Services Obligation Fund (USOF)**

- The **Universal Service Obligation Fund (USOF)** aims to provide for quality and affordable mobile and digital services across the rural and remote areas of the country.
- It allows non-discriminatory access to mobile and network services along with equitable access to knowledge and information dissemination, leading to rapid socio-economic development with improved standard of living.
- The Indian Telegraph (Amendment) Act, 2003 giving statutory status to the Universal Service Obligation Fund (USOF).

- It comes under the Department of Telecommunication

5.21 Atal Setu

Why in the news?

Recently, the Prime Minister of India inaugurated the Atal setu, which links Navi Mumbai.

About Atal Setu bridge:



- It is also known as **Mumbai Trans harbor link and connects Mumbai and Navi Mumbai.**
- Total length of the bridge is 21.8 km.
- It is the **longest bridge in the country as well as the longest sea bridge in the country.**
- The project is financed by the **Japan International Cooperation Agency (JICA)**, covering 80% of the total project cost, while the remaining portion is shared between the state and central governments.

5.22 Ken-Betwa River interlinking project

Why in the news?

Recently, the Ken-Betwa River interlinking project, was found to be in violation of environment clearance laws by an expert committee of the Union Environment Ministry.

Key points:

- The expert committee, in December 2022, recommended that the Environment Ministry “consider taking necessary action on the violation against the project proponent as per law”.
- The project proponent here was the **National Water Development Agency (NWDA)**, a Jal Shakti Ministry body.
- Following a site visit, the committee reported that about 82% of the dam and 33.5% of the canal network had been completed without a clearance from the Ministry.
- The NWDA also did not have a ‘consent to operate’ certificate.

About Ken-Betwa river interlinking project:

- The Ken-Betwa Link Project (KBLP) is the river interlinking project that aims to **transfer surplus water from the Ken River in Madhya Pradesh (MP) to Betwa in Uttar Pradesh (UP)** to irrigate the drought-prone Bundelkhand region.
- It is one of the 30 river interlinking projects across the country.

About National Water Development Agency (NWDA):

- The National Water Development Agency (NWDA), was set up in July 1982 as **Autonomous Society under the Societies registration act 1860**.
- **Nodal Ministry:** Ministry of Jal Sakthi
- It was established to carry out the water balance and other studies on a scientific and realistic basis for optimum utilization of water resources of the Peninsular River system.

5.23 Bureau of Indian Standards

Why in the news?

Recently, the Union Commerce, Food and Consumer Affairs Minister Piyush Goyal said that the Centre will soon bring Quality Control Orders (QCO) for nearly 2,500 items.

About Bureau of Indian Standards (BIS):

- The Bureau of Indian Standards (BIS) is the **National Standards Body of India**.
- It functions under the **Union Ministry of Consumer Affairs, Food and Public Distribution**.
- It was established under the **Bureau of Indian Standards Act, 2016**.
- It has **25 members** drawn from Central or State Governments, industry, scientific and research institutions, and consumer organizations.
- The **Minister in charge of the Union Consumer Affairs Ministry is the ex officio president of the BIS**.
- BIS is a **founding member** of the International Organization for Standardization (ISO).
- It represents India in the International Organization for Standardization
- **Functions**
 - Standard formulation and promotion
 - Product Certification

5.24 India's mineral resource potential

Why in the news?

Recently, Saudi Arabia said that the estimated value of its mineral resources had nearly doubled from \$1.3 trillion to \$2.5 trillion,

highlighting a sector it hopes will help diversify its oil-reliant economy.

Estimate of India's mineral resource potential:

- India is endowed with huge natural resources with a lot of metallic, non-metallic minerals.
- India produces as many as 95 minerals, which includes fuel, metallic, non-metallic, atomic and minor minerals (including building and other materials).
- The total value of mineral production (excluding atomic and fuel minerals) during 2021-22 has been estimated at Rs. 211857 crore, which shows an increase of about 31.96% over that of the previous year.

5.24 Lithium

Why in the news?

India's KABIL (Khanij Bidesh India Ltd.) will invest ₹211 crore over a five-year-period for exploration of five lithium blocks in the Fiambala area of Argentina.

key points:

- An exploration and development agreement is expected to be signed with CAMYEN, a state-owned miner in Argentina's Catamarca province.

About Lithium:

- Lithium is a chemical element;
- It has the symbol Li and atomic number 3.
- It is a soft, silvery-white alkali metal.
- Under standard conditions, it is the least dense metal and the least dense solid element.
- It is highly reactive and flammable.
- It is also referred as white gold.

Application:

- Lithium - Ion battery
- Ceramics and glass making
- Used to manufacture lubricating greases
- Manufacture pyrotechnic colorants

Distribution in India and the World:

- Chile and Argentina together contribute 30% - 35% of the total lithium supplies.
- Chile, Australia and China are the top three lithium reserved countries.
- **Lithium triangle: Argentina, Bolivia, Chile.**
- **Lithium in India:**
 - Preliminary reserves show around 14,100 tonnes in Karnataka's Mandya district.
 - The Geological Survey of India recently found lithium reserves in Jammu and Kashmir.
 - Other potential sites: Mica belt in Rajasthan and Rann of Kutch.

Top producing states in India and Countries:

- Countries: Australia > Chile > China.

5.25 Botswana diamond mine

Why in the news?

Recently, the Botswana and global diamond giant De Beers approved the investment to dig under the world's richest diamond mine by volume.

About Diamond:

- Diamond is a solid form of pure carbon with its atoms arranged in a crystal.
- Solid carbon comes in different forms known as allotropes depending on the type of chemical bond.

- The two most common allotropes of pure carbon are diamond and graphite.
- Diamond forms under high temperature and pressure conditions that exist only within a specific depth range (about 100 miles) beneath the earth's surface.

Applications:

- Jewelry purpose
- Cut and polish other diamonds
- Diamond paste is used for fine grinding and polishing.

Top countries:

- Top producers are Russia, Botswana, Canada.

Indian scenario Distribution:

- **Distribution of diamonds in India:**
 - Central Indian tract of Madhya Pradesh, comprising Panna belt.

- South Indian tract of Andhra Pradesh, comprising parts of Anantapur, Kadapa, Guntur, Krishna, Mahabubnagar and Kurnool districts.
- Behradin-Kodavali area in Raipur district and Tokapal, Dugapal, etc. areas in Bastar district of Chhattisgarh.
- Eastern Indian tract mostly of Odisha, lying between Mahanadi and Godavari valleys.

- Around 90% of the diamonds are cut and polished in India.

- India is the largest polished diamond exporter in the world.

Economic contribution:

- Total export value of polished diamonds is around \$17 billion in 2023.
- It contributes around 8% to the total manufacturing export.

6. AGRICULTURE

6.1 Global Pulse Convention

Why in the news?

Recently, the Global Pulse Convention was held in India.

About Global Pulse Convention:

- It is a global level meeting attended by around 800 governments, private players.
- It was jointly organized by the **National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) and the Global Pulse Confederation (GPC).**
- The 2023 meeting was convened by **Australia.**

- Pulses are vital in the development of sustainable food systems and key players when it comes to food security and nutrition in India.
- India was the biggest producer and consumer of pulses worldwide.

Purpose:

- It may bring global pulses industries into India.
- It may help India to diversify their production from Rice and Wheat towards Pulses.

6.2 Aromatic Plants

Why in the news?

Recently, High-value aromatic Crops

and floriculture have emerged as a means to supplement the Odisha tribal people's livelihood.

Aromatic plants mentioned in the news:

- With the help of the Central Institute of Medicinal and Aromatic Plants (CIMAP) in Lucknow, the district has recently introduced different aromatic plants such as **menthol mint (the CIM-Unnati variety), rosemary (Hariyali variety), patchouli (CIM-Samarth), damask roses (Ranisahiba), chamomile, and geraniums (CIM-Bharat).**

Purposes:

- Increase the income level of the tribals.
- Diversification of crops from Maize
- Adaption of water stress tolerant crops

Economy of Aromatic plants

- Current value of aromatic plants in the world is \$60 bn, but this could reach \$5 trillion by 2050.
- This industry is growing at a rate of 7-15% per year.
- According to the Agricultural and Processed Food Products Export Development Authority (APEDA), India's exports of essential oils and oleoresins were valued at USD 373.2 million in 2021-22.

6.3 Primary Agriculture Credit Societies

Why in the news?

Recently, the Primary Agricultural Credit Societies (PACS) are designated to operate as Jan Aushadi Kendras.

Primary Agricultural Credit Societies (PACS):

- Primary Agricultural Credit Societies are the

grass root level arms of the short-term co-operative credit structure.

- PACS deals directly with the rural (agricultural) borrowers, give those loans and collect repayments of loans given and also undertake distribution and marketing functions.
- The first PACS was started in **1904**.
- PACS are **supervised by the NABARD**.

Pradhan Mantri Bhartiya Jan Aushadhi Kendras (PMBJKs):

- Pradhan Mantri Bhartiya Jan Aushadhi Kendras (PMBJKs) provide quality generic medicines to the general public, which cost 50-90% less than the branded medicines available in the open market.
- More than 2,000 types of generic medicines and about 300 surgical items are made available through the kendras to common citizens at affordable prices.
- Currently, 10,300 outlets have been opened.

National Cooperative Development Corporation (NCDC):

- The National Cooperative Development Corporation (NCDC) was established by an Act of Parliament in **1963** as a statutory corporation.
- **Nodal Ministry:** Ministry of Cooperation.

Functions:

- Loans and grants are advanced to State Governments for financing primary and secondary level cooperative societies.
- Finance projects in the rural industrial cooperative sectors and for certain notified services in rural areas like water conservation, irrigation and micro irrigation, agri-insurance, agro-credit, rural sanitation, animal health, etc.

- Planning, promoting and financing programmes for production, processing, marketing, storage, export and import of agricultural produce, food stuffs, certain other notified commodities e.g. fertilizers, insecticides.

6.4 Palm oil import

Why in the news?

Recently, India's palm oil imports rose in December to their highest in four months as purchases of refined palm oil surged because of competitive prices.

About India's Palm oil import:

- India imported 164.7 lakh tonnes (lt) of edible oil during the **oil year 2022-23 (November to October)** against 140.3 lt during the oil year 2021-22.
- In terms of value, India imported approximately ₹1.38 lakh crore of edible oil during the oil year 2022-23.
- The **share of palm oil products in the total edible oil import** basket increased to **59 per cent** from 56 per cent.
- Import of palm oil products increased sharply due to price parity and was reported at 97.89 lt during the oil year 2022-23.
- Top 5 Palm oil producers: **Indonesia > Malaysia > Thailand > Colombia > Nigeria.**

6.5 Edible oil status in India

Why in the news?

Recently, the Central government has argued in the Supreme Court that the GM Mustard would make quality edible oil cheaper for the common man.

Status of edible oil production in India:

- Palm oil is the most consumed oil in India.
- 55% of the total edible oil consumed in India is met through import.

Expected outcome on production and import

	2021-22	2025-26	2030-31
Oilseeds area (lakh ha)	287.6	322.8	338.1
Oilseeds production (lakh tonne)	385	541	602.2
Oilseeds productivity (kg/ha)	1,339	1,676	1,781
Edible oil requirement (lakh tonne)	267.1	280	300
Production of edible oils (lakh tonne)	126.4	185	228
Import quantity (lakh tonne)	140.7	95	72
Import dependency (%)	52	36	23
Import value (₹ cr)	1,40,000	95,000	70,000

- Total edible oil demand of India was 24.6 million tonnes (2020-21) with domestic availability of 11.1 million tonnes.
- In 2022-23, 155.33 lakh tonnes (55.76%) of the total edible oil demand were met through import.
 - Which **included palm oil (57%), soybean oil (22%), sunflower oil (15%) and a small quantity of canola quality mustard oil.**
 - **Note:**
 - The volume of import of edible oil is increasing year on year.
 - India is the largest importer of Palm Oil, Soybean oil and sunflower oil.
 - **Palm Oil import:** Indonesia, Malaysia.
 - **Soybean oil:** Argentina, Brazil.
 - **Sunflower oil:** Russia, Ukraine, Romania, Netherland.

- Soybean is the most produced oilseed in India followed by Rapeseed and Mustard.

7. ENVIRONMENT

7.1 Wetland conservation

Why in the news?

Recently, the Union government has embarked on a mission to promote tourism at ecologically sensitive wetlands, better known as Ramsar sites.

Key details:

- Sixteen Ramsar sites have been identified by the Union government.
- Five Ramsar sites are being developed in a pilot mode.
 - **Sultanpur National Park - Haryana**
 - **Bhitarkanika Mangroves - Odisha**
 - **Chilika Lake - Odisha**
 - **Sirpur - Madhya Pradesh**
 - **Yashwant sagar - Madhya Pradesh**
- **Objective:** The focus of the initiative would be to shift these fragile wetlands from high value tourism to nature tourism by directly supporting conservation action and letting local communities and economies take the lead.
- This initiative was taken under the **Amrit Dharohar Capacity Building Programme 2023**.
- Implementing agencies: **Ministry of Tourism, Ministry of Environment, Forest and Climate Change**.
- As part of the mission, a total of 30 participants have been trained for 15 days under the Alternative Livelihood Programme.

7.2 National Clean Air Programme

Why in the news?

Recently, an analysis by Respirer Living Sciences and Climate Trends says that in 49 cities whose particulate matter numbers were consistently available for five years, 27 showed a decline in PM 2.5.

Key points from the news:

Trends in Indian cities:

- Delhi, for instance, has seen average, annual PM 2.5 levels decline only 5.9%.
- Navi Mumbai, a suburb of Mumbai, has seen a 46% rise in PM 2.5 levels.
- Among the cities that showed a sharp decline in PM 2.5 from 2019-2023 were Varanasi, with a 72% average reduction in PM 2.5 levels and 69% reduction in PM 10 levels.

PM 2.5 and PM 10:

- PM10 is particulate matter 10 micrometers or less in diameter, PM2.5 is particulate matter 2.5 micrometers or less in diameter.
- PM2.5 is generally described as fine particles.
- By way of comparison, a human hair is about 100 micrometers, so roughly 40 fine particles could be placed on its width.

National Clean Air Programme (NCAP):

- It was launched by the MoEFCC in January 2019.
- It is the first-ever effort in the country to frame a national framework for air quality

management with a time-bound reduction target.

- Main goal is to reduce average particulate matter concentrations 40% by 2026 (compared to 2017) in 131 cities.
- When the programme was initiated, the aim was to cut pollution 20-40% by 2024 in these cities but this goalpost was later shifted to 2026.
- The National Clean Air Programme has made noteworthy progress, witnessing notable reductions in PM 2.5 and PM 10 levels in top polluted cities.

7.3 Humboldt's enigma

Why in the news?

Recently, Humboldt's enigma was in news in the science.

What is Humboldt's enigma?

- Humboldt's enigma says that even though tropical regions receive most of the energy, it is not a region with more biodiversity.
- Some regions such as mountains are more biodiverse than the tropical regions.
- Mountain regions are an exception to the general rule that the biodiversity is decreasing from the tropical regions to the pole region.
- Eg. The Eastern Himalayan region is the second most biodiverse region in the world.

7.4 Kaziranga National Park

Why in the news?

Recently, Poachers killed a female rhino in Kaziranga and stole its horn.

About Kaziranga National Park:

- It is located in **Assam**.

- It is home to approximately 2200 Indian rhinoceros, about **two thirds of the total world population**.



- This park was established based on the advice of **Mary Curzon**.
- It is located on the edge of the **Eastern Himalayan Biodiversity Hotspot**.
- In 1985, it was declared as a **World Heritage Site by UNESCO**.
- In 2006, it was declared a **tiger reserve**.
- This park is also recognized as an **Important Bird Area** by BirdLife International for the conservation of avifaunal species.
- The **Brahmabutra** river is flowing through this national park.

7.5 Animal Exchange Programme

Why in the news?

Recently, the Arignar Anna Zoological Park, Vandalur has received three animals from the Kanpur Zoological Park in Uttar Pradesh through an animal exchange programme.

Key details:

- Two Egyptian vultures, three Himalayan griffons and five mottled wood owls and 10 common langurs were received from the Kanpur Zoological Park in Uttar Pradesh.

- As per guidelines of the **Central Zoo Authority of India**, all animals of an endangered species must be marked or implanted with a microchip.

Animal Exchange Programme:

- Animal exchange program was started in 2021 to facilitate easy transfer of animals between zoos.
- It is implemented under the **Central Zoo Authority**.
- Animal exchange proposals will be started by the concerned zoos in the states.
- The Central Zoo Authority will look into the proposal and give final approval to the animal exchange.

7.6 Kumki Elephants

Why in the news?

Recently, the Odisha government has sought assistance from Tamil Nadu for making Kumki elephants and mahouts available in the wake of worsening human-elephant conflict in the eastern State.

About Kumki elephants and purpose:

- Kumki elephant is a term used in India for trained captive Asian elephants used in operations to trap wild elephants, sometimes to rescue or to provide medical treatment to an injured or trapped wild elephant.
- Kumki comes from the Persian word "kumak," which means "aid."
- Kumki elephants are trained for six to seven years by the forest department.
- **Purpose:**
 - Forest patrolling
 - Reduce human - wildlife conflicts

- Rescue wounded elephants

7.7 Snow leopard Population Assessment Report

Why in the news?

Recently, the first Snow Leopard Population Assessment report was released.

Key details:

- In Total there are **718** snow leopards in the wild.
- The highest number of cats was estimated to be in **Ladakh (477), followed by Uttarakhand (124), Himachal Pradesh (51), Arunachal Pradesh (36), Sikkim (21), and Jammu and Kashmir (nine).**
- The current estimate puts the number of Indian snow leopards between **10% and 15% of the global population.**
- The States conducted the surveys and the Dehradun based **Wildlife Institute of India** used software and statistical methods.
- This **census approach is similar to one that has been used in the Tiger census.**
- **Census partners: Wildlife Institute of India, World Wide Fund for Nature and Nature Conservation Foundation.**

Snow Leopard:

- Snow Leopard is an elusive cat, living in the mountain terrain.
- In India, it lives in the Himalayan ranges.
- IUCN status: **Vulnerable**
- **Important threats:**
 - Free ranging dogs
 - Animal - Human conflict
 - Poaching

7.8 Sloth bear

Why in the news?

Recently, a 36-year-old male sloth bear died due to multi-organ failure at a zoo-cum-animal rescue center in Bhopalon.

- It died in Van Vihar National Park.
- It is India's oldest bear in captivity.

About Sloth bear:

- The sloth bear, also known as the Indian bear, is native to the Indian subcontinent.
- It is omnivorous, because it feeds on fruits, ants and termites.
- It is listed as vulnerable on the IUCN Red List.
- The sloth bear's global range includes India, the Terai of Nepal, temperate climatic zones of Bhutan and Sri Lanka.

Types of Bears in India and their protection status:

- **Asiatic Black Bear:**
 - It is also known as the Indian black bear.
 - It lives mostly an arboreal life.
 - IUCN red list: Vulnerable
 - It lives mostly in the northern part of India, Himalayas, China, Iran, and Mainland Southeast Asia.
 - Its body parts are used for traditional medicine.
 - They are Omnivores.
- **Himalayan Brown Bear:**
 - These are subspecies of Brown bear of the western region.
 - They are omnivores and hibernate during the winter times.

- It exhibits sexual dimorphism.
- IUCN status: Vulnerable

- **Sun Bear:**

- It is mostly living in the tropical regions of South and Southeast Asia.
- They are the smallest of all the bears in India.
- They are arboreal in nature.
- They are omnivores.
- IUCN status: Vulnerable

Note: All the four bears in India are categorized as Vulnerable in the IUCN red list.

Note: Mostly, all the bears in India are diurnal, but they are nocturnal in the areas where human activities are high.

7.9 Wildlife Trust of India

Why in the news?

Recently, the oil spill in northern Chennai's Ennore during Cyclone Michaung in early December adversely impacted the eco-sensitive Ennore Creek and the Kosasthalaiyar river.

Key details:

- The wetlands of the Ennore-Manali region are known to host a number of bird species including **open billed storks, cormorants, egrets, spot-billed ducks, grebes, pelicans, common coots, black-winged stilts, red-wattled lapwings, and pond herons.**

About Wildlife Trust of India (WTI):

- Wildlife Trust of India (WTI) was formed in 1998 in response to the many crises confronting India's wildlife and wild habitats.

- WTI is a registered charity in India (under Section 12A of the Income Tax Act, 1961).
- **Headquarters:** Noida, Uttar Pradesh.

Function:

- The principal concerns of WTI include crisis management and provision of quick, efficient aid to individuals, species or habitats that require it the most.
- In the longer term it hopes to achieve, through proactive reforms, an atmosphere conducive to conserving India's wildlife and its habitat.
- **Note: It is an NGO, not a statutory body.**

7.10 Acid Rain

Why in the news?

Recently, scientists found that fossil fuel emissions are the largest contributor to acid rain.

Key points:

- When acid rain flows into rivers and lakes, it can render the water inhospitable to some species; in soil, it destroys some bacteria.

About Acid Rain:

- Acid rain is rain that is acidic.
- Both **SO₂** and **NO_x** are also produced naturally, such as when volcanoes erupt or when lightning passes through the atmosphere, but in and around cities, their principal source is the use of fossil fuels for transport and power generation.
- Once SO₂ and NO_x rise into the air, they react with water and oxygen molecules to produce **sulphuric acid (H₂SO₄)** and **nitric acid (HNO₃)**, both of which are corrosive.
- When these molecules dissolve in water

droplets and the droplets precipitate, we have acid rain, acid snow, and even acid fog.

- The typical **pH of acid rain is around 4.2-4.4.**

7.10 Bio CNG

Why in the news?

Recently, Wabag company has entered into an MoU with Peak Sustainability Ventures to establish 100 bio CNG plants at sewage treatment facilities across India.

What is CNG?

- Compressed natural gas (CNG) is a fuel gas mainly composed of methane (CH₄), compressed to less than 1% of the volume it occupies at standard atmospheric pressure.
- It can be used in place of petrol, diesel fuel, and Liquefied Petroleum Gas (LPG).
- CNG combustion produces fewer undesirable gasses than the aforementioned fuels.
- In comparison to other fuels, natural gas poses less of a threat in the event of a spill, because it is lighter than air and disperses quickly when released.

What is Bio CNG?

- BIO CNG is the purified form of Biogas
- Biogas is processed to get 95% pure methane gas.
- Bio CNG is exactly similar to the commercially available natural gas (CV: ~52000 KJ/Kg) in its composition and energy potential.

8. SCIENCE AND TECHNOLOGY

8.1 Aditya L1

Why in the news?

Recently, a stream of commands transmitted by scientists and engineers of the Indian Space Research Organisation (ISRO) were translated by a computer onboard the Aditya-L1 spacecraft into maneuvers that guided it into orbit around an imaginary point in space.

Major seven instruments and its Purpose:

- **VELC (Visible Line Emission Coronagraph):** It is a coronagraph to study the uppermost layer of the sun's atmosphere;
- **SUIT (Solar Ultraviolet Imaging Telescope):** It is an ultraviolet imaging telescope;
- **SoLEXS (soft X-ray spectrometer) and HEL1OS (hard X-ray spectrometer):** These two instruments are to study solar flares and coronal mass ejections;
- **ASPEX (Aditya Solar wind Particle Experiment) and PAPA (Plasma Analyser Package for Aditya):** These two instruments are to study the solar wind and plasma;
- A set of **digital magnetometers** to measure properties of the magnetic field around the spacecraft.

About Kodaikanal Solar Observatory:

- It was established in 1899 in the Palani range of hills in Southern India.
- Main purpose of this observatory is to catch a magnified view of the partial and full disk of the sun.
- Two telescopes are **White Light Active Region Monitor and H alpha telescope.**

About AstroSat and its Purpose:

- AstroSat is the first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, optical and UV spectral bands simultaneously.
- One of the unique features of the AstroSat mission is that it enables the **simultaneous multi-wavelength observations of various astronomical objects with a single satellite.**
- AstroSat was launched in **2015** into a 650 km orbit inclined at an angle of 6 degree to the equator by PSLV-C30 from Satish Dhawan Space Centre, Sriharikota.
- The minimum useful life of the AstroSat mission is expected to be **5 years.**
- The spacecraft control center at Mission Operations Complex (MOX) of ISRO Telemetry, Tracking and Command Network (ISTRAC), Bengaluru manages the satellite during its entire mission life.

8.2 Einstein Probe Satellite

Why in the news?

Recently, China successfully launched its satellite into space aiming to unveil "the violent and little-known aspects of the cosmos".

About Einstein Probe Satellite:

It is a mission by the Chinese Academy of Sciences (CAS) in collaboration with the European Space Agency (ESA) and the Max Planck Institute for Extraterrestrial Physics (MPE).

- **Year of launching:** 2024

Objective:

- The Einstein probe will search the Universe for cosmic variable objects and transient phenomena shining in X-ray light.
- Einstein Probe will look for X-rays emitted during these so-called tidal disruption events and discover these otherwise dormant and hard-to-detect black holes and study how matter falls onto them.
- Einstein Probe will look for X-ray light from merging events and help to locate the massive bodies and study their properties.

8.3 INSAT 3DS

Why in the news?

Recently, the Indian Space Research Organisation (ISRO) has said that the INSAT-3DS satellite has been flagged off to the launch port at the Satish Dhawan Space Centre in Sriharikota.

About INSAT-3DS:

- The satellite is an exclusive meteorological satellite with the primary objective to provide continuity of services to the existing in-orbit INSAT-3D and 3DR satellites and significantly enhancing the capabilities of the INSAT system.
- This satellite is a user-funded project with the Ministry of Earth Sciences, configured around the ISRO's well-proven I-2k bus platform with a lift-off mass of 2,275 kg.
- **Purposes:**
 - Meteorological observations
 - Monitoring of land and ocean surfaces for weather forecasting
 - Disaster Warning

8.4 Thirty Meter Telescope

Why in the news?

Recently, an official delegation of

the Department of Science and Technology visited Mauna Kea, an inactive volcano in Hawaii, to discuss the Thirty Meter Telescope.

About Thirty Meter Telescope (TMT) project:

- It is a 30-meter diameter primary-mirror optical and infrared telescope that will enable observations into deep space.
- **Members:** US, Japan, Canada, China and India.

Mauna Kea:

- It is an inactive volcano in the state of Hawaii in the US.

8.5 Iran Satellites

Why in the news?

Recently, Iran simultaneously launched three satellites into orbit.

About Iran Satellites:

- The satellites were sent to a minimum orbit of 450 km.
- One satellite weighing 32 kg and two nano-satellites of less than 10kg each were propelled using the **Simorgh (Phoenix) satellite carrier rocket**.
- **Nano satellites:** Nano-satellites, named **Kayhan-2 and Hatef-1**, will be used to test narrowband communication and geopositioning technology.
- The larger satellite, named **Mahda** aims to test the accuracy of the Simorgh rocket in delivering multiple cargoes to space.

8.6 Soraya satellite

Why in the news?

Recently, Iran launched a research satellite called Soraya.

Key details:

- It is a research satellite launched by the Ghaem 100, a satellite carrier.
- It was launched from the Shahrud space center.
- This is the first satellite of Iran, which has been placed above 500 km.

8.7 PHANGS project

Why in the news?

Recently, the James Webb Space Telescope has captured an image of the spiral galaxy NGC 1512 under the PHANGS project.

About PHANGS project:

- The PHANGS (**Physics at High Angular resolution in Nearby Galaxies**) survey is making high resolution observations of nearby galaxies with several telescopes.
 - James Webb Space Telescope
 - Atacama Large Millimeter/submillimeter Array
 - Hubble Space Telescope
 - Very Large Telescope
- **Aim:** The main aim to understand the interplay of the small-scale physics of gas and star formation with galactic structure and galaxy evolution.
- The images let scientists for the first time resolve the structure of the clouds of dust and gas from which stars and planets form at a high level of detail in galaxies beyond the Large Magellanic Cloud and Small Magellanic Cloud, two galaxies considered galactic satellites of the sprawling Milky Way.

8.8 Prithvi Program

Why in the news?

Recently, the Union Cabinet cleared a

₹4,797-crore programme called 'Prithvi' (Earth) that is expected to subsume five existing schemes of the Ministry of Earth Sciences (MoES).

About Prithvi program:

- **PRITHvi Vigyan** scheme was started to study the atmosphere, ocean, predicting weather and Earth system sciences.
- **Nodal Ministry:** Ministry of Earth Science
- **Time period:** 2021-26

Objectives:

- Improve and increase long-term observations of the atmosphere, ocean, geosphere, cryosphere, and solid earth to track changes in the planet;
- Develop models to understand and predict weather, ocean and climate hazards, and understand the science of climate change;
- Explore polar and high-seas regions of the earth to discover new phenomena and resources;
- Develop technology for exploration and sustainable harnessing of oceanic resources for societal applications;
- Translate knowledge and insights from earth system science into services for societal, environmental, and economic benefit.

It has subsumed five ongoing schemes:

- **ACROSS:** Atmosphere & Climate Research-Modelling Observing Systems & Services is an atmospheric science program.
 - It provides for the development of a global weather prediction model.
- **O-SMART:** The 'ocean-modelling data assimilation and process specific observations' programme aims to measure water quality parameters in the coastal waters around the Indian coastal region.

- **PACER:** It has four sub- schemes under it, namely, the Antarctic Program, Indian Arctic Program, Indian Southern Ocean Program and Cryosphere and Climate Program.
- **SAGE:** It is a Seismology and Geosciences scheme.
 -
 - It provides for effective seismic monitoring.
- **REACHOUT:** This scheme was started to create thrust in R&D among the students in the earth science field.

8.9 POEM 3

Why in the news?

Recently, the Indian Space Research Organisation (ISRO) has successfully tested a 100 W-class Polymer Electrolyte Membrane Fuel Cell-based Power System in its orbital platform, POEM3.

About POEM 3:

- POEM-3, the **PSLV Orbital Experimental Module-3**, India's unique inexpensive space platform using the spent PS4 stage of the PSLV-C58 vehicle that launched XPoSat on January 1, 2024.
- POEM-3 completed 400 orbits. Its current orbit measures around 322 km by 352 km.
- It is predicted that POEM-3 will continue orbiting for approximately 73 more days before re-entering the Earth's atmosphere.
- It has **nine experimental payloads**.
- The experiments include the **Women Engineered Satellite (WESAT)** developed by LBS Institute of Technology for Women to **study the comparison between solar irradiance and UV index**, a radiation shielding experiment, an amateur radio, three propulsion systems by space start-ups, and an interplanetary dust count experiment by Physical Research Laboratory.

- **Two types of fuel cell systems** developed by the Vikram Sarabhai Space Centre were also onboard.
- **Objective:** The primary objective of the experiment was to collect valuable data that would aid in designing systems for future space missions.

Fuel Cell-based Power System (FCPS):

- Fuel cells are devices that generate electricity through electrochemical redox reactions, not combustion.
- They convert the chemical energy of fuels, such as hydrogen or methane, directly into electrical energy by combining them with oxygen.
- Because the chemical energy does not need to be converted into thermal energy and mechanical energy first, fuel cells are extremely efficient.
- Besides minimizing energy losses, fuel cells are also less polluting than classic combustion: carbon emissions are much lower.
- If green hydrogen – hydrogen created using renewable energy sources - is fuelling the cell, they only emit vapor and warm air.

8.10 Neutron star

Why in the news?

Recently, Scientists spotted an object that is neither obviously a neutron star nor a black hole in the star cluster of NGC 1851.

Key details:

- The massive object is dark, meaning it is invisible at all frequencies of light — from the radio to the optical, X Ray and gamma ray bands.

About Neutron star:

- Neutron stars are the remains of the cores of massive stars that have reached the end of their lives.
- They are one of the two possible evolutionary endpoints of the most massive stars, the other being black holes.
- The densest stellar objects, apart from perhaps, whatever exists at the heart of a black hole, neutron stars are some of the universe's most extreme objects.
- Most neutron stars are observed as pulsars. Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds.
- Pulsars have very strong magnetic fields which funnel jets of particles out along the two magnetic poles.
- These accelerated particles produce very powerful beams of light.

8.11 Amaterasu

Why in the news?

Recently, a Japanese scientist Toshihiro Fujii discovered a very high energy cosmic-ray event called 'Amaterasu'.

What are Cosmic rays?

- Cosmic rays are streams of energetic particles and clusters of particles coming from outer space and the sun.
- They include protons and alpha particles (nuclei of helium atoms).
- Only low-intensity cosmic rays reach the earth's surface.
- Their energy is mostly lost in the atmosphere itself, as they smash into atoms of the

atmospheric gasses and produce a shower of other particles.

- Otherwise, life wouldn't have been possible on the earth.
- Cosmic rays typically range in energy from about one billion eV to about 100 billion billion eV.
- The Amaterasu cosmic ray had an energy of 240 EeV – or 240 billion billion eV.

Types:

- It can be divided into two types
 - **Galactic cosmic rays** (GCR) and extragalactic cosmic rays, i.e., high-energy particles originating outside the solar system, and.
 - **Solar energetic particles**, high-energy particles (predominantly protons) emitted by the sun, primarily in solar eruptions.

About Amaterasu:

- It is a cosmic ray found by a Japanese scientist in May 2021.
- Its energy value is around 240 billion ev.
- It is a type of galactic cosmic ray.

Ultra-high-energy cosmic rays (UHECRs):

- In astroparticle physics, an ultrahigh-energy cosmic ray (UHECR) is a cosmic ray with an energy greater than 1 EeV (10^{18} electron volts, approximately 0.16 joules), far beyond both the rest mass and energies typical of other cosmic ray particles.

Large Hadron Collider (LHC):

- The LHC is a huge experiment that collides two beams of particles to study physics at very high energies. It's the largest science experiment in the world and is operated by

CERN (European Organisation for Nuclear Research)

- The LHC is a circular pipe that is 27 km long and is located on the Franco-Swiss border near Geneva, Switzerland

8.12 India Japan Space Cooperation

Why in the news?

Recently, Prime Minister Narendra Modi congratulated his Japanese counterpart on Japan's successful lunar landing.

Key points from the news:

- The Indian PM said India is looking forward to cooperating with Japanese agency JAXA in space exploration.

About India-Japan Space Cooperation:

- Recently India's Chandrayan 3 has helped Japan's **smart Lander for Investigating Moon (Slam)** which landed on the lunar surface near an equatorial crater.
- India and Japan are already working on a **joint lunar polar exploration (LUPEX) mission** that aims to send a lander and rover to the Moon's south pole around 2024.

8.13 X Antarctic expedition

Why in the news?

Recently, the researchers of the X antarctic expedition said that climate change increases the pace of the glacier meltings.

About X Antarctic Expedition:

- It is an international project with the collaboration of most of the countries to analyze the situation of the Antarctic sea and its living habitats.

- For this expedition, Colombian vessel ARC Simon Bolivar is used.

8.14 Light Emitting Diodes

Why in the news?

Recently, there utilisation of LEDs have been increased.

What is Diode?

- A diode is an electronic component about 5 mm wide.
- It has two points of contact, or terminals, called its anode and cathode.
- A diode's primary purpose is to allow current to flow in only one direction.
- It achieves this using a p-n junction.

What is an LED?

- An LED is a diode that emits light. Inside the diode's p-n junction, the electrons have more energy than the holes.
- When an electron meets and occupies a hole, it releases energy into its surroundings.
- If the frequency of this energy is in the visible part of the electromagnetic spectrum, the diode will be seen to emit light.
- The overall phenomenon is called electroluminescence.

What colors can an LED produce?

- Since LEDs can produce all three primary colors red, green, and blue, different LEDs can be combined on a display board to produce a large variety of colors.

Applications:

- LEDs have several applications in industry, consumer electronics, and household appliances: from smartphones to TV screens,

signboards to 'feeding' plants light in greenhouses, barcode scanners to monitoring air quality.

8.15 Radiological Data

Why in the news?

Recently, the Bhabha Atomic Research Centre (BARC), Mumbai have found that the radioactive discharges from the nuclear plants and the resultant potential environmental impact have been "minimal".

Key points from news:

- **Power plants studied are:** Tarapur Atomic Power Station, Madras Atomic Power Station, Kaiga Generating Station, Rajasthan Atomic Power Station, Narora Atomic Power Station, and Kakrapar Atomic Power Station, Kudankulam Atomic Power Station.
- The gaseous waste that is released to the atmosphere through stacks consists of fission product noble gases, **Argon 41, radioiodine, particulate radionuclides, cobalt-60, strontium-90, caesium-137 and tritium.**
- The liquid discharge consists of fission product radionuclides radioiodine, **tritium, strontium -90, caesium-137 and activation products like cobalt-60.**
- Average gross alpha activity in air particulates at all the seven nuclear plants was less than 0.1 megabecquerel (mBq) per cubic meter.
- In the case of rivers and lakes, the concentration of caesium-137 and strontium-90 were below 5 mBq per litre, while the concentration was less than 50 megabecquerel per litre in sea water near the nuclear plants.

- Caesium-137 discharged to the water bodies through scavenging and sedimentation processes and because of the high distribution.

8.16 Valkyrie

Why in the news?

USA's NASA has developed a humanoid robot called Valkyrie.

About Valkyrie:

- It is a humanoid robot, **developed by NASA.**
- It is designed to operate in "**degraded or damaged human-engineered environments,**" like areas hit by natural disasters, as well as handle risky tasks like cleaning solar panels or inspecting malfunctioning equipment outside spacecraft.
- This robot has a swappable battery, so it can work for four hours, swap the battery and then keep going in a very quick duration.

8.17 Voice Clone

Why in the news?

Recently, a report published in May 2023 revealed that 47% of surveyed Indians have either been a victim or knew someone who had fallen prey to an AI generated voice scam.

Key points:

- The numbers are almost twice the global average of 25%.
- The report also shared that 86% Indians were prone to sharing their voice data online or via voice notes at least once a week which has made these tools potent.

What is a Voice clone?

- Voice cloning is the process of creating a digital copy of someone's voice by using Artificial Intelligence.

Issues associated with it:

- Ransom scams on the digitally illiterate people
- Racist comments against a person or group
- Illegal use for political purposes
- Reputation damage

Measures:

- Statutory provision to make this voice cloning a crime
- Technical upgradation of law enforcement agencies to detect these kind of scams
- Global level regulation to ensure ethical use of AI

8.18 Rashtriya Vigyan Puraskar

Why in the news?

Recently, the Government called for nominations for Rashtriya Vigyan Puraskar.

About Rashtriya Vigyan Puraskar:

- It is the **national science award** established in **2023**.
- **Individuals, teams** can nominate themselves for the award.
- It comprises a **medal and a citation but no cash prize**.
- The awards will be announced on **May 11, National Technology Day**, which is the anniversary of the Pokhran-II nuclear tests.
- The awards will be conferred on **August 23, National Space Day**, to commemorate

Chandrayaan-3 mission's soft landing on the moon.

Awards are given in four categories:

- **Vigyan Ratna Awards:** These awards will recognise lifetime achievements & contributions made in any field of science and technology.
- **Vigyan Shri Awards:** These awards will recognise distinguished contributions to any field of science and technology.
- **Vigyan Team Awards:** These awards are to be given to a team comprising three or more scientists/researchers/innovators who have made an exceptional contribution working in a team in any field of science and technology.
- **Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB):** These awards are the highest multidisciplinary science awards in India for the young scientists (maximum 45 years).

- **Note:** Persons of Indian Origin can also apply for this award.

8.19 Sisal leaves

Why in the news?

Recently, a Stanford team, led by Manu Prakash, has found that **an absorbent material can be produced using Sisal leaves, and could replace cotton, wood pulp, and chemical absorbents in sanitary napkins.**

About Sisal leaves:

- Like all succulents, these are plants with thickened parts to store more water, sisal has an uncanny ability to store water and thrive in drought-prone areas.

- Its leaves grow up to 2 m long.
- The lifespan of a sisal plant is about 7-10 years, during which it produces 200-250 usable leaves.
- The ancient Aztec and Mayan civilisations were perhaps the first to begin making paper out of sisal leaves.
- Since then, the stiff, green sword-like leaves have been used to make twine, cloth, and carpets.

Significance:

- The absorption capacity of the material is higher than those found in commercial menstrual pads.
- Environmentally sustainable production method

8.20 Antibiotic effects of Cannabis compound

Why in the news?

Recently, Scientists at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, have found that Phytocannabinoids, a class of compounds found in the cannabis plant, have antibiotic resistance properties.

Key points:

- **Ways how bacteria strengthen its antibiotic resistance:**
 - **Biofilm:** It is a colony of bacteria that is formed to provide resistance against the drugs.
 - **Efflux pumps:** It is a cellular mechanism that flush out drugs from cells.
- **What are Cannabinoids?**
 - Cannabinoids are a class of compounds found in the cannabis plant.

- The prefix 'phyto' in phytocannabinoid means it comes from a plant.
- Cannabinoids bind to receptors in the bodies of animals to produce a variety of neurological effects.

• What is Tetrahydrocannabinol?

- Cannabidiol is extracted from a cannabis plant and made to react with hydrogen, using palladium as a catalyst.
- This process yielded a mixture of molecules with the same composition and order of atoms but different structures.
- One of them was THCBD.
- This cannabidiol is found more effective against the efflux pump reaction of bacteria.

8.21 Zosurabalpin

Why in the news?

Recently, Researchers have identified a new class of antibiotics with the potential to tackle a drug resistant bacterium, *Acinetobacter baumannii*.

Key details:

- The new bacteria's name is **Zosurabalpin**.
- This bacterium was found to be effective against CRAB (Carbapenem Resistant *Acinetobacter Baumannii*) induced pneumonia and sepsis in mouse models.
- This antibiotic kills *A. baumannii* through a previously unknown mode of action.
- It inhibits a key process, transport of the molecule Lipopolysaccharide (LPS), by inhibiting a complex of proteins.

- This complex was essential for transporting LPS to the bacterial surface to create the outer membrane structure of Gram Negative bacteria.
- Zosurabalpin blocks LPS transport, and the abnormal build up of LPS in the cell kills the bacterium.

8.22 Synthetic skin

Why in the news?

Recently, the researchers of the project Smartcore have received funding approval from the European Research Council.

About SmartCore:

- Under this project, the researchers have developed a three-in-one "smart skin" hybrid material, which closely resembles human skin by simultaneously sensing **pressure, moisture and temperature** and converting them into electronic signals.
- With **2,000 individual sensors per square millimeter**, the hybrid material is more sensitive than a human fingertip, giving it its reputation, and, at 0.006 millimetres thick, many times thinner than human skin.

8.23 Chlorine

Why in the news?

Recently, a chlorine gas leak in the Jhajhra area of Dehradun triggered panic, forcing people to leave their homes.

About Chlorine:

- Chlorine is a yellow-green gas at room temperature.
- Chlorine has a pungent, irritating odor similar to bleach that is detectable at low concentrations.

- The density of chlorine gas is approximately 2.5 times greater than air, which will cause it to initially remain near the ground in areas with little air movement.
- Chlorine is not flammable, but may react explosively or form explosive compounds with many common substances (including acetylene, ether, turpentine, ammonia, natural gas, hydrogen, and finely divided metals).
- Chlorine is slightly water soluble, and reacts with moisture to form hypochlorous acid (HClO) and hydrochloric acid (HCl).

Sources:

- Chlorine is also released by volcanoes and from natural weathering of chlorine-containing rocks.
- It is also produced and utilised on the land, by numerous soil microbes and worms, and some plants can make organic chlorine compounds.

Applications:

- Chlorine is used in industry and in household cleaning products.
- Chlorine was also the first poison gas to be used as a weapon during World War I.
- Chlorine is commonly pressurized and cooled for storage and shipment as an amber-colored liquid.
- It is used to disinfect water and is part of the sanitation process for sewage and industrial waste.

8.24 Mosquitofish

Why in the news?

Recently, the Visakhapatnam government is ready to release an additional six lakh mosquito

fishes after having released 20 lakh fishes a few months ago.

About Mosquitofish:

- These fishes are released into the freshwater to eat mosquito larvae.
- Most common mosquito fishes are **Gambusia affinis** and **Gambusia holbrooki**.
- Gambusia fish species have **robust adaptability and high tolerance for fluctuating environmental conditions**.
- **Origin** of these species is the **US**, but now **it is an inhabitant worldwide**.
- The World Health Organisation stopped recommending Gambusia as a mosquito control agent in 1982.
- In 2018, the National Biodiversity Authority of the Government of India also designated G. affinis and G. holbrooki as invasive alien species.

Negative effects:

- **Displacing and preying on native fauna.** For example, in **Australia**, introduced mosquitofish have led to the local extinction of the **red-finned blue-eye** (Scaturiginichthys vermeilipinnis), an endemic fish species.

8.25 Leprosy

Why in the news?

Recently, the Union government has approved a new treatment regimen for leprosy, aiming at stopping its transmission at the sub-national level by 2027.

Key points from news:

- The Ministry of Health and Family Welfare has decided to introduce a three-drug

regimen for **Pauci-Bacillary (PB) cases** in place of a two-drug regimen for six months.

About Leprosy:

- Leprosy is a chronic infectious disease caused by **Mycobacterium leprae**.
- The disease predominantly affects the skin and peripheral nerves. Left untreated, the disease may cause progressive and permanent disabilities.
- The **bacteria are transmitted via droplets** from the nose and mouth during close and frequent contact with untreated cases.
- The **disease is not spread through casual contact** with a person who has leprosy like shaking hands or hugging, sharing meals or sitting next to each other.
- Leprosy, reported from all the six WHO regions, is curable with multi-drug therapy (MDT).
- The majority of new cases detected are from Southeast Asia.
- The WHO's recommended treatment regimen consists of **three drugs, dapsone, rifampicin and clofazimine**.
- The combination is referred to as MDT. The duration of treatment is six months for PB and 12 months for MB cases.
- MDT kills the pathogen and cures the infection.

Government measures:

- **National Leprosy Eradication Programme:** The strategy of NLEP was based on controlling the disease through reduction in the quantum of infection in the population and reduction in infectious source, thus breaking the chain of disease transmission.
- **Rashtriya Bal Swasthya Karyakram:** Convergence of leprosy screening under

Rashtriya Bal Swasthya Karyakram (RBSK) for screening of children (0-18 years) and under Ayushman Bharat for screening of people above 30 years of age being initiated.

- In 2017, **SPARSH Leprosy Awareness Campaign** was launched to promote awareness and address the issues of stigma and discrimination.

8.26 Western Equine Encephalitis Virus

Why in the news?

Recently the International Health Regulations National Focal Point (IHR NFP) in Argentina alerted the Pan American Health Organization/World Health Organization (PAHO/WHO) of a human case of Western Equine Encephalitis Virus (WEEV) infection.

Key details:

- The outbreak comes after more than two decades since the last case was reported in the country.
- The last cases of human infections in Argentina were reported in 1982, 1983, and an isolated event in 1996.

About Western Equine Encephalitis Virus (WEEV) infection:

- **About:** Western Equine Encephalitis is a mosquito-borne infection caused by the WEEV, which belongs to the *Togaviridae* family of viruses.
 - The virus has an approximately 11.5 kilobases long single-stranded RNA genome and is a recombinant of the eastern equine encephalitis virus and a Sindbis-like virus.

- **Hosts:** Passerine birds are thought to be the reservoir and equine species as intermediate hosts.
- **Transmission:** The primary mode of transmission of the infection to humans is through mosquitoes which act as vectors for the virus.
- **Symptoms:** While most of the infections are asymptomatic, the infection may lead to severe consequences in rare cases.
 - An estimated 4-5% of cases may manifest as infection/inflammation of the brain, resulting in neurological symptoms and sequelae of disease.
- **Treatment:** With no specific antiviral treatment, symptomatic care is crucial, especially for neurologic symptoms.

8.27 Multiple Sclerosis

Why in the news?

Recently, DNA obtained from the bones and teeth of ancient Europeans who lived up to 34,000 years ago is providing insight into the origin of the often-disabling neurological disease multiple sclerosis.

About Multiple Sclerosis:

- It is a chronic disease of the brain and spinal cord that is considered an autoimmune disorder in which the body mistakenly attacks itself.

9. DISASTER MANAGEMENT

9.1 Indian Tsunami Early Warning Centre

Why in the news?

Recently, the Indian Tsunami Early Warning Centre (ITEWC), which houses the Indian National Centre for Ocean Information Services (INCOIS), stated that there is no tsunami threat to India after a powerful magnitude 7.5 earthquake struck the west coast of Japan.

About Indian Tsunami Early Warning Centre:

- The Indian Tsunami Early Warning Centre established at **Indian National Centre for Ocean Information Sciences**, (INCOIS), Hyderabad.
- **Nodal Ministry:** Ministry of Earth Sciences.

- It is the national authority to issue **tsunami advisories** for India.
- The ITEWC functions as an approved Tsunami Service Provider of the Indian Ocean Tsunami Warning & Mitigation System (IOTWMS) that is an integral part of the Global Tsunami Warning and Mitigation System, established and coordinated by the Intergovernmental Oceanographic Commission (IOC) of UNESCO.
- The ITEWC also **provides tsunami services to 25 Indian Ocean Countries** as part of the **Intergovernmental Oceanographic Commission (IOC) of the UNESCO framework**.

10. SECURITY

10.1 Nepalese Gurkhas Brigade

Why in the news?

Recently, Nepal reacted to the Agnipath scheme that it was consulted before introducing this Agnipath scheme.

Key points:

- Nepal said the Agnipath announcement was in breach of the Tripartite Agreement signed between Nepal, India and Britain in 1947, which guides Nepalese youths' recruitment in Indian and British armed forces.

Historical background of Nepalese Gurkha regime:

- Since the 19th century, Gurkhas have been working in India, first under East India Company and then under the British Indian Army.

- They were first recruited by the British after the end of Anglo - Nepalese War in 1816.
- In 1947 (in independence time) Gurkha soldiers were allowed to work in both the British and Indian army.
- They are given the same benefits as Indian soldiers.

About Nepalese Gurkhas brigade:

- After launching Agnipath in June 2022, Delhi had sought Nepal's position on the recruitment of Nepalese.
- An initially undecided Kathmandu then conveyed to Delhi that it would wait until elections in November 2022.
- In September 2022, Indian Army Chief General Manoj Pande hinted that vacancies for Nepalese would be withdrawn if Kathmandu failed to take a decision on time.

- There has been a status quo since.
- A little over 32,000 Gurkhas are currently serving in the Indian Army. And with gradual retirements of soldiers and no new intakes, estimates are that in about seven years, the strength of Gurkha battalions will be half of what it is today.
- And by 2037, there may be no pure Gurkha battalions.

Agnipath Scheme:

- Under the scheme, youth between 17.5 to 23 years of age will be enrolled on an 'All-India All-Class' basis as soldiers for four years.
- These recruits, who will be known as 'Agniveers', will form a distinct rank bearing a distinct insignia in the respective forces.
- They will not be eligible for any pensionary benefit under the scheme.
- With this, the existing framework of employment for soldiers will cease to exist and those below officer rank — jawans in the Army, sailors in the Navy and airmen in Air Force — will be recruited into the three services through the Agnipath scheme.
- The scheme does not apply to defence officers for whom there is a provision of short-term service called the Short Service Commission or SSC.

10.2 Indian Coast Guard

Why in the news?

Recently, the Defence Ministry has signed a contract worth over ₹1,070 crore with Mazagon Dock Shipbuilders Limited (MDL),

Mumbai, for 14 Fast Patrol Vessels (FPV) for the Indian Coast Guard (ICG).

About Indian Coast Guard (ICG):

- The Indian Coast Guard is a multi-mission organization, conducting round-the-year real-life operations at sea.
- It is headed by the **Director General**
- **Headquarters:** New Delhi
- For effective command and control, the Maritime Zones of India are divided into five Coast Guard Regions: **North-West, West, East, North-East and Andaman & Nicobar.**
- The respective Regional Headquarters are located at **Gandhinagar, Mumbai, Chennai, Kolkata and Port Blair.**
- The Coast Guard Regions are commanded by Officers of the **rank of Inspector General.**

Mandate:

- To protect our ocean and offshore wealth including oil, fish and minerals.
- To assist mariners in distress and safeguard life and property at sea.
- To enforce maritime laws with respect to sea, poaching, smuggling and narcotics.
- To preserve marine environment and ecology and protect rare species.
- To collect scientific data and back-up the navy during war.

How ICG differs from Indian Navy:

Indian Coast Guard	Indian Navy
<ul style="list-style-type: none"> • Main responsibility is to protect maritime borders from external threats. 	<ul style="list-style-type: none"> • operates mainly to protect maritime interests in the exclusive economic zones.

- It operates both within and outside the exclusive economic zone.
- Primarily focus on military operations

- It operates only within the exclusive economic zones.
- Primarily focus on civilian interactions such as fishermen, coastal communities.

10.3 Z plus security cover

Why in the news?

Recently, the Union Home Ministry directed the Central Reserve Police Force (CRPF) to provide Z-plus category security for Kerala Governor Arif Mohammed Khan.

What is Z plus security cover?

- Z-plus security is the highest level of security protection after the SPG cover.
- This security coverage includes **55 personnel**, along with **CRPF commandos**, who guard the protectee 24x7. Additional protection in the form of **National Security Guard (NSG)** commandos is also given if the need is felt, based on intelligence inputs.
- The security cover also includes a bulletproof vehicle and escort in three shifts.
- The commandos in the Z-plus security force receive expert martial arts and unarmed combat training.
- This security cover has been provided to Home Minister Amit Shah, Uttar Pradesh Chief Minister Yogi Adityanath, Union Finance Minister, and others.

Other Major Security Covers:

- Ascending order of security cover: X, Y, Y plus, Z, Z plus and SPG.

Special Protection Group:

- SPG provides security only to the prime minister of the day and the immediate family members residing with him/her.
- It is a force of 3,000 security personnel with a squad of highly trained dogs.
- The SPG was raised in 1985 after Indira Gandhi's assassination.
- The SPG was established in 1988 by an Act of the Indian Parliament.
- The Central Government has full authority over the SPG.
- The Ministry of Home Affairs (MHA) grants security cover based on an individual's threat perception.
- After Rajiv Gandhi's assassination in 1991, Sonia, Rahul, and Priyanka Gandhi received SPG protection.
- However, in 2019, their security was downgraded to Z-plus.

Z category:

- Z-category is the country's third-highest level of security protection and includes 22 personnel, along with commandos and police personnel.
- Under the Z-category, a **private individual pays for the security cover**.
- Baba Ramdev and actor Aamir Khan have been given Z-category security protection.

Y plus and Y category:

- Y category security cover includes eight to 11 personnel, including a couple of commandos.
- It also comprises two personal security officers (PSOs).
- Many VIPs in India have been given this level of security protection.
- For instance, actor Kangana Ranaut and Vivek Ranjan Agnihotri, director of The Kashmir Files, have been given Y-category protection.

10.4 Sainik school

Why in the news?

Recently, the Defence Minister Rajnath Singh inaugurated the Samvid Gurukulam Girls Sainik School, **the first all-girls Sainik School**, at Vrindavan in Mathura, Uttar Pradesh.

About Sainik School:

- **Sainik Schools Society** (SSS) is an autonomous organization under the **Ministry of Defence**, Govt of India.
- The Society runs Sainik Schools. Sainik Schools are **English medium residential schools affiliated to the Central Board of Secondary Education** (CBSE).
- Sainik Schools prepare Cadets to join the National Defence Academy (NDA), Khadakwasla (Pune), Indian Naval Academy, Ezhimala and other Training Academies for officers.
- At present there are a total of **33 Sainik Schools** across the country.
- Sainik Schools offer admission at the level of Class VI and Class IX.

- Admission is based on the performance of candidates in the **All-India Sainik Schools Entrance Examination** (AISSEE).

10.5 Drishti - 10 MALE UAV

Why in the news?

Recently, the Indian Navy Chief Said that armed UAVs in the hands of non-state actors pose a great security challenge.

About Drishti-10 starliner Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV):

- It was designed and developed by **Adani Defense and Aerospace** for the Indian Navy.
- It is an indigenously built version of the Hermes-900 UAV of Elbit Systems of Israel and has over 70% indigenous content.

10.6 P75I programme

Why in the news?

Recently, Germany has presented an inter-governmental proposal for sale of six advanced conventional submarines to India for the Navy's P-75I procurement programme.

Key points:

- The race for the deal, expected to cost upwards of ₹45,000 crore, is between Germany and Spain.
- Mazagon Dock Shipbuilders Limited (MDL), along with Larsen & Toubro (L&T) Limited, has been shortlisted to partner with foreign submarine manufacturers to make six advanced conventional submarines in India under a technology transfer.

About P75 I program:

- Project-75 (India), also known as P-75(I), is a military acquisition initiative by the Ministry of Defence (MoD).
- The initiative aims to procure diesel-electric attack submarines with fuel cells and Air-Independent Propulsion System (AIP) for the Indian Navy to build India's naval strength and develop indigenous submarine-building capabilities.

10.7 Akash missile

Why in the news?

Recently, the Defence Research and Development Organization successfully conducted the test fire of the Akash missile.

About Akash missile:

- It is a **Surface to Air Missile (SAM)** developed by the DRDO.
- The flight test was conducted against a high-speed unmanned aerial target at very low altitude.
- It is fully **indigenously developed** with radio frequency seeker, launcher, multi-function radar and command, control & communication system.
- It has a range of **25 km**.
- Akash is often compared to **Israel's Iron Dome** due to its ability to intercept UAVs, smaller projectiles, helicopters, and aircraft.

10.8 Tomahawk missiles

Why in the news?

Recently, Japan signed a deal with its ally the United States to buy 400 long-range Tomahawk missiles.

About Tomahawk missiles:

- The Tomahawk Land Attack Missile (TLAM) is a long-range **cruise missile** used for deep land attack warfare.
- It is a **subsonic** cruise missile.
- The Tomahawk can carry either **conventional or nuclear payloads**, though policy decisions have phased out their nuclear role.
- Range: **1250 - 2500 km**.
- Currently, the **USA** and **UK** are using this missile system.

10.9 Haeil 5-23 system

Why in the news?

Recently, North Korea has conducted a test of its **underwater nuclear weapons system** 'Haeil5-23 system'.

About Haeil 5-23 system:

- It is a nuclear capable underwater attack drone of North Korea.
- It also tested the 'Haeil' missile in March 2023.
- Haeil means tsunami in Korean language.

10.10 EU ports against Drug smuggling

Why in the news?

Recently, the EU launched a "European Ports Alliance" to harmonize methods in the fight against drug smuggling and to combat the hubs' infiltration by criminal groups.

About European Union ports join up in fight against drug smuggling:

- This alliance was initiated in **Belgium's**

Antwerp port, the main gateway for cocaine into Europe.

- Europe's major ports are currently dogged by violence from local mafias ready to do anything to maintain the lucrative illegal trade.
- The rise in narco-gang activity at Antwerp follows a security crackdown at the **Dutch port of Rotterdam**.
- The same phenomenon is being seen at the departure points for the drugs, she said.
- Reinforced security at **Colombian ports** has prompted gangs to turn to **Guayaquil in Ecuador**, which has become the main exportation hub to Europe for cocaine made in Colombia and Peru.
- In the European Union, nearly 70% of drug seizures by customs services are made in the bloc's ports.
- Smugglers also send drug shipments to West and North Africa, where they are loaded onto small boats that go to mainly Spanish ports.

10.11 National Cadet Corps

Why in the news?

Recently, Defence Minister Rajnath Singh has approved a proposal to raise four more units of the National Cadet Corps (NCC) in the Union Territories of Jammu and Kashmir and Ladakh.

About National Cadet Corps:

- NCC is the **youth wing of the Indian Armed Forces**.
- NCC was formed in **1948** by the Central government based on the recommendation of the **Kunzuru committee**.
- It functions under provisions of the **National Cadet Corps Act, 1948**.
- Motto of the NCC is ' **Unity and Discipline**'.
- All the **school and college students can join this NCC voluntarily**.
- **Headquarters:** New Delhi

11. SCHEMES & INITIATIVES

11.1 Prerana scheme

Why in the news?

Recently, the Ministry of Education launched 'Prerana', an experiential learning programme, which will operate from the vernacular school in Prime Minister Narendra Modi's birthplace Vadnagar, Gujarat where he had studied.

About the Prerana scheme:

- A **weekly residential programme**, it will **host 20 students (10 boys and 10 girls)**

from across the country on a rotational basis in the town.

- The programme, which has the best-in-class technology where heritage meets innovation, caters to students **from Classes 9 to 12**.
- The day wise programme schedule will feature yoga, mindfulness, followed by and hands on interesting learning activities.

11.2 Pradhan Mantri Kaushal Vikas Yojana

Why in the news?

Recently, five IITs, Ropar, Guwahati

, Mandi, Patna and Kanpur are set to provide short term skill development courses to students from far flung areas in partnership with **National Skill Development Corporation**.

About Pradhan Mantri Kaushal Vikas scheme:

- It is a flagship skill development programme
- **Year:** 2015
- **Nodal Ministry:** Ministry of Skill Development and Entrepreneurship
- **Objective:** To enable and empower Indian youth to take up industry-relevant skill training to help them secure a better livelihood.

Aims of Pradhan Mantri Kaushal Vikas Yojana 1.0

- To train and certify 50 million youth by 2020.
- Provide notification and assessment of skill competency.
- Provide monetary reward upon successful completion of training.
- Implementing industry-led standards to the course curriculum.

Aims of Pradhan Mantri Kaushal Vikas Yojana 2.0

- To train and certify 10 million youth by 2020.
- Expand skill training to school dropouts and those pursuing education.
- Provide financial aid to support setting up greenfield enterprises.
- Improve placement services and internship opportunities.
- Offer training of trainers programmes.

Aims of Pradhan Mantri Kaushal Vikas Yojana 3.0

- To train and certify 15-20 million youth by 2022.
- Focus on new age and high-end skills like AI, robotics, 3D printing, etc.

- Integrate the Kaushal Daksht portal to build a database of skilled workers.
- Strengthen infrastructure through kaushal kendras and new model training centers.
- Introduce credit-linked placement schemes for fresh trainees.
- Increase innovation and research in skill development.
- Expand short-term training courses in high-growth areas.

Aims of Pradhan Mantri Kaushal Vikas Yojana 4.0

- The scheme will emphasize On-job training, industry partnership, and alignment of courses with needs of industry.
- The scheme will also cover new age courses for Industry 4.0 like coding, AI, robotics, mechatronics, IOT, 3D printing, drones, and soft skills.

11.3 PM Suryodaya Yojana

Why in the news?

Recently, Prime Minister Modi said that his government would launch a solar rooftop scheme.

About Pradhan Mantri Suryodaya Yojana:

- The target under the scheme is to **install one crore rooftop solar on top of the households**.
- Rooftop solar panels are photovoltaic panels installed on the roof of a building that is connected to the main power supply unit.
- **Note:** In 2014, the government launched 'Rooftop solar programme' to increase the cumulative installed capacity of solar power to 40 GW by 2022. But this target could not be achieved.

11.4 Pradhan Mantri Rashtriya Bal Puraskar

Why in the news?

Recently, the President of India conferred Rashtriya Bal Puraskar to 19 children.

About Pradhan Mantri Rashtriya Bal Puraskar:

- It is an award given specifically to children for their bravery activities.
- The award is given in six categories, namely **art and culture, bravery, innovation, science and technology, social service and sports**.
- The awards are conferred upon the children in the age group of **5–18**.
- The children are selected by the **Ministry of Women and Child Development**.
- Eligible children are also presented with a **specified reservation of central pool seats for medical education**.

11.5 Vaibhav scheme

Why in the news?

Recently, the Department of Science and Technology (DST) announced the first batch of Fellows of the Vaibhav scheme.

About Vaibhav scheme:

- Vaibhav scheme was started to **improve the research ecosystem in Indian higher educational institutions and research academies** through facilitation of collaboration with world renowned institutions.
- It is implemented by the **Department of Science and Technology**

- The programme will focus on **18 identified knowledge verticals**, including quantum technology, health, pharmaceuticals, electronics, agriculture, energy, computer sciences, and material sciences, among others.
- The fellowships are **open to eligible Indian origin scientists** who are actively engaged in research activities.
 - Non-Residents of India (NRI)
 - Persons of Indian Origin (PIO)
 - Overseas Citizen of India (OCI)
- Eligible candidates will receive a monthly fellowship of **4 lakh rupees**.

11.6 e NAM

Why in the news?

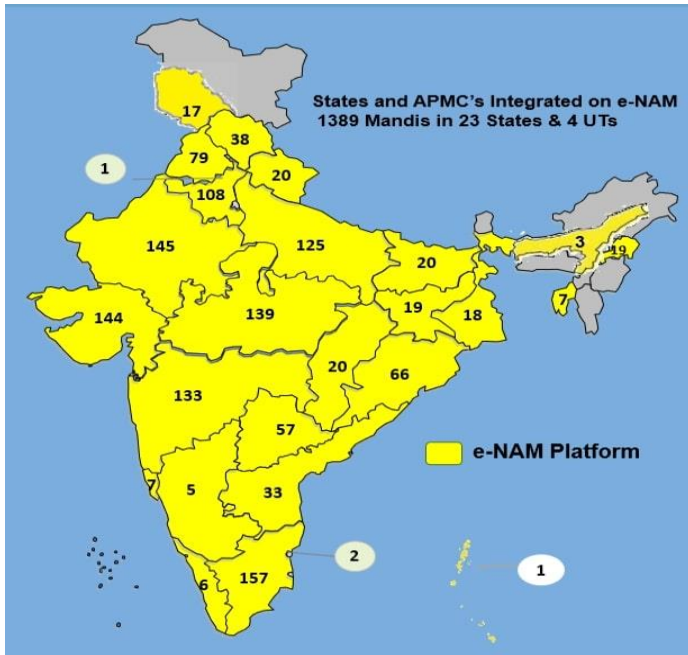
Recently, the Union government has done a feasibility study to integrate all its related platforms with Open Network for Digital Commerce (ONDC) to ensure larger benefits go to both buyers and sellers and a robust e-commerce ecosystem is built to withstand any disruption in the physical market.

Key point:

- As the government's electronic National Agriculture Market (e-NAM) has connected 1,389 mandis (agriculture market yards) across the country, an integration may help farmer-producer organisations (FPOs) to navigate both e-NAM and ONDC simultaneously to buy and sell produce,

About e NAM:

- National Agriculture Market (eNAM) is a pan-India electronic trading portal which networks the existing APMC mandis to



create a unified national market for agricultural commodities.

- The market facilitates farmers, traders and buyers with online trading in commodities.
- **Small Farmers Agribusiness Consortium (SFAC)** is the **lead agency** for implementing eNAM under the aegis of **Ministry of Agriculture and Farmers' Welfare**, Government of India.
- **Year:** 2016
- So far, **1389 APMC have been integrated into the e NAM system.**

11.7 Digi yatra

Why in the news?

Recently, Passengers say their biometric data is being collected without their knowledge or consent through the Digi Yatra initiative.

About Digi yatra:

- Digi Yatra - Digital processing of passengers at the airports.
- Passengers will be automatically processed based on facial recognition system at

checkpoints like; Entry point check, Entry in to Security Check, Aircraft Boarding, additionally this will also facilitate self-Bag Drop and Check-in, using facial recognition to identify pax and data recall.

- Digi Yatra will facilitate paperless travel and avoid identity check at multiple points.
- It is an initiative of the **Ministry of Civil Aviation.**
- **Four pillars of the digi yatra:**
 - Connected Passengers,
 - Connected Airports,
 - Connected Flying
 - Connected Systems

Issues:

- Biometric details of the passengers are taken without the knowledge of the passengers.

11.8 Bharat Pariyojana Scheme

Why in the news?

Recently, the Union Minister for Road Transport and Highways Nitin Gadkari announced greenfield corridors aimed at enhancing road connectivity in Kerala.

About Bharat Pariyojana scheme:

- Bharatmala Pariyojana is a new umbrella program for the highways sector.
- It focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps.
- The effective interventions are development of Economic Corridors, Inter Corridors and Feeder Routes, National Corridor Efficiency Improvement, Border and International

connectivity roads, Coastal and Port connectivity roads and Green-field expressways.

Key features of the scheme:

- **Improving the quality of roads** - Under this project, the construction of roads in all parts of the nation will be undertaken.
- **Total road construction** - As per the draft of the scheme, the government and the ministry will strive to complete new roads, which will add up to a whopping 34, 800 kms.
- **Integrated scheme** - The Bharatmala is the name that is given to the road development and it will include many other related schemes as well. With the completion of all the schemes, the overall success of the scheme will be guaranteed.
- **Total tenure of the program** -The central government has the plans of finishing the scheme within a span of five years. Thus, all is set for finishing the first phase before the end of 2022.
- **Segmentation in phases** - It will be divided into seven distinct phases. As of now, the first phase is under construction.
- **Construction on a daily basis** - To finish the first phase in time, the respective department has made efforts to construct at least 18 km of path on a daily basis. To beat the clock, continued efforts are being made to raise it to 30 km/day.
- **Different categories of road construction** - It has been highlighted in the official draft of the scheme that to provide better connectivity, the construction of various categories of roads will be undertaken.
- **Multi-source of funding** - One source will not be enough for funding a mammoth project. Thus, the government will have to

depend on other sources for generating adequate money to meet the expenses.

- **Nodal Ministry:** Ministry of Road Transport and Highways
- **Year:** 2015

About Greenfield corridors:

- Twenty-five Greenfield high-speed corridors have been envisaged for development under Bharatmala Pariyojana.
- Development of highspeed corridors is expected to reduce the travel time by 40-50% in selected economic nodes.

11.9 Universal Immunization Programme

Why in the news?

Recently, the National Technical Advisory Group for Immunization (NTAGI) has recommended vaccination for adolescent girls between the ages of 9 and 14.

About Universal immunization programme:

- This programme was started in **1985** to provide **universal immunization coverage across the country**.
- Under this programme, immunization is provided against **12 vaccine preventable diseases**.
- **12 diseases:** Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella (a severe form of Childhood Tuberculosis), Hepatitis B, and Meningitis & Pneumonia which is caused by Haemophilus Influenzae type B, Rotavirus diarrhea, Pneumococcal Pneumonia, and Japanese Encephalitis.
- The Government of India announced "**Mission Indradhanush**" in December **2014** in an effort to speed up the full

immunization coverage for all children and expectant women and to enhance and reenergize the program.

HPV vaccine:

- Human papillomavirus (HPV) is the most common sexually transmitted infection (STI).
- Many HPV infections cause no symptoms and 90% resolve spontaneously within two years.
- Nearly all cervical cancer is due to HPV, and two strains – HPV16 and HPV18 – account for 70% of all cases.
- The WHO's Strategic Advisory Group of Experts on Immunization (SAGE) has said that the HPV vaccine is highly effective for the prevention of HPV serotypes 16 and 18, which cause 70% of cervical cancer.

National Technical Advisory Group for Immunization (NTAGI):

- NTAGI is the highest advisory body on immunization in the country.
- It consists of independent experts who provide recommendations on vaccines after

reviewing data on disease burden, efficacy and cost-effectiveness of vaccines.

- The primary purpose of NTAGI is to provide technical resources, supplying guidance and recommendations to national policy makers and programme managers to enable them to make evidence-based immunization related policy and program decisions.
- Year of establishment: 2001

Programme for Appropriate Technology in Health (PATH):

- It is an international nonprofit organization that accelerates innovation across five platforms:
 - Vaccines,
 - Drugs,
 - Diagnostics,
 - Devices,
 - Market development.

12. PLACES IN NEWS

12.1 Mt Lewotobi Laki Laki

Why in the news?

Recently, more than 2,000 residents have been evacuated to temporary shelters amid heightened volcanic activities in a volcano in eastern Indonesia.

About Mt Lewotobi Laki-Laki:

- Lewotobi laki laki is one of the twin volcanoes located in the southeastern part of the island of Flores, Indonesia.
- Older forms of its name include Lobetabi, Lovotivo and Loby Toby.

12.2 Volcano tourism

Why in the news?

Indonesia's Marapi volcano recently erupted, killing 22 climbers who perished near the crater.

What is Volcano Tourism?

- It is the exploration and study of active volcanic and geothermal landforms.
- Volcano tourism also includes visits to dormant and extinct volcanic regions where

remnants of activity attract visitors interested in geological heritage.

About Merapi volcano, Reykjanes peninsula, Fagradalsfjall volcano, Mauna Loa:

Marapi Volcano:

- It is one of the most active volcanoes in the Sumatra region.
- It means 'Mountain of Fire'.
- It sits on the Pacific's 'Ring of Fire'.
- It is famous among the climbers.
- Indonesia totally has **127 active volcanoes**

Reykjanes Peninsula:

- It is a region in Southwest Iceland.
- It is famous as it contains a lot of volcanoes.

Fagradalsfjall volcano:

- It is an active volcano located at the Reykjanes Peninsula in Iceland.
- Fagradalsfjall is also the name for the wider volcanic system covering an area 5 kilometers (3 mi) wide and 16 kilometers (10 mi) long.

Mauna Loa:

- Mauna Loa is one of five volcanoes that together make up the Big Island of Hawaii.
- It is the southernmost island in the Hawaiian archipelago.

About Volcanoes in India:

- Barren Island in Andaman and Nicobar Islands is the only active volcano in India.
- **Others:**
 - Narcondam
 - Deccan traps
 - Baratang hills

12.3 Berbera Port

Why in the news?

Recently, Ethiopia has struck a "historic" agreement to use the main port in Somalia's breakaway region of Somaliland for shipping.

- The deal on Somaliland's Berbera port comes months after Ethiopian Prime Minister Abiy Ahmed said his country would assert its right to access the Red Sea.

Map the Somaliland Berbera port:



- It is one of the major ports in Somalia and located in Somaliland.
- It is located on the Red Sea.

Addis Ababa:



- It is the capital and largest city in Ethiopia
- It also serves as the capital of the Oromia region.
- It is highly developed and an important cultural and economic city.

12.4 Darien Gap Jungle

Why in the news?

Recently, Panama's Public Security Ministry said that around 5.2 lakh migrants crossed the Darien gap jungle.

Darien gap jungle:



- It is a thick rainforest that straddles Panama and Colombia.
- It connects American continents with Central America.
- It contains Panama's Darién Province and the northern portion of Colombia's Chocó Department.

12.5 Panama Canal

Why in the news?

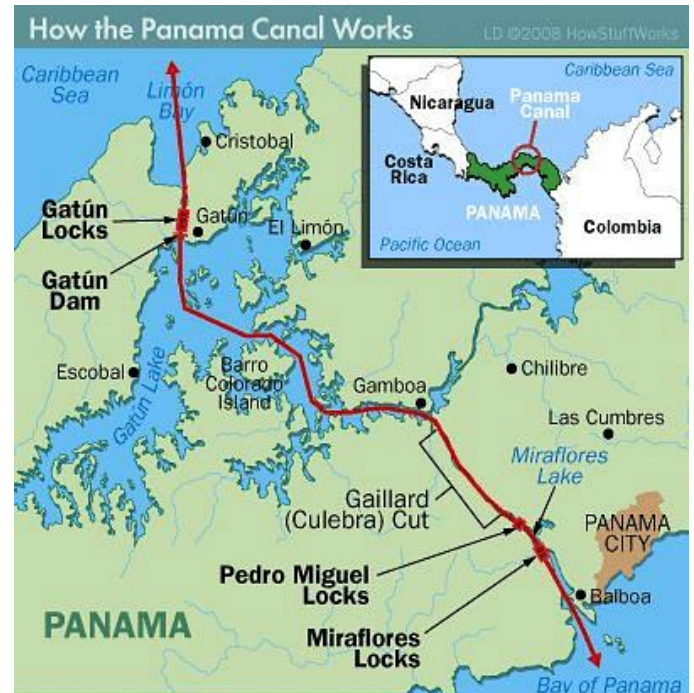
Recently, severe shortage of water in the Panama Canal paralyzes global shipping industry.

Mentioned water bodies:

- **Gatun Lake:** It is an **artificial freshwater lake** 26 meters above the sea level created by damming **the Chagres River and Lake Alajuela** to reduce the amount of excavation

work required for the canal, and then lower the ships at the other end.

About Panama Canal:



- The Panama Canal cuts across the **Isthmus of Panama** and is a key conduit for international maritime trade.
- It has been a major thoroughfare for international trade for over 100 years, connecting nearly 2,000 ports in 170 countries.
- The top origin and destination countries are the U.S., China, and Japan.
- The artificial 82-kilometer waterway connects the Atlantic Ocean with the Pacific Ocean.

Significance:

- It reduces the time for ships to travel between the Atlantic and Pacific oceans, enabling them to avoid the lengthy, hazardous route around the southernmost tip of South America via the **Drake Passage** or **Strait of Magellan**.

12.6 Yellow Sea

Why in the news?

Recently, North Korea fired several cruise missiles towards the Yellow Sea.

About Yellow Sea:



- The Yellow Sea is a marginal sea located between the Korean Peninsula and mainland China.
- It can be considered the northwestern part of the East China Sea.
- It is one of four seas named after common color terms (the others being the **Black Sea**, **the Red Sea** and **the White Sea**).
- Its name is descriptive of the golden-yellow color of the silt-ridden water discharged from major rivers.
- Rivers that flow into the yellow sea: **Yellow River, Liao River, Yalu, Hai, Changchun.**

12.7 Yanomami Indigenous land

Why in the news?

Recently, around 380 people died due to malnutrition in Yanomami Indigenous land.

About Yanomami Indigenous land:

- It is located in Brazil.
- Main tribe is the Yanomami tribe, who live in the Amazon rainforest in between Venezuela and Brazil.
- Illegal gold mining is the major issue in this land.
- Native people are forced to move to other areas.

12.8 Tuvalu

Why in the news?

Recently, the People of Tuvalu have voted in the poll to elect a new government.

About Tuvalu:



- It is one of the countries of Oceania and located in the Pacific Ocean.
- Capital: Funafuti
- It is the second least populous country in the world after Vatican City.

12.9 Khmelnytskyi

Why in the news?

Recently, **Ukraine** started to build

four new nuclear reactors in the **Khmelnyskyi region** in the western Ukraine.

Key details:

- These four nuclear reactors are built to compensate for Russia's seizure of the country's largest nuclear plant.

12.10 Gerlache strait

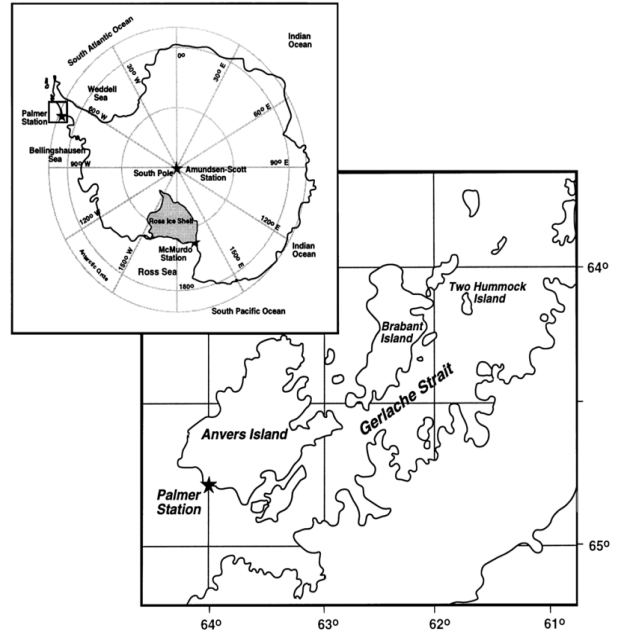
Why in the news?

Recently, expedition on Antarctic increased the focus on **Gerlache strait**.

About Gerlache Strait:

- It separates the **Palmer archipelago from the Antarctic peninsula**.
- The channel is almost 200 km long.
- On the northern end it gets as wide as 50 km and at the southern end as narrow as 10 km.

- The Belgian Antarctic Expedition, under Lt. Adrien de Gerlache, explored the strait in



January and February 1898, naming it for the expedition ship Belgica.

- The name was later changed to honor the commander himself.

13. PERSONALITIES

13.1 Karpoori Thakur

Why in the news?

Recently, President Droupadi Murmu announced that Socialist leader Karpoori Thakur would be awarded the Bharat Ratna, India's highest civilian award.

About Karpoori Thakur:

- Karpoori Thakur was born in Bihar in 1924.
- He served as Bihar's Chief Minister twice, first in 1970-71 and second in 1977-1979.
- He was a freedom fighter and incarcerated during **the Quit India Movement**.
- He is also called as **Jannayak or People's leader**.

- He was part of the anti-Emergency movement along with the other key socialist leader Jayaprakash Narayan.

- The **Mungeri Lal Commission report**, implemented during his Chief Ministership, is seen as a precursor to the Mandal Commission report implemented in the 1990s.



About Bharat Ratna:

- **Bharat Ratna** is the highest civilian award in the Republic of India.
- It was started in **1954**.
- The award is conferred in recognition of "exceptional service/performance of the highest order", without distinction of race, occupation, position or gender.
- The award was originally limited to achievements in the arts, literature, science, and public services, but the Government of India expanded the criteria to include "any field of human endeavor" in December 2011.

- The **recommendations for the award are made by the Prime Minister to the President**.
- The recipients receive a Sanad (certificate) signed by the President and a peepal leaf-shaped medallion with no monetary grant associated with the award.
- The Bharat Ratna recipients **rank seventh in the Indian order of precedence**.
- **First recipients of the award:**
 - C. Rajagopalachari, Sarvapalli Radhakrishnan, and Sir C.V Raman.

14. REPORTS AND INDEX

14.1 All India Survey on Higher Education

Why in the news?

Recently, the Ministry of Education released the All-India Survey on Higher Education.

Key points:

- The **total enrolment in higher education increased** to nearly 4.33 crore in 2021-22 from 4.14 crore in the previous academic session.
- **Female enrolments in the science stream outnumbering male enrolments**, with the overall female enrolment increased to 2.07 crore in 2021-22 from 2.01 crore in 2020-21.
- The report also said that **female Ph.D. enrolment doubled** to 0.99 lakh in 2021-22 from 0.48 lakh in 2014-15.
- In 2021-22, out of the total enrolment of 57.2 lakh students are enrolled in the science stream, with female students (29.8 lakh) outnumbering male students (27.4 lakh).

- The **enrolment of ST students increased** to 27.1 lakh in 2021-22 from 16.41 lakh in 2014-15 (an increase of 65.2%).
- Among disciplines at undergraduate level, enrolment is highest in arts (34.2%), followed by science (14.8%), commerce (13.3%) and engineering & technology (11.8%).

About All India Survey on Higher Education (AISHE):

- The **Ministry of Education** conducts this All-India Survey on Higher Education every year to provide the status of higher education in our country.
- It was first started in **2011**.
- The survey covers **all the Institutions** in the country engaged in imparting higher education.
- Indicators are educational development such as **Institution Density, Gross Enrolment Ratio, Pupil-teacher ratio, Gender Parity Index, Per Student Expenditure**.

14.2 Beyond Basics

Why in the news?

Recently, Pratham, an NGO released an **Annual Survey of Education Report (ASER)** titled Beyond Basics.

Key details:

Smartphone usage: Close to 90% of all youth have a smartphone in the household and know how to use it.

- Of those who can **use a smartphone, males (43.7%) are more than twice as likely to have their own smartphone than females (19.8%).**
- **Gender comparison in learning:** While females (76%) do better than males (70.9%) in reading a Standard II level text in their regional language, males do better than females in arithmetic and English reading.
- **Vocational training:** Only 5.6% of surveyed youth report taking vocational training or other related courses currently.
 - Youth at the college level are the most likely to be taking vocational training (16.2%).
 - The survey found adding that most youth are taking short duration courses of six months or less.
- **Enrolment:** Overall, 86.8% of 14-18-year-olds are enrolled in an educational institution.
 - There are small gender gaps in enrolment, but notable differences are visible by age.
 - The percentage of youth not enrolled is 3.9% for 14-year-old youth and is 32.6% for 18-year-olds.

- **Course streams:** Most of the people in this age group were enrolled in the Arts/Humanities streams.
 - In Class XI or higher, more than half are enrolled in the Arts/Humanities stream (55.7%) and females are less likely to be enrolled in the Science, Technology, Engineering, and Mathematics stream (28.1%) than males (36.3%).

About Annual Status of Education Report:

- The ASER report has been released by the **Pratham Education Foundation since 2005.**
- The ASER report examines the **schooling status and foundational learning of children across districts and states of rural India.**
- **Originally it was an annual publication but after 2016, it has become a biennial report.**
- ASER reports are usually referred to by the government while formulating policies.

14.3 Startup Ranking

Why in the news?

Recently, the Union Government has released the States' Startup Ranking.

Key details:

- **Startup ranking is categorized into two parts.**
 - Category A (Population more than one crore)
 - Category B (Population less than one crore)
- **Category A:**

- Best Performer: Gujarat, Karnataka, Kerala, Tamil Nadu.
- Emerging Startup states: Chattisgarh, Delhi, Jammu and Kashmir.

- **Category B:**

- Best performer: Himachal Pradesh
- Emerging Startup states: Chandigarh, Daman Diu and Dadra Nagar Haveli, Ladakh, Mizoram, Puducherry, Sikkim.

About States Startup Ranking:

- This startup ranking initiative was started to provide impetus for the startup ecosystem.
- It is released annually by the **Ministry of Commerce and Industries**.
- It was first started in **2018**.
- **Classification of states:**
 - Best performer
 - Top performer
 - Leaders
 - Aspiring leaders
 - Emerging startup ecosystems

14.4 World Employment and Social Outlook

Why in the news?

Recently, the **International Labour Organisation (ILO)** released its 'World Employment and Social Outlook: Trends 2024' report.

Key points:

- The Unemployment rate will increase in 2024 over 2023.

- Social inequalities will be wider than ever before.
- The global unemployment rate in 2023 was 5.1%, a modest improvement in 2022.
- The global jobs gap also saw improvements in 2023, but, at close to 435 million, remained elevated.
- The rate of increase of real wages is not in pace with inflation rate.
- In 2023, around one million people were dragged into the below poverty line of \$2.15 per day.
- **Only China, the Russian Federation and Mexico enjoyed positive real wage growth in 2023.**
- The strongest wage gains were in China and the Russian Federation, where labor productivity growth was among the highest in G20 countries in 2023.
- Real wage growth in India and Türkiye was also positive, but the available data refer to 2022, relative to 2021.

About 'World Employment and Social Outlook:

- This report consists of employment and related social situations across the globe.
- It is released annually by **the International Labour Organisation**.

What is Inflation?

- The increase in the price of goods and services over a period of time is called inflation.

Real wage:

- Real wages are wages adjusted for inflation, or, equivalently, wages in terms of the amount of goods and services that can be bought.

Purchasing Power Parity (PPP):

- It is the conversion rate of the currency of any country to the currency of another country so that the same particular product or the same particular service can be purchased in each of the countries.

14.5 Human Rights Watch Report

Why in the news?

Recently, the Human Rights Watch released its annual global report.

Key points:

- Many countries are keeping silent on wars because of political expediency.
- Selective outrage against some groups sends a message that some people's lives are more important than other people.
- It cited the failure of many governments to speak out about the Chinese government's repression and control over civil society, the internet and media.
- Chinese authorities' cultural persecution and arbitrary detention of a million Uighurs and other Turkic Muslims amount to crimes against humanity.
- The EU circumvents its human rights obligations to asylum seekers and migrants, "especially those from Africa and West Asia.
- India's "**democracy has slid toward autocracy**" under Prime Minister Narendra Modi.

About Human Rights Watch (HRW) Report:

- Human Rights Watch is an international **nongovernmental organization**.

- It was founded in 1978 as 'Helsinki **Watch**' to investigate rights abuses in the countries that signed the **Helsinki accord**.
- Currently, its ambit has been enlarged to more than 100 countries.
- **Headquarters:** New York

14.6 Corruption Perception Index

Why in the news?

Recently, the **Transparency International** released Corruption perceptions index 2023.

Key details:

- **India ranked 93 out of 180** countries on the corruption perceptions index for 2023.
- In 2022, India's rank was 85.
- India's overall score was 39, which is one point lower than the 2022 value 40.
- India sees further narrowing of civic space, including through the passage of a (telecommunication) bill that could be a 'grave threat' to fundamental rights.
- **Ranks of India's neighbors:**
 - Pakistan - 133
 - Bangladesh - 149
 - Bhutan - 26
 - Sri Lanka - 115
 - China - 76
 - Myanmar - 162
- **Top 3 countries:** Denmark, Finland, New Zealand.

About Corruption perceptions index:

- The index, which ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and

business people, uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean.

- It is released annually by the **Transparency International**.

14.7 Global Innovation Index

Why in the news?

Recently, PM Modi in his Man Ki Bat episode, talked about India's 40th rank in the Global Innovation Index.

About Global Innovation Index:

- The Global Innovation Index was released by the **World Intellectual Property Organization (WIPO) every year**.
- The Global Innovation Index (GII) takes the pulse of innovation against a background of an economic and geopolitical environment fraught with uncertainty.
- It reveals the most innovative economies in the world, ranking the innovation performance of around 132 economies while highlighting innovation strengths and weaknesses.
- India ranks **40th place** in the latest index in 2023.
- India's rank in **2015 was 81**.
- **S&T clusters:** Compared to China's 24 and US's 21, India has only 4 S&T clusters among the world's top 100. These are **Chennai, Bengaluru, Mumbai and Delhi**.
- Top 3 innovative countries: **Switzerland, Sweden, USA**.

World Intellectual Property Organization (WIPO)

- It established in 1967; Membership: 193 member states; Headquarters: Geneva, Switzerland
- It is a global forum for intellectual property policy, services, information and cooperation.
- It is a self-funding agency of the United Nations, with 193 member states.
- Its mandate, governing bodies and procedures are set out in the WIPO Convention, which established WIPO in 1967

14.8 Population decrease China

Why in the news?

Recent report states that China's population fell by 2 million people in 2023 in its second straight annual decrease, as births dropped for the seventh straight year and deaths jumped following the end of COVID19 restrictions.

Key details:

- India is the most populated country in the world, followed by China.
- According to census 2011, the median age in India was 24.9. In 2022, according to World Population Projections, India's median age was 28.7, making it a young country.

Population control policies of the Indian government:

- India is the first country in the world that has introduced state sponsored family planning programmes in 1951.
- National Population Policy was introduced in 2000 to control the increasing population trend.
- Mission Parivar Vikas is implemented in 13 states to increase the access to contraceptives and family planning services.

MAINSTORIES

1. POLITY AND GOVERNANCE

1.1 Languages in Indian judiciary

Why in the news?

Recently, the Supreme Court's monumental project of translating all of its 36,000 judgments into Scheduled Languages achieved unprecedented speed.

- The **E-SCR portal** started with just 2,238 translated judgments in January 2023 and ended the year with over 31,000.

Why do we need a translation project?

- To break the colonial mindset or Englisiation of the judiciary.
- To facilitate the legal awareness among the common people
- To encourage legal research in vernacular languages among young lawyers
- To increase the legal literacy among the common people
- To break the linguistic barrier in the judiciary system
- To make law and justice system more accessible to common citizen

Benefits:

- **Improve transparency:** This translation project will improve transparency and accountability in the judicial system.
- **Access to justice:** It can improve the access to justice among the common people.
- **Helpful to lawyers:** Translations aid lawyers (especially in local courts) who primarily handle cases in regional languages.
- **Legal awareness:** Translations can educate the general public about legal precedents and principles, fostering a better understanding of the law of the land.
- **Aid litigants:** This project would aid litigants, who after fighting their cases for years, were left unable to read the judgments in their own cases for the sole reason that they did not know English.
- **Legal research:** Accessible translations help with legal research, allowing for reference and comparison of precedents.

Measures taken for this project:

- **Supreme Court Vidhik Anuvaad Software (SUVAS)** is an AI-powered translation tool to translate all the SC judgements into scheduled languages.

- **Common core vocabulary:** The Bar Council of India's Bharatiya Bhasha Samiti, chaired by Justice Bobde, is currently working on creating this common core vocabulary for all Indian regional languages.

Challenges in translation project:

- **Neglection of regional languages:** More thrust in this translation project is being given to Hindi and other regional languages have been neglected.
 - Eg. Totally 80% of the SC judgements have been translated in Hindi, but only 4% of the cases have been translated to Kannada.
- **Dilemma in the purpose of the translation project:** The lawyers and legal experts have raised questions on how these translated judgments will be useful when High Courts are not yet permitted to conduct proceedings in regional languages except in Hindi-speaking States.
- **Incorrect translations:** In some translations, the judgements have been translated incorrectly and inaccurately.
- **No standardized glossary:** Apart from Hindi, there is no standardized glossary of legal terminology in many other regional languages to facilitate uniform translations from English, which has already led to incoherent translations in some languages such as Tamil.
- **Lack of experts:** There is a lack of expert translators who could get the translation done accurately.

Way forward:

- **Nuanced translations:** More translations could be done in other vernacular languages apart from Hindi.
- **Legal experts translation:** Legal experts with a strong base in regional languages could be used in this translation mission.
- **More thrust to common vocabulary:** The Union government's common core vocabulary project should be given more thrust.
- **Use of regional languages in the High Courts:** Both the Union government and the Supreme Court could decide to agree to the use of regional languages in the high courts.
- **Vertical extension of the translation mission:** This translation project of the SC can be introduced in the High Courts also, where only a higher number of cases of the common people are happening.

Pros and cons of having regional languages in High courts:

- **Pros:**
 - Easier access to justice by common citizens
 - Transparent judicial process
 - It will reduce reliance on legal interpreters
 - More nuanced understanding legal concepts in the proceedings

- **Cons**

- Establishing common standard will be difficult
- It may cause regional bias, with some specific groups could get benefits
- Translation of English common legal languages into vernacular languages will be difficult.

Languages in the subordinate courts:

- The state governments can declare any language as alternative to English in the court proceedings.
- But the judgements and decree should be made only in English.

Government stand:

- The Union government has asked the view of the Chief Justice of India for using regional languages in the High Courts.
- But the SC has decided against the use of regional languages.
- The Union government also has agreed with this decision of the Supreme Court.

Languages in Indian judiciary:

- **Article 348(1)(a)** states that unless Parliament by law provides otherwise, all proceedings before the Supreme Court and in every High Court shall be conducted in English.
- **Article 348(2)** provides further that notwithstanding the provisions of Article 348(1), the Governor of a state may, with the previous consent of the President, authorize the use of Hindi or any other language used for any official purpose, in proceedings in the High Court.
 - States of Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh have already authorized the use of Hindi in proceedings before their respective high courts and taking a cue, Tamil Nadu is also working in that direction – to authorize the use of Tamil before its high court.
- A further provision states that nothing in this clause would apply to any judgment, decree, or order made by the High Court.
- Therefore, the Constitution recognizes English as the primary language of the Supreme Court and the High Courts, with the caveat that when some other language is used in the proceedings of High Courts, judgments of the High Courts must be delivered in English.

Official Languages Act 1963:

- It empowers the Governor of a state to, with previous consent of the President, authorize the use of Hindi/the official language of the state, in addition to English, for the purpose of any judgment, decree or order passed by the High Court of that state.
- It further provides that where any judgment/decreed/order is passed in any such language it shall be accompanied by a translation of the same in English.
 - Read with the constitutional provisions, it is clear that primacy is given to English even by this Act.
- The Official Languages Act makes no mention of the Supreme Court, where English is the only language in which proceedings are conducted.

1.2 Sub categorization of castes

Why in the news?

Recently, a seven-judge constitution bench headed by Chief Justice of India D Y Chandrachud will start to hear the case pertaining to the sub-categorisation among Scheduled Castes (SCs).

What is the issue?

- States have argued that there are some castes that are grossly underrepresented despite reservation in comparison to the so-called dominant scheduled castes.
- They want to create a separate quota for some castes within the SC quota of 15% to ensure that the benefits are equitably distributed among all castes.
- The top court will decide if states have the power to create these sub-classifications when providing reservations or if such power is vested only with the President.

Why is caste sub categorization necessary?

- **Underrepresentation:** Some castes within the Scheduled Caste list are underrepresented in the educational institutions and Government jobs.
- **Equal distribution of benefits:** To ensure the equal distribution of economic benefits of the reservation to all the castes.
- **Social empowerment:** To ensure the socio-economic empowerment of all the castes.
- **Address graded inequality:** It will address the graded inequality issue in the scheduled castes. Because, some communities within the SC category had better access to basic facilities and had better socio-economic status.

Issues:

- **Against right to equality:** Sub categorization violates the constitutionally mandated fundamental right of equality.
- **Political appeasement:** The issue of sub categorization is raised only by the political parties and also for vote bank appeasement.
- **Complex process:** The Supreme Court verdict in 2018 suggested creamy layer concept, this has added more complexity to the existing issue.
- **Internal divisions:** Sub-categorization may lead to internal divisions and disputes among SC communities.
- **Dilution of community movement:** Intra group disputes may lead to the dilution of their collective social and political identity.
- **Extensive data requirement:** Identification and exclusion of communities requires extensive data proof.

- **Different socio-economic status:** The Supreme Court said that only the President can make the changes in the SC sub categorization.
 - Uniform sub categorization across the communities cannot be a suitable measure, as different communities possess different socioeconomic status in different regions.

Way forward:

- **Creamy layer concept:** Creamy layer concept can be an effective instrument to filter out the SC people in the reservation scheme.
- **Individual basis exclusion:** Instead of the sub categorization of the whole community, criterias should be developed based on individual basis.
- **Execution power to state governments:** State governments can be given powers to identify the people based on some criterias.
- **Judicial monitoring:** Judicial monitoring is important to ensure that the states are not implementing this idea for their political purpose.

Supreme Court judgements:

- **E.V. Chinnaiah v State of Andhra Pradesh:**
 - The Court held that the sub-classification would violate the right to equality by treating communities within this category differently and said that the SC list must be treated as a single, homogenous group.
 - The court also drew attention to Article 341 of the Constitution which gives the President the power to create a list of SC communities for the purposes of reservation.
 - The five-judge bench held that this meant states did not have the power to “interfere” or “disturb” this list, including through sub-classification, and that doing so would violate Article 341.
- **Jarnail Singh v Lachhmi Narain Gupta:**
 - The Supreme Court upheld the concept of “creamy layer” within SCs too.
 - The ‘Creamy layer’ concept puts an income ceiling on those eligible for reservations.
 - While this concept applies to Other Backward Castes (OBC), it was applied to promotions of SCs for the first time in 2018.

1.3 Hate speech

Why in the news?

Recently, the Supreme Court said authorities need to be “conscious that no incitement to violence and hate speech are permissible”.

What is Hate speech?

- The 267th report of the Law Commission said that it is an act of incitement to hatred against a particular set of people defined in terms of caste, religion, gender, etc.

Causes of Hate Speech:

- **Ethnic and religious tensions:** India is a diverse nation with many distinct ethnic and religious communities. Violence and hate crimes frequently result from these tensions.
- **Absence of Political Will:** Despite the existence of laws and regulations to prevent hate crimes, the lack of political will to properly enforce them has produced a climate where such acts are acceptable.
- **Misinformation :** The spread of hate speech and false information on social media can escalate tensions and facilitate the execution of hate crimes.
- **Prejudice:** Preconceived negative opinions about a particular group of people based on stereotypes or generalizations can lead to hate speech.
 - Eg. Some forms of negative opinion are prevailing against Muslim communities among some groups in India.
- **Mob mentality:** People may be more likely to engage in hate speech if they are surrounded by others who do the same.
- **Social media emergence:** Social media emergence has become a perfect platform for hate speech.
 - It provides anonymity to the people who use social media platforms for hate speech.
- **Political purpose:** Hate speech can be used by politicians and other leaders to divide populations and gain power.

Government measures against hate speech:

- **Constitutional reasonable restrictions:** Article 19 provides freedom of speech and expression. At the same time it provides some reasonable restrictions to balance the use of this article 19(1).
- **Indian Penal Code:**
 - Section 153A:
 - Punish acts that cause enmity and hatred between groups.
 - Section 295A:
 - Deals with punishing acts which deliberately or with malicious intention outrage the religious feelings of a class of persons.
 - Sections 505(1) and 505(2):
 - Make the publication and circulation of content that may cause ill will or hatred between different groups an offense

- **Representation of People's Act (RPA), 1951:**
- Section 8:
 - Prevents a person convicted of the illegal use of the freedom of speech from contesting an election.
- Section 123(A):
 - Bars the promotion of feelings of enmity or hatred between different classes of citizens of India on the grounds of race, religion, community, caste, or language in reference to elections and include it under corrupt electoral practices
- **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989:**
 - Prevents hate speech targeting Scheduled Caste or a Scheduled Tribe in any place within public view.

Supreme Court judgements:

- **Shaheen Abdulla v. Union of India and Ors, 2022:**
 - The Supreme Court (SC) of India observed that there cannot be fraternity unless different religious communities are amenable to live in harmony.
 - The SC has expressed concern over the growing incidents of hate speeches in the country and has directed the governments and police authorities to take suo motu action in such cases without waiting for the lodging of formal complaints.
- **Pravasi Bhalai Sangathan v. Union of India, 2014:**
 - The SC did not penalize hate speech as it does not exist in any of the pre-existing legislation in India. Instead, the Supreme Court requested the Law Commission to address this issue in order to avoid its stepping into the forum of judicial overreach.
- **Shreya Singhal v. Union of India, 2015:**
 - Issues were raised about Section 66A of the Information Technology Act, 2000 relating to the fundamental right of free speech and expression guaranteed by Article 19(1) (a) of the Constitution, where the Court differentiated between discussion, advocacy, and incitement and held that the first two were the essence of Article 19(1).

Challenge to curb hate speech:

- **No universal definition:** There is no universal definition of hate speech. This is a hurdle to establish clear guidelines against hate speech.
- **Anonymity:** Most of the hate speeches are happening in social media and mostly they are anonymous in nature. This anonymity is a hurdle to find the online sources of the hate speech content.
- **Political patronage:** Most of the hate speeches are happening with the support of political parties. So, it impedes the process that would address the hate speeches.

- **Long judicial process:** Judicial process against hate speeches takes a long time.
- **Lack of resources and legal framework:** India lacks the resources and legal framework to address hate speech effectively. This makes it difficult to enforce laws and regulations.

Way forward:

- **Updated legal framework:** The existing legal frameworks should be updated and be made suitable and covering the current modes of hate speeches.
- **District monitoring mechanisms:** District level committees can be formed to identify and address the hate speeches.
- **Technical upgrade:** Effective and technically evolved social media monitoring mechanisms can be established to address the hate speeches in social media.
- **Address political parties patronage:** The Election Commission of India should effectively monitor the political parties to address the nexus between political parties and hate speech sources.
- **Awareness:** Legal and educational awareness should be promoted among the people about the existing legal provisions against hate speech.

2. INTERNATIONAL RELATIONS

2.1 India Italy relationships

Why in the news?

Recently, the Union Cabinet chaired by the Prime Minister, Shri Narendra Modi has given its ex-post facto approval to the proposal of the Ministry of External Affairs to sign and ratify the Migration and Mobility Agreement between the Government of the Republic of India and the Government of the Italian Republic.

Multiple aspects of India Italy relationships:

Economic and trade relations:

- The bilateral trade between India and Italy registered at Euro 14.88 billion in 2022.
- The balance of trade remains in India's favor with Euro 5.24 billion.
- Italy is India's 4th largest trading partner in the EU, after Germany, Belgium and the Netherlands.
- Indo-Italian Joint Economic Commission Cooperation (JCEC) has been in existence since 1976.

Cultural relations:

- India and Italy are ancient civilizations with rich cultural heritage. The classical languages, **Sanskrit and Latin both belong to the Indo-European language family.**

- People of these two ancient civilizations have known, interacted and traded with each other for over 2000 years.
- Italian port cities were important trading posts on the spice route.
- The **Venetian merchant Marco Polo**, during his travels to the east, also traveled to India in the 13th century and wrote about his experiences.

Political relations:

- Political relations between India and Italy were **established in 1947**.
- In March 2023, India and Italy elevated their relationship to a **Strategic Partnership**.
- The **2020-2025 Action Plan** was adopted that set an ambitious agenda for an enhanced Partnership between the countries.

Security relations:

- Italy has also deployed an official from its Embassy for the **Information Fusion Center – Indian Ocean Region (IFC-IOR)** in February, 2023 to enhance maritime security and to counter anti-piracy operations across the Indian Ocean Region.
- The **India-Italy Military Cooperation Group (MCG)** is a forum established to boost defense cooperation between the both countries.

Science and Technology relations:

- Agreement on **Science & Technology Co-operation** was signed to improve the science ecosystem in other countries.
- India and Italy also has signed an agreement to increase the adoption of **AYUSH medicines**.
- The first **India-Italy Innovation Day** was held virtually on 14th July 2021.

Indian community:

- The Indian community in Italy (estimated at 180,000 including PIOs) is the **third largest community of Indians** in Europe after the UK and the Netherlands.

Multilateral support:

- Italy has extended support to India in crucial elections including in the International Court of Justice, UNESCO Executive Board, International Maritime Organization and FATF.
- They also supported our entry into the Wassenaar Arrangement and Australia Group.
- Italy has supported India's initiative for establishing a **Coalition of Disaster Resilient Infrastructure (CDRI)**.

Challenges:

- **Mariner's issue:** The bilateral ties faced a setback in 2012, when two Italian marines were accused of killing two Indian fishermen in February that year.
- **VVIP chopper issue:** Cancellation of VVIP chopper deal has worn down the relationship.

- **Lower trade:** India and Italy have been trade partners since the Roman era, and so it is unfortunate that India has such a low volume of trade and investment.

Way forward:

- **Increase bilateral trade value:** Both countries can take measures to improve their bilateral trade value.
- **Free Trade Agreement:** A Free Trade Agreement would be a perfect starting point to improve bilateral trade.
- **S&T coordination:** India should more effectively coordinate with Italy in the science and technology sector.
- **Use multilateral forums:** Both countries can use multilateral events like CoP meetings, G7 and G20 countries meetings to improve their bilateral ties.

2.2 International Court of Justice

Why in the news?

Recently, the International Court of Justice (ICJ), the UN's highest judicial body, held hearings in a case instituted by South Africa, accusing Israel of committing genocide in Gaza.

Importance of ICJ in International disputes:

- **Address human rights issues:** ICJ's rulings often resolved some human rights and environmental related matters.
- **Peaceful case resolve:** It plays an important role to resolve the conflicts between the member countries, otherwise the issue would have been resolved through war.
- **Ensures participation:** It ensures the participation of powerful countries in the proceedings.
 - **Eg. China participated in the South China Sea dispute.**
- **Clarification of legal issues:** Even though ICJ's advisory opinions are non-binding, they carry significant weight in clarifying legal issues.
- **Compensation order:** The ICJ has the authority to order reparations and compensation for damages caused by one state to another.

About International Court of Justice (ICJ):

- It is the UN's highest judicial body.
- Year: 1945
- It was established under the UN charter to resolve international conflicts.
- Headquarters: The Hague, Netherland.
- It consists of 15 judges. They are selected by the UN General Assembly and the UN Security Council for a 9-year term.

Challenges:

- **Poor enforcement mechanism:** Although the court's decisions are legally binding and cannot be appealed against, they are often defied in the absence of an enforcement mechanism of its own.

- **Power politics of big countries:** Compliance of the ICJ rulings are often at the mercy of the power politics of the permanent members of the Security Council.
- **Poor participation rate:** Non-participation of powerful member states in the ICJ proceedings.
 - **Eg. Russia did not participate in the ICJ proceedings in the case filed by Ukraine.**
- **Slow and time-consuming proceedings:** Another issue is the ICJ's slow and bureaucratic procedure resulting in rulings taking years to be pronounced.
- **Poor impartiality among the judges:** Judges are often aligned towards the stance of their respective countries in international matters.

Other international judicial adjudication mechanism:

International Criminal Court:

- It is an intergovernmental organization and international tribunal.
- It is the only international court that can prosecute individuals for the crimes of genocide, crimes against humanity and war crimes.
- It is different from the International Court of Justice, which is an integral part of the UN.

Way forward:

- The enforcement mechanisms of the ICJ rulings should be strengthened.
- Diplomatic efforts can be taken by the United Nations to integrate more countries into the ICJ judicial mechanism.
- ICJ can ensure the greater use of alternate dispute resolution mechanisms to resolve disputes between countries.
- Judges should be restricted from hearing cases related to their own countries.
- Financial support, legal assistance can be given to developing countries to effectively use the ICJ mechanism.

3.ECONOMY

3.1 Aquaculture

Why in the news?

Recently, some environmental activists said that intensive aquaculture activity in Andhra Pradesh led to groundwater contamination.

Key points from the news:

- The State, with a 974-kilometer coastline, the second longest in the country, had 2.12 lakh hectares of aquaculture area as of 2021.
- Andhra Pradesh produced 46.23 lakh metric tonnes (MT) of fish and shrimp in 2021, the highest in

the country, and 6.40 lakh MT of the country's overall shrimp production of 8.52 lakh MT in the same year.

- A majority of farmers in coastal areas, where paddy is mostly grown, battered by frequent cyclones and low yield, turned to aquaculture for income and became successful.
- Aquaculture in coastal areas comes under the purview of the Coastal Aquaculture Authority Act, 2005.
- It must be taken up in designated aquaculture zones, and as per the rules, officials must ensure that agriculture, salt-pan areas, mangroves, wetlands, forest lands, and village lands are not used.

How intensive aquaculture affects the environment?

- The fecal matter of shrimp and fish that settle at the bottom of the pond have **ammonia**, which gets mixed with the air when a farmer cleans the pond. Its concentration is high during harvesting that takes place every twice or thrice a year. This affects the vegetation nearby.
- Shrimp farming needs brackish water. But in inland areas saline water is accessible through sink borewells 50 feet. So a **high level of water exploitation** is happening there.
- Often farmers use **unlabelled chemicals** in the open market to prevent diseases in the aquaculture.

What is aquaculture?

- Aquaculture is the breeding, rearing, and harvesting of fish, shellfish, algae, and other organisms in all types of water environments.
- There are two main types of aquacultures, marine and freshwater.

India's condition in aquaculture:

- India ranks **second** in aquaculture production.
- The share of **inland fisheries** and aquaculture is **85 percent in total fish production**.
- Freshwater aquaculture contributes to over 95 percent of the total aquaculture production.
- The **freshwater** aquaculture comprises the culture of **carp fishes** and Ition, in **brackishwater** sector, the aquaculture includes culture of **shrimp** varieties mainly.

Benefits of Aquaculture:

- **Diversified food:** Aquaculture delivers nutritious and diverse food to a growing world population.
- **Fish stock preservation:** Aquaculture reduces the need to catch more wild fish to meet the increasing demand for fish and therefore contributes to preserving fish stocks.
- **Reduced carbon footprint:** It can provide food that is fresh and local. Supplying food closer to the consumer allows reducing carbon emissions in transport.
- **Low pressure on resources:** Aquaculture can produce food and feed with a lower climate and environmental impact than other types of farming. So we can reduce the pressure on land and farming.

- **Income source:** Aquaculture activities can be a source of income and development for remote coastal and rural communities where few alternatives are available.
- **Biodiversity conservation:** Certain types of aquacultures contribute to the preservation of ecosystems and biodiversity.
 - e.g. Mollusc farming, extensive aquaculture in ponds and wetlands, and the farming of algae and other invertebrates.

Challenges in improving its contribution to Economy:

- **Lack of input availability:** Farmers could not get legal chemicals or fertilizers for aquaculture. So they rely on unlabelled chemicals, which is a threat to the environment.
- **Groundwater exploitation:** To cultivate shrimps in inland areas, saline water is required. So, farmers are getting water from deep bottom of 50 feet through borewells. It leads to groundwater exploitation and salinization of groundwater.
- **Diversion of agricultural lands:** For commercial agriculture activity, a large number of agricultural lands are diverted to aquaculture farming.
- **Health issues:** Intensive aquaculture practices lead to high concentration of ammonia gas in the air.
- **Lower productivity:** Slow adoption of new technologies leads to lower productivity in India.
- **Lack of extension services:** The aquaculture and fisheries sector lacks sufficient extension services, limiting access to vital information and support for farmers and fishermen.

Measures taken by govt:

- **Blue revolution 2.0** promotes inland fishing and various aquaculture activities in a sustainable manner.
- **PM Matsya Sampada Yojana** aims to enhance inland fisheries and aquaculture by improving output, productivity, quality, technology, infrastructure, value chain, and traceability.
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF)** has been established for providing concessional finance for the creation and strengthening of fisheries infrastructure facilities, including inland fisheries and aquaculture.
- **Kisan Credit Card (KCC)** facility was extended to fishermen and fish farmers to assist them in meeting their working capital needs for fisheries and aquaculture.

Way forward:

- **Aquaculture extension services:** Farmers should get awareness about the benefits of aquaculture and also newer technologies should be extended through farming extension services.
- **Input availability:** Government can ensure the availability of legal inputs to the aquaculture activities.
- **High focus on small and marginal farmers:** Proper incentives like monetary support can be given

to the small and marginal farmers to adopt aquaculture.

- **Ensure Supply chain:** Supply chain facilities should be strengthened to ensure high profit and waste reduction.
- **Ensure legal aquaculture practice:** Governments also ensure proper monitoring mechanisms on damages or issues like conversion of agricultural lands, high concentration of ammonia gas in the locality and groundwater contamination.

Top Country and State's Performance in Aquaculture Lands.:

- **Top aquaculture producers:** China, India, Indonesia.
- **Top aquaculture states in India:** Andhra Pradesh, Gujarat, Odisha, Tamil Nadu, West Bengal.
- The inland fisheries and aquaculture production has doubled as it increased from 61.36 lakh tons at the end of 2013-14 to 121.12 lakh tons at the end of 2021-22.
- The shrimp production of the country increased by 267% from 3.22 lakh tons at the end of 2013-14 to a record 11.84 lakh tons (provisional figures) at the end of 2022-23.

3.2 Food Processing Industry

Why in the news?

Recently, Union Minister of Commerce & Industry, Consumer Affairs, Food & Public Distribution and Textiles, Shri Piyush Goyal inaugurated the 'Indus Food 2024', exhibition to showcase India's vibrant and diverse food ecosystem, being held in India Exposition Mart, Greater Noida.

What is Food processing?

- Food processing, any of a variety of operations by which raw foodstuffs are made suitable for consumption, cooking, or storage.

Potential of food processing industry in India:

- India's food processing sector is one of the largest in the world and its output is expected to reach \$535 Bn by 2025-26.
- Unregistered food processing sector supports employment to 5.1 Mn workers as per the NSSO 73rd Round report 2015-16 and constituted 14.18% of employment in the unregistered manufacturing sector.
- Major sectors constituting the food processing industry in India are processed fruits and vegetables, RTE/RTC, mozzarella cheese, processed marine products, edible oils, beverages, and dairy products.
- This sector accounts for 13% of exports and 6% of industrial investment.

Advantages:

- **Agri commodity hub:** India is the largest producer of some important crops and marine items.
 - FPI can effectively use this advantage.

- **Processed food supply:** India's huge consumer base and its demand for processed food can be monetized through these food processing industries.
- **Economic growth:** Growth of the food processing sector will increase the overall economic growth.
- **Employment generation:** Food processing sector provides employment opportunities to around 15% of the total employment creation of the country.
- **Entrepreneurship:** This sector has the potential to provide higher level of entrepreneurship opportunities to the people.

Challenges:

- **Lack of Cold Chain and Storage:** Inadequate cold storage and transportation facilities result in significant post-harvest losses of perishable goods. This not only affects food quality but also impacts the income of farmers.
- **Food safety issue:** Contaminated or adulterated food products can harm public health and damage the reputation of the sector.
- **Complexity in regulation:** The food processing industry is subject to a complex web of regulations, licenses, and permits, which can be challenging for businesses to navigate.
- **Poor supply chain linkages:** India's agriculture market has a long and fragmented supply chain that results in high wastage and high costs, especially due to seasonality, perishability, and variability of produce.
- **Unorganized nature:** Around 70% of the total food processing sector is unorganized in nature. This is a hurdle for the government to improve the sector.

Government measures:

- **PM Kisan Sampada Yojana:** This scheme was started to modernize and expand existing food processing units with a view to increasing the level of processing.
- **Production Linked Incentive Scheme for food processing sector:** The PLI scheme was conceived to scale up domestic manufacturing capability, accompanied by higher import substitution and employment generation in the food processing sector.
- **PM Formalisation of Micro Food Processing Enterprises:** The PMFME scheme aims to enhance the competitiveness of new and existing individual micro-enterprises in the unorganized segment of the food processing industry and promote formalization of the sector.
- **Priority sector lending norms:** Inclusion of food & agro-based processing units and cold chain as an agricultural activity under Priority Sector Lending (PSL) norms in April 2015.
- **Liberalized FDI policy:** Allowing 100% Foreign Direct Investment (FDI) approval under automatic route for the food processing sector.
- **Food processing fund:** Setting up a Special Food Processing Fund of Rs. 2000 crore with National Bank for Agriculture and Rural Development (NABARD).

Way forward:

- **Infrastructure development:** Infrastructure in this sector should be improved in alignment with the modern requirements.
- **Improve Supply chain:** Supply chain bottlenecks should be rectified and schemes like PLI should be implemented effectively.
- **Formalization:** The food processing sector should be organized and formalized.
- **Private sector participation:** Private sector should be incentivised to effectively participate in the food processing sector.
- **Regulatory measures:** Regulations and policies on the food processing sector should be made uniform across the country and should be simple.

4. ENVIRONMENT

4.1 Climate change and Urban areas

Why in the news?

- Recently, a case study of climate change impacts on Bhubaneswar of Odisha has been released.

Why is heat stress high in urban areas?

- **Reduced vegetation cover:** Vegetation cover in the urban areas are being reduced due to various reasons.
- **Concrete materials:** Trapping of heat by the concrete and asphalt materials used to build the city.
- **Decreased natural surface:** The decreased evapotranspiration due to the replacement of natural surfaces with artificial impervious surfaces is also contributing to the observed warming.
- **Reduced wind speed:** Reduction in the wind speed limits the dispersal of heat from the cities.
- **Artificial Heat Sources:** The presence of heat sources like air conditioners, industrial processes, and waste heat from buildings and vehicles further exacerbates this.

Measures taken:

- **SDG goal:** Development of environmentally sustainable cities has been added as one of the sustainable development goals.
- **Urban 20 initiative:** Urban 20 sub forum has been created under the G-20 to discuss and address the climate change effects on urban areas, which includes addressing heat stress in urban areas.
- **Smart cities project:** Under the Smart Cities project, environmentally sustainable practices such as plantations, environment friendly fuel usage are encouraged.
- **Green building promotion:** Green Rating for Integrated Habitat Assessment (GRIHA), was jointly developed by TERI and the Ministry of New and Renewable Energy to promote green and sustainable building in the urban areas.

Way forward:

- **Climate resilient cities:** Building climate resilient smart cities is important to reduce the effects of climate change in urban areas.
- **Sustainable urbanization model:** Smaller cities, which have the potential to become a metropolitan city should have a proper sustainable development model.
- **Cool Roofs and Pavements:** Implementing cool roofs and pavements, which reflect sunlight rather than absorb it, can reduce heat absorption in urban areas.
- **Increase green coverage:** Green coverage must be increased like plants growing on the roofs of buildings.

4.2 Deforestation

Why in the news?

According to the recent report, Telangana tops the country in deforestation by permitting axing of over 12 lakh trees by 2020.

What is Deforestation?

- Deforestation refers to the decrease in forest areas across the world that are lost for other uses such as agricultural croplands, urbanization, or mining activities.

Causes:

- **Climate change:** The biggest contributor to increased deforestation is climate change, with 10 million hectares of land getting affected every year.
- **Population pressure:** India, being the largest populated country, has to compensate for the increase in residents, this has come at a cost in the way of deforestation.
- **Cattle rearing and agriculture:** An annual destruction of 21,05,753 hectares has been attributed to cattle, the agricultural product most responsible for deforestation.
- **Shifting cultivation:** Large forests in India are deforested due to the practice of shifting cultivation.
- **Energy requirements:** Firewood has been used as a source of energy for cooking, heating, etc. Almost 44% of the total global wood produced fulfills the fuel requirements of the world.
- **Industrial purposes:** Wood, the versatile forest produce, is used for several industrial purposes, such as making crates, packing cases, furniture, matchboxes, wooden boxes, paper and pulp, plywood, etc.
- **Urbanization:** Due to urbanization, large areas of forest are deforested.

Consequences:

- **Global warming:** Deforestation leads to the emission of greenhouse gasses and it reduces the overall carbon capture capacity of the earth.
- **Soil erosion:** shrinking forest cover coupled with overexploitation of groundwater has accelerated erosion along the slopes of the lower Himalayas and Aravali hills, making them prone to landslides.
- **Ecological imbalance:** The destruction and alteration of habitats due to deforestation causes an ecological imbalance in the region concerned.
- **Human wildlife conflict:** Shrinking of forest areas lead to habitat reduction of wildlife species and this human wildlife conflict.
- **Economic impact:** A short-term economic gain made by conversion of forest to agriculture, or overexploitation of wood products, typically leads to a loss of long-term income and long-term biological productivity.

Measures taken by government:

- **National Mission for a Green India:** This policy was enacted for enhancing the quality of forest cover and improving ecosystem services from 4.9 million hectares (MHA) of predominantly forest lands.
- **Nagar Van Yojana:** The initiative intends to enhance the green cover, preserve biological diversity, and improve the quality of life for urban dwellers.
- **Compensatory Afforestation Fund (CAMPA):** Utilized by States/UTs for compensatory afforestation to offset forest land diversion for developmental projects.
- **Joint Forest Management:** Under this management scheme, the local community cooperates with governments to conserve the forest areas.
- **Other measures:** Schemes like MNREGA was started to improve the forest cover in rural areas.
- **Draft National Forest Policy:** The policy focuses on integrating climate change mitigation and adaptation measures into forest management practices. It emphasizes building resilience to climate change, particularly among forest-dependent communities.

Way forward:

- **Community led forest management:** Local communities should be integrated in the afforestation practices and also to stop deforestation.
- **Selective logging:** For industrial purposes and agriculture practices, selective logging can be done.
- **Afforestation:** Effective implementation of afforestation schemes with the help of people can help to restore forests.
- **Tech usage for conservation:** Modern technologies like satellites and GPS can be used to effectively monitor illegal deforestation.
- **Awareness:** People should be made aware about the negative impacts of deforestation.

International measures:

- **Bonn challenges:** India plans to restore 20 million hectares of its forest cover by 2030 under the Bonn convention.
 - The Bonn Challenge has a goal of restoring 350 million hectares of deforested and degraded land by 2030.
- **United Nations Framework Convention on Climate Change:** Under this convention, all the countries are required to become a net zero carbon emission country. This includes afforestation also.

Status report of India and World:

- As per the latest assessment in ISFR 2021, India's total forest and tree cover stands at 8,09,537 square kilometers, which accounts for 24.62% of the country's geographical area.
- India ranked the second highest for the rate of deforestation after losing 668,400 hectares of forest cover in the last 30 years.

5. SCIENCE AND TECHNOLOGY

5.1 Lithium-ion battery

Why in the news?

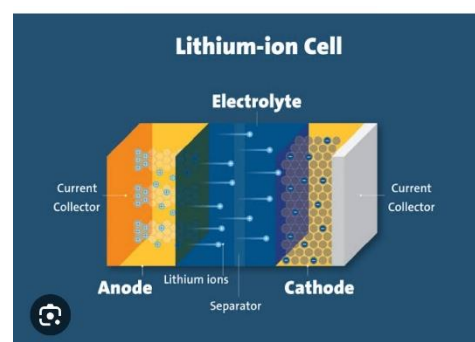
Recently, a senior government official said that the government has taken measures to improve the production of Lithium-ion batteries.

About Lithium-ion battery:

- Lithium-ion consists of two electrodes (an anode and a cathode) separated by a liquid electrolyte.
- Lithium atoms in the anode give up electrons which travel to the cathode through an external wire, this stream of electrons provides the current which powers the motor of the vehicle.
- Simultaneously, lithium ions (now positively charged from loss of an electron) travel through the electrolyte to reach the cathode.
- During charging, the process is reversed with lithium ions being forced to travel back through the electrolyte to the anode.

Advantages of Lithium-ion battery:

- It has improved discharge and charging efficiency than Lead Acid battery.
- Weight is 60% less than the lead acid battery.
- Life span is ten times longer than the normal batteries.
- Energy density is very high



- Fast charging time makes it suitable for large size battery operated vehicles etc.

Disadvantages:

- Cost of the lithium-ion battery is 40% higher than other batteries.
- Due to their advanced technology and adherence to international safety standards, repairing lithium-ion batteries can be challenging.
- Safety issues as instances of batteries catching fires have been there.

Applications of Lithium-ion battery:

- Rechargeable Li-ion batteries is in portable electronic devices, such as cellular phones, digital cameras, global positioning system devices, tablets, and laptop computers.
- These batteries have attractive applications for exoatmospheric aircrafts, especially satellites, due to their ability to be a stable power source in combination with solar energy harvesting and to reduce aircraft weight.
- Biomedical implantable devices, such as pacemakers.
- Lithium-ion batteries are increasingly being used for energy storage applications, such as storing solar and wind energy.

6. SECURITY

6.1 BSF jurisdiction expansion

Why in the news?

Recently, the Supreme Court is set to hear the dispute over the expansion of the Border Security Force (BSF) jurisdiction in Punjab.

Key points:

- Prior to the notification issued in October 2021, the BSF could exercise its powers within 15 kilometers of the border in Punjab, West Bengal and Assam.
- The Centre expanded this to **within 50 kilometers of the border**.
- The notification states that, within this larger 50-kilometer jurisdiction, the BSF can only exercise powers under the Criminal Procedure Code, the Passport (Entry into India) Act and the Passports Act.
- For other central legislations, the 15-km limit remains.
- The same notification **reduced the jurisdiction in Gujarat from 80 km to 50 km**.

Reason behind the jurisdiction expansion:

- **Increased use of drones and Unmanned Aerial Vehicles:** In recent times, there have been many instances of usage of drones and Unmanned aerial vehicles in the border areas for various illegal activities.
- **Counter organized crimes:** To counter the menace of arms and fake currency smuggling near the border areas.
- **Trafficking issue:** Human and cow trafficking instances have increased in the border areas.
- **Illegal immigrants:** High inflow of illegal migrants from the neighboring countries into India.
- **Uniform jurisdiction:** To ensure uniform jurisdiction to the BSF across the country.
 - Example: Previously the BSF jurisdiction in Punjab was 15 km, but it was 80 km in Gujarat.
- **Ensure safety:** In recent times, terrorism issue has increased in some neighboring countries.
 - This jurisdiction expansion would increase the safety of the people in the border areas.

Concerns of Punjab:

- **Compromise state powers:** Expanding the jurisdiction of the BSF would compromise the state's exclusive powers to legislate on matters involving the police and public order.
- **Lack of Consultation:** The states also contend that the central government issued the notification without consulting the affected states.
- **Federalism and Constitutional Principles:** Punjab's opposition reflects broader concerns about federalism and the balance of powers between the central and state governments.
 - The Constitution emphasize the autonomy and sovereignty of states in certain policy areas. Statistical analysis of legal proceedings indicates Punjab's stance as part of a larger debate on federal-state relations in India.
- **Geographical Specificity:** In the case of Punjab its unique geography, being densely populated and agriculturally significant, makes it particularly sensitive to the impact of the expanded jurisdiction.
 - The expansion of BSF jurisdiction could disrupt the lives and livelihoods of residents, particularly farmers who rely on border areas for cultivation.
- **Social and Economic Disruptions:** Punjab fears social and economic disruptions due to increased security measures, potentially affecting trade, tourism, and daily activities.
- **Historical and Cultural Significance:** Punjab's deep historical and cultural ties to its land intensify its opposition to what it sees as an infringement on its territory.
- **Political Opposition and Public Sentiment:** Political opposition and public sentiment against centralization of power fuel Punjab's challenge to the BSF expansion.

Way forward:

- **Coordination between forces:** BSF and state local police should work in a more coordinated manner to prevent crimes in the border areas.

- **Community Engagement:** Engaging with the local communities living in border areas can help in gathering crucial information and maintaining peace in these areas.
- **Clear jurisdiction:** The jurisdiction of the BSF should be clearly mentioned and their activities should be limited to only the trans order crimes.
- **Consultation with states:** The Central government while enacting policies, which is related to federalism should consult states and take into their views.
- **Infrastructure Investment:** Invest in border infrastructure to boost security while minimizing disruptions to local communities.

About BSF:

- The BSF was created under the **Border Security Force Act 1968**.
- The BSF is meant to secure India's borders with its neighboring nations and is empowered to arrest, search and seize.
- **Jurisdiction:** The Centre in October 2021 issued a gazette notification defining the new jurisdiction as
 - Whole of the area comprised in the States of Manipur, Mizoram, Tripura, Nagaland and Meghalaya and Union Territories of Jammu and Kashmir and Ladakh.
 - Area comprises a belt of fifty kilometres in the States of Gujarat, Rajasthan, Punjab, West Bengal and Assam, running along the borders of India.
- The Center issued the notification under Section 139(1) of the BSF Act.
 - This allows the force to prevent any offence involving the Passport Act, Registration of Foreigners Act, Foreigners Act, foreign exchange regulation law, customs, excise laws, or any cognisable offence punishable under any Central act within the "local limits of such area adjoining the borders of India".
 - It also allowed the BSF to nab any individual who violated the aforementioned laws.

7. SOCIETY

7.1 Gender equity in Education

Why in the news?

Recently, the Annual Status of Education Report indicates that boys from rural areas have more chances to get Science, Technology, Engineering and Mathematics courses than girls.

Gender equity status of education in India:

- **Parity in Learning:** The National Achievement Survey (2017), covering over 22 lakh students, shows parity in learning levels between boys and girls in elementary and secondary classes across the country.
- **Educational Gender Disparities:** The mean years of schooling for girls has almost tripled from just 1.7 years in 1990 to 4.7 in 2018, while the mean years of schooling for boys is 8.7 years.
 - The gender gap attainment in India is 3.5 years.
- **Widening Gender Gap:** Gender gap widens owing to greater barriers to schooling that girls face due to social norms and deeply ingrained gender stereotypes correlated with biological factors such as adolescence.
- **Dropout Dynamics:** The dropout rate for boys in Class 1 is marginally higher at 6.88 (6.38 for girls), this trend radically reverses by Class 8, when almost twice the number of girls are dropping out of the schooling system.
- **Private School Enrollment:** More boys than girls tend to be enrolled in private institutions, where parents incur out-of-pocket expenditure.

Major impediments in achieving gender equity in education:

- **Less investments on girls education:** Parents often incur less out of pocket expenditure on girls education than boys education.
- **Lack of physical safety:** Physical safety of the girls also plays an important role in high dropout rate among girls education.
- **Patriarchal norms:** In a patriarchal society, boys' education is considered more important than girls' education.
- **Household activities:** In rural areas, girls are often forced to do household activities. This makes them unable to attend educational courses.
- **Poverty:** Due to poverty, girl students are forced to drop out from school education and do work.
- **Child marriage:** Child marriage among girls makes them unable to continue their e-school education.

Measures taken by government to address inequity:

- **Beti Bachao Beti Padhao:** This scheme promotes early school education among girls.
- **Right to Education Act:** Under this act, early school education was made as a statutory right and compulsory for all the children between 6-14 age group.
- **National Education Policy:** Under this policy, special educational zones are created to provide more thrust for the girls' education.
- **Girls education fund:** This fund has been created under the National Educational Policy to reduce the gender gap in education.

- **Supportive schemes:** Other supportive initiatives such as Ujjwala yojana, Jal Jeevan Mission reduce the household burden among the girl students and empower them to continue their studies.

Way forward:

- **Effective implementation of government policies:** Implementation of government initiatives should be strengthened to make them a real changer in the society.
- **Monitoring committees:** Taluk or district level monitoring committees can be established to monitor the ground level situation especially in rural areas.
- **Awareness programmes:** Behavioral changes through awareness programmes can be promoted among the people with conservative mindset.
- **Community participation:** NGOs or civil society organizations can be integrated into the government's efforts to reduce dropout rates among girl students.
- **Monetary incentives:** Monetary incentives can be given to women students particularly in the areas where girls dropout rate is high.



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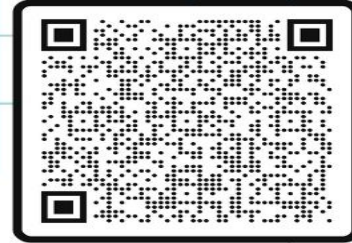
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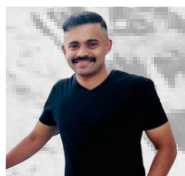
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