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Topic 1. THIS NEW NUCLEAR FUEL CAN GUARANTEE INDIA'S GREEN ENERGY TRANSITION

Important for the subject: Science and Technology

ANEEL Fuel:

The Chicago-based company **Clean Core Thorium Energy**, founded by **Mehul Shah**, has developed (and patented) a **fuel**, which is a mix of **Thorium** and **Uranium** of a certain level of enrichment, called **HALEU (High Assay Low Enriched Uranium)**. Clean Core calls this concoction **ANEEL (Advanced Nuclear Energy for Enriched Life)** — named so to honour one of **India's** foremost nuclear scientists, **Dr Anil Kakodkar**.

With this **India** can guarantee **green energy security** for the subcontinent by fast-tracking the use of **Thorium** in nuclear reactors.

Use of thorium in ANEEL fuel:

- **Thorium** is a **fertile material** and **not a fissile material**. This means it must be paired with **Uranium-235** or **Plutonium-239** to be used as fuel in a reactor.
- As neutrons from these fissile materials bombard Thorium, it mutates into **Uranium-233**, which is also a **fissile material**.
- So, to use the **Thorium** in **India**, you need **sufficient stocks of Uranium-235** (which India has very little of), or **Plutonium-239** (which is produced using Uranium-235).
- So, to use a minimum of uranium and a maximum of thorium fuel, the company has developed the **ANEEL fuel**.

Uses of ANEEL fuel:

- It can be used in the existing **Pressurized Heavy-Water Reactors (PHWRs)**, an **indigenous reactor system** that is the workhorse of **India's** nuclear fleet.
- **India** has **18 PHWR** reactors with a **total capacity of 4,460 MW** and is building **ten more of 700 MW each**.
- **India's** approach to **Thorium utilisation** has been to make a **Thorium blanket around uranium or plutonium reactors** so that as the reactor produces energy, it also converts **thorium into uranium-233**.
- However, **ANEEL** provides an **easier and quicker alternative** for the **deployment of thorium leveraging imported HALEU**.

Advantages:

- The use of thorium in nuclear reactors reduces nuclear waste significantly.
- ANEEL fuel lasts much longer and burns more efficiently.



- The spent ANEEL fuel cannot be used for weapons.

Infrastructural challenges:

- According to the **World Nuclear Association**, most of the current reactors run on **uranium fuel enriched up to 5 percent Uranium-235**.
- **HALEU** is **Uranium enriched** to more than **5 per cent** but less than **20 per cent**.
- It is needed for many of the **advanced nuclear reactor** designs under development.
- **HALEU** is not yet widely available commercially. At present, **only Russia and China** have the **infrastructure to produce HALEU** at scale.

Thorium in India:

- **India** has the **world's largest reserves of Thorium**, estimated at **1.07 million tonnes**, enough to last over a century. If India uses this **Thorium**, it can then produce enough green energy and easily turn **net-zero by its target date of 2070**.
- **Thorium** is derived from **minerals** like **monazite** (containing 10% thoria and 0.3% urania) and **thorianite**.
- **Monazite sands**, found widely on the **Kerala coast**, serve as the **primary source of refined thorium**.
- **Monazite** is a **reddish-brown phosphate mineral** containing **rare earth metals**.

The state-wise resources of in situ monazite established by AMD as of September 2014 are as follows:

| State | Monazite (Million tonnes) |
|----------------|------------------------------|
| Odisha | 2.41 |
| Andhra Pradesh | 3.72 |
| Tamil Nadu | 2.46 |
| Kerala | 1.90 |
| West Bengal | 1.22 |
| Jharkhand | 0.22 |
| Total | 11.93 |

- Both Uranium and Thorium have got distinctive characteristics governing their utilisation in nuclear reactors. Unlike uranium, thorium alone cannot be directly used as nuclear fuel in a reactor.
- Utilisation of Thorium with either uranium or plutonium, without going through the

second stage of Fast Breeder Reactors, to build sufficient inventory of plutonium first, will be counter-productive by limiting thorium utilisation to a very small fraction of the total available resources in the country.

- Utilisation of Thorium in the third stage makes it available as a sustainable energy resource for centuries. With this mode of utilisation, Thorium offers not only a sustainable energy resource, but also excellent fuel performance characteristic in a reactor, better than Uranium with respect to lower inventory of long-lived nuclear waste.
- The three stage Indian nuclear programme was formulated at the inception of the DAE and has as its main stay objective of utilisation of large resources of Thorium in a sustainable manner. As explained above, Thorium cannot be used for overcoming power crisis in the short term.

Topic 2. HOW AI IS BEING HARNESSSED IN TREATMENT OF CANCER

Important for the subject: Science and Technology

Researchers at **Mumbai's Tata Memorial Hospital, India's largest cancer hospital**, have used data from **60,000 patients** to establish a **bio-imaging bank for cancer**, laying the ground to build a **targeted algorithm** to help **detect the disease at an early stage**.

- The hospital has also started to use **artificial intelligence (AI)** to **reduce radiation exposure for paediatric patients** during **computed tomography (CT) scans**, showcasing the use and impact of this world-changing technology in the diagnosis and treatment of cancer.

What is the Tata Memorial Hospital's AI-led cancer diagnosis initiative?

- **Tata Memorial Hospital** aims to build a comprehensive **bio-imaging bank** by collecting **radiology and pathology images** alongside **clinical data, treatment specifics, and outcomes**.
- This **initiative** focuses on **head and neck cancers** and **lung cancers**, gathering data from at least **1,000 patients** for each type.
- The project involves testing **AI algorithms** to address various medical tasks like screening for **metastases**, **predicting biomarkers**, and **therapy responses**.
- **Funded** by the government's **Department of Biotechnology**, the project **collaborates with multiple institutions** and features a **live data submission portal** for investigators to contribute and develop AI algorithms.

How exactly does AI use clinical and imaging data for cancer detection?

- **AI in cancer detection** replicates **human brain processing** by **analyzing radiological and pathological images**, **learning** from vast datasets to identify specific features

indicative of different cancers.

- **Longitudinal patient data** from comprehensive imaging aids in understanding behaviour, treatment responses, disease recurrence, and overall survival.
- **AI and machine learning** use this data to **create predictive models** for tumor survival, **guiding treatment decisions**.
- Creating a **tumor image bank** involves **segmenting, annotating, and classifying tumors** based on **features, correlating biopsy, histopathology, immunohistochemistry reports, and genomic sequences** to develop algorithms.
- This assessment from images helps doctors avoid unnecessary **chemotherapy** for **predicted non-responders**.

What role could AI play in the treatment of cancer in the future?

- **AI holds immense potential** in **revolutionizing cancer treatment**, especially in **rural areas**, by **customizing treatment strategies** based on **diverse patient profiles**, thus optimizing therapy results.
- AI is expected to swiftly **detect complex cancers**, potentially **eliminating the need for extensive tests**, even by general practitioners.
- Its continuous learning capability **enhances accuracy**, leading to **timely diagnoses, better patient outcomes, and aiding healthcare professionals in decision-making**.
- However, debates persist regarding the potential replacement of human radiologists by AI tools, leading to regulatory scrutiny and resistance from some doctors and health institutions.

Topic 3. ISRO SHOULD HELP EVERYONE ENJOY THE FRUITS OF ITS NEW SCIENCE MISSIONS

Important for the subject: Science and Technology

On January 6 evening, 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 manoeuvres that guided it into orbit around an imaginary point in space.

- Thus, Aditya-L1 reached its destination, around the L1 Lagrange point, from where it will have an unfettered view of the sun for its expected lifetime of five years.

About ISRO

- The Indian Space Research Organisation (ISRO) is the space agency of the Government of India, established in **1969**. **With its headquarters in Bengaluru**, Karnataka, ISRO has emerged as a leading player in space exploration and satellite technology.

- The organization is known for its cost-effective and innovative approach to space missions. ISRO has achieved numerous milestones, including the launch of its **first satellite, Aryabhata, in 1975.**
- It gained global recognition with the **successful launch of the Mars Orbiter Mission (Mangalyaan) in 2013, making India the first Asian nation to reach Martian orbit and the first nation in the world to do so on its maiden attempt.**
- The organization has a diverse portfolio, encompassing satellite communication, Earth observation, navigation, scientific research, and interplanetary exploration.
- ISRO's Polar Satellite Launch Vehicle (PSLV) and Geosynchronous Satellite Launch Vehicle (GSLV) have been instrumental in deploying satellites for various purposes.

Aditya-L1

- Aditya-L1 is an **observatory-class solar mission** that will study the sun with seven instruments: VELC, a coronagraph to study the uppermost layer of the sun's atmosphere; SUIT, an ultraviolet imaging telescope.
- SOLEXS and HELIOS, to study solar flares and coronal mass ejections; ASPEX and PAPA, to study the solar wind and plasma; and a set of digital magnetometers to measure properties of the magnetic field around the spacecraft.
- ISRO picked the **L1 Lagrange point — 1.5 million km from the earth** in the earth-sun direction and one of five Lagrange points in the earth-sun system — because the gravitational influences of the two bodies interact such that a smaller body here will not experience a net tug towards either.
- So, Aditya-L1 can stay at L1 while expending little fuel. Its scientific mission will begin in a month or so, once its thrusters' emissions drift away.

History of observing the Sun

- As such, Aditya-L1 supplements India's storied history of observing the sun — dating back to the **Kodaikanal Solar Observatory**, which commenced operations in 1901 — by lofting it into space.
- It also follows the XPoSat mission, launched on January 1 to become only the world's second X-ray polarimetry satellite, and eight years after AstroSat, which reached several highs of its own.

Public perception of such achievements

- An important issue with such achievements is public perception. For example, while Aditya-L1 and AstroSat are big strides from India's point of view, they pale in comparison to the imaging abilities of the James Webb Space Telescope, which is operated by three space agencies.
- Yet, many continue to expect the Indian spacecraft to capture hi-res photographs of the

cosmos and are disillusioned when it does not. This is not fair (setting aside the fact that not all instruments are imagers).

About AstroSat:

- It is India's **first dedicated multi-wavelength space observatory**. It is the first dedicated Indian astronomy mission aimed at studying celestial sources in **X-ray, optical, and UV spectral bands simultaneously**.
- AstroSat, with a lift-off mass of 1515 kg, was launched by the Indian launch vehicle PSLV from Satish Dhawan Space Centre, Sriharikota, on September 28, 2015, into a 650 km orbit inclined at an angle of 6 degrees to the equator.

James Webb Space Telescope (JWST)

- The James Webb Space Telescope (JWST) is a **space telescope designed to conduct infrared astronomy**. The JWST is a collaborative project involving **NASA, the European Space Agency (ESA), and the Canadian Space Agency (CSA)**.
- Its **high-resolution and high-sensitivity instruments** allow it to view objects too old, distant, or faint for the Hubble Space Telescope.
- This enables investigations across many fields of astronomy and cosmology, such as observation of the first stars and the formation of the first galaxies, and detailed atmospheric characterization of potentially habitable exoplanets.
- The telescope's primary mirror is 6.5 meters (21.3 feet) in diameter, which is much larger than the Hubble Space Telescope's mirror. This larger mirror enables the JWST to collect more light and observe fainter objects.

Topic 4. SEVEN PRODUCTS FROM ODISHA GET GI TAG

Important for the subject: Science and Technology



As many as seven items from Odisha received the **GI tag** by the **Chennai-based Geographical Indications Registry** on Tuesday.

The new items include the **Odisha Khajuri Guda, Dhenkkanal Magji, Similipal Kai Chutney, Nayagarh Kantei Mundi brinjal, Dongria Kondh embroidery shawl, Koraput Kala Jeera rice and the paintings of Lanjia Saora.**

Kapda Ganda shawl

- Woven and embroidered by the women of the **Dongria Kondh tribe, a particularly vulnerable tribal group (PVTG) in the Niyamgiri hills in Odisha's Rayagada and Kalahandi districts.**
- It is embroidered on an **off-white coarse cloth with red, yellow and green** coloured threads, with each color holding significance.
- **Green** symbolizes the mountains and hills, and **yellow** stands for peace and happiness. **Red** stands as the symbol of blood.
- The **motifs in the shawls** are mostly lines and triangles, believed to be a reflection of the importance of mountains for the community.
- The **shawl is worn by both men and women** and the **Dongrias give it to their family members as a token of love and affection.**

Lanjia Saura Painting



- The painting is one of the **oldest tribal art forms and is also known as Idital.** The artworks are famous for their beauty, aesthetics, ritualistic association and iconography.
- The art form belongs to the **Lanjia Saura community, a PVTG largely residing in the Rayagada district.**
- These paintings are in the form of exterior murals painted on the mud walls of homes.

White paintings figure over a **crimson-maroon background**.

Koraput Kala Jeera Rice



- The **black-coloured rice variety**, also known as the '**Prince of Rice**', is famous for its aroma, taste, texture and nutritional value.
- Tribal farmers of the **Koraput region** have preserved the rice variety for around 1,000 years.

Similipal Kai chutney

- The **chutney made with red weaver ants** is a traditional delicacy of the tribals in Odisha's Mayurbhanj district.
- The ants are found in the forests of **Mayurbhanj**, including in the **Similipal forests** – **Asia's second-largest biosphere**.

Nayagarh Kantei Mundi Brinjal



- **Nayagarh Kantei Mundi Brinjal** is known for its prickly thorns on the stems and the whole plant. The green and round fruits contain more seeds as compared to other genotypes.

Odisha Khajuri Guda

- Odisha's "Khajuri Guda" or jaggery is a natural sweetener extracted from date palm trees and has its origin in the **Gajapati district**.
- The jaggery is prepared in a trapezoidal form called 'Patali Gur' and is organic by nature. It is dark brown and has a unique taste.

Dhenkanal Magji



- **Dhenkanal Magji** is a type of sweet made from cheese from buffalo milk, with distinct characteristics in terms of appearance, taste, flavor, shape, and size.
- It also has unique nutritional values that distinguish it from other **cheese-based sweets**.

About GI tags:

- **Geographical Indications of Goods** are defined as that **aspect of industrial property** which refer to the geographical indication referring to a country or to a place situated therein as being the country or place of origin of that product.
- **Under Articles 1 (2) and 10 of the Paris Convention** for the Protection of Industrial Property, geographical indications are covered as an element of IPRs.
- They are also covered under **Articles 22 to 24 of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement**. A registered GI tag is valid for **10 years**.
- GI tags are provided by the **Geographical Indications Registry, located in Chennai, India**.
- The registry operates under the **Geographical Indications of Goods (Registration and Protection) Act, 1999**. They are governed by **WIPO Agreement on Trade related aspects of Intellectual Property Rights (TRIPS)**

Topic 5. FIRST US LUNAR LANDER SINCE 1972 LAUNCHED: THE MISSION, SIGNIFICANCE

Important for the subject: Science and Technology

A US private company launched a **spacecraft** carrying NASA's **scientific instruments**, aiming to be the **first US craft to land on the Moon** in 50+ years.

- The **Peregrine lander module** of the **mission**, as well as the **Vulcan rocket** that launched it, have both been built by **private space companies** in the US.
- As part of NASA's **Commercial Lunar Payload Services (CLPS) initiative**, it involves private space companies in the **Artemis program for lunar exploration**.
- NASA is working with several American companies to deliver **science and technology to the lunar surface** through the **CLPS initiative**. The spacecraft was carrying **five NASA payloads**.
- Instruments on board will perform various tasks, including **water detection** and placing a **Laser Retro reflector Array for precise measurements**.
- A **laser Retro reflector Array** is a **collection of several mirrors** that would allow **precision measurements** of the distance of other orbiting or landing spacecraft by reflecting light from them.
- This particular instrument would remain **permanently deployed on the Moon's surface** and would act as a **marker for distances on the Moon**.
- The **Artemis program** intends to establish a **sustainable lunar presence**, with plans for **crewed missions** by **2025** and aims for **deep space exploration** from the **Moon's surface**.
- NASA's **collaboration** with private firms, like this launch under **CLPS**, aims to advance **lunar exploration** while fostering a **commercial space industry**.
- Officials expressed excitement about this mission's potential scientific discoveries and its role in shaping future human exploration endeavours.

Hakuto-R mission:

1. Launched in **2023**
2. A **Japanese mission** to **land on the moon**.
3. It was **not** successful.

6. DRDO COUNTER-DRONE SYSTEM READY, HANDED OVER TO PRIVATE FIRMS

Important for the subject: Science and Technology

The counter drone system developed by the Defence Research and Development Organisation (DRDO) is ready for production and was already demonstrated to armed services and other internal security agencies with some orders already placed.

- The DRDO is making drone based systems and anti-drone systems based on the requirements of user agencies.
- The DRDO has developed a comprehensive integrated anti-drone system which comprises detection, identification and neutralization of a drone.
- The Transfer of Technology (ToT) for above technologies has been handed over to private industries, including BEL, Adani, Larsen & Toubro (L&T), and Icom.

Technologies under development:

- DRDO is now focusing on **high endurance Unmanned Aerial Vehicles (UAV)** while the capability for smaller drones exists with the industry.
- **Tapas Medium Altitude Long Endurance (MALE) UAV** developed for Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) application is in the advanced stage of developmental trials.
- **Tactical Aerial Platform for Advanced Surveillance (TAPAS)** is a Medium Altitude Long Endurance (MALE) unmanned aerial vehicle (UAV).
- **Indigenously-developed by:** Bengaluru-based Aeronautical Development Establishment. It is a **multi-mission UAV** to carry out the intelligence, surveillance and reconnaissance roles for the three armed forces with an endurance of 24 to 30 hours.
- It uses a **Lithium Ion-based battery** with indigenous battery management system developed by the DRDO.
- **Short range armed UAV Archer** is being developed for reconnaissance, surveillance and low intensity conflict and developmental flight trials are under progress.

Topic 7. SOUTH KOREA SUPERCONDUCTIVITY CLAIM REVIVED WITH NEW DATA

Important for the subject: Science and Technology

A group of **scientists from China and Japan** have reported findings that could indicate superconductivity in a controversial material.

About Superconductivity

- Superconductivity occurs when a material offers **almost zero resistance** to the flow of electric current, enabling energy-efficient electrical appliances and lossless power transmission.
- Superconductors also **display fascinating behavior under magnetic fields**, enabling technologies like MRI machines and superfast Maglev trains.

Characteristics of Material LK-99

- **Apatite Structure:** The Korean group utilized copper-substituted lead apatite, a phosphate mineral with unique tetrahedral motifs, to create LK-99.
- **Superconducting Behavior:** LK-99 displayed essential superconducting properties, with almost zero resistance to current flow and sudden emergence of resistance above a critical current threshold.
- **Magnetic Resilience:** LK-99 retained superconductivity even under the presence of a magnetic field until reaching a critical threshold.

Meissner Effect: Key Indicator of Superconductivity

- The Meissner effect is a phenomenon where materials expel magnetic fields from their interior upon becoming superconductors.
- **Observation in Study:** The researchers observed this effect in copper-substituted lead apatite, suggesting potential superconductivity.

Quest for Room-Temperature Superconductors

- **Significance:** Discovering a material that is superconducting at room temperature and pressure (RTP) has immense scientific and commercial value.
- **Applications:** RTP superconductors could revolutionize power transmission, medical diagnostics, computing, and more, due to their ability to conduct electricity without loss.

Understanding Hysteresis in Superconductors

- **Meissner Effect and DC Current:** The Meissner effect is observable with direct current, as alternating current would disrupt the phenomenon.
- **Type I and II Superconductors:** The study helps distinguish between these types based

on how they respond to increasing magnetic field strength.

Challenges and Limitations of the Study

- **Small Superconducting Portions:** The material's superconducting sections were small, leading to a low critical magnetic field strength.
- **Interference Issues:** The presence of cuprous sulphide interfered with molecular structure analysis using X-rays.

Controversies in Superconductivity Research

- **Past Controversies:** The field has seen several disputes, including claims by Ranga Dias and a South Korean research group, which were later contested.
- **Impact of Hype:** The lucrative potential of RTP superconductors has sometimes led to premature claims and controversies in the scientific community.

New Study: Methodology and Findings

- **Approach:** The team synthesized LK-99 samples using advanced techniques and tested for signs of superconductivity beyond specific claims made by previous studies.
- **Direct Current Measurements:** They conducted hysteresis experiments, applying and removing a magnetic field to observe the material's response at various temperatures.

Topic 8. TRADITIONAL MEDICINE MORBIDITY CODES OF AYURVEDA, SIDDHA AND UNANI

Important for the subject: Science and Technology

Traditional Medicine Morbidity codes of Ayurveda, Siddha and Unani Chapter to be included in International Classification of Diseases (ICD) 11 as Module 2.

- The initiative will take place at a World Health Organization (WHO) event in New Delhi on 10th January, 2024.

About WHO ICD classification:

- The data and terminology relating to diseases based on Ayurveda, Siddha, Unani systems will now be included in the WHO's ICD11 classification.
- This effort will lead to global uniformity in ASU (Ayurveda, Unani, and Siddha) medicine as a code of vocabulary defining diseases.
- The World Health Organization (WHO) has developed a classification series called International Classification of Diseases (ICDs) to classify diseases internationally.
- The classification of data and terminology relating to diseases based on Ayush systems such as Ayurveda, Siddha, Unani etc. is not yet included in the WHO ICD series.

- The Ministry of Ayush has already developed the **Code for Ayurveda, Siddha, and Unani Medicine through the National Ayush Morbidity and Standardized Electronic Portal (NAMSTE)**.
- **Central Bureau of Health Intelligence (CBHI)** is an agency under the **Ministry of Health and Family Welfare** that serves as the **WHO Collaboration Centre for ICD-related activities**.
- The **Ministry of AYUSH** has also signed a **Donor Agreement** with the **World Health Organization** for the same.

Benefits of this Classification:

- This effort will further strengthen and expand **India's public healthcare delivery system, Ayush insurance coverage, research and development and policy-making systems**.
- These codes will also be used in the **formulation of future strategies to control various diseases in the society**.
- **Infectious diseases like Malaria and lifestyle diseases like chronic insomnia** are included in this classification.
- **Vertigo Guidance Disorder** is commonly recognized by the **three traditional systems**, as a nervous system disorder known in **Ayurveda** as '**Bhramaha**', in **siddha** as '**AjalKirkrippu**' and in **Unani** as '**Sadra-o-Dwar**'

About Central Bureau of Health Intelligence (CBHI)

Establishment:

- The Central Bureau of Health Intelligence (CBHI) was established in 1961 under the Directorate General of Health Services (DGHS) with the vision to have "A strong Health Management Information System (HMIS) in the entire country".

Its mission:

- To **strengthen the Health Information System (HIS)** in each of the districts in the country up to the facility level for evidence based decision making in the Health Sector.

Few Objectives of CBHI are:

- To **collect, analyze& disseminate Health Sector** related data of the country for evidence based policy decisions, planning and research activities.
- To **identify & disseminate innovative practices** for Health Sector Reforms. To develop **Human Resources for scientifically maintaining medical records** in both Government & private medical Institutes in India.
- To **Carry Out Need Based Operational Research** for **Efficient implementation** of

Health Information System & use of Family of International Classifications in India.

- **CBHI Provides Internship and Health Management Programmes** for the students of National Universities and Institutes.

Functions:

- It functions as **WHO Collaborating Centre on Family of International Classifications (ICD – 10 & ICF)** in India to promote the **development & use of the WHO.**
- **Family of International Classifications (WHO-FIC)** including the **International Statistical Classification of Diseases and Related Health Problems (ICD)**, the **International Classification of Functioning, Disability and Health (ICF).**

About NAMASTE Portal:

- It is an acronym for “**National Ayush Morbidity and Standardized Terminologies Electronic Portal**”
- It is a **Comprehensive web-portal for Standardized Terminologies and National Morbidity Codes of Ayurveda, Siddha and Unani Systems of Medicine and WHO-ICD-10 and ICD-11.**
- It was developed by the **Ministry of Ayush.** Its objective is to make the **clinical data generated by AYUSH system understandable to the whole world.**
- The portal is meant for **unambiguous reporting, electronic data submission through individual institutions and gradually moving towards adopting Electronic Health Records (E.H.R.).**

About ICD:

- **The International Classification of Diseases (ICD)** is a globally used medical classification used in **epidemiology, health management and for clinical purposes.**
- It is maintained by the **World Health Organization (WHO)** which acts as a directing and coordinating authority for health within **the United Nations System.**
- **The ICD is revised periodically and is currently in its 11th revision.**

Topic 9. REGULATION BY STATUTE DOES NOT ROB A VARSITY OF MINORITY STATUS, OBSERVES SC

Important for the subject: Science and Technology

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.

- The legal dispute over Aligarh Muslim University's (AMU) minority character, dating back 57 years, stems from the interpretation of **Article 30(1)** of the Constitution, which empowers religious and linguistic minorities to establish and administer educational institutions.
- This dispute has seen multiple court interventions, shaping the trajectory of AMU's status as a minority institution

Historical Background:

- AMU's origins trace back to the Muhammadan Anglo-Oriental (MOA) College, established in 1875 by Sir Syed Ahmad Khan.
- It aimed to address educational backwardness among Muslims, evolving into a university in 1920 under the AMU Act.
- The Act acknowledged its role as a "teaching and residential Muslim University."

Genesis of Dispute:

- The legal challenge emerged in 1967, questioning amendments to the AMU Act made in 1951 and 1965.
- Changes altered the University's structure, provoking a Supreme Court ruling that, in 1967, declared AMU was not established or administered by the Muslim minority.
- The court emphasized that while Muslims may have initiated the university, its recognition by the Indian government necessitated a central Act.

Persistent Dispute:

- Post the 1967 ruling, nationwide protests ensued, prompting a 1981 amendment affirming AMU's minority status.
- This led to Section 2(l) explicitly stating it was "an educational institution of their choice established by the Muslims of India."
- However, legal challenges persisted, with the Allahabad High Court overturning a reservation policy in 2005, citing the 1967 verdict.
- The Union government, along with other petitioners, contested this decision in the

Supreme Court in 2006

The Importance of Minority Institutions:

- **Preserving Diversity:** Minority institutions play a pivotal role in preserving cultural and religious diversity by providing a platform for communities to impart education aligned with their ethos.
- **Inclusive Education:** These institutions contribute to inclusive education, offering students from minority communities an environment that respects and values their cultural identity.
- **Empowerment:** Recognizing minority institutions empowers communities to actively participate in the educational landscape, fostering a sense of ownership and agency.
- **Constitutional Intent:** While Article 30(1) emphasizes minority rights, the AMU case raises questions about the balance between autonomy and state recognition, as the 1967 verdict highlighted the central Act's role.
- **Policy Implications:** The legal tussle has implications for reservation policies and the autonomy of minority institutions, with potential ramifications on inclusive education.
- **Educational Autonomy:** The dispute has implications for the autonomy of educational institutions and the extent to which the government can regulate their character.
- **Minority Rights:** It raises broader questions about minority rights and the interpretation of these rights in the context of educational institutions.

Topic 10. IISc BENGALURU COMES UP WITH WARM VACCINE AGAINST CURRENT STRAINS OF SARS-COV-2

Important for the subject: Science and Technology

A **heat-tolerant vaccine** developed by the **Indian Institute of Science (IISc)** researchers is said to be **effective against all current strains of SARS-CoV-2** besides having the **potential to be quickly adapted for future variants** as well.

- Researchers from **IISc** report the design of a **synthetic antigen (RS2 antigen)** that can be manufactured as a **potential COVID-19 vaccine candidate**.
- The RS2 antigen can be stored at room temperature unlike other vaccines which require cold storage. This makes the new vaccine much more economical.
- Since **2000**, IISc team has been working on **designing several viral vaccines**, including those against **AIDS and influenza**.
- They have leveraged this expertise to design their **current RS2-based COVID-19 vaccine candidate** in collaboration with the startup **Mynvax**, which was, until recently, **incubated at IISc**



Development of the new vaccine:

- While current vaccines are proven to be **effective against most SARS-CoV-2 strains**, their **efficacy has declined due to rapid mutation by the virus**.
- After analysing various proteins found in the virus, the researchers selected **two parts of SARS-CoV-2's spike protein** – the **S2 subunit** and the **Receptor Binding Domain (RBD)** – for designing their vaccine candidate.
- The **S2 subunit** is highly conserved. It mutates much less than the **S1 subunit**, which is the target of most current vaccines. The **RBD** can **provoke a strong immune response** in the host.
- Therefore, the team created a **hybrid protein** called **RS2** by combining these two components.
- The testing shows that the **hybrid protein** triggered a **strong immune response** and provided **better protection** when compared to vaccines containing the **whole spike protein**.

Advantage of the new vaccine:

- The vaccine candidate can be **tailored to incorporate the RBD region of any new variant of SARS-CoV-2 that might emerge**.
- Its **high levels of expression and stability at room temperature** can greatly **reduce production and distribution costs**, making it well suited for combating COVID-19.

Topic 11. CENTRE SET TO ROLL OUT VACCINE DRIVE TO FIGHT CERVICAL CANCER

Important for the subject: Science and Technology



- The government is set to roll out a human papillomavirus (HPV) vaccination campaign for girls in the 9-14 years age group. The **immunization drive is planned in three phases** over three years and is likely to start from the second quarter of this year. India accounts for about a **fifth of the global burden for cervical cancer**, recording about 1.25 lakh cases and about 75,000 deaths each year.
- According to the WHO, **Cervical cancer is the fourth most common cancer** among women globally. About 83 percent of invasive cervical cancer cases are attributed to HPV 16 or 18 in India.
- The **National Technical Advisory Group on Immunization (NTAGI)** has recommended that the **Indian Council of Medical Research (ICMR)** conduct trials on the efficacy of a single-dose regimen of HPV vaccine in the age group of 9-15 years.

About the Cervavac vaccine:

- Cervavac is **India's first indigenously** developed quadrivalent human papillomavirus (qHPV) vaccine for the prevention of cervical cancer. It is developed by **Serum Institute of India (SII) in Pune**.
- SII has a production capacity of about 2-3 million doses of **Cervavac per year**. It offers protection against four **HPV strains – 16, 18, 6 and 11**.

About Cervical Cancer (Human papillomavirus infection)

- **HPV infection** is a viral infection that commonly causes skin or mucous membrane growths (warts).
- **Human papillomavirus infection (HPV infection)** is caused by a DNA virus from the Papillomaviridae family.
- Nearly all cervical cancer is due to HPV, and two strains – **HPV16 and HPV18** – account for 70% of all cases.
- **HPV16** is responsible for almost 90% of HPV-positive oropharyngeal cancers.

Topic 12. ENTREPRENEURSHIP: TURNING THE TIDE AGAINST ANTIMICROBIAL RESISTANCE

Important for the subject: Science and Technology

In fight against the rising challenge of antimicrobial resistance (AMR), the search for new antibiotics is critical.

- **Zosurabalpin** stands out as a promising new candidate, offering a potential new way to tackle drug resistant **Acinetobacter** infections. Its early promise has been noted in Nature magazine and it's now going through the first phase of clinical trials.
- On another front, cefiderocol, already approved for use in various countries, stands out as

another beacon of hope.

- Developed by the Japanese firm Shionogi and now distributed by **GARDP (Global Antibiotic Research and Development Partnership)**, **cefiderocol** is making its mark as a potent agent against resistant infections.
- The Indian pharmaceutical landscape is witnessing a leap forward with Wockhardt's cefepimezidebactam, which is currently in international Phase 3 trials.

What is Antimicrobial Resistance (AMR)?

- **Definition:** Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi, and parasites change over time and no longer respond to medicines, making infections harder to treat and increasing the risk of disease spread, severe illness, and death.
- **Causes of AMR:** Resistance in bacteria can arise naturally by genetic mutation or by one species acquiring resistance from another. It can also appear spontaneously because of random mutations or through the spreading of resistant genes through horizontal gene transfer.

The main causes of AMR are:

1. Misuse and overuse of antimicrobials
2. Lack of clean water and sanitation
3. Inadequate infection prevention and control
4. Lack of awareness

What are the Steps taken by the Government to address AMR?

- **National Action Plan (NAP) for AMR:** In April 2017, India's NAP for AMR was released by the Union Ministry of Health and Family Welfare.
- The objectives of the NAP include increasing awareness, strengthening surveillance, promoting research, and improving infection prevention and control.
- **Signing the Delhi Declaration on AMR:** The Delhi Declaration on Antimicrobial Resistance (AMR) is an inter-ministerial consensus that was signed by the ministers of the concerned ministries in India.
- **Antibiotic Stewardship Program (AMSP):** The Indian Council of Medical Research (ICMR) has initiated the AMSP on a pilot project basis in 20 tertiary care hospitals across India.
- The program aims to control the misuse and overuse of antibiotics in hospital wards and ICUs.
- **Ban on inappropriate fixed dose combinations (FDCs):** On the recommendations of the ICMR, the Drug Controller General of India (DCGI) has banned 40 FDCs that were

found to be inappropriate.

- **Ban on the use of Colistin as a growth promoter in animal feed:** The ICMR, in collaboration with the Indian Council of Agriculture Research, Department of Animal Husbandry, Dairy and Fisheries, and the DCGI, has banned the use of Colistin as a growth promoter in animal feed in poultry.
- **One Health approach:** The government is working on a One Health approach by encouraging interdisciplinary collaboration at the human-animal-environmental interface. The key priority areas include zoonotic diseases, food safety, and antibiotic resistance.
- **Integrated One Health Surveillance Network for AMR:** The ICMR has undertaken a project on an “Integrated One Health Surveillance Network for Antimicrobial Resistance” in collaboration with the Indian Council of Agriculture Research to assess the preparedness of Indian Veterinary laboratories to participate in an integrated AMR surveillance network.
- In order to strengthen the surveillance of antimicrobial resistance (AMR) in the country, Indian Council of Medical Research (ICMR) has set up a National Anti-Microbial Resistance Research and Surveillance Network (AMRRSN) to enable compilation of national data of AMR at different levels of Health Care.
- The Drugs and Cosmetic Rule, 1945 were amended in 2013 to incorporate a new Schedule H1 under the said rules containing 46 drugs which include III and IV generation antibiotics, anti TB drugs and certain habit forming drugs for having strict control over the sale of these drugs. The Drugs falling under Schedule H1 are required to be sold in the country with the following conditions:-
- The supply of a drug specified in Schedule H1 shall be recorded in a separate register at the time of the supply giving the name and address of the prescriber, the name of the patient, the name of the drug and the quantity supplied and such records shall be maintained for three years and be open for inspection.
- The drug specified in Schedule H1 shall be labeled with the symbol Rx which shall be in red and conspicuously displayed on the left top corner of the label, and shall also be labeled with the following words in a box with a red border:

Schedule H1 Drug Warning:

- It is dangerous to take this preparation except in accordance with the medical advice. Not to be sold by retail without the prescription of a Registered Medical Practitioner.”
- Further, the Government of India has formulated a National policy for containment of antimicrobial resistance in 2011. A National Programme for Containment of AMR has also been initiated in 12th Five Year Plan with the following objectives:-
- To establish a laboratory based surveillance system by strengthening laboratories for

AMR in the country and to generate quality data on antimicrobial resistance for pathogens of public health importance

- To generate awareness among healthcare providers and in the community regarding rational use of antibiotics.
- To strengthen infection control guidelines and practices and promote rational use of antibiotics. This initiative was result of **Chennai declaration on AMR**

Topic 13. SUPREME COURT QUESTIONS CENTRE ON GM MUSTARD

Important for the subject: Science and Technology

The Supreme Court questioned the government on whether the **Genetic Engineering Appraisal Committee (GEAC)** had considered the reports of the **court-appointed Technical Experts Committee (TEC)** on the **biosafety of transgenic mustard hybrid DMH-11** before approving it for **environmental release**.

- The government responded the **GEAC** was a **statutory body** and the committee had examined relevant scientific data before giving the go-ahead for the environmental release.
- ‘**Transgenic**’ refers to an organism or cell whose genome has been altered by the introduction of one or more foreign DNA sequences from another species by artificial means.

About Hybrid Mustard DMH-11:

- **Dhara Mustard Hybrid-11(DMH-11)**, is a **genetically modified hybrid variety** of the **mustard species Brassica juncea**.
- It was developed by **Professor Deepak Pental** from the **University of Delhi**, to reduce India’s demand for **edible oil imports**.
- **DMH-11** contains **two alien genes** isolated from a **soil bacterium** called **Bacillus amyloliquefaciens** that enable the **breeding of high-yielding commercial mustard hybrids**.
- **DMH-11** was created through **transgenic technology**, primarily involving the **Bar, Barnase** and **Barstar** gene systems.
- The **Barnase** gene confers **male sterility**, while the **Barstar** gene restores **DMH-11’s ability to produce fertile seeds**. The insertion of the third gene **Bar**, enables **DMH – 11** to produce **phosphinothricin-N- acetyl-transferase**, the enzyme responsible for **Glufosinate resistance**.

About Mustard:

- Mustard is a largely **self-pollinating crop**, which makes the development of hybrids

(which typically yield more than normal varieties) difficult in the natural course.

Genetic Engineering Appraisal Committee (GEAC):

- It functions under the **Ministry of Environment, Forest and Climate Change (MoEF&CC)**.
- It is **responsible** for the **appraisal of activities involving large-scale use of hazardous microorganisms and recombinants in research and industrial production** from the environmental angle.
- The committee is also responsible for the appraisal of proposals relating to the **release of genetically engineered (GE) organisms and products** into the environment including experimental field trials.
- GEAC is **chaired** by the **Special Secretary/Additional Secretary of MoEF&CC** and **co-chaired** by a representative from the **Department of Biotechnology (DBT)**.
- Presently, it has **24** members and meets every month to review the applications in the areas indicated above.

Topic 14. THIRTY METER TELESCOPE (TMT) PROJECT

Important for the subject: Science and Technology

An official delegation from the **Department of Science and Technology** recently visited **Mauna Kea**, an **inactive volcano** in **Hawaii**, to address challenges facing the **Thirty Meter Telescope (TMT)** project.

Thirty Meter Telescope (TMT) Project:

- TMT is a planned **extremely large telescope (ELT)** that has become controversial due to its location on **Mauna Kea** on the **Island of Hawaii, USA**.
- The **TMT**, a collaborative effort involving the **U.S., Japan, China, Canada, and India**, aims to build a **30-meter diameter telescope** for **optical and infrared observations into deep space** and to observe **cosmic objects** with unprecedented sensitivity.

Alternate site:

- Despite **Indian approval** in **2014**, the project has encountered obstacles, including **local opposition on cultural and religious grounds**.
- There are plans to **relocate the Thirty Meter Telescope (TMT)** to an alternate site due to challenges faced at **Mauna Kea**.
- The **Observatorio del Roque de los Muchachos (ORM)** in **Spain's Canary Islands** is considered a potential alternative.

India's contribution:

- India plans to be a **significant contributor** to the **Thirty Meter Telescope (TMT) project**, offering **hardware, instrumentation, and software** valued at **\$200 million**.
- The contributions include **segment support assemblies, actuators, edge sensors, segment polishing, segment coating**, and **83 of the 492 precisely polished mirrors** required for the telescope.
- The **Indian Institute of Astrophysics (IIAP)** is spearheading the **consortium of Indian institutions involved in the TMT project**.

Other global scientific collaborations of India:

| | |
|---|--|
| 1. Laser Interferometer Gravitational-Wave Observatory (LIGO) Project | <ul style="list-style-type: none"> • The Indian scientists contributed in several aspects such as designing algorithms for the analysis of signals from gravitational waves, estimating energy and power radiated from black holes etc. • Now LIGO-India is a planned advanced gravitational-wave observatory to be located in India (Hingoli, Maharashtra) as part of the worldwide network. |
| 2. CERN Project | <ul style="list-style-type: none"> • India became a full Associate Member of the world's largest particle Physics laboratory CERN in 2017, thereby getting full access to data generated there. • The contribution of Indian scientists there is mainly in building the Large Hadron Collider (LHC) and the construction of two significant CERN experiments, CMS and ALICE. |
| 3. Facility for Antiproton and Ion Research (FAIR) | <ul style="list-style-type: none"> • FAIR is coming up at Darmstadt, Germany for studying the building blocks of matter and the evolution of the Universe. • FAIR is a sophisticated accelerator complex that will use high energy and ion beams to mimic the condition inside the core of the stars and early phases of the universe. • The role of Indian scientists would be to build NUSTAR (Nuclear Structure, Astrophysics and Reactions), CBM (Compressed Baryonic Matter) and PANDA (Antiproton Annihilation at Darmstadt). |

| | |
|--|--|
| 4. Square Kilometre Array (SKA) | <ul style="list-style-type: none"> India has joined nine other countries to build the world's largest and most sophisticated radio telescope called the Square Kilometre Array (SKA). The core of the telescope will be based in the Karoo desert in South Africa. Since the total detection area of the receiver dishes would exceed 1 square kilometre, it is called a Square Kilometre Array. |
| 5. International-Thermonuclear-Experimental-Reactor (ITER) | <ul style="list-style-type: none"> The International-Thermonuclear-Experimental-Reactor (ITER) is focused on creating an environment mimicking the Sun in laboratory conditions using nuclear fusion. India's scientists and institutions such as the Institute for Plasma Research, Ahmedabad are playing an important role in this. |

About Mauna Kea:

- An **inactive volcano** located on the **island of Hawai'i**, with a peak altitude of 4,207.3 meters (13,803 feet) above sea level.
- It is the **highest point** in the state of **Hawaii** and the **second-highest island peak globally**, just 38 meters shorter than its neighbour, **Mauna Loa**.
- Some authorities consider it the **tallest mountain globally**, measured from its **underwater base**, surpassing **Mount Everest's height** above sea level.
- Mauna Kea is also ranked **eighth by topographic isolation**.

Topic 15. WHO CERTIFIES CABO VERDE MALARIA-FREE; THIRD AFRICAN COUNTRY TO DO SO

Important for the subject: Science and Technology

Cabo Verde has been certified as a **malaria-free country** by the **World Health Organization (WHO)**, making it the **third nation** in the **African region** to achieve this status. **Cabo Verde** alongside **Mauritius** (in **1973**) and **Algeria** (in **2019**), received **certification** as a **Malaria-free country**.

- Africa** bears the **highest malaria burden globally**, with approximately **95%** of cases and **96%** of related **deaths** in **2021**.
- The certification is granted after a country demonstrates the **interruption of indigenous malaria transmission** for at least **three consecutive years** and the **capacity to prevent re-establishment**.

- **Cabo Verde**, facing significant malaria challenges in the past, eliminated the disease **twice** before experiencing a reemergence.
- Since **2017**, through **targeted interventions and improvements**, **Cabo Verde** has **maintained zero indigenous cases** on the **islands of Santiago and Boa Vista**.

About Malaria:

- Caused by the **Plasmodium parasite**. The parasite is **spread to humans through the bites of infected mosquitoes**. People who have malaria usually feel very sick with a high fever and shaking chills.
- Once the parasites enter the human body, they travel to the **liver** — where some types can lie dormant for as long as a year.
- When the **parasites mature**, they **leave the liver** and **infect your red blood cells**. This is when people typically develop malaria symptoms.

Disease-causing Microbes:

- **5 Plasmodium parasite** species cause malaria in humans.
- **falciparum** and **P. vivax** pose the **greatest threat**.
- **falciparum** – deadliest malarial parasite and the most prevalent on the **African continent**.
- 95% of all cases of **P. falciparum** occur in the **African region** and are associated with severe disease and disease-associated mortality.
- **P. vivax** – geographically most widespread in **tropical and subtropical regions**. Dominant in most countries outside of sub-Saharan Africa
- **Other 3 Plasmodium species** infecting humans – **P. malariae, P. ovale** and **P. knowlesi**.

Cabo Verde:

- Cabo Verde is an **archipelago and island country** of **West Africa** in the **central Atlantic Ocean**, consisting of **ten volcanic islands** with a combined land area of about 4,033 square kilometres.
- These islands lie between 600 and 850 kilometres (320 and 460 nautical miles) **west of Cap-Vert, the westernmost point of continental Africa**.
- The **Cape Verde islands** form part of the **Macaronesia ecoregion**, along with the **Azores, the Canary Islands, Madeira, and the Savage Isles**.

Capital: Praia

- **Colonised by the Portuguese**.

Topic 16. DRDO CONDUCTS SUCCESSFUL FLIGHT-TEST OF NEW GENERATION AKASH MISSILE OFF ODISHA COAST

Important for the subject: Science and Technology



Defence Research and Development Organisation (DRDO) conducted a successful flight-test of the New Generation AKASH (AKASH-NG) missile from the **Integrated Test Range (ITR), Chandipur** off the coast of Odisha on January 12, 2024.

The flight-test was conducted against a **high-speed unmanned aerial target** at very low altitude. The **successful development of the system** will further enhance the air defense capabilities of the country.

Recent Flight Test:

- During the flight-test, the target was successfully **intercepted by the weapon system and destroyed**.
- It has been validated that the functioning of the **complete weapon system** consisting of the missile with indigenously developed

Radio Frequency Seeker, Launcher, Multi-Function Radar and Command and Control & Communication system.

- The system performance was also validated through the data captured by a number of **Radars, Telemetry and Electro Optical Tracking System** deployed by ITR, Chandipur.

About AKASH- NG:

- The AKASH-NG system is a **state-of-the-art missile system** capable of intercepting high speed, agile aerial threats.
- It is a **surface-to-air missile defense system** developed by the **Defence Research and Development Organisation (DRDO)** and produced by **Bharat Dynamics Limited and Bharat Electronics**.
- This missile is a successor to the **Akash and Akash-1S series of missiles** with improvements

such as a:

- **Dual-pulse solid rocket motor,**
- **A canisterised launcher and An AESA Multifunction targeting radar**
- These improvements will help in **improving its probability of kill with a smaller ground operations and logistics footprint.**
- **Akash-NG** will have an **improved reaction time and higher level of protection** against saturation attacks.

About AKASH Missile:

- **AKASH is a Short Range Surface to Air Missile System** to protect vulnerable areas and points from air attacks.
- **Akash Weapon System (AWS)** can simultaneously engage Multiple Targets in Group Mode or Autonomous Mode.
- It has built-in **Electronic Counter-Counter Measures (ECCM) features.** It is developed by the **Defence Research and Development Organisation (DRDO)** and produced by **Bharat Dynamics Limited (BDL).**



Topic 17. MALDIVIAN PRESIDENT MOHAMED MUIZZU SETS A DEADLINE, DEMANDING INDIA WITHDRAW ITS TROOPS BY MARCH 15

Important for the subject: Science and Technology

According to the Maldives government, India has around 88 soldiers stationed in the Maldives.

- New Delhi has maintained that most of them are technical staff, engaged predominantly in **maintaining aircraft gifted by India.**

Diplomatic Strain:

- India-Maldives High-Level Core Group meets; Indian statement focuses on finding a “**mutually workable solution**” for continued **aviation operations.**

- Muizzu's consistent demand for troop withdrawal aligns with his past pledges and recent state visit to **China**, signalling evolving geopolitical dynamics.

India as a First Responder to the Maldives:

- It is a focal point for the Indian government's priorities under the '**Neighbourhood First Policy**.' India's swift response and immediate assistance during the 1988 coup attempt. The Indian Armed Forces acted promptly, executing **Operation Cactus**.
- India was the first to assist Maldives during the 2004 **Tsunami** as well as the water crisis in Malé in Dec 2014.
- India's swift dispatch of 30,000 doses of **measles vaccine** in Jan 2020 to prevent an outbreak in the Maldives.
- Both nations are key players in maintaining the safety and security of the Indian Ocean Region (IOR), thus contributing to India-led **Security And Growth for All in the Region (SAGAR) vision**.
- Defense cooperation extends to the areas of **Joint Exercises** – “Ekuverin”, “Dosti”, “Ekatha” and “Operation Shield”.

About India Out Campaign

- Initiated protests in the Maldives, transitioning to a digital presence.
- Protesters voice opposition to military presence without endorsing violence.
- Rooted in tensions since 2013, when President Yameen's pro-China stance strained India-Maldives ties.
- Ongoing campaign reflects historical diplomatic complexities between the two nations.

Topic 18. DRDO LAUNCHES ASSAULT RIFLE 'UGRAM' FOR INDIAN ARMY

Important for the subject: Science and Technology



Ugram is a state-of-the-art assault rifle of the 7.62 x 51 mm caliber. It was launched by

the Defence Research and Development Organisation (DRDO) on Monday.

The **Defence Acquisition Council** in December gave a nod for procurement of **70,000 US-made SIG Sauer assault rifles**.

About Ugram Assault Rifle:

- DRDO's **Pune-based facility Armament Research and Development Establishments (ARDE)** along with **Hyderabad-based Dvipa Armour India Private Limited**, has developed the rifle .
- Ugram weighs **less than four kilograms** and has an effective range of **500 meters**. It has been designed based on the **General Staff Qualitative Requirements (GSQRs)** of the Indian Army.
- The rifle has a **rivet-free design** and is capable of firing in both single as well as full auto mode.
- The assault rifle has been designed for the operational requirements of armed forces, paramilitary and state police entities.
- We have followed the concept of **Development cum Production Partner, DcPP** for the speedy progress of the project.
- A **Mission Mode Project of the DRDO** refers to a focused and time-bound development undertaken to achieve specific goals and objectives in the field of defense and technology.

Concept of Development cum Production Partner

- Under this, the vendor is associated with us during the design and production too.
- After the product is made by the vendor, it will undergo the acceptance trials.

About SIG Sauer assault rifles:

- The SIG Sauer SIG516 is a rifle **manufactured by SIG Sauer**.
- It is a **semi-automatic or select fire multi-caliber** rifle.
- It fires from a **closed bolt**, and has a **short-stroke pushrod piston system**.



Topic 19. WHY ARE PLASTIC ROCKS FOUND ACROSS 5 CONTINENTS, AND WHAT ARE THE THREATS?

Important for the subject: Environment



The **emergence of plastic rocks across five continents** has been catching attention of experts across the world. Plastic rocks are found in **various locations across the globe**. They have **surfaced on coastlines and inland areas in 11 countries** spanning **five continents**.

- In the geological processes, the mass of plastic deposited annually by humans is estimated at **22-48 million metric tonnes**.
- The direct reason behind the **formation of plastic rocks is the plastic pollution** humans are pouring into the environment. These are primarily composed of **compressed rock and discarded plastic polymers**.

About Plastic rocks:

- **Plastiglomerate** is a rock made of a mixture of sedimentary grains, and other natural debris (e.g. shells, wood) that is held together by plastic.
- There is a debate in the scientific community with regard to the **nomenclature** for these plastic-infused rocks.
- Various terms, including **plastistone, plasticrust, plastiglomerate, plastitar, anthropoquinas, and plastisandstone** have been proposed to describe the diverse ways in which these formations develop.

Discovery of Plastic Rocks:

- **Geologist Patricia Corcoran** discovered the **first plastic rock in Hawaii**, and coined the term '**plastiglomerate**.'
- Recently, **Deyi Hou** (an associate professor of environment at **Tsinghua University**, and his team) reported the **first plastic rocks found inland**, shedding light on the chemical bonding between plastic and rock.
- The team's extensive review confirms the **existence of plastic rocks on five continents**

and in 11 countries.

Formation Of Plastic Rocks:

- **Hou and his team** delve into the diverse methods through which plastic rocks can form.
- **Burning** is one of the common mechanisms through which plastic debris melts during activities, such as campfires or waste burning, solidifying within the mineral matrix as it cools.
- **Ocean waves** also play a vital role in the formation of plastic rocks. **Oil containing large amounts of plastic** on reaching beaches after spills, firmly attaches to rocks . They then undergo partial evaporation and solidify.
- **Chemical binding** which is catalyzed by sunlight-induced plastic oxidation also contributes to plastistone generation.
- **Plasti Stones** can be made from a variety of plastic wastes. These include **plastic bags, bottles, fishing gear, maritime ropes, and agricultural mulching films** can undergo lithification with rocks, giving rise to the formation of plastistones

Where are they currently found?

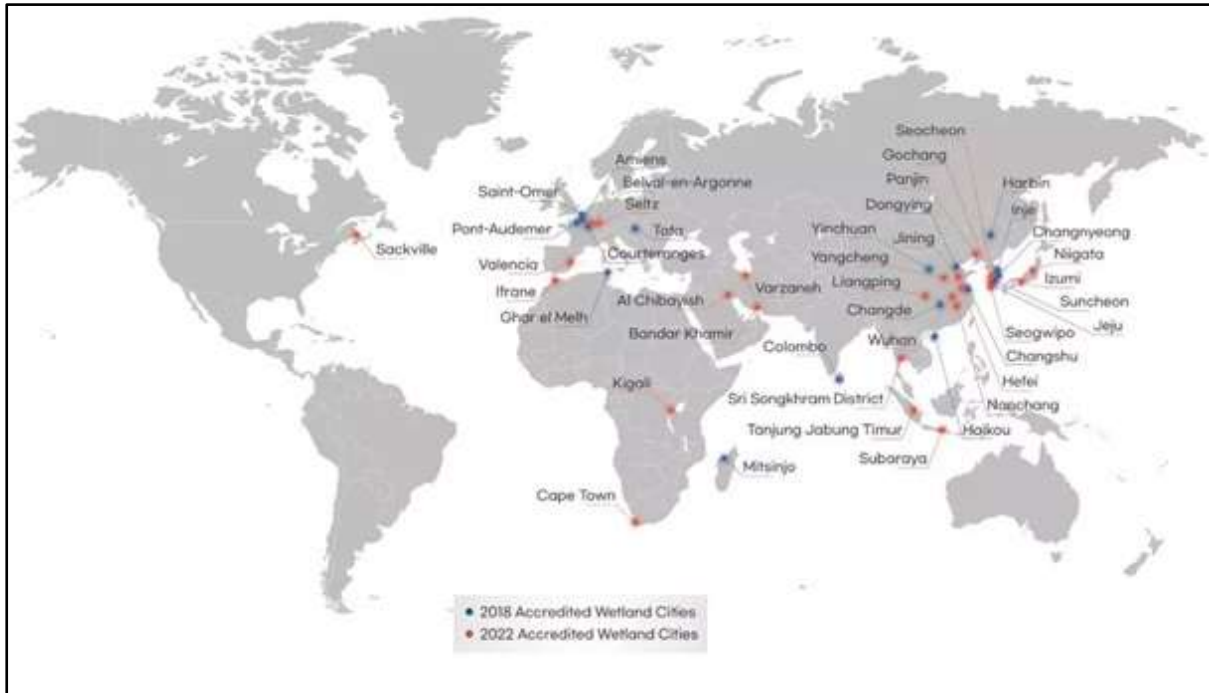
- As per the reports, plastic rocks have been found in **Brazil, Bangladesh, Hawaii, China, Japan, India, Italy, Portugal, Peru, the United Kingdom, and Spanish Curry Island.**
- Their widespread occurrence shows the **global nature of the plastic pollution crisis.**

What are the environmental implications?

- Plastic rocks **alter microbial communities within soil** and nearby environments, **impacting local ecosystems.**
- There is **lower microbial diversity in the plastistone** compared to the adjacent soil.
- The phenomenon **raises concerns about the potential release of microplastics into the environment.**
- These **rocks shed microplastics, tiny pieces of pollution** which have spread across the **globe and even into human and animal bodies.**
- **Plastic rocks will continue to increase** as a part of **natural geographical processes** and stick around for a long time.
- They are likely to **increase in places where plastic pollution is worse, like cities, mulched agricultural soils, and plastic waste dumping sites.**

Topic 20. MINISTRY OF ENVIRONMENT, FOREST, AND CLIMATE CHANGE SUBMITS PROPOSALS FOR WETLAND CITY ACCREDITATION UNDER THE RAMSAR CONVENTION ON WETLANDS FOR THE CITIES OF INDORE, BHOPAL AND UDAIPUR

Important for the subject: Environment



MoEF&CC has submitted **three nominations** from **India** for **Wetland City Accreditation (WCA)** of **Indore** (Madhya Pradesh), **Bhopal** (Madhya Pradesh) & **Udaipur** (Rajasthan) under the **Ramsar Convention on Wetlands**.

- These are the **first three Indian cities** for which nominations have been submitted for **WCA** based on the proposals received from respective **State Wetlands Authorities** in collaboration with the **Municipal Corporations**.
- **Sirpur Wetland** (Ramsar site in **Indore**), **Yashwant Sagar** (Ramsar site closer to **Indore**), **Bhoj Wetland** (Ramsar Site in **Bhopal**), and several Wetlands (Lakes) in and around **Udaipur** are lifelines to these cities.

The three nominated cities include:

- **Indore:** Founded by **Holkars**, **Indore** is the **cleanest city in India** and the recipient of **India's Smart City Award 2023** for its best sanitation, water and urban environment.
- **Sirpur Lake**, a **Ramsar Site** in the city, has been recognised as an **important site for water bird congregation** and is being developed as a **Bird Sanctuary**.
- **Bhopal:** One of the **cleanest cities in India** that has proposed conservation zones around the **wetlands** in its **draft City Development Plan 2031**.

- **Bhoj Wetland, Ramsar Site** is the city's lifeline, equipped with the **world-class wetlands interpretation centre, Jal Tarang.**
- Additionally, the **Bhopal Municipal Corporation** has a **dedicated Lake Conservation Cell.** A network of more than **300 wetland mitras** is engaged in wetland management and conservation of Sarus Crane.
- **Udaipur:** Located in **Rajasthan**, the city is surrounded by **five major wetlands**, namely, **Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai.**
- These wetlands are an integral part of the city's culture and identity, **help maintain the city's microclimate**, and provide a buffer from extreme events

Wetland City Accreditation (WCA):

- Recognizing the **importance of wetlands in urban and peri-urban environments** and taking appropriate measures to conserve and protect these wetlands, the **Ramsar Convention** during **COP12** held in the year **2015** approved a **voluntary Wetland City Accreditation** system under **Resolution XII.10** which recognizes cities which have taken exceptional steps to safeguard their urban wetlands.
- The **Wetland City Accreditation scheme** aims to further promote the conservation and wise use of **urban and peri-urban wetlands**, as well as **sustainable socio-economic benefits for local populations.**
- **To be formally accredited**, a candidate for the **Wetland City Accreditation** should satisfy the standards used to implement each of the **six international criteria** mentioned in Operational Guidance for **WCA** of the **Ramsar Convention on Wetlands.**

Accredited Wetland Cities:

- Currently, there are **42 wetland cities** spread across **17 countries worldwide**, with **China** having a maximum of **13 such cities.**

Topic 21. MAJORITY OF CITIES FAR FROM CLEAN AIR TARGET, SAYS STUDY

Important for the subject: Environment

The **National Clean Air Programme (NCAP)** in **India** aimed to decrease average particulate matter concentrations by **40%** by **2026** in **131 cities.**

- However, an analysis showed that out of **49 cities** with **consistent data over five years**, **only four cities** met or surpassed the targeted decline in **PM 2.5 levels.** Some major cities like **Delhi, Navi Mumbai, Mumbai**, and others experienced **marginal declines** or even **risers in pollution levels.**
- Cities like **Varanasi, Agra, and Jodhpur** (**50%**) demonstrated **significant reductions** in **PM 2.5 levels**, showcasing **positive progress.**

- **Uttar Pradesh** cities such as **Kanpur (50%)**, **Meerut (42%)**, and **Lucknow (41%)** also saw substantial reductions.
- Yet, concerns persist as nearly **18 of the top 20 polluted cities** for **PM 2.5** are concentrated in the **Indo-Gangetic Plain (IGP)**, with **Delhi** and other **northern/eastern cities** peaking during winter due to **adverse meteorological conditions**.
- Only **Guwahati** and **Rourkela**, outside the **IGP**, were among the **20 most polluted cities** for **PM 2.5**
- The **concentration of continuous ambient air quality monitors** varies widely among cities, with only a few cities possessing a sufficient number.
- **Geographical locations, emission sources, and meteorological influences** significantly impact **pollution levels**, necessitating further study to understand their contributions. Despite **positive** strides in reducing pollution, challenges remain.
- The **NCAP's revised goal** underscores a commitment to ambitious environmental targets, with the addition of **new air quality monitoring stations** expected to provide a clearer understanding of the problem and aid in better mitigation measures.

About NCAP:

- Launched by the **MoEFCC** in **January 2019** as a **long-term, time-bound, national-level strategy that features:**
- Making determined efforts to deal with the air pollution problem across the country in a comprehensive manner.
- Achieving **20% to 30% reduction target** in **Particulate Matter** concentrations by **2024** where **2017** is kept as the **base year** for the comparison of concentration.
- Identification of **122 non-attainment cities** (presently **131 non-attainment cities**) across the country based on the **2014-2018 Air Quality data**.
- **Non- Attainment Cities** are the cities which do not meet the **National Ambient Air Quality Standards**.
- Preparation of the **city-specific action plans** including measures to strengthen the monitoring network, reduce vehicular/industrial emissions, increase public awareness etc.
- Implementation of the **city-specific action plans** to be regularly monitored by **Committees at Central and State level** namely **Steering Committee, Monitoring Committee and Implementation Committee**.
- Facilitating collaborative, multi-scale and cross-sectoral coordination between the relevant central ministries, state governments and local bodies.

- Establishing the right mix with the existing policies and programmes which include the **National Action Plan on Climate Change (NAPCC)** and other government initiatives related to climate change.
- Constant change, activity and progress evolved based on the additional scientific and technical information as they emerged.
- Increasing the number of monitoring stations in the country including rural monitoring stations, and technology support. Emphasis on awareness and capacity-building initiatives.
- Setting up **certification agencies** for monitoring equipment, source apportionment studies, emphasis on enforcement, specific sectoral interventions etc.
- The **NCAP tracker** is a joint project of the **Carbon Copy portal** and **Maharashtra-based Respirer Living Sciences**.

Objective:

- To augment and evolve effective and proficient ambient air quality monitoring networks across the country.
- To have efficient data dissemination and public outreach mechanisms for timely measures for prevention and mitigation of air pollution.
- To have a feasible management plan for the prevention, control and abatement of air pollution.

Topic 22. OVER 100 ACTIVE PERMAFROST STRUCTURES IDENTIFIED IN JHELM BASIN, CAN CAUSE CATASTROPHIC DISASTERS IN FUTURE: STUDY

Important for the subject: Environment

A recent study **mapped over 100 rock glaciers** in the **Kashmir Himalayas**, revealing **signs of movement or melting** in these **permafrost structures**.

- Termed '**active glacial rocks**,' these formations are potentially linked to **natural disasters** as the region experiences warming. While permafrost research is extensive in areas like **Greenland** and **Alaska**, knowledge about **Himalayan rock glaciers** remains limited.

Active glacial rocks:

- **Rock glaciers** form when **debris-covered ice** transforms due to **receding or thawing glaciers**. The process might have **accelerated during warmer periods** in the **Earth's recent interglacial era**.
- These structures are often mistaken for regular ground, leading to settlements being

planned on unstable terrain. The **melting permafrost** poses risks to nearby communities and infrastructure, as seen in **Canada's Nunavik area**.

- Researchers identified these **rock glaciers** using **satellite images** and **field visits**, constructing a '**Permafrost Zonation Map**' pinpointing **207 rock glaciers** across **50 square kilometres** in the **Jhelum basin**.
- They categorized these formations as '**active**' or '**relict**' based on **permafrost status**. Reports highlight the **shift** from **glaciers** to **rock glaciers** in the **Kashmir valley's south western parts**, indicating a serious transition in **glaciation stages**.
- Experts anticipate **rock glaciers** will become more common due to **increased debris concentrations** in **melting glaciers**, a trend already observed in the **Jhelum basin's debris-covered glaciers**.
- This underscores the **importance of mapping permafrost distribution** in the **Himalayan region** due to the potential risks associated with melting permafrost in rock glaciers.

Dangers posed & a benefit:

- The study identifies **dangers** posed by **rock glaciers**, particularly near **glacial lakes** like **Chirsar and Bramsar Lakes**, increasing the risk of **glacial lake outburst floods (GLOFs)**.
- These permafrost formations, located at steep slopes, could **lead to slope failures** and **subsequent melting**, potentially causing **GLOFs** and more frequent **landslides**.
- The presence of waterbodies resembling '**thermokarst lakes**' suggests **hidden permafrost** in the **Jhelum Basin**.
- **Thermokarst** is a **type of terrain** characterised by **very irregular surfaces** of **marshy hollows** and **small hummocks** formed as **ice-rich permafrost thaws**.
- The land surface type occurs in **Arctic areas**, and on a smaller scale in mountainous areas such as the **Himalayas** and the **Swiss Alps**.
- These pitted surfaces resemble **clusters of small lakes** formed by the **dissolution of limestone** in some **karst areas**.
- These permafrost structures hold **significant water volumes**, approximately a trillion litres across the Jhelum basin, amid dwindling water sources.

Topic 23. A LOOK AT PROJECT TIGER, 50 YEARS ON

Important for the subject: Environment

Launched in **1973**, **Project Tiger** introduced **India's Tiger Reserves** – which have since rapidly ascended in status. From an **administrative category** arbitrarily constituted and

administered by the forest bureaucracy, **Tiger Reserves** became a **statutory category** in **2006**.

- Today, **Tiger Reserves** are hailed worldwide as **India's miraculous success story in environment and forest conservation**, especially in this age of climate change.
- From **only nine Reserves** in **1973** encompassing 9,115 sq. km, there are **54** in **18 States**, occupying 78,135.956 sq. km, or **2.38%** of **India's total land area**.
- **Critical Tiger Habitats (CTH)** cover 42,913.37 sq. km or **26%** of the area under **National Parks and Wildlife Sanctuaries**.
- The **initial tiger count** in **1972** was **1,827** using the **pug-mark method**. By **2022**, **3,167-3,925 tigers** were estimated via the more reliable **camera-trap method**. **India claims** to host **75%** of the **world's tigers**, growing at **6.1%** annually.
- The **Wildlife (Protection) Act** in **1972** established **National Parks and Wildlife Sanctuaries**, altering **forest-dwellers' rights**.
- **Project Tiger**, previously a **Centrally Sponsored Scheme**, introduced **Critical Tiger Habitats** and **Buffer Areas**, leading to conflict due to the displacement of people coexisting with tigers

The September 2006 amendment:

- A five-member '**Tiger Task Force**' was established in **2005** in response to concerns about **tigers' dwindling numbers** in **Sariska, Rajasthan**, despite heavy investments.
- The **Task Force** identified flaws in the approach of using **guns, guards, and fences** and highlighted **conflicts** between **forest authorities** and **locals coexisting with tigers**.
- The **September 2006 amendment** to the **Wildlife (Protection) Act** formed the **National Tiger Conservation Authority (NTCA)** and introduced a **conservation plan**.
- **Forest-dweller rights** were modified; possible relocation was considered, and wildlife killings were permitted if they threatened human lives.
- The **Scheduled Tribes and Other Traditional Forest Dwellers Act**, enacted four months later, **recognized traditional forest rights**, empowering **Gram Sabhas** to **manage forests**.
- This act safeguarded the livelihoods of around 20 crore Indians, half of whom were tribals, across 1.79 lakh villages.
- The **FRA** introduced **Critical Wildlife Habitat (CWH)**, preventing diversion for non-forestry purposes, a demand made by Adivasi movements during negotiations.

India's basis for CTHs:

- **Tiger Reserves** were initially meant to be created democratically based on scientific

criteria, considering the interests of people living in these areas.

- **Critical Tiger Habitats (CTHs)** are founded on scientific evidence of human activities' irreversible damage to wildlife, requiring potential modifications to **forest dwellers rights** and possible relocation after consultation.
- CTH establishment shouldn't infringe upon **Scheduled Tribes' or other forest dwellers' rights**.
- **Buffer Areas** aim to **balance human-animal coexistence** while **respecting local people's rights**, determined by **objective criteria** and **expert committee input**. Except for **Similipal in Odisha**, the CTHs had **no Buffer Area**.
- However, **all Tiger Reserves in India** were notified without meeting these requirements, **lacking informed consent from forest-dwelling communities**, leading to **conflict-prone situations** for both tigers and forest-dwellers.

Relocation vs Rehabilitation:

- The **Wildlife (Protection) Act (WLPA)** permits **only voluntary relocation** based on **mutually agreed terms**, while the **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (LARR) Act 2013** outlines compensation and rehabilitation procedures.
- **LARR** mandates **compensating relocated individuals twice the market value of land, asset values, allowances, housing, basic amenities, and more**, ensuring **consent** and **proper resettlement**.
- However, the government has **limited compensation to Rs 15 lakh, not meeting legal requirements**, and transferring responsibility to **State governments**.
- Officials often obtain **minimal consent for relocation**. As of **2019**, over 57,000 families lived in **Critical Tiger Habitats (CTHs)** across **50 Tiger Reserves**.
- **Tiger Reserves** face resistance to recognizing **forest rights**, causing conflict. **NTCA** initially barred **FRA rights recognition in CTHs**, later withdrawing after the Union Environment Ministry issued guidelines.
- There's a clash between **FRA's provisions for public utilities** and the **Union Environment Ministry's insistence on wildlife clearance** for small-scale diversions from protected areas.
- India's expanding tiger population and reserves may escalate conflicts rather than foster biodiversity in the future.

| Critical Tiger Habitat (CTHs) | Critical Wildlife Habitat (CWLHs) |
|--|--|
| <p>These are core areas of tiger reserves and are identified under the Wild Life Protection Act (WLPA), 1972 based on scientific evidence.</p> <p>Such areas are required to be kept as inviolate for the purpose of tiger conservation, without affecting the rights of the Scheduled Tribes or such other forest dwellers.</p> <p>The notification of CTH is done by the state government in consultation with the expert committee constituted for the purpose.</p> | <p>CWLHs are defined only in the Forest Rights Act, 2006.</p> <p>CWLHs are meant to be areas of national parks and wildlife sanctuaries that are required to be kept as inviolate for the purpose of wildlife conservation (not just tigers).</p> <p>The identification of CWLH is done based on scientific and objective criteria, but it mandatorily requires the settlement of forest rights under FRA.</p> <p>The notification of CWLHs can only be done with the consent of the Gram Sabhas and affected stakeholders.</p> <p>Post notification, the forest rights in CWLHs can be modified or resettled Important for the subject to certain conditions.</p> |

Topic 24. DARJEELING ZOO SCRIPTS A SUCCESS STORY: WITH A COUNT OF 14, IT NOW HAS WORLD'S LARGEST NUMBER OF SNOW LEOPARDS IN CAPTIVITY

Important for the subject: Environment



Nearly four decades after **Darjeeling zoo** began a conservation breeding programme, it now has the world's largest number of snow leopards in captivity.

- There are **14 snow leopards in total with 7 males and 7 females**. This announcement was made by the **World Association for Zoos and Aquariums (WAZA)**.
- There are six cubs from three mothers, the highest since the launch of the breeding programme at **Padmaja Naidu Himalayan Zoological Park (PNHZA)**, also commonly known as **Darjeeling zoo**.
- The conservation breeding programme for snow leopards, the **first and the only in the country**, was launched at **Darjeeling zoo in 1985**.
- The **Darjeeling zoo** has been the coordinating zoo for snow leopards in the country since 2007.

Biosecurity protocols for all captive animals include:

- Blow flaming of shelters twice a month, using virucidal spray twice a month, daily use of UV lights, daily cleaning of shelters with disinfectants, burning of turmeric, use of potassium permanganate as foot baths
- **WAZA is the global alliance of regional associations, national federations, zoos and aquariums**, dedicated to the care and conservation of animals and their habitats around the world.

About Snow Leopard:

- The snow leopard's habitat range extends across the mountainous regions of 12 countries across Asia: **Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan**.
- In India, the population of snow leopards is estimated to be between **400-600** and is distributed across the union territories of **Jammu & Kashmir and Ladakh** and the states of **Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh**.
- Snow leopards live in **high altitudes ranging from 3,000-4,500 meters**. They generally prey upon species such as the **Himalayan Blue Sheep, Ibex and Tahr**.

Vulnerability status of Snow Leopard:

1. **Vulnerable: IUCN LIST**
2. **Appendix 1: CITES**
3. **Schedule 1: Wildlife Protection Act 1972**

Conservation programmes:

- **WWF had launched Third Pole Geo Lab**, an interactive web-based tool and database for snow leopard conservation, climate change, and water security issues in **Asia's high**

mountains, as part of our USAID-funded project, Conservation and Adaptation in Asia's High Mountain Communities and Landscapes.

- The **USAID-funded, \$7.3 million Conservation and Adaptation in Asia's High Mountain Landscapes and Communities** project will conduct field activities in and build alliances among six of the snow leopard's 12 range countries: Bhutan, India, Nepal, Mongolia, Kyrgyzstan, and Pakistan.
- **India** has been part of the **Global Snow Leopard and Ecosystem Protection (GSLEP) Programme** since 2013.

Project Snow Leopard:

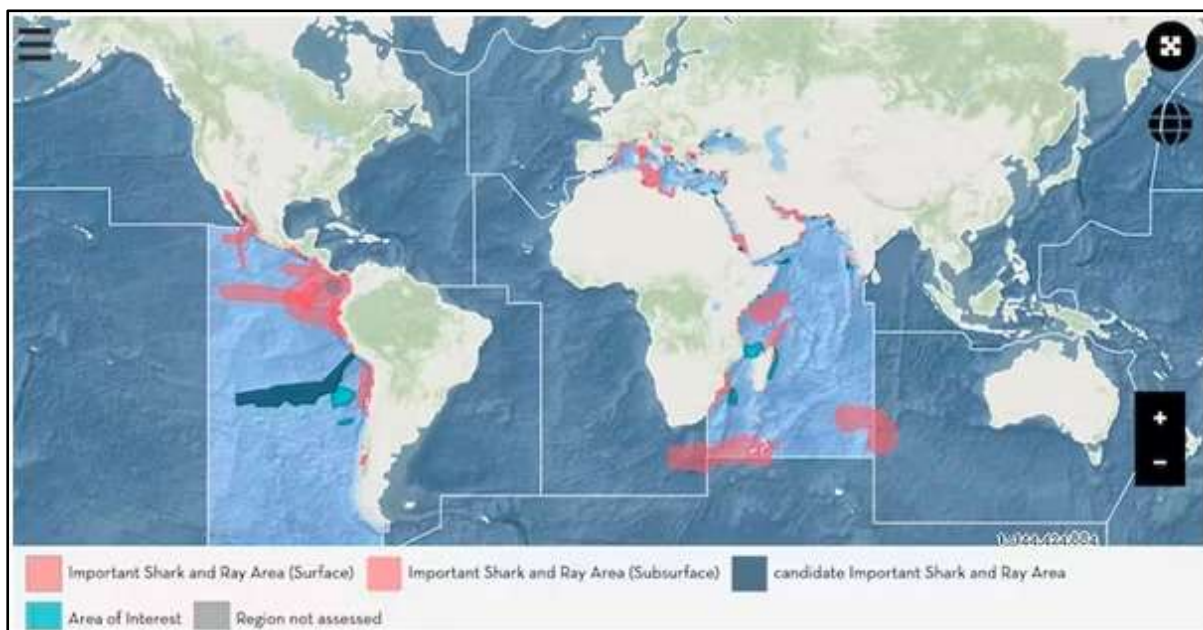
- The **Ministry of Environment, Forest & Climate Change** launched **Project Snow Leopard in 2009** to promote an inclusive, participatory, and landscape-based approach to conserve Snow Leopards and their habitat in India.
- The project **aims to protect and conserve the high-altitude of the Himalayan and trans-Himalayan regions** to improve wildlife conservation and adopt a participatory approach that involves the local communities and other stakeholders in safeguarding the snow leopard and its habitat.
- **Project Snow Leopard** is being implemented in the four Himalayan states of **Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh**, and the two UTs of **Jammu and Kashmir, and Ladakh**

About Padmaja Naidu Himalayan Zoological Park:

- This zoo was established in August 1958.
- It is the **largest high-altitude zoo in the country**. It is located in **Darjeeling district of West Bengal**
- It has been successful in conservation breeding of **10 animals including Red Pandas, Snow Leopards and Blue Sheep**.
- The **Red Panda project** was started in 1990. The zoo has been a **pioneer for conservation breeding of endangered Eastern Himalayan Species in India**.
- In the year **2022**, the **Central Zoo Authority of India (CZA)** ranked **PNHZ Park First** in all categories among all zoos in the country.

Topic 25. TO PROTECT ENDANGERED SHARKS AND RAYS, SCIENTISTS ARE MAPPING THESE SPECIES' MOST IMPORTANT LOCATIONS

Important for the subject: Environment



Important Shark and Ray Areas Project:

The Earth's saltwater bodies collectively form a vast ocean with diverse ecosystems. Specific locations, like the **Fuvahmulah Atoll** in the **Maldives**, are highlighted for their rich marine life, including **tiger sharks**, **thresher sharks**, **scalloped hammerheads**, and **oceanic manta rays**.

- The **Important Shark and Ray Areas project**, led by **marine conservation scientists**, aims to **identify key areas crucial for the conservation of sharks and rays**. The **project** involves **collaboration** among hundreds of **scientists** and **experts** to **identify and prioritize areas** crucial for the **survival of sharks and their relatives**.
- By recognizing and protecting these zones, the project seeks to implement **measures for fisheries management** and ensure the **well-being of these marine species**.
- They've developed **technical criteria** modelled after successful approaches for other marine animals and are conducting regional workshops worldwide.
- After expert reviews, designated areas will be added to an **online e-atlas** which can be seen online, with a **formal compendium published for each region**.
- This process, **repeated every 10 years**, allows for adjustments based on new research and changing environmental factors.

Significance of the project:

- The **Important Shark and Ray Areas** project has published compendiums for the **Mediterranean and Black Seas region**, featuring **65 identified crucial areas**, and the **western Indian Ocean** with over **125 areas**.
- These zones **vary in size and habitat** and **play a vital role** for species like the **blackchin guitarfish** and the **common smooth hound shark**.
- **Examples** include **Benidorm Island** in the **Mediterranean** and the **Cocos-Galapagos Swimway** in **Costa Rica** and **Ecuador**.
- Ranging from the **smallest area**, **Israel's Palmahim brine pools**, to the **largest**, the **Strait of Sicily** and **Tunisian Plateau**, these zones support **diverse shark, ray, and chimaera species**.
- While designation as an **Important Shark and Ray Area** doesn't ensure automatic protection, the project **aims to influence existing spatial planning, fisheries management, and conservation efforts**, with the potential for incorporation into marine protected areas or other preserves.

Topic 26. SMALL HERBIVORES ARE TRUE VICTIMS

Important for the subject: Environment

India's natural areas are facing **extensive threats**, with **land-use changes** leading to **fragmented, depleted, and invaded ecosystems**. **Two-thirds** of these spaces are now grappling with the **invasion of alien plants**, posing a significant **risk to biodiversity**.

- **Herbivores**, both **wild** and **domestic**, are **particularly vulnerable** as they rely on these landscapes for survival.
- While **invasive plants** are **not a primary food source for herbivores**, some large grazers, such as **rhinoceroses** and **Indian bison**, have been observed consuming them, especially during dry seasons.
- **Megaherbivores**, with their large size and varied diets, play a **crucial role** in **controlling invasive plants in certain regions**, but in **drier areas**, the invasion creates challenges for native plants.
- **Smaller and medium-sized herbivores**, **heavily reliant on vegetation** decimated by **invasive plants**, face the dilemma of starvation or consuming invaders, with **potential health issues** documented.
- **Protected areas in India** are implementing measures such as **managed grasslands** and **periodic removal of invasive plants** to provide temporary havens for herbivores.
- However, a **long-term solution** requires **large-scale, science-driven restoration** of

native ecosystems.

Megaherbivores:

- Megaherbivores are **large herbivores** that can exceed 1,000 kg (2,200 lb) in weight. They **first appeared 300 million years ago** in the **early Permian**, in the form of **synapsids**.
- They were then **replaced by megaherbivorous dinosaurs** that went extinct in the **Cretaceous-Paleogene extinction event**. After this period, **small mammalian species** evolved into **large herbivores** in the **Paleogene**.
- During the **Quaternary Extinction Event**, **mega herbivores disappeared** on most continents on Earth. Recent mega herbivores include **elephants, rhinos, hippos, and giraffes**.
- There are **nine extant species of mega herbivores** living in **Africa and Asia**. The **African bush elephant** is the **largest extant species**.
- **Extant mega herbivores** are **keystone species** in their environment. They **defoliate** the landscape and spread a greater number of seeds than other **frugivores**.
- **Extant mega herbivores**, like most **large mammals**, are **K-selected species**. They are characterized by their **large size, relative immunity to predation, their effect on plant species, and their dietary tolerance**.

Topic 27. PREPARE ZONE MANAGEMENT PLANS SOON, NGT TELLS COASTAL STATES, UNION TERRITORIES

Important for the subject: Environment

The National Green Tribunal (NGT) has asked the Ministry of Environment, Forest and Climate Change to ensure that coastal States and Union Territories prepare a Coastal Zone Management Plan (CZMP) or the Island Coastal Regulation Zone Plan (ICRZP) as per the Coastal Regulation Zone notification, 2019, within a time bound period.

- Only three States – Odisha, Karnataka and Maharashtra – have formulated the CZMP/ICRZP as per the notification. The only Great Nicobar and Little Andaman Islands have approved the ICRZP.

About Coastal Regulation Zone (CRZ)

- **Ministry of Environment and Forests (MoEF) under the Environment Protection Act, 1986, issued the Coastal Regulation Zone** notification for regulation of activities in the coastal area.
- As per the notification, the **coastal land up to 500m from the High Tide Line (HTL) and a stage of 100m along banks of creeks, estuaries, backwater** and rivers Important for the subject to tidal fluctuations, is called the Coastal Regulation Zone(CRZ).

CRZ along the country has been placed in four categories, which are as follows:

CRZ I – Ecologically Sensitive Areas.

- They **lie between low and high tide line.**
- Exploration of natural gas and extraction of salt are permitted

CRZ II – Shore Line Areas

- The areas that have been **developed up to or close to the shoreline.**
- Unauthorized structures are not allowed to construct in this zone.

CRZ III – Undisturbed Area

- Rural and Urban localities which fall outside I and II.
- Only certain activities related to agriculture even some public facilities are allowed in this zone.

CRZ IV – Territorial Area

- An area covered **between Low Tide Line and 12 Nautical Miles seaward.**
- Fishing and allied activities are permitted in this zone.
- Solid waste should be let off in this zone.

National Green Tribunal

- The National Green Tribunal has been established under the National Green Tribunal Act 2010.
- New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four places of sitting of the Tribunal.
- NGT is mandated to make disposal of applications or appeals finally within 6 months of the filing of the same.

What is the composition of NGT?

- The Tribunal comprises the Chairperson, the Judicial Members, and Expert Members. They shall hold office for a term of 5 years and are not eligible for reappointment.
- The Chairperson is appointed by the Central Government in consultation with the Chief Justice of India (CJI).

- A Selection Committee shall be formed by the central government to appoint the Judicial Members and Expert Members.
- There are to be at least 10 and a maximum of 20 full-time Judicial members and Expert Members in the tribunal.

Powers & Jurisdiction

- Established for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
- It has appellate jurisdiction to hear appeals as a Court. The Tribunal is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.

Topic 28. CENSUS RECORDS A 27% INCREASE IN WATERBIRDS IN KAZIRANGA

Important for the subject: Environment

The **Kaziranga National Park and Tiger Reserve** have recorded a **27% increase** in the number of **resident and winter migratory water birds**.

- It was the **fifth waterbird census** conducted through the **citizen scientist initiative**.

About Kaziranga National Park:

- Located in the **Golaghat and Nagaon districts** of the state of **Assam, India**. The park, which hosts **two-thirds of the world's Indian rhinoceroses**, is a **UNESCO World Heritage Site**.
- With its **unique terrestrial and aquatic habitats**, **Kaziranga** is one of the best-protected areas in the world.
- Apart from **being the home of the Big Five mammals** — **rhino, tiger, elephant, Asiatic water buffalo, and eastern swamp deer** — the park sustains more than 500 avian species.
- Kaziranga is a vast expanse of **tall elephant grass, marshland, and dense tropical moist broadleaf forests**, crisscrossed by **four major rivers**, including the **Brahmaputra**, which bisects the park. Other rivers are: **Dhansiri, Difloo, and Laokhowa Suti**.
- More than **50%** of its landmass under grasslands is dotted with waterbodies, locally known as **bells**.
- Listed as **'Important Bird Area'** by the **Bombay Natural History Society**

(BNHS) and **BirdLife International**.

- Notable wetlands adjoining the tiger reserve that recorded significant bird presence are **Hukuma Beel** (3049 individuals), **Joysagar Doloni** (1765), **Gonak Beel** (973), **Sahala Beel** (424), and **Sisubari Beel** (348).

Key avian species in Kaziranga:

- Bengal florican, swamp francolin, and various species of raptors, vultures, and waterfowl.
- It has the highest concentration of ‘**Bengal florican**’ after the **Manas** and **Orang National Parks**.

Topic 29. US OIL & GAS LOBBY PUSHES MASSIVE AD CAMPAIGN PROMOTING FOSSIL FUELS

Important for the subject: Environment

The **United States** has surpassed **Qatar** and **Australia** to become the **world’s top natural gas exporter** in **2023**.

- The **biggest oil and gas lobby** in the country — the **American Petroleum Institute (API)** — has launched an eight-figure ad campaign “**Lights on Energy**” to **promote the need for fossil fuels among voters**.

Details about the Campaign- “Lights on Energy”:

- The campaign emphasizes the **essential role of fossil fuels**, framing them as **crucial for national security and comfort**.
- It says that ‘Without access to reliable American energy provided by natural gas and oil, our nation’s security can be weakened, and its future put at risk’.
- The **per capita emissions of the US**, like other developed countries, are among the **highest in the world** largely because of **lifestyle or luxury emissions**.
- While **India’s per capita emissions** are **markedly lower** and are attributed to **survival or subsistence emissions**.
- The campaign also downplays the **environmental impact of methane emissions** from **oil and natural gas**.
- Notably, it aligns with the concept of “**transitional fuels**” recognized in the **Global Stocktake text**, exploiting this as a justification for continued natural gas use.

Topic 30. THE FIRST-EVER IUCN ASSESSMENT OF THE HIMALAYAN WOLF IS OUT. AND IT IS GRIM

Important for the subject: Environment

The **Himalayan wolf**, scientifically known as **Canis lupus chanco**, is a **canine** with uncertain taxonomy, characterized by **distinctive genetic markers**.

- Its **mitochondrial DNA** suggests it is **genetically primitive** compared to the **Holarctic grey wolf** and is **genetically identical** to the **Tibetan** and **Mongolian wolves**, with connections to the **African wolf**.
- Although there are **no significant morphological differences** between **Himalayan** and **Tibetan wolves**, the former are adapted to **high-altitude environments** above 4,000 meters.
- The **Himalayan wolf's distribution** includes the **Himalayan range** and the **Tibetan Plateau**.
- Wolves in **India** and **Nepal** are **endangered**, listed on **CITES Appendix I** due to international trade.

Assessment of Himalayan Wolf:

- They have been **evaluated for the first time** on the **IUCN Red List** and are now classified as '**Vulnerable**.'
- The assessment estimates a population size of **2,275-3,792 mature individuals** in a single subpopulation across **Nepal, India**, and the **Tibetan Plateau**.
- The **continuous decline in the population** is attributed to significant **threats** and a **lack of conservation efforts**.
- In **India**, there are **227-378 mature individuals** in the **Himalayan region**, with potential additional presence in **Uttarakhand** and **Sikkim states**.

Causes of decline:

- The **Himalayan Wolf** is identified as a **genetically unique species** in a **2018 study**.
- The assessment notes a **continuing decline in the habitat** of these **wolves**, primarily due to **depredation conflicts**, **habitat modification**, and **illegal hunting for trade**. **Hybridization with feral dogs** poses a growing threat in **Ladakh** and **Spiti**.
- The assessment **recommends measures** such as **securing prey populations**, implementing effective **livestock guarding methods**, managing **feral dog populations**, and **fostering transboundary conservation efforts**.
- Additionally, it calls for incorporating the **Himalayan Wolf** into conservation programs to enhance public acceptance and reduce persecution.

Topic 31. INDIA'S FIRST NATIONAL HIGHWAY STEEL SLAG ROAD SECTION ON NH- 66 MUMBAI-GOA NATIONAL HIGHWAY INAUGURATED

Important for the subject: Environment



Dr. V.K. Saraswat, Member (S&T), NITI AAYOG has inaugurated India's First National Highway Steel Slag Road section on **NH- 66 Mumbai-Goa National Highway**.

- **The Steel Slag Road Technology** which was developed by **CSIR-Central Road Research Institute (CSIR-CRRI)** is transforming the waste of steel industries into wealth.
- It is helping the **National Highways Authority of India (NHAI)** to build stronger and **eco-friendly national highways** in the country.
- For construction of this road around **80,000 tons of CONARC Steel slag** were converted as **processed steel slag** aggregates at JSW Steel Dolvi, Raigad plant.
- India is the **second largest steel producing country** in the world and about 19 million tonnes of steel slag is generated in the country as a solid waste, which will increase to 60 million tonnes by the year 2030.
- **Steel slag road technology** fulfilling the Prime Minister's 'Waste to Wealth' mission

About Steel Slag Road Technology:

- The technology has been developed by the **Central Road Research Institute** under a research project in collaboration with the Ministry of Steel, Government of India.
- This technology facilitates the **large-scale utilization of waste steel slag of steel plants** and has proved very useful in effective disposal of about 19 million tonnes of steel

slag generated in the country.

- This technique has been successfully tested in road construction in four major states of the country including **Gujarat, Jharkhand, Maharashtra and Arunachal Pradesh.**
- The **1st road made with steel slag road interpretation technology in Surat, Gujarat,** has become famous for its technological excellence at national and national level.
- No natural ballast of any kind has been used in the construction of this road.

About Waste to Wealth Mission:

- The Waste to Wealth Mission is one of the **nine scientific missions of the Prime Minister's Science, Technology, and Innovation Advisory Council (PMSTIAC).**
- The mission is spearheaded by the office of the **Principal Scientific Adviser (PSA), Government of India.**
- The mission aims to identify, develop, and deploy technologies to treat waste to generate energy, recycle materials, and extract resources of value.
- The mission will assist and augment the **Swachh Bharat and Smart Cities projects by leveraging science, technology, and innovation** to create circular economic models that are financially viable for waste management to streamline waste handling in the country.

About CSIR-Central Road Research Institute (CSIR-CRRI):

- **CSIR-Central Road Research Institute (CRRI)** is a premier national laboratory established in **1952.** It is a constituent of **Council of Scientific and Industrial Research (CSIR).**
- It is engaged in carrying out research and development projects on **design, construction and maintenance of roads and runways, traffic and transportation** planning of mega and medium cities.
- It provides assistance in **management of roads in different terrains, improvement of marginal materials,** utilization of industrial waste in road construction, landslide control, ground improvements and environmental pollution.
- It deals with the aspects of **road traffic safety and analysis & design, wind, fatigue, corrosion studies, performance monitoring/evaluation, service life assessment and rehabilitation of highway & railway bridges.**
- The institute provides technical and consultancy services to various user organizations in India and abroad.

Topic 32. CHANGING ENVIRONMENT CAUSED THE DEMISE OF LARGEST PRIMATE

Important for the subject: Environment

The **extinction of Gigantopithecus blacki**, the **largest known primate**, was attributed to its **struggle to adapt to environmental changes**, according to a paper in Nature.

- This research addresses a **significant gap** in understanding why this **giant ape failed to survive**, while similar primates persisted. Fossil distribution indicates a **significant reduction in its geographical range** before extinction, but the exact timeline and reason for this decline remain undetermined.

Determining changes:

- Researchers, analyzing fossil samples from **22 caves** in **southern China**, used **teeth analysis** and **stable isotope analysis** to determine **changes in diet and behaviour**.
- **Pollen analysis** suggests that the **environment, suitable for G. blacki**, transitioned from **dense forests to open forests** during the **extinction window (295–215,000 years ago)**.
- **Dental analyses** indicate a **less diverse diet** and **increased stress** among **G. blacki** during this period compared to its primate relative, **Pongo weidenreichi**.
- The decline in **G. blacki fossils** supports the hypothesis that it struggled to adapt to the changing environment, leading to its precise timeline for extinction.

About the Gigantopithecus blacki:

- **Gigantopithecus** is an **extinct genus of ape**, with its **only known species, Gigantopithecus blacki**, living from **2 million to 300,000 years ago** during the **Early to Middle Pleistocene**.
- They are the largest primate in Earth's history. Initially discovered in a drugstore in **1935**, its remains, including **teeth and mandibles**, have been found in various sites, mostly in **China**, and potentially in **Thailand, Vietnam, and Indonesia**.
- Despite its **gorilla-like reconstruction**, estimates of its **size** (potentially 200–300 kg) are speculative due to limited remains.
- **Gigantopithecus** was once considered a **hominin** but is now **classified** as closely related to **orangutans**. **Gigantopithecus** was a **herbivore** adapted for **grinding tough, fibrous plants**, with evidence of **fig family fruits** in its diet.
- It inhabited **subtropical to tropical forests** and **went extinct around 300,000 years ago**, possibly due to **climate change** and **human activity**. **Gigantopithecus** has also gained attention in cryptozoology as a speculated identity for the **Tibetan yeti** or **American bigfoot**.

Topic 33. INDIVIDUAL INCOME INEQUALITY FELL DURING FY 2014 – 2022

Important for the subject: Economy

The economic research department of the State Bank of India (SBI) has reported a significant decline in individual income inequality in India from fiscal year 2014 to fiscal year 2022. The decline is attributed to a “great migration” at the bottom of the income pyramid.

- The Gini coefficient, a measure of income inequality, decreased from 0.472 to 0.402 during this period, based on Income Tax Return (ITR) data.
- **Income Growth:** The weighted mean income of individuals increased from ₹3.1 lakh to ₹11.6 lakh during FY14-FY21.
- **Individual ITR Filers:** About 36.3% of individual ITR filers in the lowest income group in FY14 moved upward, resulting in a 21.1% increase in their income during FY14-FY21.
- **Income Disparity:** The income disparity for individuals earning less than ₹3.5 lakh decreased from 31.8% to 15.8% during FY14-FY21, indicating an increased share of this income group in total income.
- **Top 2.5% Taxpayers:** The contribution of the top 2.5% of taxpayers to total income declined from 2.81% to 2.28% during FY14-FY21.
- **MSMEs and Income Patterns:** MSMEs (Micro, Small, and Medium Enterprises) showed a change in income patterns, with about 19.5% transitioning to larger categories.
- **Savings and Financial Assets:** Post-pandemic, there was a shift from savings channeled into physical assets to financial assets, in line with global trends.
- **Recovery Theory:** The report challenges the notion of a K-shaped recovery post-pandemic, emphasizing the complexity of income dynamics.
- The following terms refer to different shapes that represent the trajectory of economic recovery over time.

Z-Shaped Recovery:

- In a Z-shaped recovery, the economy experiences a sharp decline followed by a quick and robust recovery.
- The term suggests that the recovery is so strong that the economy surpasses its previous peak.

V-Shaped Recovery:

- A V-shaped recovery indicates a **rapid and robust rebound after a sharp economic decline**. The **economy bounces back quickly**, resembling the upward slope of the letter “V.”

U-Shaped Recovery:

- In a U-shaped recovery, the **economy experiences a more gradual decline, followed by a slow and steady recovery**. The bottom of the “U” represents a **period of stagnation before improvement begins**.

Elongated U-Shaped Recovery:

- Similar to a U-shaped recovery, an **elongated U-shaped recovery implies a more extended period of economic downturn before a gradual upturn**.

W-Shaped Recovery:

- A W-shaped recovery, also known as a **double-dip recovery**, involves a **sharp economic decline, a temporary recovery, another decline, and then a final recovery**. The pattern resembles the letter “W.”

L-Shaped Recovery:

- An L-shaped recovery suggests a **sharp economic decline followed by a prolonged period of stagnation or slow growth**.
- Unlike a U-shaped recovery, **there is no significant upward trajectory, and the economy remains at a lower level**.

K-Shaped Recovery:

- A K-shaped recovery refers to **divergent paths for different sectors or segments of the economy**.
- While some sectors or groups experience **rapid recovery and growth (the upward branch of the “K”)**, others may continue to decline or stagnate (the downward branch of the “K”).
- These recovery shapes are conceptual models used by economists and analysts to describe and predict the overall trajectory of an economy in response to various events or shocks.
- **The actual shape of the recovery depends on factors such as government policies, consumer behavior, global economic conditions, and the nature of the initial shock.**

About Lorenz Curve and Gini Coefficient

- The Lorenz Curve and Gini Coefficient are tools used to **analyse and measure income distribution and inequality within an economy**.

Lorenz Curve:

- Developed by Max Lorenz in 1906, the Lorenz Curve is a graphical representation of the **distribution of income or wealth in a population**.
- The **45° diagonal line on the graph represents perfect equality, where each segment of the population earns an equal share of the total income**.
- The Lorenz Curve depicts the actual distribution of income, which may deviate from perfect equality.

Gini Coefficient:

- The Gini Coefficient is derived from the Lorenz Curve and **quantifies the level of income inequality within a population**.
- It is a single numerical measure that ranges from 0 to 1, **where 0 represents perfect equality (everyone has the same income) and 1 represents perfect inequality (one individual has all the income)**.
- **A lower Gini Coefficient indicates a more equal distribution of income**, while a higher coefficient suggests greater income inequality.
- In summary, the **Lorenz Curve visually represents the distribution of income, while the Gini Coefficient provides a numerical measure of income inequality based on the Lorenz Curve**.

Topic 34. FAKE INVOICES UNDER GST***Important for the subject: Economy***

The Finance Ministry has undertaken a nationwide drive to identify fake firms and detect Goods and Services Tax (GST) evasion.

Results of the Drive:

- Over 29,000 fake firms were identified during the special drive. The **detected fake firms were involved in suspected Input Tax Credit (ITC) evasion amounting to ₹44,015 crore**.
- The drive saved ₹4,646 crore, of which ₹3,802 crore was saved by blocking ITC, and ₹844 crore was recovered. A total of 121 arrests have been made in connection with these cases.

Special All-India Drive:

- The drive was initiated on May 16, 2023, and continued for seven months. It aimed to **identify non-existent or bogus registrations and the issuance of fake invoices**

without any underlying supply of goods and services.

- All Central and State tax administrations participated in the drive.

Process of Identifying Fake Firms:

- **GSTN (Goods and Services Tax Network) used detailed data analytics and risk parameters to identify suspicious or fraudulent GSTINs (Goods and Services Tax Identification Numbers).**
- Suspicious GSTINs were shared with the concerned State and Central Tax authorities for verification and necessary action.

Measures to Strengthen GST Registration Process:

- Pilot projects of **biometric-based Aadhar authentication at registration** were launched in Gujarat, Puducherry, and Andhra Pradesh.
- Various measures were implemented to curtail tax evasion, **including sequential filing of GST returns, system-generated intimation for reconciliation of tax liability gaps, and the use of data analytics and risk parameters** for detecting fake ITC.

Problem of Fake Invoices:

- Fake invoices involve the **issuance of invoices without any actual supply of goods or services, used fraudulently to avail Input Tax Credit (ITC).**
- Unscrupulous elements misuse identities to obtain fake/bogus GST registration for fraudulent activities, causing revenue loss to the government.

Input Tax Credit (ITC):

- Input Tax Credit (ITC) is a mechanism under the Goods and Services Tax (GST) system that **allows businesses to claim a credit for the taxes paid on their purchases, which can be used to offset their tax liability when they make sales.**
- It is essentially a **credit for the tax paid on inputs used in the production of goods or services.**

Objectives and Key Features:

- **Objective:** The primary objective of ITC is to avoid cascading of taxes. Cascading occurs when taxes are paid on the tax already paid, leading to a higher tax burden.

Key Points for Prelims:

- **GST (Goods and Services Tax):** It is a comprehensive indirect tax levied on the supply of goods and services. It has replaced various indirect taxes in India.
- **Composition Scheme:** A scheme under GST for small businesses, allowing them to pay tax at a fixed rate based on turnover without claiming ITC.

GSTN (Goods and Services Tax Network):

- GSTN, or the Goods and Services Tax Network, is a **non-profit organization** that **manages the entire IT system of the Goods and Services Tax (GST) portal.**
- **It provides the technological infrastructure for the implementation of GST in India.**
- **GSTN was established to provide a common and shared IT infrastructure to central and state governments, taxpayers, and other stakeholders for the implementation of GST.**

Functioning:

- **GSTN facilitates the real-time flow of information between taxpayers and the GST system.** It plays a crucial role in ensuring transparency, efficiency, and accuracy in the GST compliance process.

Importance:

- The successful implementation of GST required a robust IT infrastructure, and GSTN plays a pivotal role in providing the necessary technology backbone.
- It has been **instrumental in digitizing and streamlining various processes related to GST compliance.**

Ownership:

- GSTN is a Government Company and 100% of the shareholding being held by Government (50% with Union Government and 50% jointly with State Governments & UTs) in GSTN.

Topic 35. INCLUSION OF INDIA'S FULLY ACCESSIBLE ROUTE (FAR) BONDS IN BLOOMBERG EMERGING MARKET LOCAL CURRENCY INDEX***Important for the subject: Economy***

The Indian government's Fully Accessible Route (FAR) bonds to be included in Bloomberg EM Local Currency Index.

Inclusion Details:

- FAR bonds included with an **initial weight of 20 per cent** of their full market value in **September 2024.**
- Weight increased in **20 per cent increments** every month until **January 2025.** By January 2025, FAR bonds will be **weighted at 100 per cent** of their full market value in the indices.

Index and Capping:

- Upon full inclusion, FAR bonds will be **fully capped at 10 per cent** within the Bloomberg Emerging Market 10 per cent Country Capped Index.
- Indian rupee to become the **third-largest currency** in the Bloomberg Emerging Market Local Currency Index, following the Chinese Renminbi and the South Korean's Won.

Background:

- Reserve Bank of India introduced FAR bonds as securities **exempt from foreign investment restrictions** in **April 2020**.

Index Composition:

- As of **November 30, 2023**, the index would include **32 Indian securities**, representing **99 per cent** of a \$5.96 trillion index.

Market Developments:

- India remains **excluded from Bloomberg Global Aggregate and related indices**. Bloomberg will continue to **monitor related market developments**.

Fully Accessible Route (FAR)

- The Reserve Bank of India (RBI) has introduced the 'Fully Accessible Route' (FAR) from **April 1, 2020**.
- This channel **allows non-residents to invest in specified government bonds without any restrictions**.

Budget Announcement:

- The FAR initiative **opens certain specified categories of government bonds fully for non-resident investors**.

Investment Ceilings:

- Under FAR, eligible investors can invest in specified government securities **without any investment ceilings**.

Operational Coexistence:

- FAR operates alongside the existing routes, namely the **Medium Term Framework (MTF)** and the **Voluntary Retention Route (VRR)**.

Benefits:

- Substantially eases access for non-residents to Indian government securities markets. Facilitates inclusion in global bond indices. Attracts stable foreign investment in government bonds.

Voluntary Retention Route (VRR):

- VRR is another scheme introduced by the RBI to encourage Foreign Portfolio Investors (FPIs) for long-term investments in Indian debt markets.
- Provides operational flexibility and exemptions from certain regulatory requirements. Requires a minimum retention period of three years, with FPIs maintaining a minimum of 75% of the allocated amount in India.
- Investment limits are available on tap and allotted by Clearing Corporation of India Ltd. (CCIL) on a 'first come first served' basis.

Topic 36. GDP ESTIMATE

Important for the subject: Economy

India's GDP estimates for the current financial year (2023-24) based on the **First Advance Estimates (FAEs)** released by the government.

GDP Growth Estimate:

- The FAEs project that **India's GDP will grow by 7.3% in the current financial year, slightly faster than the 7.2% growth** in the previous year (2022-23).

Basis for Budgeting:

- The FAEs are crucial as **they are the last GDP data released before the Union Budget for the upcoming financial year is finalized.** They form the basis for budgetary calculations.

Estimation Method:

- The FAEs are **indicator-based and compiled using the benchmark-indicator method.** Data from the first seven months of the financial year are extrapolated to provide an annual picture.

Significance of FAEs for 2023-24:

- The FAEs for the **current year gain significance as they offer the first complete picture of economic growth of the last ten years**

GDP Growth Trend:

- The chart illustrates India's real GDP in absolute terms and growth rate. By the end of March 2024, **India's GDP is expected to reach almost Rs 172 lakh crore.**

Engines of GDP Growth:

- The text outlines the four main engines of GDP growth, **including private consumption expenditure, gross fixed capital formation, government final consumption expenditure, and net exports**

Components of GDP Growth:

- It provides insights into how each component, such as **private consumption demand, investment spending, government spending, and net exports**, contributes to India's GDP growth.

Comparison of Growth Trends:

- The growth rate in the second term of the government (2019-20 to 2023-24) is compared to the first term (2014-15 to 2018-19), **highlighting a lower compounded annual growth rate (CAGR) in the second term**

Net Exports:

- The negative growth rates in net exports suggest that Indians are importing more than exporting. The drag effect from net exports has grown, but there is a mild improvement over the two terms

Private Consumption Expenditure (C or PCE):

- This represents the **total value of goods and services purchased by households in an economy over a specific time period.**
- It includes **spending on durable goods (e.g., cars, appliances), nondurable goods (e.g., food, clothing), and services (e.g., healthcare, education).**
- Private consumption is a **crucial driver of economic activity** and is often a significant portion of a country's GDP.

Government Final Consumption Expenditure (G or GFCE):

- This represents the **total value of goods and services purchased by the government for direct consumption or for the collective benefit of the community.**
- It includes **spending on public goods and services such as defense, education, healthcare, and public administration.**
- Government consumption expenditure is a **component of government spending and contributes to overall economic activity.**

Gross Fixed Capital Formation (GFCF):

- GFCF refers to the **total value of new and replacement investments in physical assets made by both the private and public sectors within a country during a specific period.**
- It includes **spending on machinery, equipment, buildings, infrastructure, and other physical assets that contribute to the expansion and improvement of the productive capacity of the economy.**
- GFCF is an **indicator of the level of investment in an economy** and is crucial for

sustaining economic growth in the long term.

To calculate GDP using the expenditure approach, the formula is as follows:

- $GDP = C + I + G + (X - M)$

Where:

1. C is Private Consumption Expenditure
 2. I is Gross Fixed Capital Formation
 3. G is Government Final Consumption Expenditure
 4. X is Exports of goods and services
 5. M is Imports of goods and services
- These **components together represent the total spending in the economy, and GDP is the sum of all these expenditures.**
 - **About First Advance Estimates,” “Second Advance Estimates,” and “Provisional Estimates.**
 - The terms “First Advance Estimates,” “Second Advance Estimates,” and “Provisional Estimates” are **stages in the process of estimating a country’s Gross Domestic Product (GDP) for a specific fiscal year.**
 - These estimates provide insights into the overall economic performance and are crucial for economic planning and policy formulation. Here’s an overview of each stage:

First Advance Estimates (FAE):

- The First Advance Estimates are **released early in the financial year, usually in January**, by the government.
- These estimates provide an **initial projection of the GDP growth rate and key economic indicators for the ongoing fiscal year.**
- FAE are based on **available data for the first few months of the fiscal year**, and projections are made for the remaining months.

Second Advance Estimates (SAE):

- The Second Advance Estimates are **released later in the financial year, typically in February, following the First Advance Estimates.**
- By this stage, more data for the fiscal year are available, **allowing for a more refined**

and accurate estimation of GDP growth and other economic parameters.

- SAE provide an updated and improved outlook compared to FAE, incorporating additional economic data.

Provisional Estimates:

- The **Provisional Estimates** are released towards the end of the fiscal year, usually in **May**.
- At this stage, most of the relevant data for the entire fiscal year are available, providing a comprehensive and accurate assessment of economic performance.
- **Provisional Estimates** serve as the basis for the finalization of the annual economic accounts.

Final Estimates (Actuals):

- After the end of the fiscal year, the **authorities revise and finalize the GDP estimates based on the most complete and accurate data available**.
- These Final Estimates, also referred to as “Actuals,” are typically released after thorough data reconciliation and validation.
- The **Final Estimates** provide the official and most accurate figures for the **GDP growth rate and other economic indicators for the completed fiscal year**.
- In summary, the **First Advance Estimates** provide an early projection, the **Second Advance Estimates** offer an updated outlook, and the **Provisional Estimates** present a more comprehensive assessment.
- The **Final Estimates**, released later, represent the most accurate figures for the **GDP and economic indicators for a specific fiscal year**.

Topic 37. INDIA'S INCLUSION IN BLOOMBERG EM INDEX

Important for the subject: Economy

Bloomberg Index Services Ltd (BISL) has proposed the **inclusion of India's Fully Accessible Route (FAR) bonds in the Bloomberg EM Local Currency Index**

Boost to Foreign Portfolio Investments (FPIs):

- India's imminent inclusion in the Bloomberg Emerging Market (EM) Index is anticipated to **stimulate foreign portfolio investments in the country's debt market in 2024**.

Support for Debt Issuances:

- The inclusion is expected to **bolster increased debt issuances by the Indian**

government in the coming years, providing support for economic activities

Frontloading by Foreign Investors:

- Foreign investors, particularly Foreign Portfolio Investors (FPIs), are **expected to front load investments in the Indian debt market ahead of the official inclusion in global indices**, aligning with the record \$7.1 billion invested in Indian government bonds by FPIs in 2023

Inflow Projections:

- Economists and analysts estimate that **India's inclusion in the Bloomberg EM bond index could generate inflows of \$23 billion over five months**, beginning in September. The larger JP Morgan EM bond index is **expected to attract FPI inflows of \$30 billion over ten months, starting in June**

Impact on Government Securities (GSecs):

- The **inclusion is seen as good news for Government Securities (GSecs)**, with **expectations of reduced G-Sec yields to 6.8% in FY25**

Improved Demand-Supply Dynamics:

- Inclusions in global indices are expected to **enhance demand-supply dynamics for sovereign bonds, tapping into a significant but under realized investor group**. This can **support fiscal discipline while addressing infrastructure need**

Balancing Fiscal Discipline:

- The anticipated portfolio inflows may prompt authorities to **passively absorb flows, reinforcing defences and maintaining a stable path for the Indian rupee**

Optimism for Growth Prospects:

- With optimism surrounding India's growth prospects, coupled with the **boost from bond index inclusion and expectations of US rate cuts**, foreign inflows into Indian government bonds reached a six-year high in Q4 2023

Record Inflows in 2023:

- Foreign investors bought a net ₹35,000 crore in bonds between October and December 2023, **contributing to the highest annual inflows since 2017, total ₹59,800 crore**

Impact on Indian Economy

Positive Boost to Forex Reserves:

- The anticipated \$3 billion additional Foreign Portfolio Investments (FPIs) in the Indian debt market will **contribute to an increase in foreign exchange reserves**.
- **This is crucial for maintaining a robust external position and ensuring liquidity in**

the economy

Stabilization of Rupee:

- **Increased FPI inflows typically lead to a strengthened Indian rupee.** A stable and appreciating currency **enhances investor confidence, attracts further investments, and helps in controlling inflation by making imports more affordable.**

Lower Borrowing Costs:

- Higher FPI investments in Indian debt instruments can result in increased demand for government bonds.
- **This heightened demand often leads to lower yields and, consequently, reduced borrowing costs for the government. This is favorable for fiscal management**

Support for Economic Growth:

- The injection of foreign capital into the debt market provides a vital source of funding for the government.
- **These funds can be channeled into various economic development initiatives, infrastructure projects, and social welfare programs, contributing to overall economic growth**

Market Liquidity and Depth:

- **FPI inflows enhance liquidity and depth in the debt market.**
- A more liquid market is better equipped to handle large transactions, and **increased depth ensures a broader range of investment opportunities** for both domestic and international investors

Confidence in Indian Financial Markets:

- Positive sentiment generated by substantial FPI inflows signals confidence in the stability and attractiveness of Indian financial markets.
- **This confidence can attract further foreign investments across various asset classes, including equities and bonds.**

Balance of Payments Improvement:

- Higher FPI inflows positively **impact India's balance of payments by improving the current account balance.** This, in turn, contributes to the overall stability of the country's external sector.

Potential for Lower Interest Rates:

- As FPIs increase their exposure to Indian debt, the resulting demand can lead to lower interest rates in the domestic market. **Lower interest rates stimulate borrowing and**

spending, providing a boost to economic activities

Investment in G-Secs and Corporate Bonds:

- FPIs investing in government securities (G-Secs) and corporate bonds can **diversify their portfolios and contribute to the development of the Indian corporate debt market**

Risks and Policy Response:

- While FPI inflows bring several benefits, **there may be challenges, such as potential currency appreciation.**
- The central bank may implement policy measures to manage such risks and maintain a balanced economic environment.
- In summary, the anticipated FPI inflows into the Indian debt market are expected to have multifaceted positive impacts, **ranging from currency stabilization to economic growth support and enhanced market dynamics.**

Topic 38. USIDFC AND NIIF TO SET UP \$1 -BILLION FUND TO FINANCE RENEWABLE ENERGY PROJECTS

Important for the subject: Economy

The United States International Development Finance Corporation (USIDFC) and India's National Infrastructure Investment Fund (NIIF) are “working on the possibility of creating a fund” that would invest in renewable energy and green projects in India.

- The idea is broadly to create a fund with the USIDFC and NIIF bringing in \$500 million each and getting more from other investors.
- NIIF is a “collaborative investment platform” for international and Indian investors, anchored by the Government of India, which manages funds with investments in different asset classes and diversified sectors that generate attractive risk-adjusted returns.
- NIIF manages over \$44.9 billion of equity capital commitments across its four funds – Master Fund, Private Markets Fund, Strategic Opportunities Fund, and India-Japan Fund.
- USIDFC has an exposure of \$4 billion in India, which is 10 per cent of its global exposure.

National Investment and Infrastructure Fund (NIIF):

- NIIF is India's first sovereign wealth fund set up by the Government of India in 2015.
- It is an investor-owned fund manager, anchored by the Government of India (GoI) in collaboration with leading global and domestic institutional investors.
- NIIF's mandate includes investing in areas such as energy, transportation, housing, water,

waste management and other infrastructure-related sectors in India.

Functioning:

- It is being operationalized by establishing three Alternative Investment Funds (AIFs) under the SEBI Regulations.
- The proposed corpus of NIIF is Rs. 40,000 Crores funded of 49% from Government of India.
- Rest from strategic anchor partners (Overseas sovereign/quasi-sovereign/multilateral/bilateral investors).

NIIF and Three Funds:

- NIIF currently manages three funds each with its distinctive investment mandate.
- **Master Fund:** A fund focused on creating scalable sectoral platforms in core infrastructure and in collaboration with strong and reputed operating and financial partners.
- **Fund of Funds:** A fund focused on anchoring and investing incredible and reputed third-party managers with a strong track record across diversified sectors within infrastructure services and allied sectors.
- **Strategic Investment Fund:** A fund focused on investing in strategic assets and projects with longer-term horizon across various stages of development.

Topic 39. GENERALIZED SYSTEM OF PREFERENCES (GSP)

Important for the subject: Economy

Pharma Exports Boost:

The Union government has urged the US to **enhance inspections by the US Food and Drug Administration in India to elevate pharmaceutical exports.**

- This appeal is part of the broader effort to **strengthen trade ties, as highlighted in the joint statement of the Trade Policy Forum.**

Longstanding Demand for GSP Restoration:

- A reiterated demand in the statement is **restoring the Generalised System of Preferences (GSP), aiming for smoother access to American markets for Indian goods.**

Challenges Faced by Indian Business Visitors:

- addressed challenges **faced by Indian business visitors due to prolonged visa processing times**, emphasizing the disruptions caused post-Covid-19.

US Response to Indian Trade Measures:

- The US took note of various trade measures implemented by India, **including Quality Control Orders (QCO) and the laptop import monitoring system.**
- These measures, perceived as **strategies to curb imports from China**, have been met with scrutiny.

Commitment to Address Technical Regulations:

- Both nations reaffirmed their commitment to **ensuring technical regulations, like Quality Control Orders (QCOs), don't create undue trade barriers.**
- Stakeholder consultations and **alignment of domestic standards with international ones** were stressed to mitigate trade hurdles.

Diversity in Pharma Supply Chain:

- Discussions encompassed the **overdependence and lack of diversity in active pharmaceutical ingredients (APIs) within the global pharma supply chain.**
- India's strategic identification of API manufacturing, under the PLI scheme, was highlighted as a significant move.

Mutual Recognition for Conformity Assessment:

- The governments agreed to **establish a pathway for mutual recognition of results from accredited conformity assessment bodies.**
- This move aims to **address issues where Indian exports face rejection in the US due to differences in standards.**

Emphasis on FDA Inspections:

- There was a strong emphasis on **increasing the number of inspections by the US Food and Drug Administration in India.**
- This is seen as vital for facilitating smoother trade and reducing existing backlogs.

Generalized System of Preferences (GSP):**Withdrawal and India's Appeal:**

- The Generalized System of Preferences (GSP) **trade privilege for India was withdrawn by the Trump administration in June 2019.**
- India has been **actively urging the Biden Administration to reinstate this trade privilege.**

Overview of GSP:

- GSP is a U.S. trade program **initiated on January 1, 1976, under the Trade Act of**

1974.

- GSP is a preferential trade program that **allows certain developing countries to pay fewer or zero duties on their exports to developed countries.**
- The aim is to **promote economic growth in the beneficiary countries by facilitating their exports.**
- Under GSP, **eligible products from beneficiary countries receive preferential treatment in terms of reduced tariffs or duty-free access to the markets of the developed countries offering GSP privileges.**

Non-Reciprocal Basis and Concerns:

- GSP has historically been **granted on a non-reciprocal basis, supporting development in beneficiary countries.**
- However, **the U.S. has linked GSP with market access and tariff reduction, deviating from its non-reciprocal nature.**

Objective of GSP:

- The primary objective of GSP is to **provide development support to less affluent countries by promoting their exports to developed nations.**
- It facilitates **sustainable development by aiding beneficiary countries in increasing and diversifying their trade with the United States.**

Benefits of GSP:

- Indian exporters indirectly benefit from GSP **through reduced tariffs or duty-free entry granted to eligible Indian products.**
- The lowered import duty **enhances the competitiveness of Indian products in the U.S. market, benefiting both new and established exporters.**
- GSP serves as a tool for **market penetration and allows exporters to improve market share and profit margins in the donor country.**

Topic 40. OVERVIEW OF RETAIL INFLATION

Important for the subject: Economy

The **Ministry of Statistics and Programme Implementation** released data on Friday indicating retail inflation growth in December at **5.7%.**

Understanding Retail Inflation (CPI):

- Retail inflation, also known as **Consumer Price Inflation (CPI)**, reflects the price rise affecting consumers.

- This data is pivotal in policymaking, **particularly for the Reserve Bank of India (RBI) when deciding interest rate adjustments, impacting EMIs on car loans and home loans.**

Inflation Definition and Significance:

- Inflation refers to the **general increase in price levels, not specific to a single commodity.**
- The inflation rate signifies the percentage by which prices rise; **for instance, a 5.7% inflation rate implies a 5.7% increase in the price level compared to December 2022.**

Recent Data Analysis:

- The latest data revealed a retail inflation rate of 5.7%, **surpassing the RBI's target rate of 4%, which is not desirable as per the targets given to MPC.**
- Notably, **inflation had dipped below 5% in September and October but rose again in November.**

RBI's Comfort Zone:

- The RBI has a comfort zone for inflation, **mandated by law, ranging from 2% to 6%.** Despite the disappointment, **the 5.7% reading falls within this comfort zone, considering supply disruptions due to the pandemic and geopolitical events.**

Inflation Over the Past 10 Years:

- Assuming an annual inflation rate of 4%, the **general price level would be 22% higher in five years and 48% higher in ten years.**
- Data analysis shows a **24% rise in the price level during the first five years from 2014 – 2019.**
- Assuming a 5.5% annual inflation rate for the current financial year, **the price level has grown by another 32% over the past five years.**

Real Terms Impact on People:

- To keep up with a 4% annual inflation over five years, **a person's income would need to increase by 22% to maintain their real purchasing power.**

Wholesale Price Index (WPI):

Definition:

- WPI is a widely used inflation indicator in India, **published by the Office of Economic Adviser, Ministry of Commerce and Industry.**

Scope:

- It includes **all transactions at the first point of bulk sale in the domestic market.**

Criticism:

- Major criticism lies in **its focus on wholesale prices, as the general public does not make purchases at wholesale rates.**

Base Year:

- The **base year for All-India WPI was revised from 2004-05 to 2011-12 in 2017.**

Consumer Price Index (CPI):**Purpose:**

- CPI measures **price changes from the perspective of a retail buyer.**

Base Year:

- The **base year for CPI is 2012.**

Measurement Scope:

- It **tracks changes over time in the retail prices of selected goods and services, reflecting the spending patterns of a defined group of consumers.**

Types of CPI:

1. CPI for Industrial Workers (IW).
2. CPI for Agricultural Labourer (AL).
3. CPI for Rural Labourer (RL).
4. CPI (Rural/Urban/Combined).

Compilation Authorities:

- The **first three types are compiled by the Labour Bureau** in the Ministry of Labour and Employment.
- The **fourth type is compiled by the Central Statistical Organisation (CSO)** in the Ministry of Statistics and Programme Implementation.

Index of Industrial Production (IIP):**Definition:**

- IIP is an index that **reflects the growth rates in various industry groups of the economy over a fixed period.**

Base Year:

- The base year for IIP is 2011-2012.

Compilation Authority:

- **Compiled and published monthly by the Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation.**

Composite Indicator:

- IIP is a composite indicator measuring the **growth rate of industry groups categorized under broad sectors (Mining, Manufacturing, and Electricity) and use-based sectors (Basic Goods, Capital Goods, and Intermediate Goods).**

Core Industries:

- The **eight core industries in India, representing about 40% of the IIP weight, significantly contribute to this index.**

Topic 41. US SEC APPROVES BITCOIN ETFS: A GAME-CHANGER FOR CRYPTOCURRENCY INDUSTRY

Important for the subject: Economy

Landmark SEC Approval:

The US Securities and Exchange Commission (SEC) has **approved the establishment of Bitcoin exchange-traded funds (ETFs) by 11 investment firms**, including BlackRock, Fidelity, and Franklin Templeton.

Listing on Major Exchanges:

- **Investment firms can now list Bitcoin-based ETFs on major US exchanges** such as Nasdaq and the New York Stock Exchange.

Potential Impact on Bitcoin and Crypto Industry:

- This decision is seen as a **potential revival for Bitcoin and the broader crypto industry**, which has faced challenges such as declining token prices and failed projects.

Analyst Projections:

- Analyst predicts that **Bitcoin ETFs may attract \$100 billion in institutional investments in Bitcoin by the end of the year.**
- A surge in Bitcoin's price is projected to reach \$100,000 this year and \$200,000 by the next.

Mixed Reactions:

- Some view **ETFs as a more accessible route for investors to engage with Bitcoin,**

while skeptics express concerns about Bitcoin's actual use cases.

SEC Statement:

- SEC emphasizes that the **approval should not be seen as an endorsement of cryptocurrencies by the US market regulator.**

Impact on India's Cryptocurrency Market:

- In India, **reactions are optimistic, anticipating institutional investments to flow in through ETFs and expecting increased stability in Bitcoin prices.**

Taxation Impact in India:

- India's cryptocurrency market was previously **affected by taxation rules introduced in the Union Budget 2022.**
- ETFs could potentially attract investors back to local exchanges, driven by expectations of a price surge.

Exchange-Traded Funds (ETFs):

- ETFs are **investment funds that are traded on stock exchanges, much like individual stocks. They represent a diversified portfolio of assets** such as stocks, bonds, commodities, or a combination of these.

Structure:

- ETFs **pool funds from multiple investors to invest in a basket of assets. They are structured to track the performance of a specific index or a group of assets.**

Liquidity:

- ETFs are traded on stock exchanges throughout the day at market prices. This **provides liquidity, allowing investors to buy and sell shares during trading hours.**

Diversification:

- ETFs offer diversification by **holding a variety of assets, reducing the risk associated with investing in individual stocks or bonds.**

Management Fees:

- ETFs typically have **lower management fees compared to traditional mutual funds, making them cost-effective investment options.**

Passive vs. Active Management:

- Some ETFs **passively track an index's performance, while others are actively managed by fund managers.**

Bitcoin ETFs:

Introduction:

- Bitcoin ETFs are a **specific type of exchange-traded fund that focuses on Bitcoin as the underlying asset.**

Purpose:

- **Bitcoin ETFs allow investors to gain exposure to the price movements of Bitcoin without directly owning the cryptocurrency.**
- They provide a more accessible and familiar route for investors to engage with Bitcoin, **avoiding the complexities of purchasing and storing the cryptocurrency.**
- Bitcoin ETFs are listed on traditional stock exchanges, **making them accessible through brokerage accounts like other ETFs.**

Impact on Bitcoin Markets:

- Bitcoin ETFs are seen as a way to **bring more institutional investment into the cryptocurrency market, potentially impacting Bitcoin's liquidity and price dynamics.**

Risks and Concerns:

- Critics argue that **Bitcoin ETFs may undermine the decentralized nature of cryptocurrency by involving traditional financial institutions.**
- Some express concerns about market manipulation and regulatory uncertainties.

Topic 42. IMPACTS OF GROWING HOUSEHOLD CREDIT ON INDIAN ECONOMY

Important for the subject: Economy

Positive Effects on Consumption and GDP:

Research department emphasizes the **positive effects of growing household credit on consumption and, consequently, GDP growth.** Increased household credit is seen as a driver for economic expansion.

Scope for Augmentation:

- Compared to developed countries, **India has room for augmentation in household credit. The higher ratios observed in developed nations suggest that there is ample scope for Indian banks to enhance credit in this segment.**

Importance of Asset Quality:

- While growing household credit is beneficial, **maintaining asset quality is imperative.**

Disruptions in terms of asset quality can have adverse effects and set back the financial system. Prudent regulation is emphasized to prevent such shocks.

Credit to GDP Ratio:

- **India ranks 10th among major G20 economies in terms of the household credit-to-GDP ratio.** The country's ratio stands at 40.3%, lower than developed economies like the US, the UK, Germany, and Japan.
- However, compared to major emerging markets, India's ratio is impressive, surpassed only by South Korea and China.

Comparison with Emerging Markets:

- India's household credit-to-GDP ratio outperforms other emerging markets, including South Africa, Indonesia, and Russia.
- The ratio reflects a developed credit market in India, showcasing its strength in comparison to the median level of credit to GDP ratio of households in emerging markets.

Credit as a Contributor to Growth:

- Analysis shows that regressing household consumption to household credit, indicates that credit has become a significant contributor to fueling private consumption demand.
- This positive correlation is viewed as beneficial for overall economic growth.

Prudent Regulation and Economic Growth:

- Under the umbrella of prudent regulation, **quality consumer credit is identified as a potential driver of economic growth.**
- This suggests that, with appropriate regulatory measures, household credit can play a constructive role in stimulating economic activity.
- In summary, the report underscores the merit of growing household credit in India, emphasizing its positive impacts on consumption, GDP growth, and the overall economic landscape.
- However, it emphasizes the importance of maintaining prudent regulation and asset quality to sustain these positive effects.

Impact of growing household credit on the Indian economy

Positive Impacts:

Consumption Boost:

- Growing household credit allows individuals to access funds for various purposes,

including consumption. This, in turn, can boost overall consumer spending, contributing positively to economic growth.

GDP Growth:

- **Increased household credit can stimulate economic activity, leading to higher demand for goods and services.** As consumption rises, businesses may expand to meet the demand, positively impacting GDP growth.

Financial Inclusion:

- **Household credit expansion can contribute to financial inclusion by providing access to credit for a broader section of the population.**
- This helps individuals meet their financial needs and participate more actively in the economy.

Investment in Assets:

- **Households often use credit to finance the purchase of assets such as homes and vehicles.** This can drive investments in the real estate and automotive sectors, supporting related industries and job creation.

Negative Impacts:

Debt Burden:

- **A rapid increase in household credit may lead to a higher level of indebtedness among individuals.**
- If households struggle to manage their debt, it could result in financial stress and negatively impact their overall financial well-being.

Asset Price Inflation:

- **Increased demand for assets, particularly in the real estate market, driven by easy access to credit, may lead to asset price inflation.** This could make housing less affordable for certain segments of the population.

Credit Quality Concerns:

- A surge in household credit raises concerns about credit quality. **If lending standards are not adequately maintained, there is a risk of a rise in non-performing loans, impacting the stability of financial institutions.**

Interest Rate Sensitivity:

- **Households with variable-rate loans are vulnerable to interest rate fluctuations.** If interest rates rise, the cost of servicing debt increases, potentially causing financial strain for borrowers.

Macroprudential Risks:

- **Excessive household credit growth can pose macroprudential risks to the financial system.** Regulators may need to implement measures to curb speculative lending and maintain financial stability.
- In summary, **while growing household credit can contribute to economic expansion and financial inclusion, it requires careful monitoring to prevent the build-up of systemic risks and ensure the overall stability of the financial system.**
- Regulatory measures and prudent lending practices play a crucial role in mitigating potential negative impacts.

Topic 43. ACCELERATED MARKET ENTRY: GOVT PERMITS PARALLEL TESTING FOR ELECTRONICS FROM MANUFACTURERS

Important for the subject: Economy

Products of electronics and mobile manufacturers like **Samsung, Apple, Xiaomi, Lenovo, Dell and others** will now reach the market faster as the government has now allowed parallel testing of 64 electronics devices.

- These devices include **mobile phones, wireless earphones, headphones, laptops, notebooks and tablets.**
- Manufacturers can opt for **parallel testing voluntarily**, while those preferring the traditional sequential method could continue to do so.
- **Electronics and IT hardware makers** can save as much as **4 to 13 weeks** in the compliance process with the recent guidelines issued by the Bureau of Indian Standards (BIS).

Compulsory Registration Scheme (CRS)

- According to the **Compulsory Registration Scheme (CRS)** electronic products, whether imported or manufactured locally are required to be mandatorily tested.
- They need security approvals from the **Bureau of Indian Standards (BIS)** before being deployed as final products and sold to customers.

About Parallel Testing:

- In **parallel testing different components** are simultaneously tested unlike sequential

testing where the tests are done one after another.

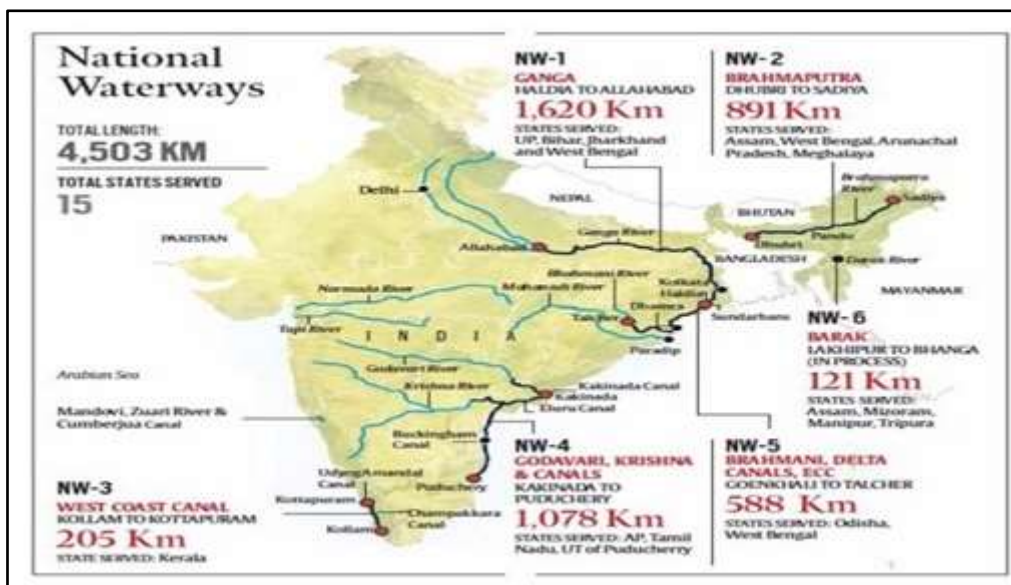
- Components can be **deployed and can reach the market faster** in parallel testing compared to sequential testing.
- Under parallel testing, the **lab will test the first component and issue a test report.**
- The voluntary adoption of parallel testing not only streamlines the compliance process for manufacturers but also significantly accelerates the go-to-market strategy compared to the traditional sequential testing methodology.
- This initiative enhances the **speed of doing business, allowing companies to introduce cutting-edge products** to Indian consumers more swiftly, thus contributing to the success of the **Make in India mission.**

About Bureau of Indian standards (BIS):

- It is the **National Standard Body of India.** It was established under the **BIS Act 2016** for the **harmonious development of the activities of standardization, marking and quality certification of goods.**
- It works under the aegis of Ministry of Consumer Affairs, Food & Public Distribution. The Minister in charge of the **Ministry or Department having administrative control** of the BIS is the ex-officio President of the BIS.
- The organization was formerly the **Indian Standards Institution (ISI) which was set up under the Resolution of the Department of Industries and Supplies.**
- It is **one of the founding members of International Organization for Standardization (ISO).**
- BIS has its Headquarters at **New Delhi** and its 05 Regional Offices (ROs) are at Kolkata (Eastern), Chennai (Southern), Mumbai (Western), Chandigarh (Northern) and Delhi (Central).
- BIS has 500 plus scientific officers working as Certification Officers, Member secretaries of technical committees and lab OIC's.
- The organization was formerly the **Indian Standards Institution (ISI) which was set up under the Resolution of the Department of Industries and Supplies.**

Topic 44. SHRI SARBANANDA SONOWAL TO CHAIR THE FIRST INLAND WATERWAYS DEVELOPMENT COUNCIL MEETING TO BE HELD TOMORROW IN KOLKATA

Important for the subject: Geography



Union Ports, Shipping and Waterways Minister Sarbananda Sonowal chaired the first Inland Waterways Development Council(IWDC) Meeting in Kolkata on 8th Jan 2024, Monday.

- ‘Harit Nauka’ Guidelines along with the ‘River Cruise Tourism Roadmap 2047’ is to be launched.
- IWDC’s first meeting features a packed agenda addressing crucial issues in the development of inland waterways in India
- The day-long meeting on board the vessel MV Ganga Queen, will bring together key figures from across the waterways, states and central government.
- Upcoming projects include the establishment of the Centre for Inland and Coastal Maritime Technology at IIT Kharagpur.
- The anti-erosion work on the left bank of the river Hooghly/Bhagirathi Block & P.S. Kalyani Nadia district.
- The Ministry has set a bold objective to elevate the modal share of Inland Water Transportation (IWT) from the current 2% to 5%, aligning with Maritime India Vision 2030.
- Adhering to the objectives of Maritime Amrit Kaal Vision 2047, the ministry aims to substantially increase the existing IWT cargo volume from approximately 120 MTPA to over 500 MTPA.

Elements of IWDC meet:

The meeting will encompass topics such as

- **fairway development, private sector engagement and best practices, optimizing cargo transport efficiency in Inland Water Transport (IWT),**
- **fostering the promotion and development of eco-friendly vessels for passenger transportation, exploring the economic advantages of river cruise tourism, and emphasizing sustainable practices.**

About Inland Waterways Authority of India (IWAI):

- **The Inland Waterways Authority of India (IWAI)** came into existence on 27th October 1986 for development and regulation of inland waterways for shipping and navigation.
- The Authority primarily undertakes projects for development and maintenance of **IWT infrastructure on national waterways** through grants received from the Ministry of Shipping.
- The head office of the Authority is at **Noida**.

About Inland Waterways in India:

- India has about **14,500 km of navigable waterways** which consist of rivers, canals, backwaters, creeks, etc.
- As per **The National Waterways Act, 2016**, there are 111 officially notified **Inland National Waterways (NWs)** in India identified for the purposes of inland water transport.

About MV Ganga Vilas:

- MV Ganga Vilas is the **world's longest Motor Vessel (MV) river cruise**.
- It was launched by the **Prime minister of India Narendra Modi on 13 January 2023**.
- It will travel from **Varanasi in Uttar Pradesh** to around 3,200 km in 51 days to **Dibrugarh in Assam** via Bangladesh, passing through 27 river systems.
- The **MV Ganga Vilas cruise** itinerary includes **World Heritage Sites, National Parks, and River Ghats** to key cities such as **Patna in Bihar, Sahibganj in Jharkhand, Kolkata in West Bengal, Dhaka in Bangladesh, and Guwahati in Assam**.

About Centre for Inland and Coastal Maritime Technology (CICMT):

- The **Centre for Inland and Coastal Maritime Technology (CICMT)** at **IIT Kharagpur** is set-up with a total budget of Rs. 69.2 crores.
- Its aim is to provide technological support, research and development, testing and

experimentation facilities to the **Ministry of Shipping and its subordinate offices.**

Maritime India Vision (MIV) 2030:

- **Maritime India Vision 2030** is a ten-year blueprint for the development of **India's maritime sector.**
- It was released in November 2020 by Prime Minister Modi at the **Maritime India Summit.**
- The vision aims to boost waterways, give a fillip to the shipbuilding industry, and encourage **cruise tourism in India.**
- **MIV 2030** outlines 10 key themes which are essential for India to secure its place at the forefront of the **Global Maritime Sector.**

They are as follows:

- Develop best-in-class Port infrastructure
- Drive E2E Logistics Efficiency and Cost Competitiveness Enhance Logistics Efficiency through Technology and Innovation
- Strengthen Policy and Institutional Framework to Support all Stakeholders Enhance Global Share in Ship Building, Repair and Recycling
- Enhance Cargo and Passenger Movement through Inland Waterways Promote Ocean, Coastal and River Cruise Sector
- Enhance India's Global stature and Maritime Co-operation Become Top Seafaring Nation with World Class Education, Research & Training

Topic 45. IIT DELHI TEAM MAKES FIRST HI-RES LANDSLIDE RISK MAP FOR INDIA

Important for the subject: Geography

North India faced severe floods and landslides in 2023, prompting the recognition of a **national landslide susceptibility map.**

- **IIT Delhi's Manabendra Saharia**, an assistant professor in the civil engineering department and head of the **HydroSense Lab** at IIT Delhi, initiated its creation due to the **absence of comprehensive country-wide data.**

About 'Indian Landslide Susceptibility Map':

- The difficulty arose due to the **localized nature of landslides**, impacting only **1-2%** of India.
- Data collection involved **150,000 known landslide events** and **16 factors** affecting

susceptibility like **soil type, tree coverage, road proximity, and slope steepness.**

- The use of **GeoSadak**, an online system that has data on the national road network in India, aided in obtaining **crucial road network data for remote areas.**
- **Ensemble machine learning** was employed to analyze this data and estimate susceptibility.
- Finally, the '**Indian Landslide Susceptibility Map**' with a **100m resolution**, set to be published in **Catena**, is recognized as a **significant contribution.**
- The significance lies in its **aid to policymakers, vulnerability assessment, and mitigation strategies.** It identified both **known and previously unknown high-risk landslide areas.**
- Future plans include a '**Landslide Early Warning System**' using **map data** and its usefulness for organizations like **GSI and disaster management authorities.**
- Map and data are made **freely accessible online for public use** without the need for technical expertise.

Topic 46. GLOBAL WARMING, SEA LEVEL RISE, AGEING FLOOD DEFENCE SYSTEMS: WHY EUROPEAN COUNTRIES HAVE BEEN FLOODED

Important for the subject: Geography

Heavy rains have hit **France, England, Netherlands and Germany** for more than two weeks, causing rivers to burst their banks in many areas, flooding homes and prompting evacuations.

- A combination of factors, including **global warming, rising sea levels, and ageing flood defence systems** have led to the deluge in the countries.
- These floods followed **Storm Henk's** recent impact in these areas. **Flooding has been intensified by three key factors:** rising global temperatures, sea level increases, and outdated flood defence systems.
- **Firstly, global warming** contributes to **more frequent and severe rainfall events.** **Warmer temperatures** lead to **increased evaporation**, allowing the atmosphere to hold more moisture, resulting in **heavier and more prolonged rainfall.**
- **El Nino**, an **abnormal warming in the Pacific Ocean**, has also **raised ocean temperatures, increasing evaporation and subsequent rainfall.**
- **Secondly, rising sea levels** prompt rivers to **overflow and flood surrounding areas.** For instance, in **northern France**, a **4.4 cm rise in sea levels** from **1966 to 2018** likely contributed to recent flooding.
- **Lastly, outdated flood defence systems**, particularly in **France**, failed to manage the

influx of water effectively.

- Additionally, **construction on floodplains** in **France** and **England** disrupts **natural drainage routes**, causing water to inundate specific areas instead of being absorbed into the soil.

What's next?

- The forecast indicates worsening conditions ahead. With a **warming planet**, **storms** are expected to **intensify**, leading to **heavier rainfall** and **more frequent extreme weather events** like floods.
- Hydrologists project the **UK experiencing wetter winters and hotter, drier summers, with periods of intensified rainfall**.
- This ongoing climate change is anticipated to elevate river flows, exacerbating flooding and its impacts on communities, property, and public services.
- To address these challenges, there's an urgent call to **enhance flood defences**, implement **early warning systems**, and bolster **resilience measures** to manage the aftermath of heavy rainfall.

Places in news:

Trent River: England

- The Trent is **third** in the list of **longest rivers** in the **United Kingdom**.
- Its source is in **Staffordshire**, on the southern edge of **Biddulph Moor**. It flows through and drains the **North Midlands** into the **Humber Estuary**.
- The river is known for **dramatic flooding** after storms and spring snowmelt, which in the past often caused the river to change course.

IJsselmeer inland sea: The Netherlands

- The **IJsselmeer**, also known as **Lake IJssel** in **English**, is a **closed-off inland bay** in the **central Netherlands** bordering the provinces of Flevoland, North Holland and Friesland.
- The **river IJssel** flows into the **IJsselmeer**.

Topic 47. WHY DID NORTH INDIA FOG SO HEAVILY LAST WEEK?

Important for the subject: Geography

In late December 2023 and early 2024, **northern India** faced **severe winter conditions** characterized by **low temperatures** and **dense fog**.

Affected regions are: **Punjab, Haryana, Chandigarh, Rajasthan, Uttarakhand** and **Uttar**

Pradesh, Bihar and Madhya Pradesh.

What is fog?

- Fog is the result of **small water droplets** forming when **evaporated water** cools and **condenses**.
- Fog is a **thick cloud** near the **earth's surface**, dependent on **lower temperatures** and **abundant surface moisture**.
- Fog forms when there's a **temperature difference** between the **ground** and the **air**, common during Indian winters.
- **High humidity**, along with **ample moisture**, contributes to the **creation of foggy conditions**.

Mechanisms:

- **Infrared Cooling:** Occurs during the **transition from summer to winter**, with **warm, moist air** coming into contact with **cooling processes**, leading to **rapid condensation** and **fog formation**.

Types of fog:

- **Radiation Fog:** Prevails after an **unseasonably warm day** with **high humidity**, followed by a **rapid temperature drop**.
- **Advectional fog:** Fogs formed by condensation of warm air when it moves horizontally over a cold surface, are known as **advectional fog**. These fogs are thick and persistent. Occurs over warm and cold water mixing zones in oceans.
- **Frontal or precipitation fog:** It is produced due to **convergence of warm and cold air masses** where warm air mass is pushed under by the heavier cold air mass.
- Precipitation in the warm air mass condenses to produce fog at the boundary of the two air masses. These are called **frontal or precipitation fog**.
- Various environmental conditions determine the specific type, duration, and effects of fog, including its impact on snow melting.

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** — **low temperatures**, **low wind speed**, **moisture availability** and **plenty of aerosols** — are present in this region.
- **Moisture incursion** into this region can happen due to **Western Disturbance** and sometimes **Arabian sea**.

Other forms of condensation:

| | |
|----------------|---|
| 1. Dew | <ul style="list-style-type: none"> When the moisture is deposited in the form of water droplets on cooler surfaces of solid objects (rather than nuclei in air above the surface) such as stones, grass blades and plant leaves, it is known as dew. The ideal conditions for its formation are clear sky, calm air, high relative humidity, and cold and long nights. For the formation of dew, it is necessary that the dew point is above the freezing point. |
| 2. White Frost | <ul style="list-style-type: none"> Frost forms on cold surfaces when condensation takes place below freezing point (0°C), i.e. the dew point is at or below the freezing point. The excess moisture is deposited in the form of minute ice crystals instead of water droplets. The ideal conditions for the formation of white frost are the same as those for the formation of dew, except that the air temperature must be at or below the freezing point. |
| 3. Mist | <ul style="list-style-type: none"> The difference between the mist and fog is that mist contains more moisture than fog. In mist each nuclei contains a thicker layer of moisture. Mists are frequent over mountains as the rising warm air up the slopes meets a cold surface. Mist is also formed by water droplets, but with less merging or coalescing. This means mist is less dense and quicker to dissipate. Fogs are drier than mist and they are prevalent where warm currents of air come in contact with cold currents. In mist visibility is more than one kilometer but less than two kilometres. |
| 4. Haze | <ul style="list-style-type: none"> Haze is traditionally an atmospheric phenomenon where dust, smoke and other dry particles obscure the clarity of the sky (No condensation. Smog is similar to haze but there is condensation in smog). Sources for haze particles include farming (ploughing in dry weather), traffic, industry, and wildfires. |

Topic 48. KUKIZO TRIBAL BODIES AGAINST REVIEW OF ST STATUS OF CERTAIN TRIBES

Important for the subject: Geography

Indigenous Tribal Leaders' Forum (ITLF) and Zomi Council Steering Committee (ZCSC) condemn the move to review ST status of Kuki-Zo communities in Manipur during ethnic conflict. Manipur government forms a committee to examine delisting representation, including all 34 recognized STs.

- ITLF accuses Manipur government of attempting to change ST criteria, depriving Kuki-

Zo tribals of rights and land, warns of escalating conflict. Zomi body opposes removal of Free Movement Regime along Myanmar border, criticizes Manipur government's efforts to shift focus from the root cause of ethnic violence.

- ZCSC demands a separate administration for the Zo people, seeking a Union Territory with a legislature under the Indian Constitution.

About Kuki Tribe:

- Resides in the **northeastern regions of India, Myanmar, and Bangladesh**. Primarily located in Manipur and Mizoram (India), Chin State (Myanmar), and Chittagong Hill Tracts (Bangladesh). Also referred to as Chin or Mizo people, sharing common ancestry and culture.
- **Part of the broader Zo people**, including the Chin and Mizo tribes. Boasts a diverse history, culture, and traditions, shaped by their environment in hilly and forested terrain.
- **Communicates through various dialects of the Chin-Kuki-Mizo language family**, belonging to the Tibeto-Burman branch of SinoTibetan languages

Process of Amendment in the ST List

- Any tribe or tribal community can be included or excluded from the list only **by law made by the Parliament of India**.
- A notification issued under **clause (1) of Article 342**, specifying Scheduled Tribes, is used to amend the list.
- As per the SC verdict, **it is not open to State governments or courts or tribunals or any other authority to modify, amend or alter the list of Scheduled Tribes specified in the notification issued under clause (1) of Article 342**.
- However, the center has stated that the **process of inclusion or exclusion from ST list requires the proposal to originate from the concerned State government, which is then acted upon by the Parliament**.
- 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.
- **Criteria includes primitive traits, distinctive culture, geographical isolation, shyness of contact with the community at large, and backwardness.**

Topic 49. ATAL SETU: ALL YOU NEED TO KNOW ABOUT INDIA'S LONGEST SEA BRIDGE

Important for the subject: Geography



Today, Prime Minister of India will inaugurate the much-awaited Atal Setu, the Mumbai Trans Harbour Link (MTHL)

About Atal Setu:

- The **Mumbai Trans Harbour Link (MTHL) or Atal Setu** is the longest sea bridge in India is set to be inaugurated today.
- The bridge has been named after former prime minister and late BJP veteran Atal Bihari Vajpayee.
- **21.8 km in length** and having six lanes, the bridge has been constructed at a whopping cost of ₹18,000 crore.
- The bridge originates from **Sewri in Mumbai and ends at Nhava Sheva in Uran taluka** in Raigad district. It has shortened the distance between **Mumbai and Navi Mumbai to just 20 minutes** which earlier took 2 hours.

Other Bridges in India:

1. **Bhupen Hazarika Setu** on River Brahmaputra in Assam.
2. **Dibang river bridge** on River Dibang in Arunachal Pradesh.
3. **Mahatma Gandhi Setu** on River Ganges in Bihar.
4. **Bandra Worli sea link** on Mahim Bay in Maharashtra.
5. **Bogibeel bridge** on River Brahmaputra in Assam

Topic 50. FOCUS ON BEST PRACTICES AS GLOBAL MEET ON PULSES RETURNS TO INDIA

Important for the subject: Geography

India is set to be the **world's largest producer of lentil (masur)** this year on the back of an expected **surge in production** estimated at **1.6 million tonnes (mt)**.

- **Lentil production in Canada**, the **top player** in the global market, is projected at around **1.5 mt** and in **Australia** at **1.4 mt**.

Pulses as a superfood:

- India is the largest producer and consumer of pulses globally.
- Pulses are considered to be a superfood because of their **nutritional benefits**, **ability to reduce greenhouse gas emissions**, and **suitability for cultivation in arid conditions with minimal water**.

About the Global Pulse Convention:

- The **Global Pulse Convention**, jointly organized by the **National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED)** and the **Global Pulse Confederation (GPC)**, is set to take place in **New Delhi** in February.
- The event will gather around 800 representatives from **governments**, **commercial entities**, and **non-profit organizations** involved in **pulse production and processing**.
- The convention **aims** to facilitate knowledge sharing among experts, stakeholders, and policymakers.
- Pulses are significant in **sustainable food systems**. The convention will focus on promoting **pulses as smart crops** and is expected to attract participants from over 40 countries.

Global Pulse Confederation (GPC):

- Formerly known as **CICILS IPTIC**, **GPC** represents **all segments of the pulse industry value chain** from growers, researchers, logistics suppliers, traders, exporters and importers to government bodies, multilateral organizations, processors, canners and consumers.
- Its membership includes **24 national associations** and over **600 private sector members**. **GPC** is based in **Dubai** and licensed by the **Dubai Multi Commodity Centre (DMCC)**. **India** is a member. **Mr. Vijay Iyengar** is the **current President of GPC**.

India Pulses and Grains Association (IPGA):

- **IPGA** is the **apex body** representing **India's pulses and grains industry** and

trade. Registered in Mumbai under Section 8 of the Companies Act 2013, it boasts a membership of over 400, including regional pulse industry associations, reaching over 10,000 stakeholders across the value chain.

- IPGA aims to globally enhance the competitiveness of India's pulses and grains industry, contributing to the nation's food and nutrition security.
- Since 2011, IPGA has engaged with Agriculture and Consumer Affairs Ministries to advocate for policy amendments, including the incorporation of pulses into the Public Distribution System and the Food Security Act.
- Additionally, it has worked towards allowing free exports of all pulses and ensuring trading at Minimum Support Price (MSP), with government intervention if trading prices drop.
- IPGA also monitors foreign trade in pulses and grains, offering forward-looking guidance to aid the government in policy formulation.

Topic 51. CORAL REEFS AND TYPES OF CORAL REEFS

Important for the subject: Geography



Coral reefs are some of the most diverse ecosystems in the world. Coral polyps, the animals primarily responsible for building reefs, can take many forms: large reef building colonies, graceful flowing fans, and even small, solitary organisms.

Types of coral reefs

- **Fringing reefs** grow near the coastline around islands and continents. They are separated from the shore by narrow, shallow lagoons. Fringing reefs are the most common type of reef.
- **Barrier reefs** also parallel the coastline but are separated by deeper, wider lagoons. At their shallowest points, they can reach the water's surface forming a "barrier" to navigation.
- An **atoll** is a **ring-shaped coral reef, island, or series of islets**. The **atoll** surrounds a body of water called a **lagoon**. Sometimes, **atolls** and **lagoons** protect a **central island**. **Channels** between **islets** connect a **lagoon** to the **open ocean or sea**.

How do Atolls develop?

- **Atolls** develop with **underwater volcanoes**, called **seamounts**.

Formation of Fringe Reefs:

- **First**, the volcano erupts, piling up lava on the seafloor. As the volcano continues to erupt, the **seamount's elevation grows higher**, eventually **breaking the surface of the water**. The top of the volcano becomes an **oceanic island**.
- In the **next stage**, **tiny sea animals** called **corals** begin to build a **reef** around the island. The **type of corals that build reefs** are called **hermatypic corals**, or **hard corals**. **Hermatypic corals** create a **hard exoskeleton of limestone** (calcium carbonate).
- This **coral reef**, called a **fringing reef**, surrounds the **island** just below the ocean surface. The **thin, shallow strip of water** between the **fringing reef** and the **island** is the **lagoon**.

Formation of Barrier Reef:

- Over millions of years, the **volcanic island erodes** and **sinks to the seafloor**. This process is called **subsidence**. The **seamount erodes into the sea**, its **top made flat by the constant pounding of powerful ocean waves**. As it subsides, the **flat-topped seamount** is called a 'guyot'.
- As the island subsides to become a **guyot**, its **ring-shaped fringing reef** turns into a **barrier reef**. A **barrier reef** is **farther from the shore and has a deeper lagoon**. The **barrier reef** protects the **lagoon** from the harsh winds and waves of the open ocean.
- **Subsidence** brings slight differences in ocean chemistry that change the reef radically. The **outer, ocean-facing side** of the reef remains a healthy marine ecosystem. **Corals on the inner, lagoon-facing side**, however, begin to **slowly decay**.
- The **algae that corals need to survive face much more competition** for **fewer nutrient resources**. The **limestone decays**, changing the color of the lagoon from deep ocean blue to bright teal.

Atoll formation:

- In the **final stage of an atoll's formation**, ocean waves break apart pieces of the limestone reef. They **pound, break, and erode the coral** into **tiny grains of sand**.
- This sand and other material deposited by waves or wind pile up on the reef. This material, including organic matter such as **plant seeds**, forms a **ring-shaped island or islets**. This is an **atoll**.



- **Hermatypic corals** only live in warm water. An island that is located where ocean temperatures are just warm enough to support **hermatypic corals** is said to be at “**Darwin Point**,” named after **Charles Darwin**. The famous naturalist was the **first to outline how atolls form**.

Patch reefs:

- **Patch reefs** are **small, isolated reefs** that grow up from the **open bottom of the island platform** or **continental shelf**.
- They usually occur between **fringing reefs** and **barrier reefs**. They vary greatly in size, and they rarely reach the surface of the water.

Pseudo-Atolls:

- The **island nation of Bermuda** is sometimes called the **world’s “northernmost atoll.”** Bermuda is a **pseudo-atoll**, a **ring of islands** that **look like an atoll**, but have **several distinguishing characteristics**: high elevations, mostly submerged reefs, and a wide reef-front terrace (the broad, sloping shelf running from the island’s highest elevation to the sea).

Topic 52. A NEAR-COMPLETE DAM LINKED TO KEN-BETWA PROJECT IS YET TO GET ENVIRONMENT CLEARANCE

Important for the subject: Geography

The **Lower Orr dam**, a crucial part of **Madhya Pradesh’s** contribution to the **Ken-Betwa River interlinking project**, has been found in **violation of environmental clearance laws** by an **expert committee of the Union Environment Ministry**.

- Documents reveal that the **dam construction began in 2019 without obtaining formal clearance from the Ministry**, leading to a recommendation in December 2022 for **necessary legal action** against the project proponent, the **National Water Development Agency (NWDA)**.
- The **NWDA**, a **Jal Shakti Ministry body**, had completed a significant portion of the dam and canal network (82% and 33.5%, respectively) **without proper clearances**, including lacking a ‘**consent to operate**’ certificate.

Fresh assessment:

- The **Expert Appraisal Committee (EAC)** has advised the developers of the **Lower Orr Dam project** to undergo a **new environmental appraisal**, with the **National Water Development Agency (NWDA)** required to provide additional data on potential damages.
- Because the project involved **diverting forest land**, a separate **Forest Advisory Committee (FAC)** is expected to weigh the project proposal and recommend such diversion.

Lower Orr Dam Project:

- The **Lower Orr project** envisages providing **irrigation and drinking water**, on about **90,000 hectares**, spanning the **Shivpuri and Datia districts** of the **drought-prone Bundelkhand regions** of **Madhya Pradesh**.
- This includes a **dam** over the **Orr river** and a **separate system of barrages**.

Ken Betwa Link Project (KBLP):

- The **Ken-Betwa Link Project (KBLP)** is the **River interlinking project** that aims to transfer surplus water from the **Ken river** in **MP** to **Betwa** in **UP** to irrigate the **drought-prone Bundelkhand region**.
- The region spread across the districts of **two states** mainly **Jhansi, Banda, Lalitpur and Mahoba districts** of **UP** and **Tikamgarh, Panna and Chhatarpur districts** of **MP**.
- The project involves building a **77-metre tall** and a **2-km wide Dhaudhan dam** and a **230-km canal**.
- **Ken-Betwa** is one of the **30 river interlinking projects** conceived across the country. The project has been delayed due to political and environmental issues.
- It would **submerge 58.03 sq. km (10.07%) of critical tiger habitats** in the **Panna Tiger Reserve** and **50% loss to the habitat** of a **highly endangered vulture species**.

Ken, Betwa and Orr Rivers:

- **Ken and Betwa rivers** originate in **MP** and are the **tributaries of Yamuna**.
- **Ken** meets with **Yamuna** in **Banda district** of **UP** and with **Betwa** in **Hamirpur district** of **UP**. **Orr river** is a tributary of **Betwa river**.
- **Rajghat, Paricha and Matatila dams** are over **Betwa river**.
- **Ken River** passes through **Panna tiger reserve**.

Topic 53. BEACH GAMES 2024, DIU

Important for the subject: Geography

The Beach Games 2024, the first multi-sports beach games in India, organized at the pristine blue flag certified **Ghoghla Beach in Diu** concluded with landlocked Madhya Pradesh emerging overall champion, topping the medal tally with a total of 18 medals, including an impressive haul of 7 golds. This remarkable feat not only showcased the sporting prowess of Madhya Pradesh's contingent but also highlighted the depth of talent fostered within the state

What is Blue Flag Certification?

- It is an internationally recognised eco-label that is accorded based on 33 criterias. These

criteria are divided into 4 major heads namely,

- Environmental education and information
- Bathing water quality
- Environmental management
- Conservation and safety services in the beaches
- Blue Flag beaches are considered the cleanest beaches of the world. It is an eco-tourism model endeavouring to provide the tourists/beachgoers clean and hygienic bathing water, facilities, a safe and healthy environment and sustainable development of the area.
- It is accorded by the international jury composed of eminent members – **United Nations Environment Programme (UNEP), United Nations World Tourism Organisation (UNWTO), Denmark-based NGO Foundation for Environmental Education (FEE) and International Union for Conservation of Nature (IUCN).**
- On the lines of Blue Flag certification, India has also launched its own eco-label BEAMS (Beach Environment & Aesthetics Management Services).

12 Beaches which have Received the Certification:

1. **Shivrajpur (Gujarat)**
2. **Ghoghla (Daman & Diu)**
3. **Kasarkod (Karnataka)**
4. **Padubidri beach (Karnataka)**
5. **Kappad (Kerala)**
6. **Rushikonda (Andhra Pradesh)**
7. **Golden beach (Odisha)**
8. **Radhanagar beach (Andaman and Nicobar)**
9. **Kovalam (Tamil Nadu)**
10. **Eden (Puducherry)**
11. **Thundi beach and Kadmat beach (Lakshadweep)**

Topic 54. RISING SEA, SHRINKING SANDS ERODE VIBRANCY OF GANGA SAGAR MELA

Important for the subject: Geography

The **Ganga Sagar Mela** at the **Kapil Muni temple** on **Sagar Island** in **West Bengal** is facing challenges due to **rising sea levels** and **beach erosion**.

- The **West Bengal government** is seeking “**national fair**” status for the religious congregation due to its uniqueness and spiritual significance. The beach in front of the temple is covered with mud.
- The government has installed **tetrapods**, a type of **wave-dissipating concrete block**, to address **erosion**, and their effectiveness will be assessed after the monsoon.
- There is the formation of a **char land** near **Sagar Island** due to **sediment deposition**. Rising sea levels are bringing water close to the **Kapil Muni temple**, and previous temples of Kapil Muni have submerged in the sea.

Reason for coastal erosion:

- Human interventions, including the removal of sand dunes and vegetation for Mela ground extension
- Violations of **Coastal Regulation Zone** in constructions on **Sagar Island**. The impact of reduced sediment influx from the **Ganga-Meghna-Brahmaputra river system**, leading to land loss in the Sundarbans.

Sagar Island:

- It is an island in the **Ganges delta**, lying on the **continental shelf** of **Bay of Bengal** about **100 km (54 nautical miles)** south of **Kolkata**.
- Although **Sagar Island** is a part of **Sundarbans**, it does not have any **tiger habitation** or **mangrove forests** or **small river tributaries** as is characteristic of the overall **Sundarban delta**.
- This island is a place of **Hindu pilgrimage**. Every year on the day of **Makar Sankranti**, Hindus gather to take a holy dip at the confluence of **river Ganges** and **Bay of Bengal** and offer prayers in the **Kapil Muni Temple**.
- **Kolkata Port Trust** has a pilot station and a light house.
- **Islands of Sundarbans**

Topic 55. BILKIS BANO CASE

Important for the subject: Polity

THE Supreme Court had struck down the relief granted by the **Gujarat government** to 11 men who were sentenced to life for the gangrape of Bilkis Bano and murder of her family members during the 2002 riots.

- A bench of **Justice BV Nagarathna** and **Justice Ujjal Bhuyan** said that Gujarat government's decision to grant remission to convicts was **"an instance of usurpation of jurisdiction and of abuse of discretion"** The court said the State had **"acted in tandem and was complicit"** with the convicts.
- The Supreme Court said that Gujarat was not the **"appropriate government" to decide on the remission plea of the 11 men convicted for the "grotesque and diabolical crime driven by communal hatred"**.

Gujrat Remission policy:

- **1992 remission policy** allowed prisoners who had served a **minimum of 14 years** to apply for early release.
- This policy empowered the state to consider the remaining sentence **based on conduct, Important for the subject to verification**. However, the **Supreme Court invalidated** the 1992 policy in 2012.
- In response to this, The Gujarat crafted a **new policy in 2014**, introducing **exclusions for specific types of crimes**.
- **Radheshyam Shah** sought remission under the 1992 policy, which did not have post-2014 exclusions.

Legal aspects pertaining to Pardoning:

Constitutional provisions:

- Under **Articles 72 and 161 of the Constitution**, the President and Governors have the power to pardon, and to suspend, remit, or commute a sentence passed by the courts.

Code of Criminal Procedure (CrPC):

- **Chapter XXXII** of the CrPC (**Sections 432 to 435**) outlines the procedures for remission, suspension, and commutation of sentences.
- Since **prisons is a state Important for the subject**, state governments have powers under **Section 432 of the Code of Criminal Procedure (CrPC)** to remit sentences.
- **States set up a Sentence Review Board** to exercise the powers under Section 432 of the CrPC.

- **Section 433A of the CrPC** puts certain restrictions on these powers of remission:
- **Where a sentence of imprisonment for life** is imposed on conviction of a person for an offense for which death is one of the punishments provided by law or,
- **Where a sentence of death imposed on a person has been commuted** under Section 433 into one of imprisonment for life.
- In the above cases, a person shall not be released from prison unless he had served at least fourteen years of imprisonment.

Views of Judiciary:

- The court ruled that remission under **Section 432 of the CrPC** requires **obtaining the judge's opinion and reasons from the convicting or confirming court**, allowing only case-specific, not wholesale, decisions.
- The Supreme Court has held that states cannot exercise the power of remission arbitrarily, and must follow due process.
- In '**Laxman Naskar v. Union of India**' (2000) the SC laid down five grounds on which remission is considered:
- **Whether the offense is an individual act of crime that does not affect the society;**
- **Whether there is a chance of the crime being repeated in future;**
- **Whether the convict has lost the potentiality to commit crime;**
- **Whether any purpose is being served in keeping the convict in prison; and Socio-economic conditions of the convict's family**

Pardoning power of president:

| Type | Illustration |
|--------|--|
| Pardon | It removes both the sentence and the conviction and completely absolves the convict from all sentences, punishments and disqualifications. |

| | |
|-------------|---|
| Remission | It implies reducing the period of a sentence without changing its character. |
| Commutation | It denotes the substitution of one form of punishment for a lighter form. |
| Respite | It denotes awarding a lesser sentence in place of one originally awarded due to some special fact, such as the physical disability of a convict or the pregnancy of a woman offender. |
| Reprieve | It implies a stay of the execution of a sentence (especially that of death) for a temporary period. |

Difference between pardoning power of president and governor

- The President can pardon sentences inflicted by **court martial (military courts)** while the **governor cannot**. The President can pardon **death sentences** while the **governor cannot**.

About Parole and Furlough

Parole:

- It is a rehabilitative procedure which aims to change the qualities of such people. It was legalized and enacted under the Prison Act of 1894 and the Prisoner Act of 1900.
- In India each state has its own set of parole guidelines. It is not a right and thus it is given to a prisoner only for a specific reasons such as a death in the family or a wedding of a blood relative

Furlough:

- It is given in cases of long-term imprisonment. The period of furlough granted to a prisoner is treated as remission of his sentence.
- It is a matter of right for a prisoner which is to be granted periodically irrespective of any reason.
- It will enable the prisoner to retain family and social ties, and to counter the ill-effects of prolonged time spent in prison.

Difference between Parole and Furlough:

- The Supreme Court had differentiated between parole and furlough in various judgements

such as **The State of Maharashtra vs. Suresh Panduram (2006)** and **State of Haryana and Ors. vs. Mohinder Singh (2000)**, etc).

Few differences are as follows:

- Parole can be awarded in the case of **short-term detention**, on the other hand furlough is allowed in the case of **long-term detention**.
- Parole lasts for **one month**, on the other hand furlough lasts for a **maximum of 14 days**. Parole is granted by **The Divisional Commissioner**, on the other hand furlough is granted by **Deputy Inspector General Prison**.
- A specific **reason is necessary for parole**, on the other hand a furlough is **intended to break the monotony of imprisonment**.
- The **term of imprisonment** is not included in the **computation of the term of parole**, whereas it is vice versa in **furlough**.
- Parole can be **granted a number of times** whereas there is **limitation in the case of furlough**.

Topic 56. THE LAWS AROUND REMISSION POLICY

Important for the subject: Polity

The Supreme Court on January 8 set aside the remission of 11 convicts sentenced to life imprisonment for the gang rape of Bilkis Bano and murder of her family, during the 2002 communal riots in Gujarat. The remission order was passed by the Gujarat government in August 2022.

Legal and Constitutional Provisions:

- The constitutional provisions under **Article 72 and 161** empower the **President and Governor, respectively, to grant pardon, commutation, remission, respite, or reprieve to a convict**.
- Additionally, **Section 432 of the Criminal Procedure Code (CrPC)** allows the **appropriate State government to remit a convict's punishment, Important for the subject to certain conditions**.
- Notably, life imprisonment convicts can only be considered for **remission after serving 14 years, as per Section 433A of the CrPC**.
- "Remission" in this context refers to the reduction or mitigation of the sentence or penalty imposed on a person.
- It allows the executive authorities to use their discretion in considering factors such as the nature of the offense, the conduct of the convict, and other relevant circumstances to

decide whether a reduction in the punishment is warranted.

Supreme Court guidelines on pardoning power:

- **Mandatory Central government advice:** In **Maru Ram v Union of India**, the Constitutional Bench of Supreme Court held that the power under **Article 72** is to be exercised on the advice of the Central Government and not by the President on his own, and that the advice of the Government binds the head of the Republic.
- **No reason required:** The Supreme Court in **Ranga Billa** case observed that the term pardon itself signifies that it is entirely a discretionary remedy and grant or rejection of it need not to be reasoned.
- **Not a matter of right:** Supreme Court in **Kehar Singh v Union of India** held that the grant of pardon by the President is an act of grace and, therefore, cannot be claimed as a matter of right. The power exercised by the President being exclusively of administrative nature, is not justiciable.
- **Limited Judicial review:** Pardoning powers under **Articles 72 and 161** is Important for the subject to judicial review.
- In **Epuru Sudhakar vs Govt. Of A.P.**, the Supreme Court held that it is a well-set principle that a limited judicial review of exercise of clemency powers is available to the Supreme Court and High Courts. Granting of clemency by the President or Governor can be challenged on the **following grounds**:
 - The order has been passed without application of mind.
 - The order is malafide.
 - The order has been passed on wholly irrelevant considerations.
 - Relevant material has been kept out of consideration.

The order is arbitrary.

- The pardoning power is founded on **consideration of public good** and is to be exercised on the ground of public welfare. Pardon may substantially help in saving an innocent person from being punished due to miscarriage of justice or in cases of doubtful conviction.
- The hope of being pardoned itself serves as an incentive for the convict to behave himself in the prison institution and thus, helps considerably in solving the issue of prison discipline.

Bilkis Bano Case:

- The crimes in question occurred in Gujarat in 2002 but were later shifted to Maharashtra for a fair trial. In 2008, a CBI trial court in Mumbai sentenced the 11 convicts to life imprisonment.

- In 2022, Radheshyam Shah, one of the convicts, sought remission under Gujarat's 'Remission policy' of 1992.
- Despite legal discrepancies, the Gujarat government granted premature release to the convicts in August 2022, leading to a legal and moral quandary.

Topic 57. MAHARASHTRA SPEAKER GIVES VERDICT ON SHIV SENA SPLIT

Important for the subject: Polity

Maharashtra Speaker Rahul Narvekar recognised the Shinde faction as the “real Shiv Sena”, while deciding on a set of 54 petitions calling for disqualification of Sena MLAs on both sides.

Anti Defection Law:

- **The Tenth Schedule which is popularly known as the Anti-Defection Act was included in the Constitution via the 52nd Amendment Act, 1985 and sets the provisions for disqualification of elected members on the grounds of defection to another political party.**

The grounds for disqualification under the Anti-Defection Law are as follows:

- If an elected member voluntarily gives up his membership of a political party.
- If he votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorized to do so, without obtaining prior permission.
- If any independently elected member joins any political party. If any nominated member joins any political party after the expiry of six months.

Some exceptions to 10th Schedule:

- As per the 1985 Act, a 'defection' by one-third of the elected members of a political party was considered a 'merger'.

91st Constitutional Amendment Act:

- But the 91st Constitutional Amendment Act, 2003, changed this and now at least two-thirds of the members of a party have to be in favor of a “merger” for it to have validity in the eyes of the law.
- The members so disqualified can stand for elections from any political party for a seat in the same House. The law applies to both Parliament and state assemblies.
- Provision of Tenth schedule which provides for exemption from disqualification in case of split by one third members of legislative party has been deleted by this amendment.

Role of speaker:

- **In Kihoto Hollohan vs Zachillhu And Others’ case,** the Supreme Court upheld

the **sweeping discretion available to the Speaker in deciding cases of disqualification of MLAs.**

- The **decision on questions as to disqualification** on ground of defection are referred to the Chairman or the Speaker of such House, which is **Important for the subject to 'Judicial review'**.
- There is **no time limit as per the law within which the Presiding Officers** should decide on a plea for disqualification. The courts also can intervene only after the officer has made a decision, and so the only option for the petitioner is to wait until the decision is made.

Constitutional Provisions for Disqualification of MLAs

- Under the Constitution, a person shall be disqualified for being chosen as and for being a member of the legislative assembly or legislative council of a state:
- If he holds any office of profit under the Union or state government (except that of a minister or any other office exempted by state legislature),
- If he is of unsound mind and stands so declared by a court,
- If he is an undischarged insolvent,
- If he is not a citizen of India or has voluntarily acquired the citizenship of a foreign state or is under any acknowledgement of allegiance to a foreign state, and
- If he is so disqualified under any law made by Parliament.

Parliamentary Provisions for Disqualification of MLAs

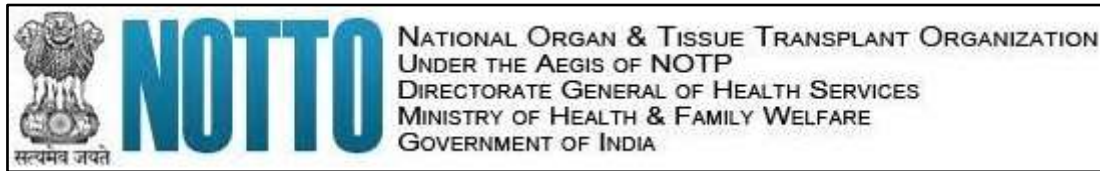
- The Parliament through Representation of People Act (1951) has prescribed a number of additional disqualifications for members of Parliament and to the House or Houses of the Legislature of each State
- He/She must not have been found guilty of certain election offenses or corrupt practices in the elections.
- He/She must not have been convicted for any offense resulting in imprisonment for two or more years.

Governors decision:

- The governor's decision is final on the question whether a member has become Important for the subject to any of the above disqualifications.
- The governor should obtain the opinion of the Election Commission and act accordingly.

Topic 58. COMPLETE ORGAN TRANSPLANT PROCESS IN 6-8 WEEKS, SAYS DELHI HC

Important for the subject: Polity



Delhi High Court has prescribed an ideal timeline of 6-8 weeks to complete the process of transplanting organs from living donors.

- **Justice Prathiba M Singh** said prolonged delays can cause significant mental and physical anguish for donors, recipients, and their families.
- It also directed the **Ministry of Health and Family Welfare to adhere to timelines under The Transplantation of Human Organs and Tissues Act, 1994, and Rules, 2014** for all steps in the process of considering organ-donation applications.
- The court suggested that after 4-6 weeks of receiving the application, the Committee can schedule interviews within 2 weeks.
- This will facilitate meetings of family members of the donors and recipients and conduct more than one interview.
- The “entire process i.e. from submission to decision should not exceed 6 to 8 weeks”- Courts said.

The Transplantation of Human Organs and Tissues Act, 1994:

- The law governs the transplantation of human organs and tissues in India, including the donation of organs after death.
- It lays down regulations governing healthcare providers and hospitals, and stipulates penalties for violations.
- The Act allows **living donations from close relatives such as parents, siblings, children, spouses, grandparents, and grandchildren.**
- Altruistic donations from **distant relatives, in-laws, or long-time friends are allowed after additional scrutiny** to ensure there is no financial exchange.
- Living donations from close relatives involving Indians or foreigners must be accompanied by documents establishing their identities, family trees, and pictures that prove the donor-recipient relationship.
- Offering to pay for organs or supplying them for payment; initiating, negotiating, or advertising such arrangements; looking for persons to supply organs; and abetting in preparing false documents **can attract a jail term up to 10 years and a fine up to Rs 1**

crore.

Role of Authorisation Committee:

- The Authorisation Committee **oversees and approves organ transplant procedures involving donors and recipients who are not near relatives.**
- This approval is crucial in ensuring ethical compliance and preventing illegal practices.

Transplantation of Human Organs and Tissues Rules, 2014.

- **Rule 7 of the 2014 Rules provides** for the constitution of the Authorisation Committee and the nature of enquiry and evaluation conducted by it.
- **Rule 7(3) says the Committee** must ensure there is no commercial transaction involved in cases where the donor and recipient are not near relatives.

About NOTTO:

- **National Organ and Tissue Transplant Organization (NOTTO) is a National level organization** set up under the **Directorate General of Health Services, Ministry of Health and Family Welfare, Delhi.**
- National Network division of NOTTO would function as the apex center for all India activities of coordination and networking for procurement and distribution of organs and tissues and registry of Organs and Tissues Donation and Transplantation in the country.

National Organ Transplant Program (NOTP)

- It is a **central sector continuing scheme** implemented by the **National Organ and Tissue Transplant Organization (NOTTO).**
- It aims to improve access to the life transforming transplantation for needy citizens of our country by promoting deceased organ donation.

Organs and tissues that can be transplanted

1. organs – **heart, kidney, liver, lung, pancreas, stomach and intestine**
2. tissue – **cornea, bone, tendon, skin, pancreas islets, heart valves, nerves and veins**
3. cells – **bone marrow and stem cells**
4. limbs – **hands, arms and feet.**

Topic 59. SC REFUSES TO STAY LAW ON SELECTION OF CEC AND EC

Important for the subject: Polity

The Supreme Court declined to stay a new law which brushed aside a top court judgment to include the Chief Justice of India as a member of the high powered selection committee to appoint the Chief Election Commissioner (CEC) and Election Commissioners (ECs).

- “The CEC and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023 has diluted the Supreme Court judgment by replacing the Chief Justice of India with a Union Cabinet Minister.
- **Key Provisions of the “The CEC and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023**
- The act replaces the Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991. It addresses the appointment, salary, and removal of the CEC and ECs.

Appointment Process:

- The CEC and ECs will be **appointed by the President** upon the recommendation of a Selection Committee.
- The **Selection Committee will consist of the Prime Minister, a Union Cabinet Minister, and the Leader of Opposition/leader of the largest opposition party in Lok Sabha.**
- Recommendations of the Selection Committee will be valid even when there is a vacancy in this Committee.
- A **Search Committee headed by the Cabinet Secretary** will propose a panel of names to the Selection Committee.
- Eligibility for the posts includes holding (or having held) a post equivalent to the Secretary to the central government.

Changes in Salary and Conditions:

- The salary and conditions of service of the CEC and ECs will be equivalent to that of the **Cabinet Secretary**.
- Under the 1991 Act, it was equivalent to the salary of a Supreme Court Judge.

Removal Process:

- The act retains the constitutional provision (**Article 324(5)**) that allows the CEC to be removed like a Supreme Court Judge, while ECs can only be removed on the recommendation of the CEC.

Protection for CEC And ECs:

- The Act safeguards CEC and ECs from legal proceedings related to actions taken during their tenure, provided such actions were carried out in the discharge of official duties.
- The amendment aimed to shield these officials from civil or criminal proceedings related to their official functions.

Topic 60. LS PRIVILEGES PANEL CALLS FOR REVOKING SUSPENSION OF 3 MPS

Important for the subject: Polity

The Privileges Committee of the Lok Sabha have accepted the “**regrets**” expressed by MPs for their alleged disrespect to the Chair during the Winter Session of Parliament.

What is Parliamentary Privilege?

- Parliamentary privilege refers to **rights and immunities enjoyed by Parliament as an institution and MPs in their individual capacity**, without which they cannot discharge their functions as entrusted upon them by the Constitution.

Are these parliamentary privileges defined under law?

- According to the Constitution, the powers, privileges and immunities of Parliament and MP’s **are to be defined by Parliament.**
- **No law has so far been enacted** in this respect. In the absence of any such law, it continues to be governed by British Parliamentary conventions.

Constitutional Provisions regarding Parliamentary Privileges

- **Article 105:** There shall be freedom of speech in Parliament. No member of Parliament shall be liable to any proceedings in any court in respect of anything said or any vote given by him in Parliament or any committee thereof.
- **Article 122:** The validity of any proceedings in Parliament shall not be called in question in court on the ground of any alleged irregularity of procedure.
- **Article 194:** There shall be freedom of speech in the State Legislature. No member of the State Legislature shall be liable to any proceedings in any court in respect of anything said or any vote given by him in the State Legislature or any committee thereof.
- **Article 212:** The validity of any proceedings in the State Legislature shall not be called in question in court on the ground of any alleged irregularity of procedure.

Topic 61. WHAT IS BREACH OF PRIVILEGE?

Important for the subject: Polity

A breach of privilege is a **violation of any of the privileges of MPs/Parliament.** Among other things, any action ‘casting reflections’ on MPs, parliament or its committees; could be considered breach of privilege.

- This may include publishing of news items, editorials or statements made in newspaper/magazine/TV interviews or in public speeches.

About Committee of Privileges

- This committee consists of **15 members in Lok Sabha (10 in case of Rajya Sabha)** nominated by the Speaker (Chairman in case of Rajya Sabha).
- **In the Rajya Sabha, the deputy chairperson heads the committee of privileges.**

Powers and Functions:

- The committee examines every question involving a breach of privilege of the House or of the members or of any Committee thereof referred to it by the House or by the Speaker/Chairman.
- It also determines with reference to the facts of each case whether a breach of privilege is involved and makes suitable recommendations in its report. It also states the procedure to be followed by the House in giving effect to its recommendations.
- When a question of privilege is referred to the Committee by the House, the report of the Committee is presented to the House by the Chairman or, in his absence, by any member of the Committee.
- **Where a question of privilege is referred to the Committee by the Speaker, the report of the Committee is presented to the Speaker who may pass final orders thereon or direct that it be laid on the Table of the House.**
- The Speaker/Chairman may refer to the Committee any petition regarding the disqualification of a member on the ground of defection for making a preliminary inquiry and submitting a report to him.
- The procedure to be followed by the Committee in these cases is so far as may be the same as applicable to questions of breach of privilege.

Topic 62. GOVT RECONSTITUTES EPFO BOARD

Important for the subject: Polity

The Centre reconstituted the **Central Board of Trustees (CBT)** of the **Employees Provident Fund Organisation (EPFO)** by excluding representatives of the Opposition trade unions **INTUC, AITUC and AIUTUC** from the panel.

- **All India Manufacturers Association, an organization of employers** started by legendary engineer M. Visvesvaraya in 1941, is excluded from the CBT.
- **Laghu Udyog Bharti**, an organization of employers supported by the RSS, has managed to send two members to the panel.

There are two persons nominated for the post of vice chairman:

- **Minister of State for Labour and Employment,**
- **Labour and Employment Secretary.**
- There are five central government representatives, four from the **Ministry of Labour** and

Employment, and one from the **Ministry of Finance** along with 15 state government representatives.

- The AITUC, which is **one of the oldest trade unions** in the country, has decided to raise its protests.

About Reconstituted EPFO board(Central Board of Trustees)

- In the place of INTUC, AITUC and AIUTUC, the Centre has newly inducted to the panel the **Trade Union Coordination Centre, Self Employed Women's Association and the National Front of Indian Trade Unions.**
- The **Bharatiya Mazdoor Sangh(BMS)** , which is the trade union of Sangh Parivar, has retained three members in the panel.
- The CBT, EPFO is a tripartite, statutory body constituted by the central government under the provisions of **section 5A of the Employees' Provident Funds and Miscellaneous Provisions Act, 1952.** It has representatives of employees, employers and government.
- The role of the Board includes **administration of the funds, delegation of administrative and financial powers for administration of the schemes, appointment of officers and staff, maintenance of accounts of income and expenditure and determining the annual rate of interest.**

About Trade Unions:

- **Labor unions or trade unions are organizations** formed by workers from related fields that work for the common interest of its members.
- They help workers with issues like **fairness of pay, good working environment, hours of work and benefits.**
- They represent a **cluster of workers and provide a link between the management and workers.**
- The **Indian Trade Union Act, 1926,** is the **principle act** which controls and regulates the mechanism of trade unions.
- The **BMS** is considered as the **largest union** at present, followed by the **INTUC. HMS and CITU.**

About AITUC:

- The **All India Trade Union Congress (AITUC)** is the **oldest trade union** federation in India.
- It is associated with the **Communist Party of India.** It was founded on **31 October 1920** with **Lala Lajpat Rai** as its **first** president.

About International Trade Union Confederation (ITUC)

- ITUC is an **international body** of independent trade unions from 187 countries.
- The federation was formed on **1 November 2006** out of the merger of the International Confederation of **Free Trade Unions (ICFTU)** and the **World Confederation of Labour (WCL)**.
- It is headquartered at **Brussels, Belgium**. Its role is crucial for any trade union to be elected to the workers' representatives in the governing body of the **International Labour Organisation (ILO)**.
- **The Trade Union Development Cooperation Network (TUDCN)** is an initiative of the **ITUC** whose **main objective is to bring the trade union perspective** into international development policy debates.

About EPFO:

- **The Employees' Provident Fund** came into existence with the promulgation of the **Employees' Provident Funds Ordinance on the 15th November, 1951**.
- It was replaced by the **Employees' Provident Funds Act, 1952**. The Act is now referred to as the **Employees' Provident Funds & Miscellaneous Provisions Act, 1952** which extends to the **whole of India**.
- **EPFO is one of the World's largest Social Security Organisations** in terms of clientele and the volume of financial transactions undertaken.
- **EPFiGMS** is a **customized portal of EPFO** with an **aim to redress grievances for the services provided by EPFO**.

Topic 63. A SPEAKER'S FLAWED MOVE TO DETERMINE THE REAL FACTION

Important for the subject: Polity

In the Shiv Sena case in Maharashtra, the question as to which faction is the real party cannot be decided by the Speaker as the Tenth Schedule does not require him to decide this.

What constitutes defection?

- **Voluntarily giving up the membership** of their original party or **voting against the whip** of the party are treated as defection and the Members of the legislature who do either of these things are liable to be disqualified under the anti-defection law contained in the Tenth Schedule of the Constitution.
- In **Rajendra Singh Rana vs Swami Prasad Maurya (2007)**, the Court stated that when a member or a group of members of the ruling party joins hands with the Opposition party and meets the Governor along with the Members of the Opposition and try to form an alternative government, they can be said to have voluntarily given up the membership of



their original party.

- Earlier, under the Tenth Schedule, a legislator could avoid disqualification on **two grounds: a split in his political party** where one-third of the legislators form a faction and break with that party, or the legislator's party **merging with another party** and not less than two-thirds agree to the merger and walkout of the original party.
- The split provision in paragraph 3 of the Tenth Schedule was omitted through the **91st Constitution Amendment in 2003** due to frequent abuse by legislators. Now only the merger provision in paragraph 4 remains, which can protect defectors provided the conditions stipulated in paragraph 4 are met, such as the **merger** of the defectors party with another party.

Tenth schedule of Indian constitution

- The Tenth Schedule of the Indian Constitution, commonly known as the “Anti-Defection Law,” was added by the 52nd Amendment Act, 1985.
- It is a crucial constitutional provision aimed at preventing political defections and maintaining the stability of the government.
- The primary objective is to curb the evil of political defections, which often lead to instability and opportunistic changes in the composition of legislatures.
- There are certain situations where defection is not considered grounds for disqualification.
- For example, if a member's original party merges with another party, or if a significant portion of the party decides to merge with another party, the members are not disqualified.

Topic 64. BOSNIAN SERBS ARE ‘MENTALLY’ IN SERBIA, THEIR LEADER SAYS

Important for the subject: International Relations



Celebrations are due on 9 January, to mark **32 years** since **Bosnian Serbs** proclaimed

a “republic” deemed **anti-constitutional** by both **Bosnia’s central government** and the **Organisation for Security and Cooperation in Europe (OSCE)**.

- Three months after the proclamation of their republic — **Republika Srpska** — on **January 9, 1992**, an **inter-ethnic war** broke out in **Bosnia**, claiming around 1,00,000 lives.
- Since the **1992-1995 war**, **Bosnia and Herzegovina** comprises **two semi-independent entities** — the mostly-Orthodox Christian Serbs’ **Republika Srpska**, and the **Federation of Bosnia and Herzegovina**, made up of **mostly-Muslim Bosniaks** and **mostly-Catholic Croats**.

Bosnia and Herzegovina:

- Country in **Southeast Europe**, situated on the **Balkan Peninsula**. Borders **Serbia** to the **east**, **Montenegro** to the **southeast**, and **Croatia** to the **north** and **southwest**.
- In the **south**, it has a **20 kilometres (12 miles) long coast** on the **Adriatic Sea**, with the town of **Neum** being its **only access to the sea**.
- **Moderate continental climate** with **hot summers** and **cold, snowy winters**.
- **Herzegovina**, the smaller, **southern region**, has a **Mediterranean climate** and is mostly **mountainous**. **Sarajevo** is the **capital** and the **largest city**.

Serbia:

- A **landlocked country** at the crossroads of **Southeast and Central Europe**, located in the **Balkans** and the **Pannonian Plain**.
- Borders with **Hungary** to the **north**, **Romania** to the **northeast**, **Bulgaria** to the **southeast**, **North Macedonia** to the **south**, **Croatia** and **Bosnia and Herzegovina** to the **west**, and **Montenegro** to the **southwest**.
- It claims a border with **Albania** through the disputed territory of **Kosovo**. Its capital **Belgrade** is also the **largest city**.

Bosnia- Serbia relations:

- The modern-day countries of **Bosnia and Herzegovina** and **Serbia** both originated from **Yugoslavia**.
- The main dispute in **Bosnia** arose from the **dissolution of Yugoslavia**, when most **Serbs** did not support the country’s independence, but instead joined the **Serbian war effort** to dismember **Bosnia** and attach **Serb-controlled areas to Serbia**.
- While this plan was thwarted, the **Dayton Peace Accords** that ended the war recognized the **Serb Republic (Republika Srpska, RS)** as one of the country’s two entities.
- Bosnian statehood does not enjoy strong support among **Bosnia Serbs** and many

prefer **RS** to become **independent or join Serbia**.

- On the other hand, many **Bosniaks** and **Croats** opposed the existence of the **RS**, considering that it was established through **ethnic cleansing** and there was **only a slim majority of Serbs** living on its **pre-war territory**.
- Currently, the **RS** enjoys far-reaching autonomy as a weak federal state. Since its recognition in **1995** through the **Dayton Accords**, both the autonomy of the RS and its Serb dominance have been weakened by the **Office of the High Representative (OHR)**, the international agency that oversees the peace process.
- Relations between **Serbs** and **other nations in Bosnia** have been **largely peaceful** since the **end of the war**, but contacts remain limited as most Serbs live separately from Bosniaks and Croats within Bosnia

Organisation for Security and Cooperation in Europe (OSCE):

- **OSCE** is an **intergovernmental organization** focusing on **regional security in Europe, North America, and Asia**.
- **Mandate** includes arms control, promoting human rights, freedom of the press, and ensuring free and fair elections.
- Employs approximately 3,460 people, mainly in **field operations, Vienna secretariat**, and institutions. **Observer status** at the **United Nations**.
- **Originated** in **1975** as a **forum for discussions between the Western Bloc and Eastern Bloc** during the **Cold War**.
- Comprises **57 participating countries**, mostly in **Europe**, with some in **Asia and North America**.
- Focuses on early warning, conflict prevention, crisis management, and post-conflict rehabilitation.

Topic 65. WHY INTERNATIONAL LAW MATTERS

Important for the subject: International Relations

Despite flaws and challenges in enforcement, international law remains important.

International law helps hold powerful nations accountable for their actions, as seen in cases like Israel's actions in Gaza and conflicts like the Russia-Ukraine war

United Nations Charter

- The **Charter of the United Nations** is the **founding document** of the United Nations. It was **signed on 26 June 1945, in San Francisco**, at the conclusion of the **United Nations Conference on International Organization**, and came **into force on 24 October 1945**.

- The UN Charter **codifies the major principles of international relations**, from sovereign equality of States to the prohibition of the use of force in international relations. It has been **amended five times since 1945**.

Article

The Purposes of the United Nations are:

- To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace,
- To bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;
- To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace;
- To achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion;
- To be a centre for harmonizing the actions of nations in the attainment of these common ends

Article 2

- The Organization and its Members, in pursuit of the Purposes stated in Article 1, shall act in accordance with the following Principles.
- The Organization is based on the principle of the sovereign equality of all its Members. All Members, in order to ensure to all of them the rights and benefits resulting from membership, shall fulfill in good faith the obligations assumed by them in accordance with the present Charter.
- All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.
- All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.
- All Members shall give the United Nations every assistance in any action it takes in accordance with the present Charter, and shall refrain from giving assistance to any state against which the United Nations is taking preventive or enforcement action.

- The Organization shall ensure that states which are not Members of the United Nations act in accordance with these Principles so far as may be necessary for the maintenance of international peace and security.
- Nothing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state or shall require the Members to submit.
- Such matters to settlement under the present Charter; but this principle shall not prejudice the application of enforcement measures under Chapter VII.

Topic 66. HOW A SUPER ENERGETIC PARTICLE FROM OUTER SPACE COULD HELP PHYSICS

Important for the subject: International Relations

A cosmic ray that has been dubbed ‘**Amaterasu**’ appears to have reached the earth from an empty part of the universe.

- In May 2021, **Japanese scientist Toshihiro Fujii** discovered a remarkably high-energy cosmic-ray event, which he named ‘Amaterasu,’ after the **Japanese sun goddess**.
- This cosmic ray, Amaterasu, is the **second-highest-energy cosmic ray ever detected** and was found by analyzing data collected between May 2008 and November 2021 by the **Telescope Array Project in the U.S.**
- Cosmic rays are energetic particles from space, including protons and alpha particles, and understanding them is crucial as they influence life on Earth.
- The energy of Amaterasu was measured at an astonishing 240 exaelectron-volt (EeV), making it about 40 million times more energetic than particles accelerated in the **Large Hadron Collider (LHC)**.
- **Ultra-high-energy cosmic rays (UHECRs) like Amaterasu, with energies greater than 1 EeV, are of particular interest.** Cosmic microwave background radiation limits their propagation beyond certain distances in space.
- Amaterasu’s origin remains a mystery as it appears to come from an empty part of the universe, defying existing astronomical explanations.
- This discovery **challenges the Standard Model of particle physics and suggests the possibility of unknown phenomena.**
- In 1991, another high-energy cosmic ray, known as the “**Oh My God**” particle, with an energy of 320 EeV, was detected, and it remains the most energetic cosmic ray ever recorded.

Topic 67. MAIDEN EMBARKATION OF SCIENTISTS FROM INDIAN OCEAN COUNTRIES ONBOARD ANTARCTIC EXPEDITION – COLOMBO SECURITY CONCLAVE (CSC)

Important for the subject: International Relations



Two scientists from **Mauritius** and **one scientist from Bangladesh** boarded the vessel at **Cape town on 20 Dec 2023** to participate in the 43rd Antarctic expedition of India led by **National Centre for Polar and Ocean Research, Goa**.

This participation of scientists from neighboring countries is an outcome of the **CSC Oceanographers and Hydrographers conference** held at **Goa and Hyderabad** in November 2022.

- The scientists from CSC nations had embarked onboard ‘**Sagar Nidhi**’ for a month-long scientific expedition in the Indian Ocean Region in June 2023.
- These scientists will participate in the **Antarctic expedition for a period of 3-4 months**.
- They will undertake collaborative research in various disciplines pertaining to **polar science and understand the nuances of Polar logistics** as well as challenges of the Polar environment.

About Colombo Security Conclave:

- The **Colombo Security Conclave** was formed in **2011** as a **trilateral maritime security grouping of India, Sri Lanka and the Maldives**.
- Later **Mauritius** joining as the **fourth member** and **Bangladesh &**

Seychelles participating as observer countries

- The **Conclave underlines regional cooperation** and shared security objectives concerning all littoral nations in the Indian Ocean Region (IOR).
- It aims to make **maritime security, marine pollution response and maritime search & rescue** priorities for the region.
- The **5th National Security Adviser** level meeting of the Colombo Security Conclave was held in **Maldives on 09-10 March 2022**.

In the meeting, key areas of cooperation to enhance and strengthen regional security were identified in the following five pillars:

1. Maritime Safety and Security
 2. Countering Terrorism and Radicalisation
 3. Combating Trafficking and Transnational Organised Crime
 4. Cyber Security, Protection of Critical Infrastructure and Technology
 5. Humanitarian Assistance and Disaster Relief
- Its **6th NSA level meet was convened at Mauritius** in December 2023. In November 2021, **India, Sri Lanka, and Maldives** conducted **Exercise Dosti XV in Maldives**, with **Bangladesh and the Seychelles as observers**.

About SAGAR:

- SAGAR is an acronym for **Security and Growth for All in the Region**, is a term used by the Prime Minister and Government of India for **India's vision and geopolitical framework of maritime cooperation in the Indian Ocean region**.
- SAGAR was launched in **2015**. It is **India's strategic vision for the Indian Ocean Region (IOR)**.
- **Security and Growth for All in the Region (SAGAR) and neighborhood first policy** are the prime initiatives for IOR.

Topic 68. SOUTH AFRICA'S GENOCIDE CASE AGAINST ISRAEL: HOW WILL THE ICJ DECIDE?

Important for the subject: International Relations

Israel has **promised to defend itself as the World Court** is set to hold public hearings in the case brought by South Africa.

- **Pretoria accuses Israel** of committing genocide in contravention of the 1948 UN

Genocide Convention, which both South Africa and Israel are party to. Countries party to the **treaty have the collective right to prevent and stop the crime.**

- **What constitutes genocide:** The killing of civilians in large numbers, especially children; the expulsion and displacement of Palestinians en masse and the destruction of their homes; the inciting statements by several Israel officials portraying Palestinians as sub-humans to be collectively punished, all constitute genocide.
- The **suit also lists the blockade on food and the destruction of essential health services** for pregnant women and babies as measures by Tel Aviv. A separate case is continuing at the **International Criminal Court, a different body.**
- The **ICC tries individuals in criminal cases**, the ICJ focuses on legal disputes between states.
- A 2019 case that **The Gambia brought against Myanmar** for its military crackdown on Rohingya refugees is still in trial.
- President Joan E Donoghue of the United States leads the ICJ presently alongside Vice President Kirill Gevorgian of Russia.

About International Court of Justice:

- The Court is the **principal judicial organ of the United Nations.**
- It was established by the **United Nations Charter**, which was signed in **1945 in San Francisco (United States).**
- It started its functioning in **April, 1946.** The seat of the Court is at the **Peace Palace in The Hague (Netherlands).**
- The Court's official languages are **English and French.**

Composition and working of ICJ:

- **The International Court of Justice is composed of 15 judges** elected to nine-year terms of office by the **United Nations General Assembly and the Security Council.**
- Any country **can propose candidates but no two judges must** come from one country.
- Presently, the bench includes judges from **all parts of the world including France, Slovakia, Somalia and India.**
- To appoint a president and vice president, **the judges hold a secret ballot.** ICJ judges ought to be **impartial and not act as extensions of their countries.**
- At the preliminaries, **the ICJ will determine if it has jurisdiction in the case at all.**
- Jurisdiction is established when the states involved affirm that they recognise the court's power, or if the countries are party to a treaty.

- **South Africa and Israel are parties to the Genocide Convention 1948.**

Who may submit cases to the Court?

- **Only States are eligible** to appear before the Court in contentious cases. At present, this essentially means the **193 Member States of the United Nations**.
- The Court has **no jurisdiction to deal with applications from individuals, non-governmental organizations, corporations or any other private entity**.
- It cannot provide them with legal advice or help them in their dealings with national authorities.

States representation to the court:

- Countries appoint teams of **“Special Agents”** which usually include top legal counsel or reputed law professors. The **two teams will present** their arguments to the full bench.
- **All 17 judges will sit at the head of the Great Hall of Justice** in the ICJ to hear the arguments on both sides.

Will other countries intervene?

- If a state intervenes because they **want to show solidarity**, it doesn't add anything from a legal perspective
- This can only **slow down the process and cause logistical challenges** for the ICJ. Cases filed by **multiple countries would have slowed down the case** as the court would have to attend to them all.

What could a final judgment look like?

- ICJ judgements are **legally binding and cannot be appealed**. **Article 94 of the United Nations Charter** provides that “each Member of the United Nations undertakes to comply with the decision of [the Court] in any case to which it is a party”.
- If there is a dispute about the meaning or scope of a judgment, the only possibility is for one of the parties to make a request to the Court for an interpretation.
- **If Israel does not comply, South Africa can approach the UN Security Council for enforcement.**
- US being a **permanent member possesses** a veto power. The US could **shield Israel from punishment**, as it has done multiple times in this war.
- Since 1945, the **US has vetoed 34 out of 36 UNSC draft resolutions** related to the Israel-Palestine conflict.

About International Criminal Court (ICC):

- It is governed by an **International treaty called ‘The Rome Statute’**. The ICC is

the world's first permanent international criminal court.

- It investigates and, where warranted, tries individuals charged with the gravest crimes of concern to the international community: genocide, war crimes, crimes against humanity and the crime of aggression.
- The ICC's **18 judges are elected by the Assembly of States Parties** for their qualifications, impartiality and integrity, and serve 9-year, non-renewable terms.
- **India along with US, Russia, Israel, Myanmar and China is not a party to the Rome Statute.**
- **India is not a member of ICC.**

Difference between ICJ and ICC:

| Aspects | ICJ | ICC |
|----------------------|--|---|
| Established | 1945 | 2002 |
| Headquarters | The Hague, Netherlands. | The Hague, Netherlands. |
| Relationship with UN | Principal judicial organ of UN | Not a part of UN |
| Types of cases | Legal disputes between states and requests for advisory opinions on legal questions. | Prosecutes individuals for the most serious crimes as per Rome statute. |
| Appeals | No | Yes |
| Enforcement power | Relies on UNSC to uphold judgements. | None, relies on cooperation. |

GENOCIDE AT THE ICJ VERSUS GENOCIDE AT THE ICC:

ICJ:

- The ICJ can consider whether a **State has committed genocide under the Genocide Convention.**
- Under that Convention, genocide is defined as any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group:

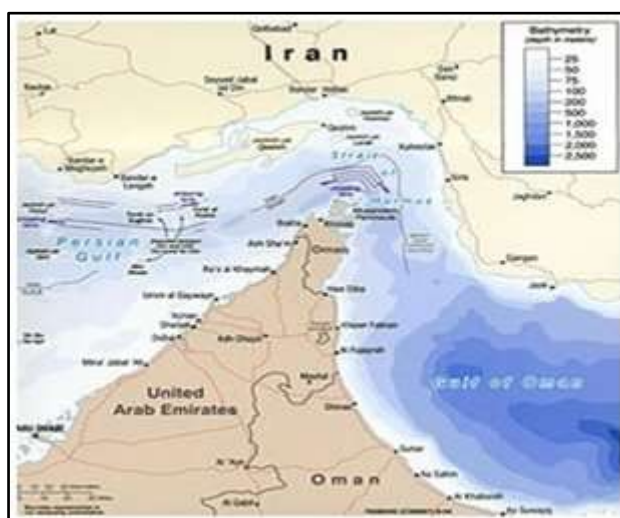
- Killing members of the group;
- Causing serious bodily or mental harm to members of the group;
- Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- Imposing measures intended to prevent births within the group;
- Forcibly transferring children of the group to another group.

ICC:

- The ICC, on the other hand, **prosecutes genocide as a crime committed by individuals, and it also has jurisdiction over other crimes that the ICJ cannot consider**, such as war crimes and crimes against humanity.
- While the definition of genocide is the same at both the ICC and ICJ, **the difference is that at the ICC an atrocity does not need to meet the threshold of 'genocide' to be prosecuted.**
- The ICC can therefore investigate a **much wider array of crimes than the ICJ**. However, it can only do so in situations arising in States that are party to the Rome Statute.
- **Prosecutors are only** permitted to open investigations into situations arising in countries that have ratified the Rome Statute.

Topic 69. IRAN SEIZES OIL TANKER AT CENTER DISPUTE WITH US

Important for the subject: International Relations



The Panama-flagged oil tanker Niovi of the US Navy was seized by Iran's Islamic Revolutionary Guard Corps Navy (IRGCN) while passing through the narrow Strait of

Hormuz.

Iran has seized a second oil tanker in a week. Tehran's prosecutor announced that the oil tanker was seized on a judicial order following a complaint by a plaintiff

The incident comes after Iran seized a Marshall Islands-flagged oil tanker in the Gulf of Oman called the Advantage Sweet.

Advantage Sweet's seizure by Iran was in response to a recent seizure via a court order by the United States of an oil cargo aboard the Marshall Islands tanker

About Strait of Hormuz:

- The Strait of Hormuz is a strait between the **Persian Gulf and the Gulf of Oman**.
- It provides the **only sea passage from the Persian Gulf to the open ocean** and is one of the world's most strategically important choke points.
- On the north coast lies **Iran**, and on the south coast lies the **Musandam peninsula**, shared by the **United Arab Emirates and Oman**.
- **About a fifth of the world's crude oil and oil products** passes through the **Strait of Hormuz**, a narrow choke point between **Iran and Oman**

Topic 70. ISRAELI LOGISTICS START-UP PLANS TO CONNECT DUBAI AND HAIFA PORTS VIA LAND TO BYPASS RED SEA

Important for the subject: International Relations



Amidst the **Houthi Red Sea Crisis**, Israeli logistics start-up **Trucknet** has found a new way to move cargo **by road** between **Dubai** and the **Adani-run Haifa port** in **Israel**. Cargo will move through **Saudi Arabia** and **Jordan** to reach **Haifa port** and proceed to **Europe by sea**.

The cargo from **Mumbai** or **Mundra** can be sent to **Jebel Ali**, from where it could be sent by road to **Haifa**, and then via ships to reach **ports in Europe** or **the US**.

Red Sea crisis:

- Global trade is suffering due to the fallout of the recent attacks by **Yemen-backed Houthi militants** on ships passing through the **Red Sea/Gulf of Aden**.
- The container ships are now being diverted via the **Cape of Good Hope** at the **southern tip of Africa**, resulting in a **sharp rise in both transit time and freight cost**.
- This adds approx. **6000 nautical miles** between **Asia** and **Europe** and **double the travel time**.

Red Sea (or Erythraean Sea):

- It is a **seawater inlet** of the **Indian Ocean**, lying between **Africa** and **Asia**. The connection to the ocean is in the south through the **Bab el Mandeb Strait** and the **Gulf of Aden**.
- To the **north** lie the **Sinai Peninsula**, the **Gulf of Aqaba**, and the **Gulf of Suez** (leading to the Suez Canal). The sea is underlain by the **Red Sea Rift** which is part of the **Great Rift Valley**. The **six countries bordering the Red Sea** are: Saudi Arabia, Yemen, Egypt, Sudan, Eritrea, and Djibouti.

Haifa port:

- It is the **largest of Israel's three major international seaports**, the others being the **Port of Ashdod** and the **Port of Eilat**.
- It has a **natural deep-water harbor**, which operates all year long, and serves both passenger and merchant ships. It is **one of the largest ports** in the **eastern Mediterranean** in terms of freight volume.
- It is a part of the recently proposed **India-Middle East Corridor (IMEC)**.

Jebel Ali port:

- Also known as **Mina Jebel Ali**, is a **deep port** located in **Jebel Ali, Dubai, United Arab Emirates**.
- It is located 35 km southwest of Dubai, in the Persian Gulf. It is the **world's ninth busiest port**, the **largest man-made harbour**, and the **biggest and by far the busiest port in the Middle East**.
- It was constructed in the late **1970s** to supplement the facilities at **Port Rashid**.

Bab el Mandeb strait:

- Also called '**Gate of Lamentation**', the **Gate of Grief** or the **Gate of Tears**. It is a strait between **Yemen** on the **Arabian Peninsula** and **Djibouti** and **Eritrea** in the **Horn of Africa**.
- It connects the **Red Sea** to the **Gulf of Aden** and by extension the **Indian Ocean**.

Topic 71. GLOBAL UNEMPLOYMENT OUTLOOK – ILO REPORT 2024

Important for the subject: International Relations

Projected Increase in Unemployment Rate:

The International Labour Organization (ILO) predicts a **global unemployment rate of 5.2% in 2024, a slight increase from 5.1% in the previous year.**

Cause:

- The main factor **contributing to the rise is an increase in joblessness in advanced economies.**

Forecasted Unemployed Population:

- The ILO's **World Employment and Social Outlook report** estimates a growth of 2 million unemployed people globally.

Reasons for Modest Performance:

- ILO attributes the **anticipated modest fall in labour market performance to global economic deceleration.**

Post-Pandemic Recovery:

- Despite a brief growth spurt during the post-pandemic recovery, **overall labour productivity growth has returned to a low pace similar to the previous decade.**

Impact on Income and Wages:

- Slow productivity growth periods can make **real disposable income and wages susceptible to sudden price shocks.**

Employment Gains Across Countries:

- While upper-middle-income countries may **experience minimal employment gains in the coming years, low-income and lower-middle-income countries are expected to maintain robust job growth.**

Global Economic Deceleration:

- The ILO emphasizes that the **global economic slowdown is a contributing factor to the projected increase in the unemployment rate.**

International Labour Organization (ILO) and its report

- The International Labour Organization (ILO) is a specialized agency of the United Nations that **focuses on issues related to labour and employment.**
- It has published various reports covering a wide range of topics related to **global labour**

markets, employment trends, and social issues.

Some of the key reports published by the ILO include:

World Employment and Social Outlook (WESO):

- The WESO report provides an in-depth analysis of **global employment trends and social issues. It covers topics such as unemployment rates, income inequality, and the impact of economic trends on the labor market.**

Global Wage Report:

- This report examines **global wage trends, income disparities, and the factors influencing wage growth or decline.** It provides insights into the challenges faced by workers in different parts of the world.

ILO Global Estimates on International Migrant Workers:

- Focusing on international migration, this report provides estimates and analysis of migrant workers globally. It covers aspects such as **migration patterns, labor market integration, and the rights of migrant workers.**

World Social Protection Report:

- The ILO's social protection report assesses the status of social protection globally. It examines **social protection policies, access to healthcare, and measures to address poverty and inequality.**

Global Employment Trends:

- This report analyses emerging trends in the **global labour market, including changes in employment rates, sectoral shifts, and the impact of technological advancements on jobs.**

ILO Monitor: COVID-19 and the World of Work:

- In response to the COVID-19 pandemic, the **ILO has regularly published monitors providing updates on the impact of the pandemic on the world of work. It covers aspects such as job losses, policy responses, and recovery strategies.**

ILOSTAT:

- ILOSTAT is the ILO's statistical database, providing a wealth of labour-related statistics. It covers data on employment, unemployment, wages, and working conditions, among other indicators.

ILO Conventions

- The **ILO Declaration on Fundamental Principles and Rights at Work** was adopted in 1998, and it commits member states to respect and **promote eight fundamental**

principles and rights in four categories, irrespective of whether they have ratified the relevant conventions.

These principles and rights are as follows:

Freedom of Association and The Right to Collective Bargaining:

- Convention 87: Freedom of Association and Protection of the Right to Organize.
- Convention 98: Right to Organize and Collective Bargaining.

Elimination of Forced or Compulsory Labour:

- Convention 29: Forced Labour Convention.
- Convention 105: Abolition of Forced Labour Convention.

Abolition of Child Labour:

- Convention 138: Minimum Age Convention.
- Convention 182: Worst Forms of Child Labour Convention.

Elimination of Discrimination in Respect of Employment and Occupation:

- Convention 100: Equal Remuneration Convention.
- Convention 111: Discrimination (Employment and Occupation) Convention.
- These fundamental conventions **form an integral part of the United Nations Human Rights Framework, and their ratification signals member states' commitment to human rights.**
- Unfortunately, as of now, 48 member states, including those with the highest populations, have yet to complete ratification of all eight conventions.
- **The eight-core conventions of the ILO are crucial in the face of global economic challenges, contributing to the welfare and livelihood of workers worldwide.**

India and ILO Scenario:

- India, as a founding member of the ILO, has been a permanent member of the ILO Governing Body since 1922.
- The first ILO Office in India was established in 1928, marking decades of productive partnership grounded in mutual trust, respect, and the building of sustained institutional capacities.
- **India has ratified six out of the eight-core/fundamental ILO conventions, covering**

various aspects such as forced labour, child labour, and discrimination.

- However, it has not ratified two conventions related to freedom of association and collective bargaining (Convention No. 87 and No. 98).
- The non-ratification of Conventions No. 87 and 98 is attributed to certain restrictions imposed on government servants, including the right to strike, openly criticize government policies, accept financial contributions, and join foreign organizations.
- **Convention No. 144** of the International Labour Organization (ILO) is known as the “Convention on Tripartite Consultation (International Labour Standards).”
- This convention was adopted in 1976 and emphasizes the application of a fundamental principle on which the ILO was founded, which is tripartite social dialogue in the development and implementation of international labor standards.
- Convention No. 144 of the ILO reflects the organization’s commitment to tripartite social dialogue as a means to develop and implement international labor standards.
- Tripartism is seen as a cornerstone for promoting cooperation, inclusivity, and consensus-building in addressing labor-related issues on a global scale.

Topic 72. SUDAN GOVERNMENT REJECTS EAST AFRICAN MEDIATION MOVE

Important for the subject: International Relations



Sudan’s Army aligned government spurned an invitation to an **East African summit** and rebuked the United Nations for engaging with the commander of rival paramilitary forces.

What is the Current Crisis in Sudan?

Background:

- The conflict in Sudan has its roots in the **overthrowing of long-serving President Omar al-Bashir by military generals in April 2019**, following widespread protests.
- This led to an agreement between the military and protesters, under which a power-sharing body called the Sovereignty Council was established to lead Sudan to elections at the end of 2023.
- However, the military overthrew the transitional government led by Abdalla Hamdok in October 2021, with Burhan becoming the de-facto leader of the country and Dagalo his second-in-command.

Tussle between Army and RSF:

- Soon after the 2021 coup, a **power struggle between two military (SAF) and paramilitary (RSF) generals arose**, interrupting a plan to transition to elections.
- A preliminary deal was reached in December 2021 for a political transition, but negotiations hit a roadblock over the integration of the paramilitary Rapid Support Forces (RSF) with the Sudanese Armed Forces (SAF), due to disagreements over the timetable and security sector reforms.
- **Tensions escalated over the control of resources and RSF integration, leading to clashes.**
- There was disagreement over how the 10,000-strong RSF should be integrated into the army, and which authority should oversee that process.
- Also, Dagalo (RSF general) wanted to delay the integration for 10 years but the army said it would take place in the next two years.

What is Operation Kaveri?

- Operation Kaveri is a codename for India's evacuation effort to bring back its citizens stranded in Sudan amid intense fighting between the army and a rival paramilitary force there.

Topic 73. RAM TEMPLE OPENING BRINGS HOPE TO MORADABAD BRASS TRADERS AS ORDERS FOR IDOLS SHOOT UP***Important for the subject: History***

There is a rise in brass idols business in Moradabad with the inauguration of Ram Temple. There was a time when the annual turnover of the brassware industry in Moradabad stood at around ₹20,000 crore. **Now, it is just one-fourth of that.**

About Moradabad: A Brass city

- Moradabad is known as the ‘**Brass City**’ or **Peetal Nagri**. The designs made on the brass products here display culture, heritage, history and diversity.
- The patterns and designs used for decorating these items are **inspired from a variety of sources, varying from Hindu Gods and Goddesses to paintings of the Mughal Era**.
- The district has domestic units as well as large industries engaged in the manufacture of **metal goods**.
- The work of washing, shaping and polishing handicraft metal items is carried out in the domestic units.
- The exporters in Moradabad have now begun to work with other metals like aluminum, stainless steel, iron etc.

Moradabad Metal Craft- GI Tagged In 2013

- Moradabad metal engraving is a **fine and delicate art**. This craft shows the traces of **Islamic culture**. There are many sharp tools used in the process of tracing the design on to the brass, silver and copper.

Topic 74. WEST BENGAL DEMANDS TO LIST BENGALI AS ‘CLASSICAL LANGUAGE’

Important for the subject: History

The Chief Minister said that based on scientific research, it has been established by her State team that Bengali had its origins 2,500 years ago. She said that her government has sent four volumes of documents to the Ministry.

About Classical language

- Currently there are **six languages** that enjoy the ‘Classical’ status in India:
- **Tamil** (declared in 2004), **Sanskrit** (2005), **Kannada** (2008), **Telugu** (2008), **Malayalam** (2013), and **Odia** (2014).
- All the Classical Languages are listed in the **Eighth Schedule** of the Constitution.
- The **Ministry of Culture** provides the guidelines regarding Classical languages.

Guidelines for declaring a language as ‘Classical’

- High antiquity of its early texts/recorded history over a period of **1500-2000 years**;
- A body of **ancient literature/texts**, which is considered a valuable heritage by generations of speakers;

- The literary tradition be original and not borrowed from another speech community;
- The classical language and literature being distinct from modern, there may also be a discontinuity between the classical language and its later forms or its offshoots.

Benefits of classical language

- Once a language is notified as a Classical language, the Human Resource and Development Ministry provides certain benefits to promote it:
- Two major annual international awards for scholars of eminence in classical Indian languages. A **Centre of Excellence** for studies in Classical Languages is set up.
- The **University Grants Commission** is requested to create, to start with at least in the Central Universities, a certain number of Professional Chairs for the Classical Languages so declared.

Topic 75. MINISTRY OF TOURISM ORGANIZES CONFERENCE ON MAHABHARAT CIRCUIT

Important for the subject :History



The **Ministry of Tourism, Govt. of India (Northern Region Office)** organized a Conference on Mahabharat Circuit.

This was followed by a **Familiarisation Trip to Kurukshetra, Jyotisar and Thanesar** on 10th January, 2024.

This Conference was aimed at **exploring, promoting and highlighting Kurukshetra** and the **Places of Significance related to Mahabharat** as a preferred tourist destination amongst the Domestic Tourists and overseas visitors.

Important Places Related To Great Epic Mahabharata:

Kurukshetra:

- According to the **Puranas, Kurukshetra is a region named after King Kuru**, the ancestor of Kauravas and Pandavas in the Kuru kingdom, as depicted in epic

Mahabharata.

- The **Kurukshetra War of the Mahabharata** is believed to have taken place here. **Thaneswar** whose urban area is merged with Kurukshetra is a pilgrimage site with many locations **attributed to Mahabharata**.

Jyotisar:

- Jyotisar is the place where the sacred Jyotisar, **the birthplace of Gita**, is the most venerated tirtha of Kurukshetra.
- It is believed that the **Mahabharata battle started from Jyotisar**, where on the eve of the battle deluded Arjuna received the eternal message of Gita from its propounder Lord Krishna.
- It is said that **Adi Sankaracharya** has identified the place during his sojourn to Himalaya in the 9th century of Christian era.
- Jyotisar is located on the banks of **Jyotisar Sarovar wetland, is a Hindu pilgrimage site** in the city of Kurukshetra in Haryana state of India.



Thanesar:

- **Thanesar** (also known as Sthanishvara) is a historic city and Hindu pilgrimage center in the Kurukshetra district of Haryana, India.
- It is located approximately **160 km northwest of Delhi**.
- The city **Kurukshetra's area merges with Thanesar**.

HASTINAPUR:

- The Sites Related To Mahabharata in Hastinapur are **Vidur Tila, Pandaveswar Temple, Baradari, Draupadeshwar Temple, Karna Temple, Draupadi Ghat, Karna Ghat And Draupadeshwar Mahadev Temple Etc.**

- **Hastinapur is Also a Sacred Place For Jain Devotees.**

Few of them are:

1. **Shwetambar Jain Temple**
2. **Prachin Digambar Jain Temple**
3. **Ashtapad Jain Temple**
4. **Shri Kailash Parvat Jain Temple, Having Sumeru Parvat And Kamal Temple In Jambudweep Jain Temple**

About Mahabharata Circuit of Uttrakhand:

- The **Mahabharata Circuit** covers all the places associated with the **epic in the state of Uttarakhand**.
- Around 250-300 km long, this circuit spans from Mana, the last village of India towards the international border, all the way to scenic Dodital.

Various places of Uttarakhand Mahabharata Circuit are:

BADRINATH

- It is in this holy destination, it is said, that the **sage-author of the epic** had resided. Close to the **Badrinath temple stands the Vyas Gufa, a cave** where it is believed the sage had sat and composed the epic with the help of Lord Ganesha.

MANA

- The last village of India, along the **Indo-China border**, **Mana** is around 5 km from Badrinath.
- **Mana is believed to have been the site from where the Pandavas** had started on their mahaprasthan(last journey), and their wife Draupadi was the first to fall, after crossing the Saraswati river.

PANDUKESHWAR TEMPLE

- The Pandukeshwar Temple lies on the way to Badrinath. Here Pandu who was the **father of the Pandavas**, worshiped Lord Shiva.

LAKHAMANDAL

- **Lakhamandal Temple is dedicated to Lord Shiva**, who is represented in the form of a graphite lingam that shines when water is poured on it.
- A very interesting tale says that **Lakhamandal or the palace of lac** was a beautiful structure built by the Kauravas for their cousins, the Pandavas.

HANOL-THADIYAR

- **Hanol, near Chakrata, is a scenic destination** with several tales from the Mahabharata

attached to it.

- It is said that when **Lord Krishna** disappeared at the end of the Dwapara yuga, the Pandavas followed him and crossed the Tons river.

NETWAR

- Netwar is the most popular location in **Tons valley**.
- This is where the temple of **Karna is located**. Karna is said to be the firstborn of Kunti, the mother of the Pandavas.

DEORA

- **Deora** is home to **another temple of Karna**.
- The temple has a compound on the right where six miniature temples stand, representing Karna and the Pandavas.

DODITAL

- Legend has it that the **Pandavas came to be beautiful Dodital** on their way to heaven after winning the war of Mahabharata.

Topic 76. INDIA'S OLDEST LIVING CITY FOUND IN VADNAGAR

Important for the subject: History

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.

- The excavation was done by a team of scientists from IIT Kharagpur, Archaeological Survey of India, Physical Research Laboratory, Jawaharlal Nehru University and Deccan College
- The study was funded by Infosys Foundation and Gujarat government's Directorate of Archaeology & Museums that is entrusted with building India's first experiential digital museum at Vadnagar.
- The excavation at Vadnagar was carried out from 2016 till early 2023.

Key Findings in the Excavation:

- The find is significant as it plugs a gap in Indian archaeological history between **1,500 BCE and 500 BCE** and points to a continuity in human settlement in India over 5,500 years.
- There was no record of an advanced city-like settlement before 500 BCE. The team said that the settlement could be as old as 1,400 BCE and contemporary to the very late phase

of post-urban Harappan period.

- If true, it indicates a cultural continuity in India for the past 5,500 year and that the so-called Dark Age may be a myth.
- The period between the collapse of Indus Valley Civilisation around 4,000 years ago (early 2nd millennium BCE) and the emergence of Iron Age and cities of Mahajanapadas like Gandhar, Koshal, Avanti (6th-5th century BCE) is depicted as the 'Dark Age' by a section of archaeologists.
- The records are rare for this period – one of the earliest is the rock inscription of emperor Ashoka during Mauryan period (320-185 BCE) at Sudarsana Lake, Girnar hill, Gujarat.
- **The excavation at Vadnagar has revealed characteristic archaeological artifacts, potteries, copper, gold, silver and iron objects and intricately designed bangles.**
- The study also indicates that the rise and fall of different kingdoms over 3,000 years and recurrent invasions of India by central Asian warriors were driven by severe change in climate like rainfall or droughts.

The radiocarbon dates show that successively Vadnagar was ruled by:

- Indo-Greeks (till 100 CE), Indo-Scythian or Shakas known as Kshatrapa kings (till 400 CE), Maitrakas (Gupta kingdom), Rashtrakuta-Pratihara-Chawada kings (till 930 CE), Solanki kings (Chalukya rule till 1,300 CE), Sultanate-Mughals (1680 CE), and Gaekwad/British.
- The excavation team said that the inference from the findings at Vadnagar was that cold arid/hyper-arid conditions could have triggered migration from the uninhabitable central Asia.

Archaeological Survey of India (ASI):

- The Archaeological Survey of India (ASI) was established in the year 1861 by Alexander Cunningham.
- After independence, it was established as a statutory body under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

Concerned Ministry: Ministry of Culture

- ASI is responsible for archaeological research and the conservation and preservation of cultural monuments in the country.
- Its activities include carrying out surveys of antiquarian remains, exploration and excavation of archaeological sites, conservation and maintenance of protected monuments etc.

Topic 77. PRADHAN MANTRI ANUSUCHIT JAATI ABHUYDAY YOJANA

Important for the subject: Scheme



Under the Adarsh Gram Component of Pradhan Mantri Anusuchit Jaati Abhyudaya Yojana, a total of 1834 villages have been Declared as Adarsh Gram during the current FY 2023-24.

- Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM- AJAY) is a merged scheme of 03 Centrally Sponsored Scheme namely
- Pradhan Mantri Adarsh Gram Yojana (PMAGY), Special Central Assistance to Scheduled Castes Sub Plan (SCA to SCSP) and Babu Jagjivan Ram Chhatrawas Yojana (BJRCY).
- It has been implemented since 2021-22 with an aim to reduce **poverty of the SC communities**.

The objectives of the Scheme are to:

- **Reduce poverty of the SC communities** by generation of additional employment opportunities through skill development income generating schemes and other initiatives.
- **Improve socio-economic developmental indicators** by ensuring adequate infrastructure and requisite services in the SC dominated villages.
- **Increase literacy and encourage enrolment of SCs in schools and higher educational institutions** by providing adequate residential facilities in quality institutions, especially in the aspirational districts/ SC dominated blocks and elsewhere in India.

The Scheme has following three components:

- Development of SC dominated villages into an “AdarshGram”. ‘Grants-in-aid’ for District/State-level Projects for socio-economic betterment of SCs Construction of Hostels in higher educational institutions

About Adarsh Gram Component {erstwhile Pradhan Mantri AdarshGram Yojana}

- The objective of this component is to ensure integrated development of SC majority villages so that, inter alia, there is:

Adequate infrastructure

- All requisite infrastructures necessary for socio-economic development needs are to be provided under the Scheme.

Improvement in Socio-Economic Indicators.

- The identified socio-economic indicators which are known as Monitor-able indicators, are to be improved so that the disparity between SC and non-SC population is eliminated and the level of indicators is raised to at least that of the National average.
- More specifically, all BPL SC families should have food and livelihood security.

About Grants-in-aid for District/State-level Projects for Socio-Economic betterment of SCs {erstwhile scheme of Special Central Assistance to Scheduled Caste Sub Plan}

- The scheme aims at socio-economic development of SCs through grants for following types of projects:
- **Comprehensive Livelihood Projects:** Such projects which create an entire eco-system for producing sustainable income, or social advancement to the Scheduled Castes.
- **Skill Development:** Skilling courses as per norms of MSDE.
- Related facilities and infrastructure for conducting Skill Development Activities conducted by the Government.
- Skill Development Institutions can also be funded.

Grants for creation/acquisition of assets for beneficiaries/households:

- There shall be one individual asset distribution under the scheme.

Infrastructure development:

- Development of infrastructure related to the project and also Hostels and residential schools.
- Other infrastructure- Various other infrastructure development projects in SC majority villages.

Special Provisions:

- Upto 15% of the total Grants exclusively on viable income generating economic development schemes/programmes for SC Women.
- Upto 30% of the total Grants utilize for infrastructure development

Hostel Component {erstwhile scheme of Babu Jagjivan RamChhatrawas Yojana}

Objectives:-

- Scheme for **construction of hostels to enable and encourage Scheduled Caste** students to attain quality education and reduce their dropout rate
- Construction of Hostels in higher educational institutions which are **top-ranked as per the National Institutional Ranking Framework (NIRF)** of Government of India and are funded by the Centre/State/UT Governments either fully or partially.
- Similarly, construction of hostels in schools which are either fully or partially funded by the Centre/State/UT Governments and recommended by the Ministry of Education.
- **Implemented through the State Governments, UT Administrations & Central and State Universities/Institutions**

Topic 78. GOVT LIKELY TO UNVEIL NEW PMAY-G VERSION WITH 85% HIGHER FINANCIAL ASSISTANCE

Important for the subject: Schemes



The government may unveil a new version of the Pradhan Mantri Awas Yojana-Gramin (**PMAY-G**) for the next five years.

- The financial assistance will be **85 percent higher than under the current scheme** for

each beneficiary, to build pucca houses in rural areas.

- The Union Cabinet approved the **Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JAN- MAN) scheme** in November last year.
- Under the scheme Rs 2.39 lakh/unit is given for the provision of pucca houses to **improve socio-economic conditions of the particularly vulnerable tribal groups (PVTGS)**.
- Keeping in mind the escalation in cost, a similar cash support will likely be given in the **new version of PMAY-G**.
- The expected savings in **PMAY-G** would cover the additional allocation of **Rs 16,143 crore for the Mahatma Gandhi National Rural Employment Guarantee Scheme** in the first supplementary demand for grants.
- The Centre is likely to launch **revamped urban affordable housing** keeping in mind the escalation in costs.

About Pradhan Mantri Awaas Yojana- Gramin (PMAY-G):

- It is launched by the **Ministry of Rural Development**.
- Under the PMAY- G, the **beneficiaries** are provided financial assistance of **Rs 1.2 lakh in plains and Rs 1.3 lakh in hilly states-Northeastern states and union territories (UTs) of Jammu & Kashmir and Ladakh**-as well as difficult areas and Integrated Action Plan (IAP) districts.
- Beneficiaries are based on **housing deprivation parameters of Socio-Economic and Caste Census (SECC), 2011** and are Important for the subjected to **13-point exclusion criteria** followed by Gram Sabha verification.

About Pradhan Mantri Awas Yojana – Urban (PMAY-U):

- PMAY-U is a flagship Mission of Government of India being implemented by the **Ministry of Housing and Urban Affairs (MoHUA)**. It was launched on **25th June 2015**.
- The Mission addresses urban housing shortage among the **EWS/LIG and MIG categories** including the **slum dwellers by ensuring a pucca house** to all eligible urban households by the year 2022.
- As per PMAY(U) guidelines, the size of a house for Economically Weaker Section (EWS) could be **up to 30 sq. mt. carpet area**.
- However States/UTs have the flexibility to enhance the size of houses in consultation and approval of the Ministry.

About PM-JANMAN:

- The **Union Ministry of Tribal Affairs** will be nodal and coordinating Ministry, whereas

each of other **8 sectoral ministries and departments** will implement the interventions related to them

- **PM JANMAN is a government scheme** that aims to bring tribal communities into the mainstream.
- The **PM-JANMAN (comprising Central Sector and Centrally Sponsored Schemes)** to focus on **11 critical interventions through 9 Ministries** including the Ministry of Tribal Affairs.
- The PM JANMAN Mission targets the development of **75 Particularly Vulnerable Tribal Groups (PVTGs)** who have been left out by the schemes of various Ministries/Departments.
- **Tribal Health** is one of the key focus areas under PM JANMAN.