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Topic 1. LOWER OXYGEN AT HIGH ALTITUDES INCREASES LIFESPAN IN AGEING MICE

Important for the subject: Science and Technology

The lower oxygen content at high altitudes increases lifespan significantly in ageing mice, according to a study published in PLOS Biology.

- The study shows that oxygen restriction, or continuous hypoxia, can extend lifespan in an ageing mammal. Naked mole rat: A rodent that spends most of its life in an oxygen-deficient burrow with a lifespan much longer than scientists have been able to predict based on its size or evolutionary history.
- Caloric restriction, or dietary restriction without malnutrition is the gold standard for increasing lifespan in diverse species like yeast, roundworms, fruit flies, mice, and rats. The animals housed in hypoxic conditions also displayed better neurologic function than their counterparts living in normoxic conditions (normal oxygen conditions).
- The mechanism by which hypoxia extends lifespan in mammals is still unknown to researchers.

Significance of the study:

- The study provides valuable insights into the potential of hypoxia to enhance healthy lifespan.
- Ageing is a highly complex phenomenon, involving numerous molecular mediators. Hypoxia may not target many aspects of ageing since it doesn't affect the expression of a gene (p21) that's an important marker of ageing.

Applicability to humans:

- There is no evidence of its applicability to the human population and there is no evidence that people living at high altitudes have a longer maximal lifespan, but there are some clues that the median lifespan might be increased at higher altitudes.

Topic 2. WHY NASA IS TURNING TO LASERS FOR NEXT-GEN SPACE COMMS

Important for the subject: Science and Technology

NASA's Psyche spacecraft, successfully fired a laser signal at Earth. NASA's Psyche spacecraft, designed to explore the metal core of a 144-mile-long asteroid, is carrying a test for Deep Space Optical Communications (DSOC).

The DSOC experiment aims to demonstrate laser communication beyond the Moon, offering higher data rates than traditional radio waves.

The technology could alleviate bandwidth limitations on the Deep Space Network, which faces increased demands from various space missions.

Laser communication in space, while not expected to replace radio waves entirely, could provide a new channel to enhance communication capabilities. The Psyche mission will test the DSOC during its journey to the asteroid.

What is NASA's revolutionary new technology:

- NASA's Deep Space Optical Communications (DSOC) experiment is at the forefront of advancing space communication by pioneering the use of near-infrared laser signals.
- Similar to how fiber optics transformed traditional telephone lines on Earth, DSOC is poised to deliver data rates at least 10 times higher than current state-of-the-art radio telecommunications systems of comparable size and power.
- This breakthrough technology, housed in the Psyche spacecraft, aims to enhance data transmission during its journey to the main asteroid belt, offering benefits such as higher resolution images, increased scientific data volumes, and the possibility of streaming video.
- The DSOC transceiver, a crucial component, achieved "first light" on November 14 by successfully locking onto a powerful uplink laser beacon transmitted from NASA's Table Mountain Facility near Wrightwood, California.
- Overcoming the challenges associated with higher bandwidths, DSOC relies on "extremely precise pointing." Achieving this precision involves isolating the transceiver from the spacecraft's vibrations and compensating for the constantly changing positions of Earth and the spacecraft.
- The analogy provided by NASA illustrates the precision required as "hitting a dime from a mile away while the dime is moving," emphasizing the need for accuracy in targeting. Furthermore, the vast distance between the spacecraft and Earth necessitates the use of novel signal-processing techniques to extract information from the weak laser signals transmitted through space.

What is NASA's Psyche Spacecraft:

- Psyche, a space mission under the National Aeronautics and Space Administration, was launched in 2023 with the goal of exploring the origin of planetary cores. It aims to achieve this by orbiting and studying the metallic asteroid 16 Psyche, commencing its observations in 2029.
- Positioned between Mars and Jupiter, 16 Psyche is recognized as the heaviest M-type asteroid, characterized by elevated concentrations of metal phases such as iron-nickel. Scientists speculate that it could be the exposed iron core of a protoplanet or the aftermath of a collision that stripped away its mantle and crust.
- To propel and maneuver in orbit, Psyche utilizes solar-powered hall effect thrusters, marking the first instance of an interplanetary spacecraft employing this technology.
- Furthermore, it stands as the pioneering mission to employ laser optical communications beyond the Earth-Moon system.
- Managed by NASA's Jet Propulsion Laboratory (JPL), the spacecraft is scheduled to orbit 16 Psyche from August 2029 until late 2031. Although it won't land on the asteroid, the mission holds the potential to provide distinctive insights into Earth's impenetrable iron core.

Topic 3. EIGHT MONTHS ON, STATES ARE STILL WAITING FOR 3HP TB PREVENTIVE DRUGS

Important for the subject: Science and Technology

Eight months after the Prime Minister launched the pan-India rollout of a shorter TB Preventive Treatment (TPT) in March 2023 called the 3HP — once-weekly isoniazid-rifapentine for 12 weeks — States are yet to receive the 3HP combination drug from the Central TB Division.

Tamil Nadu and Kerala have already begun using 3HP for TB preventive treatment despite not receiving the drug supply. Since treatment with 3HP involves only 12 doses, compliance is better, adverse effects of the drugs are less and treatment completion is better compared with 180 doses of isoniazid monotherapy.

Less than 20% of TB infections are due to household contacts being exposed to the index case. TB preventive therapy can halt the progression of TB disease very effectively for many years. In India, there are greater chances of getting re-infected after completing the TB preventive therapy, and reinfection may reverse the protection.

Hepatotoxicity:

Hepatotoxicity implies chemical-driven liver damage. Drug-induced liver injury is a cause of acute and chronic liver disease caused specifically by medications and the most common reason for a drug to be withdrawn from the market after approval.

The cases of hepatotoxicity have been reduced with 3HP drug regime.

About TB:

- Tuberculosis (TB) is an infectious airborne bacterial disease caused by *Mycobacterium tuberculosis*.
- TB commonly affects the lungs (pulmonary TB) but can also affect other parts (extrapulmonary TB)
- Tuberculosis spreads from person to person through the air, when people who are infected with TB infection cough, sneeze or otherwise transmit respiratory fluids through the air.
- About 30-40% of the Indian population has latent TB infection, and 5-10% of those with latent infection will develop TB disease over the course of their lives.
- Smear microscopy forms the bulk of TB testing (despite its low sensitivity) and molecular testing constitutes just 23%.
- India should invest more in TB screening using digital chest X-rays and molecular testing for TB disease confirmation.

Multidrug-Resistant TB (MDR-TB):

- In MDR-TB, the bacteria that cause TB develop resistance to antimicrobial drugs used to cure the disease.
- MDR-TB does not respond to at least isoniazid and rifampicin, the 2 most powerful

anti-TB drugs.

- Treatment options for MDR-TB are limited and expensive. CBNAAT (Cartridges Based Nucleic Acid Amplification Test) is used for early diagnosis of MDR-TB.

Extensively Drug-Resistant TB (XDR-TB):

- **XDR-TB** is a form of **multidrug-resistant TB** with additional **resistance to more anti-TB drugs**.
- People who are resistant to **isoniazid** and **rifampicin**, plus any **fluoroquinolone** and **at least one of three injectable second-line drugs** (amikacin, kanamycin, capreomycin) are said to have XDR-TB.

National Strategic Plan for TB Elimination:

- It is a framework to guide the activities of all stakeholders whose work is relevant to TB elimination in India.
- It provides goals and strategies for the country's response to the disease during the period **2017 to 2025**.
- It **aims** to direct the attention of all stakeholders on the most important interventions or activities that the **RNTCP** believes will bring about significant changes in the incidence, prevalence and mortality of TB.
- It will guide the development of the **national project implementation plan (PIP)** and **state PIPs**, as well as **district health action plans (DHAP)** under the **National Health Mission (NHM)**.

Topic 4. IS INDIA LAGGING IN MEASLES VACCINATION?

Important for the subject: Science and Technology

A new report from the World Health Organization and the U.S. Centers for Disease Control and Prevention (CDC) said measles cases in 2022 have increased by 18%, and deaths by 43% globally, compared to 2021.

This takes the estimated number of measles cases to nine million and deaths to 1, 36, 000, mostly among children.

- Globally 22 million children did not get their first measles shot in 2022 and half of them live in 10 countries including India, where an estimated 1.1 million infants did not get the first dose of the vaccine.
- India's Universal Immunisation Programme is one of the largest public health programmes in the world targeting close to 2.67 crore newborns and 2.9 crore pregnant women annually.
- Measles vaccination averted 56 million deaths between 2000 and 2021. The pandemic has led to setbacks in surveillance and immunisation efforts across the globe leaving millions of children vulnerable to diseases like measles.

Measles:

- Measles is a contagious disease caused by a virus, which spreads through the air when an infected person coughs or sneezes.
- Measles starts with a cough, runny nose, red eyes, and fever. Then a rash of tiny, red spots breaks out. It starts at the head and spreads to the rest of the body.
- It affects mainly children causing significant morbidity and mortality. Measles can be prevented with the MMR vaccine. The vaccine protects against three diseases — measles, mumps and rubella. Two doses of MMR vaccine are about 97% effective at preventing measles; one dose is about 93% effective.

Topic 5. INFERTILITY TREATMENT FINDS A PLACE IN POLITICAL MANIFESTOS

Important for the subject :Science and Technology

Doctors welcome inclusion of infertility, which is recognised as public health issue by WHO; they say policy on treatment can mitigate the financial burden and emotional impact of infertility on family life; States are planning to give financial aid.

Different Methods for treatment of Infertility:

IVF

In vitro fertilization

- It is the most commonly used assisted reproductive technology (ART). In vitro fertilization, as its name—fertilization is done by fusing ovum from the female donor and sperm from the male donor outside the body under strict laboratory conditions.
- This results in a zygote, or famously known as a test-tube baby. **After embryo culturing, an embryo is transferred to the uterus of the mother.**
- This method is commonly performed in the case of women with **damaged or clogged Fallopian tubes.**

Zygote intrafallopian transfer (ZIFT)

- Zygote intra-fallopian transfer (ZIFT), also known as **Tubal Embryo Transfer is analogous to IVF.**
- ZIFT is an ART procedure where **fertilization happens in a laboratory.** The thus formed zygote is then conveyed to the Fallopian tube of the mother using laparoscopy. **ZIFT proceeds as follows:** egg retrieval from ovaries, fertilization, carrying the zygote into the uterine tubes for implantation and further development.

ZIFT is not for women with abnormal uterine tubes.

Gamete Intra-Fallopian Transfer (GIFT)

- Unlike IVF and ZIFT, GIFT is an in-vivo fertilization procedure where the gametes – sperm and ova are conveyed directly into the **fallopian tube.**

- In GIFT, fertilization and zygote formation is more natural as it **takes place within the female body**. However, this **technique is carried out only if there is enough sperm count and at least one fallopian tube is functional**. GIFT is an alternative for IVF.

Topic 6. PIEZOELECTRICITY: WHY QUARTZ TICKS

Important for the subject: Science and Technology

Introduction

Piezoelectricity is a remarkable phenomenon whereby some materials – including quartz, ceramics such as lead zirconate titanate (PZT), and even certain biological substances like bone and the tendons – can generate an electric charge in response to mechanical stress.

What is the Piezoelectric Effect?

- The piezoelectric effect is a phenomenon in which certain materials produce an electrical charge in response to mechanical stress or pressure.
- This effect occurs when the material is subjected to a force that causes its molecules to become polarized, meaning that the positive and negative charges within the material are separated from each other.
- When this polarization occurs, an electric potential is generated across the material, and if the material is connected to a circuit, a current can flow. The reverse is also true: if an electric potential is applied to the material, it can cause a mechanical deformation.
- Piezoelectric materials are used in a variety of applications, such as in sensors, actuators, and energy harvesting devices. Some examples of common piezoelectric materials include quartz, ceramics, and certain types of crystals.
- Quartz is the most famous piezoelectric crystal, it is used in this capacity in analog wristwatches and clocks. The Piezoelectric effect was discovered in 1880, in quartz, by Jacques and Pierre Curie.
- Some materials also display an inverse piezoelectric effect, where the application of an electric current induces a mechanical deformation.
- Both direct and inverse piezoelectric materials are widely used in pressure sensors, accelerometers, and acoustic devices –where their ability to convert mechanical signals into electrical signals is crucial.
- The piezoelectric effect is also what made quartz watches so common and, over time, affordable.

Topic 7. PLANTS WARN EACH OTHER OF DANGER, AND NOW WE CAN WATCH THEM

Important for the subject: Science and Technology

For the first time, scientists were able to visualise plants sensing compounds released by other plants in danger.

The scent of freshly cut grass, more than just a pleasant aroma, is a part of a complex plant communication system involving Green Leaf Volatiles (GLVs).

For plants, these GLVs are not just fragrances but crucial signals that alert them to imminent threats, such as herbivore attacks.

Basics of Plant Eavesdropping

- **Inter-Plant Communication:** Plants have the remarkable ability to ‘eavesdrop’ on the distress signals of their neighbors, preparing themselves for similar threats.
- **Agricultural Implications:** Understanding this natural warning system could revolutionize pest control in agriculture, potentially reducing the need for harmful pesticides.

About Plant Defense Mechanisms

- Research involving mustard plants (*Arabidopsis thaliana*) has shown that calcium plays a crucial role in plant defense, with calcium levels spiking in response to damage.
- Using genetically modified plants that fluoresce in response to calcium surges, researchers have been able to visually track plant reactions to physical damage and GLV exposure.
- Experiments have demonstrated that plants can detect and respond to GLVs emitted by neighboring plants, as evidenced by fluorescence in modified mustard plants.
- Among the GLVs, specific compounds like E-2-HAL and Z-3-HAL were found to trigger significant responses in plants.

Defense Response at Gene-Level

- **Defense Genes Activation:** Exposure to GLVs leads to the activation of certain defence-related genes in plants, suggesting that they perceive these volatiles as danger signals.
- **Consequences for Plant Protection:** This gene activation could be a crucial step in natural plant defense mechanisms against herbivores.

Significance and Future Directions

- **Alternative Strategies:** While promising, researchers also consider other substances like jasmonic acid, balancing pest control with the plant’s growth and fruit production.
- **Expanding Plant Sensory Research:** The findings encourage further exploration into plant perception and response to external stimuli, particularly in natural environments where signaling dynamics are more complex.
- **Challenges in Field Studies:** One of the main challenges in studying plant volatile signaling in natural settings is the dilution of these compounds in the open air.
- **Natural Pest Control:** The study opens up possibilities for using GLVs in agricultural pest control, potentially reducing reliance on chemical pesticides.

Topic 8. DECENTRALISED AUTONOMOUS ORGANISATIONS (DAOS): SHAPING THE DIGITAL FUTURE

Important for the subject: Science and Technology

DAOs operate at the crossroads of blockchain technology and governance. Governed by smart contracts, they aim to create self-sustaining, community-driven entities. The legality and regulatory framework surrounding DAOs provoke ongoing debate.

DAOs Genesis

DAOs are organisations encoded as computer programs transparently controlled by members.

- Operate without government influence, fostering trust through smart contracts on block chain networks. Emphasis on self-sustainability, community-driven governance, and decentralisation.

Various Use Cases

- DAOs impact finance, art, governance, and supply chain management. Platforms like Compound and Maker DAO revolutionise lending and borrowing in finance. Artists tokenize creations, manage royalties through DAOs, transforming the art industry.
- Supply chain management benefits from transparency and traceability provided by DAOs. DAOs like DAOstack facilitate decentralised governance for online communities.

Implications for the Digital World:

- DAOs embody decentralisation, shifting power from centralised authorities to collective decision-making.
- Transparency and trust are fundamental; smart contracts are transparent, fostering trust among participants.
- DAOs champion inclusivity, democratise access to resources, and enable global participation. Inspire new forms of collaboration, allowing participants with shared goals to unite globally.

Challenges and Controversies

- The 2016 DAO hack exposed vulnerabilities, leading to a contentious hard fork in the Ethereum blockchain.
- Legal and regulatory uncertainties surround DAOs, with traditional legal systems struggling to adapt.
- Regulatory uncertainty persists as jurisdictions grapple with classifying and regulating DAOs. Challenges; include legal liability, taxation, identity verification, compliance with AML and KYC regulations, and dispute resolution.

Addressing Challenges:

- Stakeholders actively collaborate to establish legal frameworks that balance innovation

with compliance.

- Developing guidelines for governance, intellectual property, cross-border operations, and token-based decision-making.
- Ongoing discussions involving legal experts, block chain developers, and policymakers to navigate complexities.
- DAOs revolutionize digital organization and collaboration, offering boundless potential for positive change. Collaboration is essential to navigate challenges and unlock DAOs' transformative power.

Topic 9. FRESH CHINA OUTBREAK ATTRIBUTED TO MULTIPLE KNOWN PATHOGENS

Important for the subject: Science and Technology

China has set at rest fears surrounding its recent outbreak of a mysterious pneumonia-like illness and informed the World Health Organization (WHO) that there has been a general increase in respiratory illnesses due to multiple known pathogens in some parts of the country. As per the information provided by Chian, the causes of illness are Mycoplasma pneumoniae, respiratory syncytial virus (RSV), adenovirus and influenza virus.

- Surveillance data provided by the National Influenza Centre in China to the WHO's FluNet revealed that influenza-like illnesses (ILI) exceeded usual levels for this time of the year and are increasing in the country's northern provinces. The viruses identified commonly were of A (H3N2) and B/Victoria lineage.
- According to WHO's risk assessment, there is not enough information available to characterise the overall rise in cases of respiratory illnesses seen in children.
- The WHO has recommended vaccines against influenza and maintaining appropriate social distancing from people who are ill, getting tested and medical care as needed, wearing masks as appropriate; ensuring good ventilation, and practising regular hand washing.

Pathogens	Description
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<p>1. Mycoplasma pneumoniae</p>	<ul style="list-style-type: none"> • It is a very small bacterium in the class Mollicutes. • It is a human pathogen that causes the disease mycoplasma pneumonia, a form of atypical bacterial pneumonia related to cold agglutinin disease. • M. pneumoniae is characterized by the absence of a peptidoglycan cell wall and resulting resistance to many antibacterial agents. • The persistence of M. pneumoniae infections even after treatment is associated with its ability to mimic host cell surface composition.
<p>2. Respiratory Syncytial Virus (RSV)</p>	<ul style="list-style-type: none"> • It is a common respiratory virus that usually causes mild, cold-like symptoms. • Most people recover in a week or two, but RSV can be serious. • Infants and older adults are more likely to develop severe RSV and need hospitalization.
<p>3. Adenovirus</p>	<ul style="list-style-type: none"> • Members of the family Adenoviridae • These are medium-sized, non enveloped (without an outer lipid bilayer) viruses with an icosahedral nucleocapsid containing a double-stranded DNA genome. • They have a broad range of vertebrate hosts; in humans, more than 50 distinct adenoviral serotypes have been found to cause a wide range of illnesses, from mild respiratory infections in young children (known as the common cold) to life-threatening multi-organ disease in people with a weakened immune system.
<p>4. Influenza virus</p>	<ul style="list-style-type: none"> • A common viral infection that can be deadly, especially in high-risk groups. • The flu (or Influenza) attacks the lungs, nose and throat. Young children, older adults, pregnant women and people with chronic diseases or weak immune systems are at high risk.

Topic 10. WHAT ARE THE GOOD MANUFACTURING PRACTICES (GMP) FOR PHARMA COMPANIES?

Important for the subject: Science and Technology

In the last 10 days, two Indian companies have come in for serious observations from the US Food and Drug Administration (FDA) on their non-adherence to current Good Manufacturing Practices (cGMP).

Good Manufacturing Practices

- **Good Manufacturing Practices** (GMP, also referred to as ‘cGMP’ or ‘current Good Manufacturing Practice’) is the aspect of quality assurance that ensures that medicinal products are consistently produced and controlled to the quality standards appropriate to their intended use and as required by the product specification.
- GMP defines quality measures for both production and quality control and defines general measures to ensure that processes necessary for production and testing are clearly defined, validated, reviewed, and documented, and that the personnel, premises and materials are suitable for the production of pharmaceuticals and biologicals including vaccines. GMP also has legal components, covering responsibilities for distribution, contract manufacturing and testing, and responses to product defects and complaints. Specific GMP requirements relevant to classes of products such as sterile pharmaceuticals or biological medicinal products are provided in a series of annexes to the general GMP requirements.

GMP guidance

- The first WHO draft text on GMP was adopted in 1968. In 1969, when the World Health Assembly recommended the first version of the WHO Certification Scheme on the quality of pharmaceutical products moving in the global market, it accepted the WHO GMP as an integral part of the Scheme. A supplementary annex on biological medicinal products was adopted by the Expert Committee on Biological Standardization (ECBS) in 1991 and establishes the general approach to the quality control of biological medicines that include products such as vaccines, blood and blood products, antigens, cell and tissue therapies, biopharmaceutical products, and others.
- More than 100 countries have incorporated the WHO GMP provisions into their national medicines laws, and many more countries have adopted its provisions and approach in defining their own national GMP requirements. The WHO GMP continues to be used as a basis for the WHO Certification Scheme and prequalification of vaccines for procurement by UN agencies.

INDIA and cGMP

- The Central government is looking to tighten norms through the revised cGMP norms or (Schedule M). In August, the Health Ministry gave large companies six months to implement the norms, while small and medium sized companies were given 12 months.
- The present Schedule M norms for manufacturing are stringent, and sometimes all that's needed is technical hand-holding by regulators, or financial help to upgrade systems and documentation.

Topic 11. FIBRE OPTIC CABLES: ITS ORIGINS, WORKING AND DIFFERENT FUNCTIONS

Important for the subject: Science and Technology

During COVID-19 pandemic, optical fibre highlighted the crucial role of the internet in maintaining global connectivity, facilitated largely by high-speed internet connections.

These connections, enabling video chats, online payments, and virtual meetings, largely depend on the technology of optical fibers.

About Optical Fibers

- **Size and Composition:** Optical fibers are thin strands of glass, almost as thin as a human hair, used for transmitting information.
- **Information Transmission:** They carry various forms of data, including text, images, and videos, at speeds close to that of light.
- **Everyday Relevance:** Optical fibers play a vital role in everyday communications like text messaging and phone calls.
- **Fragility vs. Strength:** Despite their thinness, these fibers are strong and durable when encased in protective materials.
- **Versatility:** They are flexible enough to be laid underground, underwater, or wound around spools.

Genesis of optical fibre

- **Charles Kao's Contribution:** About 60 years ago, physicist Charles Kao proposed using glass fibers for telecommunications, a suggestion that earned him a Nobel Prize in 2009.
- **Replacing Copper Wires:** Kao's idea was initially met with skepticism but eventually replaced copper wires in telecommunication.

Optical Fibers Working?

- **Light as an Electromagnetic Wave:** Light, part of the electromagnetic spectrum, can be controlled and guided through optical fibers.
- **Total Internal Reflection:** This phenomenon allows light to travel long distances within the fiber with minimal loss of power.
- **Fiber Optic Communication System:** This system includes a transmitter, the optical fiber, and a receiver to encode, carry, and reproduce information.

Data Transmission and Resistance

- **High Data-Transmission Rate:** Optical fibers can transmit data at rates of several terabits per second.
- **Insensitivity to External Disturbances:** Unlike copper cables, they are not affected by external factors like lightning or bad weather.

Development of Fiber Optic Cables

- **Early Experiments:** The concept of guiding light in transparent media dates back to the 19th century, with demonstrations by Jean-Daniel Colladon and others.
- **Medical and Defense Applications:** Early glass objects were used in medicine and defense before their adaptation for data transmission.
- **Advancements in the 20th Century:** Significant progress occurred in the 1950s and 1960s, including the development of glass-clad fibers and the invention of lasers.

Present day Manufacturing

- **Loss Reduction:** Modern optical fibers have significantly reduced signal loss, less than 0.2 dB/km.
- **Fiber-Optic Cable Production:** Today, glass fibers are produced using the fiber-drawing technique, ensuring high purity and engineered refractive index profiles.

Prospects of Fiber Optics

- **Quantum Optics and Communication:** The technology stands at the forefront of a new era, with expanding possibilities in quantum optics and home connectivity.
- **Expanding Applications:** Fiber optics technology is now integral to various fields, including telecommunication, medical science, and laser technology.
- **India's National Mission:** The Indian government's 2020 Union Budget announced a significant investment in quantum technologies and applications, highlighting the future potential of fiber optics.

Topic 12. WEBB SPACE TELESCOPE SPOTS 'TEENAGE' GALAXIES

Important for the subject: Science and Technology

The James Webb Space Telescope has provided detailed insights into slightly older galaxies, known as 'teenagers' in galactic terms, shedding light on their evolution and unique characteristics.

This research is part of the CECILIA Survey, utilizing Webb to analyze the chemistry of distant galaxies, named after astronomer Cecilia Payne-Gaposchkin.

About Teenage Galaxies

- **Formation Period:** The study focuses on galaxies that formed around 2-3 billion years after the Big Bang, which occurred about 13.8 billion years ago.
- **Research Methodology:** Researchers analyzed light across various wavelengths from 23 such galaxies using Webb, akin to studying their 'chemical DNA.'
- **Key Discoveries:** These teenage galaxies exhibit distinct chemical compositions, indicative of intense star formation and rapid developmental phases.

Features of Teenage Galaxies

- **Detected Elements:** Observations identified these galaxies glowing with elements like hydrogen, helium, oxygen, nitrogen, sulfur, argon, nickel, and silicon.
- **Contrast with Modern Galaxies:** These galaxies show significant differences in appearance and behavior compared to contemporary galaxies.
- **Developmental Mysteries:** They undergo crucial, yet not fully understood, processes during this phase, shaping their final structure and nature.
- **High Temperatures in Star-Forming Regions:** Star-forming areas in these galaxies show temperatures around 24,000 degrees Fahrenheit, much higher than in present-day galaxies.
- **Young Stars and Gas Properties:** This temperature variation suggests differences in the stars and gas properties of teenage galaxies.

Importance of Oxygen and Nickel

- **Oxygen's Crucial Role:** As a key component of galactic DNA and the third-most abundant element in the universe, oxygen is vital for tracking galaxies' growth history.
- **Nickel – An Unexpected Find:** The presence of nickel, usually not bright enough to be observed in nearby galaxies, suggests unique aspects of massive stars in these galaxies.
- **Undetected Elements:** Astronomers believe that additional elements likely exist in these galaxies but remain undetected due to current technological limits.

Outcomes of the Findings

- **Insights into Star Formation:** Understanding the chemical makeup of these galaxies provides valuable information about their star formation history and rate.
- **Chemical Immaturity and Rapid Growth:** The study indicates that these galaxies are in a phase of rapid formation and are still chemically immature.

Topic 13. THE MECHANISM THAT REMOVES UNFIT CELLS BEFORE YOU'RE BORN

Important for the subject: Science and Technology

In 2016, Manvendra Singh re-analysed previously published gene expression data from an early human embryo, and spotted a new group of cells that hadn't been seen before.

These cells didn't become a part of the later stages of the embryo and were eliminated early in development.

Important findings of the Study:

- A new group of cells were found that had died before being developed into the later stages of an embryo.
- These cells were non-committed and found among cells of inner cell mass. The inner cell mass or embryoblast is a structure in the early development of an embryo which is not yet implanted along the lines of uterus of the mother.

Human embryonic stem cells express a gene called HERVH.

HERVH is a virus-like gene that helps maintain pluripotency.

- Pluripotency is seen in cells that has the ability to make other types of cells in the human body. Most of the cells of inner cell mass express HERVH, except non-committed cells eventually dies.

Stage of development of embryo:

- The development of the human body entails growth from a one-celled zygote to an adult human after fertilization.
- Fertilization occurs when the sperm cell enters and fuses with an egg cell (ovum). The genetic material of the sperm and egg then combines to form the single-cell- zygote.
- Zygote than undergoes the processes of cell division and cellular differentiation leading to the formation of the embryo that occurs during the early stages of development. An embryo is an initial stage of development of a multicellular organism.
- The mass of cells that form the early embryo gets implanted inside the mother's womb and then grows bigger. The cells then start to differentiate into different types of cells that makes up the skin, muscles, nerves, etc.
- Over time, it develops into organs such as heart, lungs, the brain, and so forth. In the early stages of the human embryo (before implantation in the womb), the cells arrange themselves in a particular way.
- A blob of cells gathers towards one side of the embryo and the other cells arrange themselves around the blob, the cells that are collected on one side are called the Inner cell mass.

Inner cell mass contains pluripotent cells.

What are Jumping Genes?

- Transposable elements (TEs) or jumping genes are Deoxyribonucleic acid (DNA) sequences that move from one location of the genome to another.
- These elements were first identified by geneticist Barbara McClintock in 1948. They are abundantly found in almost all organisms both prokaryotes and eukaryotes.
- Prokaryotes are unicellular organisms that do not contain well bounded nucleus and other membrane-bound organelles. Example: Monera and archaebacteria.
- Eukaryotes are those organisms that contain well bounded nucleus and membrane-bound organelles and can be either unicellular or multicellular. Example: protists, fungi, plants, and animals.
- TEs make up 50% of the human genome and up to 90% of the maize genome. These genes are dangerous little pieces of DNA that can get inserted into different regions of the genome and can damage DNA or cell death.

Role of HERVH:

- **HERVH itself is a transposon but without the ability to jump. It protects early embryonic cells from dying because it does not contain another set of mutagenic transposons that causes DNA damage.**
- It plays a role in the pluripotency of stem cells, so it has major implications for regenerative medicine. It could play a role in the fitness of the early embryo. The good non-committed cells expressing HERVH are reducing, leading to less healthy embryos.

A small price to pay:

- In the early embryo, when the cells form the inner cell mass and other cells surround it, the latter forms the placenta.
- The placenta is a structure that is attached to the wall of the uterus, near the developing fetus, and helps move oxygen and nutrients from the mother to the fetus.
- The cells that form the placenta also express transposon activity but are more tolerant of the transposons, and do not die.
- But the placenta is discarded after childbirth, so the cost of the placenta is the least to the organism. The transposon activity in the early embryo could affect its fitness, with implications for infertility treatment and in-vitro fertilization (IVF) techniques.

Topic 14. MYLAB AND EKINCARE TO PROMOTE SERUM INSTITUTE'S NASAL FLU VACCINE AMONG CORPORATES

Important for the subject: Science and Technology

Diagnostics solutions provider Mylab is partnering with Ekincare to promote the nasal influenza vaccine NASOVAC-S4, developed by the Serum Institute of India (SII), among corporates.

Ekincare:

- Ekincare is a corporate health benefits platform and its collaboration with Mylab will enable businesses to incorporate NASOVAC-S4 into their employee wellness programs.
- Ekincare has a network of over 10,000 cashless healthcare service providers, making it one of India's leading integrated OPD (out-patient department) benefits platforms

About NASOVAC-S4:

- It offers a non-invasive and painless alternative to traditional injections. It is administered through the nasal route.
- It includes two influenza Type A virus strains (A/H1N1 and A/H3N2) and two influenza Type B virus strains (Victoria and Yamagata lineage).
- It aims to reduce the impact of influenza on the workplace. Influenza is an acute respiratory infection caused by influenza viruses.

Topic 15. GPS SPOOFING

Important for the subject: Science and Technology

Electronic warfare in the Middle East and Ukraine is affecting air travel far from the battlefields, unnerving pilots and exposing an unintended consequence of a tactic that experts say will become more common.

Planes are losing satellite signals, flights have been diverted and pilots have received false location reports or inaccurate warnings that they were flying close to terrain, according to European Union safety regulators and an internal airline memo viewed by The New York Times. The Federal Aviation Administration has also warned pilots about GPS jamming in the Middle East.

- Global positioning system (GPS) technology is now the standard way for travelers to efficiently get from point A to point B. While GPS delivers unparalleled opportunities to businesses and individuals, there are some drawbacks to using this technology. GPS devices can be vulnerable to cyber-attacks through GPS spoofing.

GPS Spoofing

- Global navigation satellite systems (GNSS) have been around for years in many industrialized countries, and GPS is just one of those systems. GPS spoofing happens when someone uses a radio transmitter to send a counterfeit GPS signal to a receiver antenna to counter a legitimate GPS satellite signal. Most navigation systems are designed to use the strongest GPS signal, and the fake signal overrides the weaker but legitimate satellite signal.

Commercial Hazards of GPS Spoofing

- GPS spoofing isn't to be confused with GPS jamming. GPS jamming happens when a cybercriminal blocks GPS signals altogether. Selling or using GPS jamming equipment that can block communications is illegal in the United States. While GPS jamming appears to be the greater threat, GPS spoofing delivers a sucker punch to a variety of businesses.
- GPS spoofing allows hackers to interfere with navigation systems without operators realizing it. The fake GPS feeds cause drivers, ship captains, and other operators to go off course without any coercion. Businesses that are particularly vulnerable to GPS spoofing are shipping companies, taxi services, and construction companies.

Topic 16. DO DEAD STARS CRASH WITH THE LIGHT OF 500 MILLION SUNS?

Important for the subject: Science and Technology

Recent findings propose an extraordinary connection between these enigmatic bursts and the collision of two neutron stars, a cosmic event that unleashes gravitational waves and a luminosity rivaling the brilliance of 500 million suns.

In the cosmic theater of astrophysics, a captivating revelation has emerged as scientists delve into the origins and characteristics of fast radio bursts (FRBs) — powerful radio frequency emissions originating from distant galaxies that endure for just milliseconds.

What are the Fast Radio Bursts (FRBs)?

- Fast Radio Bursts (FRBs) are astrophysical phenomena characterized by brief and intense bursts of radio waves originating from deep space.
- These bursts, highly energetic in nature, last for only a few milliseconds, making them

one of the most intriguing and enigmatic phenomena in astrophysics.

Key Characteristics of Fast Radio Bursts (FRBs):

- FRBs manifest as short-lived episodes of intense radio frequency emissions, lasting only a few milliseconds.
- The exact sources of FRBs are located in distant galaxies, making them challenging to study and understand due to their considerable distance from Earth.

Significance of Fast Radio Bursts (FRBs):

- **Host Galaxies' Intense Radio Light:** The study of FRBs has revealed intense radio light within the host galaxies where these bursts originate. Understanding this phenomenon provides crucial insights into the aftermath and environment of the sources of FRBs.
- **Implications for Gravitational-Wave Astronomy:** The correlation between FRBs and gravitational-wave events has profound implications for gravitational-wave astronomy. The study suggests a potential connection between FRBs and cosmic events, such as neutron star collisions, which release both gravitational waves and FRBs.
- **Future Observatories and Technologies:** The findings suggest that future advancements in radio telescope technology, combined with gravitational-wave observatories like the Square Kilometer Array and the upcoming Laser Interferometer Space Antenna (LISA), could unlock further insights into these high-energy cosmic events.
- **Understanding the Structure of the Universe:** The study of FRBs contributes to our understanding of the structure of the universe by providing a unique lens into the energetic processes and cataclysmic events occurring in the vast cosmic expanse.

What are Radio waves and their significance in astronomy?

- Radio waves, characterized by long wavelengths and low frequencies, constitute a category of electromagnetic radiation.
- Within the realm of astronomy, these waves hold paramount importance, enabling the observation of celestial entities and occurrences that remain invisible in alternative light wavelengths.
- The utility of radio waves extends to the examination of diverse cosmic elements, including galaxies, pulsars, quasars, and the radiation from the cosmic microwave background.

Topic 17. A CENTRALISED WEBSITE TO TRACK, RECOVER YOUR LOST MOBILE FASTER

Important for the subject: Science and Technology

The Indian government has recently launched a groundbreaking nationwide mobile phone tracking system known as the Central Equipment Identity Register (CEIR). This initiative is poised to play a pivotal role in bolstering national security, curbing phone theft, and ensuring the authenticity of mobile devices in the market.

Background:

- The Centre for Department of Telematics (CDoT), after successful piloting in Delhi, Maharashtra, Karnataka, and the North East, officially launched the CEIR system.

- This innovative system is designed not only for tracking lost or stolen mobile phones but also to render such devices unusable, serving as a deterrent to theft.

Functionality of CEIR:

- **IMEI Registration:** Users are required to disclose the International Mobile Equipment Identity (IMEI) number, a 15-digit unique identifier associated with their mobile device, before its sale in India.
- **Reporting Lost or Stolen Mobile Phones:** In the event of a lost or stolen phone, users report the IMEI number to the authorities.
- **Blocking IMEI Across Networks:** The CEIR system processes the reported IMEI number and ensures its blocking across all networks in the country, rendering the device unusable.
- **Preventing Unauthorized Use:** By blocking the IMEI number, the system prevents unauthorized individuals from using the lost or stolen device on any network in India, acting as a deterrent to theft.
- **Tracking and Recovery:** Authorities, including the police, can leverage the CEIR system to track and locate stolen or lost mobile phones based on their blocked IMEI numbers, involving advanced technologies and collaborations with telecom operators.
- **Retrieval by Authorities:** Upon locating a stolen or lost mobile phone, authorities take necessary actions to verify ownership and facilitate the return of recovered devices to their rightful owners.
- **National Security and Counterfeit Prevention:** CEIR addresses national security concerns by preventing the use of cloned or counterfeit mobile phones. Authorities can identify unauthorized or cloned devices based on IMEI numbers and take appropriate actions.
- **Consumer Awareness and Protection:** The system contributes to consumer protection by raising awareness about counterfeit or cloned mobile phones in the market. Users can verify IMEI numbers before purchasing, ensuring authenticity and preventing potential issues.

About IMEI:

- IMEI, or International Mobile Equipment Identity, plays a pivotal role in the realm of mobile technology, serving as a 15-digit unique identifier for mobile devices worldwide.
- IMEI serves as a crucial tool for identifying the hardware of a specific mobile device, aiding in its differentiation from other devices.
- Device manufacturers assign IMEI numbers during the production process, ensuring a unique identifier for each device manufactured.
- In India, mobile device sellers are mandated to disclose the IMEI numbers of devices before their sale, aligning with regulatory standards.

Topic 18. HARYANA'S EMPLOYMENT RESERVATION LAW

Important for the subject: Polity

The Punjab and Haryana High Court quashed a law enacted by the Haryana government in 2021 that guaranteed 75% reservation to locals in private sector jobs in Haryana.

Historical Background of the Haryana reservation:

Origin

- In November 2020, the Haryana Assembly passed the Haryana State Employment of Local Candidates Bill.

Obligation for the employers:

- It made it mandatory for employers in the State to reserve 75% of jobs paying a monthly salary of less than ₹30,000 (originally ₹50,000) for local residents of the State.
- The law **is** applicable to all private entities in the State including companies, trusts, societies, partnerships, and limited liability partnerships. It also covers any person employing 10 or more persons for the purpose of manufacturing or providing any service.

Local candidate's definition:

- A 'local candidate' has been defined under the law as anyone domiciled in Haryana for the past five years. Such candidates will have to mandatorily register themselves on a designated portal in order to avail benefits. Employers have to make recruitments only through this portal.

Exemption:

- Companies can seek an exemption if they do not find local candidates of a desired skill or qualification, but this claim can be rejected by government officials if they doubt its legitimacy.

Violations and penalty:

- Employers found to be violating the Act are liable to a fine between ₹10,000 and ₹2 lakh.

Challenges to the law:

Violation of Article 19:

- Several industry associations challenged the validity of the law on the ground that it violates Article 19 of the Constitution. Article 19 guarantees the right to freedom, including to reside and settle in any part of the Indian territory and practise any profession, business or trade.

Violation of Article 14 and Article 15:

- It is also contended that the law was an infringement of Article 14 (equality before the law) and Article 15, which prohibits discrimination on various grounds such as religion, race, caste, sex or place of birth.

Discrimination between residents and non residents:

- The court was also apprised that the reservation creates a wedge between persons domiciled in different States and is contrary to the concept of common citizenship envisaged in the Constitution.

State Government's View:

- The State government contended that the law intends to protect the right to livelihood of

people domiciled in the State, and that the enactment was rooted in the rising unemployment in Haryana. It was also asserted that the **government is empowered to create such reservations under Article 16(4) of the Constitution.**

- Article 16 (4) stipulates that the right to equality in public employment does not prevent the State from making any provision for the reservation of appointments or posts in favour of any backward class of citizens which, in the opinion of the State, is not adequately represented in the services under the State.

Have other States enacted such laws?

- States such as **Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh** have enacted laws providing reservations for their local residents in the private sector.

Why did the High Court quash it?

Violation of Article 19(1) (g):

- The court ruled that the **law was unconstitutional** to the extent that a person's right to carry on occupation, trade, or business under **Article 19(1)(g)** of the Constitution was being impaired.

Discrimination:

- It also highlighted that the law discriminates against individuals who do not belong to a certain State by putting up artificial walls throughout the country.

Parliament's power is supreme:

- Placing reliance on **Article 35 of the Constitution**, the court outlined that the **provision bars the State legislature from legislating on matters that fall within the purview of Article 16(3) of the Constitution** (equality of opportunity in matters of public employment) since only the Parliament can pass laws on such Important for the subjects.

Return of the Inspector Raj:

- The court said that these restrictions amounted to 'Inspector Raj' that furthered State control over private employers. Section 6 of the Act requires employers to submit quarterly reports with details of local candidates employed and Section 8, under which officers could call for documents to ensure the law was being implemented.

Topic 19. GOVERNOR HOLDS NO VETO POWER OVER BILLS, SAYS SC

Important for the subject: Polity

While examining the constitutional authority of the Governor in withholding assent to a bill, the Supreme Court has issued a crucial verdict outlining a governor's obligations when withholding assent to a Bill.

Chief Justice Chandrachud highlighted that keeping a Bill duly passed for indeterminate periods contradicts constitutional principles, emphasising the importance of prompt action.

Governor's Obligation

- The Supreme Court ruled that when a governor withholds assent to a Bill, it's mandatory to promptly send it back to the State legislature.
- This action must be accompanied by a message necessitating the legislature to reconsider the Bill.

Legislature's Authority

- The court emphasised that the ultimate decision on accepting the Governor's advice belongs exclusively to the legislature.
- The Governor's message does not bind the legislature, as indicated by the expression "if the Bill is passed again with or without amendments."

Constitutional Democracy Principles

- The court warned against the risk of a Governor virtually vetoing a duly elected legislature's functioning by withholding assent without further recourse. Such a scenario contradicts the fundamental principles of constitutional democracy.

Expedition Requirement

- The court stressed that the Bill should be sent back to the Legislature "as soon as possible" with the mandatory message.
- The expression "as soon as possible" was deemed a "constitutional imperative of expedition," and failure to act promptly was deemed inconsistent with constitutional language.

What are the Governor's Powers w. r. to Passage of Bills?

- The governor's powers with respect to the passage of bills are defined by Article 200 and Article 201 of the Constitution. According to these articles, the governor has the following options when a bill is presented to him/her by the state legislature:
- He/she may give assent to the bill, which means the bill becomes an act. He/she may withhold assent to the bill, which means the bill is rejected. He/she may return the bill (if it is not a money bill) to the state legislature with a message requesting reconsideration of the bill or some of its provisions.
- If the bill is passed again by the state legislature with or without amendments, the governor cannot withhold assent to it.
- He/she may reserve the bill for the consideration of the president, who may either assent to or withhold assent from the bill, or direct the governor to return the bill to the state legislature for reconsideration.
- The reservation of the bill by the governor is mandatory if the bill endangers the position of the state high court.
- It is also discretionary if the bill is against the provisions of the Constitution, the Directive Principles of State Policy, the larger interest of the country, or of grave national importance, or deals with compulsory acquisition of property under Article 31A of the Constitution.

What are the Challenges associated with Governor's Office?

- The Appointment of Governors: The governor is appointed by the president on the advice of the central government. This raises questions about the political neutrality and impartiality of the governor.
- There have been instances where governors have been appointed from the ruling party at the centre or have been removed or transferred for political reasons. This undermines the dignity and stability of the office of the governor.
- The Role and Powers of Governors: The governor has various roles and powers under the constitution, such as giving assent to bills passed by the state legislature, appointing the chief minister and other ministers, sending reports to the president on the state of affairs, and exercising special responsibilities in some states.
- However, these roles and powers are often Important for the subject to the discretion of the governor, which can lead to conflicts with the elected state government.
- There have been cases such as Tamil nadu's where governors have delayed or withheld assent to bills, dismissed or dissolved state governments, recommended president's rule, or interfered in the functioning of state universities.
- These actions have been criticized as arbitrary, partisan, or unconstitutional by the state governments or the opposition parties.
- The Accountability and Immunity of Governors: Although the governor is supposed to be the President's analogue at the state government, the reality is that they have been, and continue to be, the agents of the Union government, sent to keep a check on popularly elected state governments.
- The governor can be removed from office at the pleasure of the Union government. The governor is secure in the knowledge that as long as they do as they are told by the Union government, they will continue to hold their positions. As heads of state, they are not even answerable to the courts for their actions while in office (Art 361).

Topic 20. SUPREME COURT ASK GOVT TO SET UP FRESH DELIMITATION COMMISSION

Important for the subject: Polity

SC ask govt. to set up fresh delimitation commission

The Supreme Court has directed the Centre to promptly establish a delimitation commission to provide proportional representation for two scheduled tribe communities seeking political reservation in West Bengal.

These communities, Limboo and Tamang, were declared as scheduled tribes by a 2002 law passed by Parliament.

The court clarified that the delimitation exercise should not interfere with upcoming elections for the Lok Sabha or the Assembly, as holding elections is a constitutional mandate.

- **The Election Commission informed the court that adding Limboo and Tamang communities in West Bengal would result in an additional seat for Scheduled Tribes in the assembly.**

- The court emphasized the Union government's responsibility to ensure the implementation of Articles 330 and 332, which provide reservation for SC/ST communities based on proportional representation.
- The order stems from petitions seeking political representation for the two ST communities in West Bengal and Sikkim.
- The court noted that Sikkim's special provisions under Article 371F allow for reservation to specific sections of the population, different from proportional reservation under Articles 330 and 332.
- The judgment clarified that it would not affect the election schedule and highlighted the need for parliamentary legislation to address reservation extents for ST communities.

What is Delimitation:

- Delimitation is the **act of redrawing boundaries of Lok Sabha and Assembly constituencies to represent changes in population and is done on the basis of the preceding Census.**
- This exercise is **carried out by a Delimitation Commission**, whose orders have the **force of law and cannot be questioned** before any court.

What are the Constitutional provisions:

- **Article 82:** This provides the **Parliament with the authority to enact a Delimitation Act after every Census.**
- **Article 170:** This provides for the **States to get divided into territorial constituencies** as per the Delimitation Act after every Census.
- The **Union government sets up a Delimitation Commission once the Act is in force.**

What is Delimitation Commission:

- It is **appointed by the President of India** and works in **collaboration with the Election Commission of India.**
- Its **members are a serving or retired Supreme Court judge, Chief Election Commissioner or an Election Commissioner nominated by CEC and Election Commissioners of the respective state.**
- Its **function is to determine the number and boundaries of constituencies, to identify seats reserved for SC/ST. It is a high power body whose orders have the force of law and cannot be called in question before any court.**
- **Delimitation Commissions have been set up four times — 1952, 1963, 1973 and 2002 under the Acts of 1952, 1962, 1972 and 2002.**

Topic 21. LOK SABHA MPS TOLD NOT TO SHARE REPLIES UNTIL QUESTION HOUR IS OVER

Important for the subject: Polity

Lok Sabha MPs told not to share replies until Question Hour is over

The Lok Sabha secretariat has emphasized the confidentiality of government replies during Question Hour, instructing Members of Parliament to use the exclusive portal and refrain from sharing information until the session concludes.

The bulletin, issued on November 10, highlights that replies are login and password protected for the exclusive use of MPs.

- The directive follows the Lok Sabha Ethics Committee's recommendation for the expulsion of TMC MP Mahua Moitra due to cash-for-query allegations.
- The secretariat underscores the strict confidentiality of reply contents until the relevant question has been addressed in the House, even for questions not orally answered.
- Replies become public once presented during the live telecast of Question Hour, and the bulletin stresses the confidentiality of written answer lists until laid on the House table after the session concludes.

What is the procedure for raising the questions:

- The procedure for raising questions is governed by:
- **Rules 32 to 54** of the "Rules of Procedure and Conduct of Business in Lok Sabha"
- **Directions 10 to 18** of the "Directions by the Speaker, Lok Sabha".
- To ask a question, an MP has to first give a notice addressed to the lower house's **Secretary-General**, intimating their intention to ask a question.

The notice usually contains:

- The text of the question, The official designation of the Minister to whom the question is addressed, The date on which the answer is desired, The order of preference, in case the MP tables more than one notice of questions for the same day.
- A Member is allowed to give not more than five notices of questions, both for oral and written answers, in all, for any day.
- Notices received in excess of five from a Member for a day, are considered for the subsequent day(s) concerning that Minister during the period of that session only.
- Usually, the period of notice of a question is not less than 15 days. There are two ways through which MPs can submit the notices of their questions.
- **First**, through an online 'Member's Portal', where they have to enter their ID and password to get access.
- **Second**, through the printed forms available in the Parliamentary Notice Office. After submission of the notices, the next stage is when the Speaker of Lok Sabha examines the notices of the questions in the light of the laid-out rules. It is the Speaker, who

decides if a question, or a part thereof, is or isn't admissible.

What are the conditions for the admissibility of questions:

- There exist several regulations that dictate the **eligibility of a question** presented by a Member of Parliament.
- For instance, these questions are **generally limited to 150 words** in length and must **abstain from including arguments, defamatory remarks, or references to an individual's character or behavior** unless it relates to their official or public role.
- Additionally, **questions addressing broad policy issues are typically not permitted due to the limitations of providing a comprehensive policy** within a question's response.
- Furthermore, a **question is not admissible** if its **Important for the subject matter is pending judgment before any court of law** or any other tribunal or **body set up under law or is under consideration before a Parliamentary Committee.**
- A query also **cannot seek information on matters which may weaken the unity and integrity of the country.**

What are the different types of questions:

- There are **four types of questions** i.e **starred, unstarred, short-notice questions, and questions addressed to private Members.**
- **Starred Questions:** These questions are **asked by MPs** and are **answered orally** by the Minister-in-charge. MPs can **ask one starred question per day**, and they must be **submitted at least 15 days in advance. Only 20 starred questions** can be **listed for oral answers on a given day**, and supplementary questions can be asked after the oral response.
- **Unstarred Questions:** Unstarred questions **receive written replies from the Ministry.** They also **need to be submitted at least 15 days** in advance, but they **do not allow for follow-up questions.** A total of **230 unstarred questions** can be **listed for written answers in a day.**
- **Short Notice Questions:** These are questions related to **urgent public matters** and can be **asked with less than 10 days' notice**, provided **reasons for the short notice** are given. Short notice questions are **answered orally, and supplementary questions can follow.**
- **Questions to Private Members:** These questions are **addressed to the MP themselves.** They are asked when the **Important for the subject matter relates to a Bill, Resolution, or any matter concerning the Business of the House** for which that MP is responsible. The **procedure for these questions is similar to questions addressed to a Minister, with variations as determined by the Speaker.**

Some facts about Ethics Committee:

- Each of the **two Houses of Parliament** has an ethics committee. They deal with the members'
- Besides **overseeing the moral and ethical conduct** of members, ethics committee also **prepares a Code of Conduct** for members, which are amended from time to time.

- The ethics committee in Lok Sabha has 15 members while in Rajya Sabha has 10 members. The members of the Ethics Committee are appointed by the Speaker for a period of one year.

What is the history of Ethics Committees:

- A Presiding Officers' Conference held in Delhi in 1996 first mooted the idea of ethics panels for the two Houses.
- Then Vice President K R Narayanan constituted the Ethics Committee of the Upper House on March 4, 1997, and it was inaugurated that May to oversee the moral and ethical conduct of members and examine cases of misconduct referred to it. The Rules applicable to the Committee of Privileges also apply to the ethics panel.
- In the case of Lok Sabha, a study group of the House Committee of Privileges, after visiting Australia, the UK, and the US in 1997 to look into practices pertaining to the conduct and ethics of legislators, recommended the constitution of an Ethics Committee, but it could not be taken up by Lok Sabha.
- The Committee of Privileges finally recommended the constitution of an Ethics Committee during the 13th Lok Sabha.
- The late Speaker, G M C Balayogi, constituted an ad hoc Ethics Committee in 2000, which became a permanent part of the House only in 2015.

Topic 22. BIHAR CABINET NOD TO SEEK SPECIAL STATUS FOR STATE

Important for the subject: Polity

The Bihar Cabinet passed a resolution on Wednesday requesting the Centre to grant special category status to the State, days after CM Nitish Kumar threatened to launch a movement if the demand remains unfulfilled.

What is Special Category Status (SCS)?

SCS is a classification given by the Centre to assist development of states that face geographical and socio-economic disadvantages.

The Constitution does not make a provision for SCS and this classification was later done on the recommendations of the Fifth Finance Commission in 1969.

Status was first accorded to Jammu and Kashmir, Assam and Nagaland in 1969.

- SCS for plan assistance was granted in the past by the National Development Council of the erstwhile Planning Commission.
- **Eleven States** including Assam, Nagaland, Himachal Pradesh, Manipur, Meghalaya, Sikkim, Tripura, Arunachal Pradesh, Mizoram, Uttarakhand and Telangana have been accorded the special category state status.
- **Telangana, the newest State** of India, was accorded the status as it was carved out of another state Andhra Pradesh.

- The 14th Finance Commission has done away with the ‘special category status’ for states, except for the Northeastern and three hill states. It suggested to fill the resource gap of such states through **tax devolution** by increasing it to **42% from 32%**.
- SCS is different from Special status which imparts enhanced legislative and political rights, while SCS deals with only economic and financial aspects. For instance, J&K used to have Special status before Article 370 was repealed.

Parameters (Based on Gadgil Formula):

1. Hilly Terrain;
2. Low Population Density and/or Sizeable Share of Tribal Population;
3. Strategic Location along Borders with Neighbouring Countries;
4. Economic and Infrastructure Backwardness; and
5. Nonviable Nature of State finances.

What are the Benefits of Special Category Status?

- The Centre pays **90% of the funds required in a centrally-sponsored scheme** to special category status states as against 60% or 75% in case of other states, while the remaining funds are provided by the state governments.

Unspent money in a financial year does not lapse and is carried forward.

- **Significant concessions** are provided to these states in excise and customs duties, income tax and corporate tax. **30% of the Centre’s Gross Budget** goes to Special Category states.

What are the Concerns regarding Special Category Status?

- It causes **Increased burden on Central Finances. Spillover Effect:** Giving special status to a state leads to demands from other states too. For instance, demands from Andhra Pradesh, Odisha and Bihar.

Topic 23. HARSHNESS OF AMENDMENTS MADE TO PMLA IN 2019 SHOCKING, SAYS SIBAL

Important for the subject: Polity

Mr. Sibal raised concern that the amendments made to the anti-money laundering law in 2019 had armed the Enforcement Directorate (ED) with **unbridled powers of summons, arrest, raids and attachment of property and made bail nearly impossible** while shifting the burden of proof of innocence onto the accused rather than the prosecution.

What is the Prevention of Money Laundering Act (PMLA), 2002?

Money Laundering Definition:

- Money laundering is the **process of making large amounts of money generated by criminal activity, such as drug trafficking or terrorist funding, appear to have come**

from a legitimate source.

About Law:

- It is a **criminal law** enacted to prevent money laundering and to provide for confiscation of property derived from, or involved in, money-laundering and related matters.
- It forms the core of the legal framework put in place by India to combat Money Laundering. The provisions of this act are **applicable to all financial institutions**, banks (Including RBI), mutual funds, insurance companies, and their financial intermediaries.

Recent Amendments:

- **Clarification about the Position of Proceeds of Crime:** Proceeds of the Crime **not only includes the property derived from scheduled offense but would also include any other property derived or obtained indulging into any criminal activity relate-able or similar to the scheduled offense.**
- **Money Laundering Redefined:** Money Laundering was **not an independent crime** rather depended on another crime, known as the predicate offense or scheduled offense.
- The amendment seeks to **treat money laundering as a stand-alone crime.** Under **Section 3 of PMLA**, the person shall be accused of money laundering if **in any manner that person is directly or indirectly involved in the proceeds of the crime.**
- **Continuing Nature of Offense:** This amendment further mentioned that the person will be considered to be involved in the offense of money laundering till the time that person is getting the fruits of activities related to money laundering as this offense is of a continuing nature.

What is the Enforcement Directorate?

- The Directorate of Enforcement or the ED is a multi-disciplinary organization mandated with **investigation of economic crimes** and violations of foreign exchange laws.
- The origin of this Directorate goes back to 1st May, 1956, when an '**Enforcement Unit**' was **formed in the Department of Economic Affairs** for handling Exchange Control Laws violations under **Foreign Exchange Regulation Act, 1947 (FERA '47).**
- With the onset of the process of economic liberalization, FERA, 1973, which was a regulatory law, was repealed and in its place, **Foreign Exchange Management Act, 1999 (FEMA)** came into operation.
- Recently, with the increase in the number of cases relating to economic offenders taking shelter in foreign countries, the Government has passed the **Fugitive Economic Offenders Act, 2018 (FEOA)** and ED is entrusted with its enforcement.

Powers of ED:

- The **ED carries out search (property) and seizure (money/documents)** after it has decided that the money has been laundered, under Section 16 (power of survey) and Section 17 (search and seizure) of the PMLA.
- On the basis of that, the authorities decide if arrest is needed as per Section 19 (**power of arrest**). Under Section 50 of the PMLA, the ED **can also directly carry out search and**

seizure without calling the person for questioning.

- It is **not necessary to summon the person** first and then start with the search and seizure. **If the person is arrested, the ED gets 60 days to file the prosecution complaint (chargesheet) as the punishment** under PMLA doesn't go beyond seven years.
- If no one is arrested and only the property is attached, then the prosecution complaint along with attachment order is to be submitted before the adjudicating authority within 60 days.

Contentious Provision:

- **Allegations of Violation of Article 20(3):** PMLA's provisions on **admissibility of statements made by the accused as evidence**, and the stringent bail provisions have been the most contentious.
- **It is the only Act in the country in which a statement recorded before an investigating officer is admissible in court as evidence.** Other laws that contained such provisions, such as TADA and POTA, have long been repealed.
- **Violation of Article 22:** ED could summon a person without telling him whether he was being called as a witness or an accused.
- The **provision for bail stipulates that a magistrate will not grant bail to an accused unless he is convinced that prima facie no case is made out.** This provision was struck down by the Supreme Court on the ground that it presupposed the trial at the stage of bail itself.

What are the Recent Controversies Regarding PMLA and the Powers and Efficiency of ED?

- The PMLA formulated in 2002 has undergone various critical changes from time to time in order to give itself more strength to deal with the offence of money laundering.
- However, on account of these amendments, several petitions have been filed across the country that question the almost **blanket powers assigned to the ED under PMLA for searching, seizing, investigating, and attaching assets considered to be proceeds of crimes.**
- Moreover, in a recent hearing, the SC upheld the constitutional validity of the PMLA and ED's power to hold inquiries, arrest people and attach property (under Section 5 of the Act).
- The Court stated that Section 5 provides for a balancing arrangement to secure the interests of the person and also ensures that the proceeds of crime remain available to be dealt with in the manner provided by the 2002 Act.
- **Validation of Article 20(3):** Judiciary rejected the argument that ED authorities are police officers and, hence, a statement recorded by them (Section 50 of the Act) would be hit by Article 20(3) of the Indian Constitution which says no person accused of an offence shall be compelled to be a witness against himself (self incrimination).
- Additionally, the **conviction rate of the ED under PMLA is very low**, despite thousands of cases registered and people arrested.

Topic 24. GOVERNMENT PANEL SETS INDICATIVE TARGETS FOR BLENDING SUSTAINABLE AVIATION FUEL IN ATF

Important for the subject: Polity

Govt. panel sets indicative targets for blending sustainable aviation fuel in ATF from 2027. The **National Biofuel Coordination Committee (NBCC)** in India has set **initial indicative targets for blending sustainable aviation fuel (SAF) with aviation turbine fuel (ATF)**. The **approved targets are 1% SAF indicative blending in ATF for international flights in 2027 and 2% SAF blending target in 2028** for international flights.

The decision **aligns with the mandatory phase of the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSA)**, effective from 2027.

CORSA requires airlines globally to offset any growth in carbon dioxide emissions beyond 2020 levels. The NBCC is an **inter-ministerial panel overseeing India's biofuels program.**

What is the ATF and SAF:

- **Jet fuel, also known as aviation turbine fuel (ATF), is formulated specifically for use in aircraft equipped with gas-turbine engines.**
- **ATF is composed of a diverse mixture of hydrocarbons. Due to the broad range of petroleum sources, defining jet fuel as a specific ratio of hydrocarbons is not feasible.**
- **Sustainable Aviation Fuel (SAF) is an environmentally friendly alternative produced from sustainable feedstocks.**
- **Its chemical composition closely resembles that of conventional ATF derived from crude oil. Notably, SAF boasts a considerably lower carbon footprint compared to traditional ATF.**

What is the International Civil Aviation Organization's (ICAO):

- **The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations that coordinates the principles and techniques of international air navigation.**
- **It was established in 1947. Its headquarters are situated in Quebec, Canada. The organization plays a crucial role in fostering the planning and development of international air transport to ensure safe and orderly growth.**

What is the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA):

- **CORSA is a worldwide market-based initiative that aims to counterbalance global carbon dioxide (CO₂) emissions from international aviation, seeking to maintain emission levels.**

- This initiative is **not applicable to domestic aviation** and mandates airlines globally to **compensate for any increase in carbon dioxide emissions beyond the 2020 levels**. To achieve emission offsetting, airplane operators will acquire and cancel emissions units from the global carbon market.
- In 2018, the International Civil Aviation Organization (ICAO) adopted Standards and Recommended Practices (SARPs) to implement CORSIA within the framework of the Convention on International Civil Aviation.

What is the National Biofuel Coordination Committee (NBCC)

- NBCC was constituted in 1960 under the Chairmanship of Minister, Petroleum & Natural Gas to provide overall coordination, effective end-to-end implementation and monitoring of biofuel programmes.
- NBCC has been active in the implementation of many projects in areas such as Institutional, Housing, Industrial and Environmental, Transportation, Power, etc.
- Various public welfare projects have also been undertaken and completed by the business, though not using CSR money.

Topic 25. CBI BEGINS PROBE INTO LOKPAL COMPLAINT ON MAHUA

Important for the subject: Polity

Cash-for-query' row

The Central Bureau of Investigation (CBI) is reportedly investigating a complaint sent by Lokpal regarding cash-for-query allegations against Trinamool Congress's Lok Sabha member Mahua Moitra. Moitra is accused of sharing her Parliament login and password with businessman Darshan Hiranandani, allowing him to post questions on her behalf.

The Lokpal forwarded the complaint to the CBI for investigation. The Ethics Committee of Lok Sabha had earlier recommended Moitra's expulsion for "unethical conduct" and "serious misdemeanors." Moitra admitted to providing login details but denied taking any cash. The CBI is now enquiring into the matter.

Some facts about Lokpal and Lokayuktas Act 2013:

- The Act allows for the setting up of an anti-corruption ombudsman called Lokpal at the Centre and Lokayuktas in the state.
- **Composition:** The Lokpal will consist of a chairperson and a maximum of eight members.
- Chairperson should have been a Chief Justice of India, or is or has been a judge of the Supreme Court, or an eminent person who fulfills eligibility criteria as specified.
- **50% of the members are to be judicial members** provided that not less than 50% of the members belong to the Scheduled Castes, Scheduled Tribes, OBCs, minorities, and women.
- **Inquiry Wing:** Lokpal will have an Inquiry Wing for conducting preliminary

inquiry into any offence alleged to have been committed by a public servant punishable under the Prevention of Corruption Act, 1988.

- **Prosecution Wing:** It will also have a Prosecution Wing for the prosecution of public servants in relation to any complaint by the Lokpal under this Act.

Powers:

- The Lokpal will have the **power of superintendence and direction over any investigation agency including CBI** for cases referred to them by the ombudsman.
- As per the Act, the Lokpal **can summon or question any public servant** if there exists a prima facie case against the person, even before an investigation agency (such as vigilance or CBI) has begun the probe. Any officer of the CBI investigating a case referred to it by the Lokpal, shall not be transferred without the approval of the Lokpal.
- An **investigation** must be completed **within six months**. However, the Lokpal or Lokayukta may allow extensions of six months at a time provided the reasons for the need of such extensions are given in writing. **Special courts will be instituted** to conduct trials on cases referred by Lokpal.
- **Jurisdiction of Lokpal:** It covers a wide range of public servants — from the Prime Minister (PM), ministers and MP, to groups A, B, C, D officers of the central government including the chairperson and members of the Lokpal. However, there are some **exceptions for PM:**
- Lokpal **cannot inquire into allegations against the PM relating to international relations, external and internal security, public order, atomic energy and space**. Also, complaints against the PM are **not to be probed** unless the **full Lokpal bench considers the initiation of inquiry and at least 2/3rds of the members approve it**.
- Such an inquiry against the Prime Minister (if conducted) is to be **held in camera** and if the Lokpal comes to the conclusion that the complaint deserves to be dismissed, the records of the inquiry are not to be published or made available to anyone.

Selection committee:

- Once the search committee submits its recommendation for the Lokpal and its members, a selection committee will consider those names and forward them to the President for his consideration.
- The five-member selection committee comprises the following –**Prime Minister (chairperson), Lok Sabha Speaker, Leader of the Opposition, Chief Justice of India and An Eminent jurist nominated by the President.**

Topic 26. WITH TURMERIC BOARD SET TO BE A REALITY, NO YELLOW TWIST THIS TIME

Important for the subject: Polity

About Turmeric

Turmeric (*Curcuma longa*): It is a perennial herbaceous plant of the ginger family. The plant's underground stems or rhizomes have been used as a spice, dye, medicine, and

religious maker since antiquity.

Climate: It requires temperatures between 20 and 30 °C (68 and 86 °F) and a considerable amount of annual rainfall to thrive.

Largest Producer: India is the largest producer and exporter of turmeric in the world. Turmeric occupies about 6% of the total area under spices and condiments in India.

Largest Producer State: Telangana was the leading producer of turmeric in India during 2018. Maharashtra and Tamil Nadu were second and third in the ranking that year.

Significance: The spice's color comes mainly from curcumin, a bright yellow phenolic compound that has been in the news for its ostensible potential to fight cancer. As a result, the demand for turmeric with high curcumin content has risen.

About National Turmeric Board

- **Nature:** It is not a statutory body.
- **Nodal Ministry:** Ministry of Commerce & Industry.

Composition of the National Turmeric Board

- Chairperson appointed by the **Central Government**, responsible for providing strategic direction to the Board's activities.
- **Secretary appointed by the Department of Commerce**, responsible for the day-to-day administration of the Board.

Board Members

- **Ministry Representatives: Officials from the Ministry of AYUSH, Departments of Pharmaceuticals, Agriculture & Farmers Welfare, Commerce & Industry** of the Union Government to provide governmental perspective.
- **State Government Representatives:** Senior officials from three states on a rotational basis to ensure regional perspectives are considered.
- **Research and Industry Experts:** Representatives from select national/state institutions involved in turmeric research and industry.
- **Turmeric Stakeholders:** Representatives from turmeric farmers and exporters to represent the interests of the community.

Objectives of the National Turmeric Board

Increasing Awareness and Consumption

- The Board will initiate awareness campaigns highlighting the health and wellness benefits of turmeric, aiming to increase its consumption within India. Collaborate with the Ministry of AYUSH to promote the use of turmeric in traditional medicine systems

like Ayurveda.

Developing International Markets

- Conduct market research to identify potential international markets for turmeric and its products. Facilitate the participation of Indian turmeric exporters in international trade fairs and exhibitions.
- Collaborate with the Ministry of Commerce & Industry to negotiate favourable trade agreements that benefit turmeric exports.

Research and Development

- Invest in research and development to create new turmeric-based products, exploring both culinary and medicinal applications.
- Document and preserve traditional knowledge related to turmeric for future generations while ensuring its ethical use.

Capacity Building and Skill Development

- Organize training programs for turmeric growers, focusing on modern cultivation techniques, sustainable farming practices, and post-harvest handling.
- Provide workshops to enhance the skills of farmers in areas like organic farming, pest management, and irrigation practices.

Ensuring Quality and Food Safety

- Develop and enforce quality standards for turmeric and turmeric products to meet international regulations.
- Implement food safety measures across the turmeric supply chain to ensure the products meet high-quality standards.

Topic 27. FREE LEGAL AID

Important for the subject: Polity

Poor state of legal aid in India.

Constitutional Basis of Legal System:

Article 39A of the Constitution of India provides that State shall secure that the operation of the legal system promotes justice on a basis of equal opportunity, and shall in particular, provide free legal aid, by suitable legislation or schemes or in any other way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disability.

Articles 14 and 22(1) also make it obligatory for the State to ensure equality before law and a legal system which promotes justice on a basis of equal opportunity to all.

Legal aid strives to ensure that constitutional pledge is fulfilled in its letter and spirit and

equal justice is made available to the poor, downtrodden and weaker sections of the Society.

- 1987, the Legal Services Authorities Act was enacted by the Parliament which came into force on 9th November, 1995 to establish a nationwide uniform network for providing free and competent legal services to the weaker sections of the society on the basis of equal opportunity. The National Legal Services Authority (NALSA) has been constituted under the Legal Services Authorities Act, 1987 to monitor and evaluate implementation of legal aid programmes and to lay down policies and principles for making legal services available under the Act.
- In every State, a State Legal Services Authority and in every High Court, a High Court Legal Services Committee have been constituted. District Legal Services Authorities, Taluk Legal Services Committees have been constituted in the Districts and most of the Taluks to give effect to the policies and directions of the NALSA and to provide free legal services to the people and conduct Lok Adalats in the State.
- Supreme Court Legal Services Committee has been constituted to administer and implement the legal services programme insofar as it relates to the Supreme Court of India.

NALSA.

- It has been constituted under the Legal Services Authorities Act, 1987, to provide free legal services to weaker sections of society.
- It aims to ensure that opportunities for securing justice are not denied to any citizen by reasons of economic or other disabilities. The 'Nyaya Deep' is the official newsletter of NALSA.
- It has also been providing assistance to prisoners who were eligible to be released on parole or interim bail under the relaxed norms, through its panel lawyers.

Composition of NALSA:

- The Chief Justice of India shall be the Patron-in-Chief, as per section 3(2) of Legal Service Authorities Act. The Second senior-most judge of Supreme Court of India is the Executive-Chairman.

Functions performed by NALSA:

- It organize Lok Adalat for amicable settlement of disputes. It Identify specific categories of the marginalised and excluded groups and formulates various schemes for the implementation of preventive and strategic legal service programmes.
- It provides free legal aid in civil and criminal matters for the poor and marginalised people who cannot afford the services of a lawyer in any court or tribunal.

State Legal Services Authorities:

- It has been constituted to give effect to the policies and directions of the NALSA and to give free legal services to the people and conduct LokAdalat in the State.
- It is headed by Hon'ble the Chief Justice of the respective High Court who is the Patron-in-Chief of the State Legal Services Authority.

District Legal Services Authority:

- It has been constituted to implement Legal Services Programmes in the District. It is situated in the District Courts Complex in every District and chaired by the District Judge

of the Respective District.

Other provisions for alternate justice:

- The amendments to the Commercial Courts Act now mandates pre institutional mediation. India passed the Mediation Act, 2023 to improve mediation institutions and reduce judicial workload.
- Other issues facing the legal aid system include rising criminal cases and police station bail restrictions.
- Even though Section 320(1) of the Code of Criminal Procedure allows compounding (conversion into penalties) without court permission, our police officers are taught to register cases that do not fit under this provision, avoiding station level compounding. Even the recently passed Mediation Act, 2023 ignores this. It could have permitted mediated settlement in cases falling under Section 320(1) of CrPC.

Schedule M norms: It is good manufacturing practice norm.

Topic 28. OVERVIEW OF SUPPLEMENTARY DEMANDS FOR GRANTS (SDG)

Important for the subject: Polity

Likely Allocations:

Additional allocation for **fertilizer, food, fuel subsidy, and Rural Employment Guarantee Scheme expected in SDG**. Winter Session of Parliament (starting December 4) to witness SDG presentation.

Funding Sources:

Some funds allocated for subsidy and rural employment through the contingency fund, Important for the subject to parliamentary regularization. **Anticipation of additional allocation through SDG, but not a significant fresh cash outflow expected.**

Increase in Expenses:

- FY 24 Budget size exceeds ₹45 lakh crore, with over 47% spent in April-September. **Significant increase in capital expenditure; revenue expenditure on Fertilizer Subsidy and Urea Subsidy already high.**
- Cabinet approved over ₹22,000 crore additional expenditure, likely provisioned through SDG.

Potential Areas for Additional Allocation:

- Petroleum subsidy may exceed budgeted ₹2,257 crore **due to additional Ujjwala LPG scheme connections and increased subsidy for Ujjawala customers.**
- Demand for assistance from oil marketing companies facing a ₹200 price cut on each domestic LPG cylinder. Possible allocation for the free food grains scheme. Expected need for more funds for the **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).**

Supplementary Demands for Grants: Overview

Definition:

- **Supplementary Demands for Grants are necessary for government expenditure beyond the amount approved during the Budget session.**

Constitutional Provisions:

Article 115:

- Pertains to supplementary, additional, or excess grants.

Article 116:

- Pertains to Votes on Account, Votes of Credit, and exceptional grants. **Articles 115 and 116 cover Supplementary, Additional, or Excess Grants, and Votes on Account, Votes of Credit, and Exceptional Grants, respectively.**

Procedure:

- When approved grants fall short, **an estimate for Supplementary or Additional grants is presented to and passed by Parliament before the fiscal year-end.** If actual expenditure exceeds approved grants, the **Ministry of Finance presents a Demand for Excess Grant.**
- The Comptroller and Auditor General of India highlights excesses to Parliament. The **Public Accounts Committee reviews excesses and provides recommendations.** **Demand for Excess Grants is presented after the fiscal year-end.**

Other Types of Grants:

Additional Grant:

- Granted for additional expenditure on a new service not in the budget for the current fiscal year.

Excess Grant:

- Granted when spending on any service exceeds the allocated budget amount. **Voted by Lok Sabha after the fiscal year, following approval by the Public Accounts Committee.**

Vote of Credit:

- **Granted to meet an unexpected demand on India's resources with no specific details.** Functions like a blank cheque given by Lok Sabha to the Executive.

Exceptional Grant:

- **Granted for a special purpose unrelated to the current service of any fiscal year.**

Token Grant:

- **Granted when funds for new service expenditure can be made available by reappropriation.**
- **A token sum (Re 1) demand is submitted to Lok Sabha; if approved, funds become available.** Reappropriation involves **transferring funds between budget heads without**

additional expenditure.

Nutrient-Based Fertilizer Subsidy:

- A subsidy provided for fertilizers based on their nutrient content rather than a flat subsidy for all fertilizers. Intended to promote balanced use of fertilizers and improve soil fertility.

Implementation:

- The subsidy is calculated based on the nutrient content of the fertilizers, such as **nitrogen, phosphorus, and potassium**. Farmers receive subsidies to make fertilizers more affordable and encourage judicious use.

Urea Subsidy:

- Urea is a crucial nitrogenous fertilizer. **Urea subsidy involves financial support to ensure its availability at an affordable price for farmers.**

Implementation:

- The government provides a subsidy to fertilizer manufacturers, making urea accessible to farmers at lower prices. **Aims to support agricultural productivity and address farmers' concerns about fertilizer costs.**

Mahatma Gandhi National Rural Employment Guarantee Act (NREGA):

Objective:

- **Guaranteeing at least 100 days of wage employment in rural areas to every household whose adult members volunteer to do unskilled manual work.**

Implementation:

- Provides a **social safety net** by ensuring livelihood security. **Focuses on sustainable development through the creation of productive assets in rural areas.**

Ujjwala LPG Scheme:

Objective:

- To provide clean cooking fuel (LPG) to women from **Below Poverty Line (BPL) households.**

Implementation:

- Subsidized LPG connections are provided to eligible BPL women. Aims to **reduce indoor air pollution, health risks, and time spent on collecting traditional fuels.**

Topic 29. EC TELLS TELANGANA GOVT TO STOP DISBURSAL OF RYTHU BANDHU

Important for the subject: Polity

EC tells KCR govt to stop farm aide, cite model code. The **Election Commission of India** revoked its “**no objection**” for **disbursement under the Rythu Bandhu scheme** in Telangana, accusing BRS Minister T Harish Rao of **violating the Model Code of Conduct**. The EC noted that Rao, a candidate sponsored by the BRS Party, **publicized the release under the scheme, disrupting the level playing field** in the ongoing election process.

The permission for disbursement was **initially given with the condition that it wouldn't be publicized for political gains** and not during the silence period before the poll. The BRS Party urged the EC to reconsider, emphasizing the scheme's importance for farmers. The EC directed that **disbursement be halted until the MCC in Telangana ceases to apply, citing a clear violation**.

What is Model Code of Conduct:

- It is a **set of guidelines issued by the Election Commission of India** for the **conduct of political parties and candidates** during elections mainly with respect to **speeches, polling day, polling booths, portfolios, election manifestos, processions, and general conduct**.
- This set of norms has been evolved with the **consensus of political parties** who have consented to **abide by the principles** embodied in the said code in its letter and spirit.
- The **Model Code of Conduct comes into force** immediately on the **announcement of the election schedule by the commission** for the need of **ensuring free and fair elections**. Its main purpose is to ensure that ruling parties, at the Centre and in the States, **do not misuse their position** of advantage to gain an unfair edge.
- It is **designed to avert practices that are deemed corrupt under the model code of conduct** during **general elections to the Lok Sabha**, the code is **applicable throughout the country**. During general elections to the **Legislative Assembly of the state**, the code is **applicable in the entire State**.
- During bye-elections, the **Model Code of Conduct would be applicable in the area of the concerned Constituency only**.

Some facts about Rythu Bandhu Scheme:

- The **Farmer's Investment Support Scheme (FISS)**, commonly known as the **Rythu Bandhu scheme**, was initiated by the **Telangana government in 2018** as a welfare program for farmers.

This scheme has a dual purpose:

- To **provide timely cash grants** for the **initial investment** requirements of farmers, **To prevent farmers from falling into a cycle of debt**.
- Under this program, a **financial aid of Rs 5,000 per acre per farmer** is directly **transferred to their account each season**. This support is **distributed twice a year, specifically allocated for both the kharif and rabi harvests**.

- Farmers have the flexibility to utilize this assistance for various purposes such as acquiring seeds, fertilizers, pesticides, labor, and other investments related to field operations for the chosen crop season.
- Eligibility criteria for the scheme include residency in the state and land ownership. Additionally, farmers cultivating land in forested areas, predominantly from Scheduled Tribe communities with a valid Record of Forest Rights (ROFR) document, are also eligible to receive benefits.
- Notably, this initiative stands out as the country's inaugural direct farmer investment support scheme, wherein cash is disbursed directly to the beneficiaries.

Topic 30. CENTER AND MANIPUR INK DEAL WITH BANNED MEITEI INSURGENT BODY

Important for the subject: Polity

In a historic move towards peace and stability, the Union and Manipur governments have successfully negotiated a peace agreement with the United National Liberation Front (UNLF), the oldest armed group operating in the Manipur valley. Union Home Minister Amit Shah expressed his welcome to the UNLF for renouncing violence and embracing democratic processes.

Historical Significance of the Agreement:

- The signing of the peace agreement reflects efforts to address historical grievances and find a comprehensive resolution to conflicts in Manipur.
- Manipur has witnessed prolonged unrest, and this agreement signifies a commitment to sustainable peace in the region.

About UNLF:

- UNLF, formed in 1964, is the oldest armed group in Manipur and has been operating both within and outside Indian territory.
- It is one of eight Meitei extremist organizations declared unlawful under the Unlawful Activities (Prevention) Act, 1967, by the Union Ministry of Home Affairs (MHA).

Peace Agreement Details:

- Union Home Minister Amit Shah announced the agreement, highlighting UNLF's commitment to renouncing violence and embracing mainstream democratic processes. This move is expected to contribute to the region's overall peace and progress.

Extension of Ban on Unlawful Associations:

- Last week, the MHA extended the ban on eight Meitei extremist organizations, including UNLF, for another five years under the Unlawful Activities (Prevention) Act. These groups have been advocating for Manipur's secession from India.

Topic 31. GOVERNMENT CLEARS TERMS OF REFERENCE OF 16TH FINANCE COMMISSION

Important for the subject: Polity

Government clears Terms of Reference of 16th Finance Commission. The Union Cabinet **approved the terms of reference (ToR)** for the **Sixteenth Finance Commission**, which will recommend the formula for sharing revenues between the Centre and the States for the five-year period beginning on **April 1, 2026**.

The government has set a **deadline of October 31, 2025**, for the panel to submit its recommendations.

Terms of Reference for the Sixteenth Finance Commission:

- The Finance Commission shall **make recommendations** as to the following matters, namely:
- The **distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them under Chapter I, Part XII of the Constitution** and the allocation between the States of the respective shares of such proceeds;
- The **principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India and the sums to be paid to the States by way of grants-in-aid of their revenues under article 275 of the Constitution for the purposes other than those specified in the provisos to clause (1) of that article;**
- The **measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State.**
- The Commission **may review the present arrangements on financing Disaster Management initiatives**, with reference to the **funds constituted under the Disaster Management Act, 2005 (53 of 2005)**, and make appropriate recommendations thereon.
- The Commission shall **make its report available by 31st day of October, 2025 covering a period of five years commencing on the 1st day of April, 2026.**

What is Finance Commission:

- The Finance Commission is a **constitutional body** for the purpose of allocation of certain revenue resources between the Union and the State Governments.
- It was established **under Article 280** of the Indian Constitution by the **Indian President**. It was **created to define the financial relations** between the Centre and the states. It shall be the **duty of the Commission to make recommendations** to the President in relation to the:
 - the **distribution between the Union and the States of the net proceeds of taxes** which are to be, or maybe, divided between them and the allocation between the States of the respective shares of such proceeds;
 - the **principles which should govern the grants in aid of the revenues of the States out of the Consolidated Fund of India; any other matter referred to the Commission by the President** in the interests of sound finance.
- The Commission shall **determine their procedure and shall have such powers in the performance of their functions as Parliament may by law confer on them.**



- The recommendations made by the Finance Commission are of an advisory nature only and therefore, not binding upon the government. The first Finance Commission was set up in 1951
- The Fifteenth Finance Commission was constituted on 27 November 2017 under N.K.Singh.

What is the Composition of Finance Commission:

- The President shall constitute a Finance Commission which shall consist of a Chairman and four other members to be appointed by the President.

Qualifications for members of the Finance commission as per Finance commission act, 1951:

- Chairperson – Individual with experience of public affairs
- Member 1 – High court judge or qualified to be one.
- Member 2 – special knowledge of finance and accounts of government.
- Member 3 – special knowledge of economics.
- Member 4 – wide experience in financial matters and administration.

Topic 32. THE ECI MUST ACT INDEPENDENTLY AS THE ARBITER OF ELECTION CODE BREACHES

Important for the subject: Polity

Election Commission

Permanent and an independent body established by the Constitution to supervise elections.

Article 324 provides that the power of superintendence, direction and control of elections to parliament, state legislatures, the office of President of India and the office of Vice-President of India

In Mohinder Singh Gill vs Chief Election Commissioner, Supreme Court held that Article 324 contains plenary powers to ensure free and fair elections, and ECI can take all necessary steps to achieve this constitutional objective.

Provisions ensuring Independence of Commission

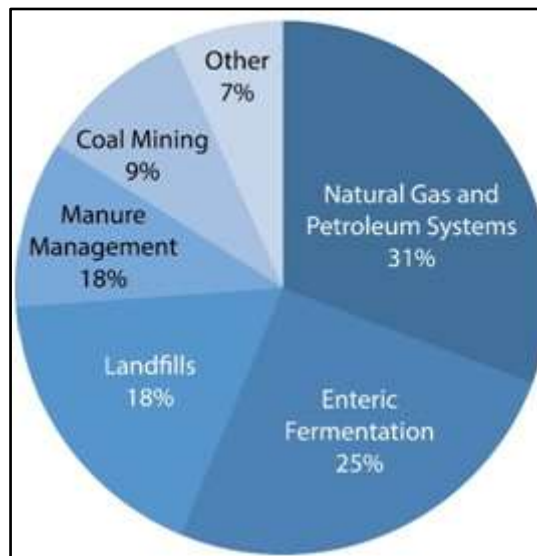
- **Security of tenure:** The chief election commissioner is provided with the security of tenure. He cannot be removed from his office except in same manner and on the same grounds as a judge of the Supreme Court.
 - **Service conditions:** The service conditions of the chief election commissioner cannot be varied to his disadvantage after his appointment.
 - **Removal of other election commissioners:** Any other election commissioner or a regional commissioner cannot be removed from office except on the recommendation of the chief election commissioner
- Powers of EC
- **Determination of territorial areas:** To determine territorial areas of electoral

constituencies throughout the country on the basis of the Delimitation Commission. To prepare and revise electoral rolls.

- **Recognition:** To grant recognition to political parties and allot symbols
- **Advise to President:** To advise the president on matters relating to disqualifications of the members of Parliament
- **President's rule:** To advise President whether elections can be held in a state under president's rule in order to extend the period of emergency after one year

Topic 33. COP28 TURNS ATTENTION TO POTENT METHANE EMISSIONS

Important for the subject: Environment



The powerful heat-trapping emissions, namely **methane**, are likely to be discussed at the crucial **CoP28** meeting in **Dubai**.

- It is the **second largest contributor** to **climate change**, accounting for around **16%** of the warming effect.
- **Methane** remains in the atmosphere for **only about 10 years**, but Its warming effect is **28 times greater than CO₂** over a **100-year timescale**. **Potent** but relatively **short-lived methane** is a key target for countries wanting to slash emissions quickly and slow climate change.
- Large amounts of methane are simply leaking into the atmosphere from fossil fuel infrastructure.
- **Methane concentrations** currently is over **two-and-a-half times greater** than pre-industrial levels. **Atmospheric methane (CH₄)** occurs abundantly in nature as the **primary component of natural gas**.

Sources:

- Around **60%** of methane emissions are linked to human activity and the rest are from **wastelands**.
- **Agriculture** is the **biggest emitter**, responsible for roughly a **quarter of emissions**. Most

of that is from **livestock** (cows and sheep release methane during digestion and in their manure) and **rice cultivation**, where flooded fields create ideal conditions for methane-emitting bacteria.

- The **energy sector – coal, oil, and gas** – is the **second largest source** of **human-caused methane emissions**. Methane leaks from **energy infrastructure**, such as gas pipelines, and from deliberate releases during maintenance.
- **Discarded household waste** also releases **large quantities of methane** when it decomposes, if left to rot in landfills.

Curbing methane emissions:

- Rapid cuts in methane emissions linked to the fossil fuel sector could prevent up to **0.1 degrees Celsius** of warming by mid-century.
- Reduction can be achieved by **repairing leaky infrastructure** and **eliminating routine flaring and venting** during maintenance.
- In agriculture, it's possible to **modify animal diets** by adding a compound to improve their health. For **rice fields**, **changes to water management** can be made.

Top methane emitting countries:

- The world's **five largest** methane emitters (from all sources) are **China, India, the United States, Russia** and **Brazil**.
- Together, they are responsible for close to **half of all methane emissions** globally. Of these, **only the United States** and **Brazil** are part of the **Global Methane Pledge**.
- Looking only at **energy-related emissions**, the **five largest emitting countries** are **China, Russia, the United States, Iran** and **India**.

Topic 34. ANTARCTIC OZONE HOLE NOW LARGER, THINNER & MAY TAKE LONGER TO RECOVER. MESOSPHERE HAS A ROLE TO PLAY: STUDY

Important for the subject: Environment

The **ozone hole** over the **Antarctic** has not only grown larger but also thinner throughout most of the spring, according to a new study.

Ozone Hole:

The **ozone hole** is a **region of exceptionally depleted ozone** in the **stratosphere** over the **Antarctic**. It happens at the beginning of the Southern Hemisphere spring from August through October.

Study findings:

- Despite making a **recovery in area and depth** since the **2000s**, the **Antarctic ozone hole** has been **massive** in the last four years. There is **much less ozone in the centre of the ozone hole** compared to 19 years ago.
- This reduction is despite the **1987 Montreal Protocol on Substances that Deplete the Ozone Layer**, which regulates the production and consumption of human-generated chemicals known to deplete the ozone.
- The **Montreal Protocol on Ozone Depleting Substances quadrennial assessment**

report of 2022 confirmed the phase-out of nearly 99 per cent of banned ozone-depleting substances.

- The ozone layer is on track to recover within four decades, according to the United Nations Environment Programme (UNEP). But, from 2020-22, the ozone hole has been remarkably large. The extent and duration of the 2022 hole were remarkably similar to the large holes of 2020 and 2021.

Factors responsible:

- The ozone layer over the Antarctic is intrinsically linked to the climate and dynamics of the Southern Hemisphere.
- Other factors like springtime temperature and wind patterns, aerosols from wildfires and volcanic eruptions, as well as changes in the solar cycle ozone hole development could also be responsible for the thinning of the ozone layer.

Role of Polar Vortex:

- The Antarctic ozone hole sits within the polar vortex, which is a circular pattern of wind in the stratosphere that forms during winter and is maintained until late spring.
- Within this vortex, the Antarctic air from the mesosphere (the atmospheric layer above the stratosphere) falls into the stratosphere.
- This intrusion of air brings natural chemicals (nitrogen dioxide, for example) which impact ozone chemistry in October.

Topic 35. NEW STUDY REVEALS STURGEON CAVIAR SOURCED FROM ILLEGAL TRADE, LABELLED TO MISLEAD

Important for the subject: Environment

A new study has revealed that sturgeon products being sold in the international market were from illegal trade and flouting wildlife protection norms.

Sturgeon:

- Sturgeon is the common name for the 28 species of fish belonging to the family Acipenseridae.
- Sturgeons are long-lived, late-maturing fishes with distinctive characteristics, such as a heterocercal caudal fin similar to those of sharks, and an elongated, spindle-like body that is smooth-skinned, scaleless, and armoured with five lateral rows of bony plates called scutes.
- Sturgeon is native to lower Danube countries such as Bulgaria, Romania, Serbia and Ukraine that produce caviar. Caviar is a food consisting of salt-cured roe of the family Acipenseridae.
- Traditionally, the term caviar refers only to roe from wild sturgeon in the Caspian Sea and Black Sea (beluga, ossetra and sevruga caviars).
- The Danube is the last river body with functional populations of beluga (Huso huso), Russian (Acipenser gueldenstaedtii), stellate (Acipenser stellatus)

and sterlet (*Acipenser ruthenus*) sturgeons.

- The **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** in **1998** listed the species as **endangered** and put restrictions on the **fishing of sturgeons** from the **Danube and Black Sea**. Since then, the **legal, internationally traceable caviar and meat** can only be sourced from **farmed sturgeons**.

Topic 36. GUJARAT GETS A STATE FISH: WHY GHOL, THE ‘FISHERMAN’S LOTTERY’, WAS CHOSEN

Important for the subject: Environment

The **black-spotted croaker**, or the **ghol fish** — considered a fisherman’s lottery — was declared the **state fish of Gujarat**.

It has been chosen as the **state fish** because of its **economic value** and its **uniqueness**. **Some other fish species found on the Gujarat coast:** Ribbon fish, pomfret, and Bombay Duck.

About Ghol fish or Black-spotted croaker:

- The **black-spotted croaker** (*Protonibeadiacanthus*), also known in **Australia** as the **black jewfish**, is a species of **marine ray-finned fish** belonging to the family **Sciaenidae**, the **drums and croakers**.
- It is the **only species** in the **monospecific genus Protonibea**. The fish is usually found in the **Indo-Pacific region** that stretches from the **Persian Gulf** to the **Pacific Ocean**.
- It is an expensive fish and is used for medicinal purposes. It has a huge market in **China** and **other countries**.
- While the **meat** of the fish is exported as frozen fillet or whole fish to **European and Middle-Eastern countries**, its **air bladder** — which is cut open from the stomach and dried — is mainly **exported to China, Hong Kong** and **other Asian countries** where it is in high demand for its **medicinal values**.
- **IUCN Red List:** Near Threatened

Topic 37. COP 28: INDIA’S EQUITY DEMAND

Important for the subject: Environment

There is an almost linear relationship between global warming and cumulative carbon dioxide (CO₂) emissions.

Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC):

The UNFCCC recognises the CBDR-RC principle. This means different States have different responsibilities and respective capabilities in tackling climate change.

This principle has been reaffirmed in the **Paris Agreement**, whose main aim is to hold “the increase in the global average temperature to well **below 2 degrees Celsius** above pre-

industrial levels and pursue efforts “to **limit the temperature increase to 1.5 degrees Celsius** above pre-industrial levels”.

According to the **Intergovernmental Panel on Climate Change’s Sixth Assessment Report (IPCC AR6)**, every **1,000 billion tonnes of CO₂** in emissions causes an estimated **0.45 degrees Celsius** rise in the global surface temperature.

Global Carbon Budget:

- It refers to the **maximum cumulative global anthropogenic CO₂ emissions** – from the **pre-industrial era** to when such emissions reach **net-zero**, resulting in limiting global warming to a given level with a given probability. The remaining **carbon budget** indicates how much **CO₂** could still be emitted, from a specified time after the pre-industrial period, while keeping temperature rise to the specified limit.
- The **IPCC AR6** has shown that the world warmed by a staggering **1.07 degrees Celsius until 2019** from pre-industrial levels, so almost **four-fifths of the global carbon budget stands depleted**. Only a fifth remains to meet the target set in the Paris Agreement.

Who’s responsible for cumulative global emissions?

- The **developed countries** have appropriated a **disproportionately larger share** of the **global carbon budget** to date.
- The contribution of **South Asia** (including **India**) to **historical cumulative emissions** is **only around 4%** despite having almost **24% of the entire world population**.
- The **per capita CO₂-FFI (fossil fuel and industry) emissions** of **South Asia** was just **1.7 tonnes CO₂-equivalent per capita**, far below **North America** (15.4 tonnes CO₂-eq. per capita) and also significantly **lower** than the **world average** (6.6 tonnes CO₂-eq. per capita).

How does the carbon budget matter for India?

- The share of the global carbon budget is limited for every nation. **India** must recognise a **‘fair share of the carbon budget’** as a **strategic national resource** whose reserves are depleting rapidly due to over-exploitation by developed countries.
- According to the **NITI Aayog-U.N. Development Programme’s Multidimensional Poverty Index Report 2023** review, **India** has been able to **lift more than 135 million** poor out of poverty in less than five years (2015-2021).
- In **2022**, **oil, coal and gas** accounted for **30%, 27% and 23%** of the **world’s total energy**, while **solar and wind energy** together contributed **only 2.4%**.
- The world is still largely powered by **non-renewable energy**. Based on **India’s historical emissions** (1850-2019), it has a **carbon credit** equivalent of **338 GtCO₂-eq.**, equal to around **\$17 trillion** at **\$50/tCO₂-eq.**
- Developed countries have failed to provide **US \$100 billion dollars a year**, as promised at the **COP 15** talks in **Copenhagen in 2009**.

India’s Effort Towards Renewable Energy Production:

- India has set up the **International Solar Alliance**, the **Coalition for Disaster Resilient Infrastructure**, and the **Global Biofuel Alliance**.
- Through the ‘**Lifestyle for Environment**’ (LiFE) mission, the **Indian government** also **aims** to spread awareness of good lifestyle practices and establish that sustainable lifestyles are the best way forward.

Topic 38. THREATENED SPECIES UP BY 25% IN QUEENSLAND’S WET TROPICS DUE TO CLIMATE CHANGE

Important for the subject: Environment

Climate change has pushed **25 per cent** more organisms in **Australia’s biodiversity-rich northern rainforests** into the list of **threatened species** since **2020**, a new report showed. The rainforests are **world heritage sites**.

Prepared and submitted by the management and conservation authority for the **UNESCO-listed Queensland wet tropics** to the state government.

- It highlighted the **growing threats and declining health of species** such as **ringtail possum**. It was given international protection in **1988**, but **climate change, habitat loss and degradation** of supporting ecosystem, **invasive species** and **Disease** pose threats.
- **Other threatened species:** Endemic rainforest frogs, high-altitude birds, ringtail possums and plants of the Myrtaceae family, Euastacus crayfish, Spiny crayfish, Robert’s crayfish, Apollo jewel (Hypochrysops apollo apollo) butterfly, Flying fox (Pteropus conspicillatus), Tooth-billed bowerbird (Scenopoeetes dentirostris).
- The **Wet Tropics bioregion** contains **26 per cent of Australia’s vascular plant species**. Some **314** of these are classified as **Vulnerable, Endangered or Critically Endangered**, according to the **Nature Conservation Act (NCA)** or **Environment Protection and Biodiversity Conservation (EPBC) Act** with a further **98 species** listed as **Near Threatened**.
- **Bushfires in 2019** affected **53 per cent** of the **Gondwana World Heritage Rainforests** and **80 per cent** of the **Greater Blue Mountains World Heritage Area**.

Topic 39. TIME FOR VERSION 2.0: IUCN RED LIST OUTDATED AND UNRELIABLE, CLAIM SCIENTISTS IN NEW PAPER

Important for the subject: Environment

Scientists and conservationists across the world have expressed concerns that the **International Union for Conservation of Nature (IUCN) Red List of Threatened Species** is outdated and unreliable.

About the IUCN Red List:

- Formed in **1964**, the **Red List** is an **extinction risk assessment tool**. It is the **world’s most comprehensive information source** on the **global extinction risk status** of

animal, fungus and plant species.

- Under the list, species are classified into **nine categories of extinction risks**: Not evaluated, data deficient, least concern, near threatened, vulnerable, endangered, critically endangered, extinct in the wild and extinct.
- It is a **powerful tool** to inform and catalyse action for **biodiversity conservation** and **policy change**, critical to protecting the natural resources we need to survive.
- It provides **information** about **range, population size, habitat and ecology, use and/or trade, threats, and conservation actions** that will help inform necessary conservation decisions.
- Currently, there are more than **150,300 species** on The **IUCN Red List**, with more than **42,100 species** threatened with **extinction**, including **41% of amphibians, 37% of sharks and rays, 36% of reef-building corals, 34% of conifers, 27% of mammals** and **13% of birds**.

Flaws in the Red List:

- Researchers have highlighted the flaws in the **IUCN Species Survival Commission (SSC)** system of **assigning species status**.
- There are **only 150,000 species** assessed by IUCN which contributes **less than 10 per cent** of the **two million** described species in the world. The percentage gets skewed dramatically after considering the **recent global biodiversity estimates**, which suggest **animal species exceeding 50 million**.
- While the **Red List** has about **42,100 species threatened**, the **IPBES**, on the other hand, states that **more than a million species** are facing **potential extinction threats**.
- Furthermore, more **undescribed species** may face **extinction threats**, and many classified species may already be **threatened**, but **IUCN-recommended reassessments every 10 years** have **not been completed**.
- The **categories and criteria** are over **30 years old** and **have not evolved** gravely. The systems were **implemented without technological tools** such as **geographic information systems** and **remote sensing**, and **simple assumptions** were used without inferences, among others.
- **Several stork species** have been assigned **least Concern** even though these **species had exceedingly little information** available about their needs and ecological requirements.
- **A few species whose conservation status is controversial**: Woolly-necked storks (vulnerable) and greater adjutant storks (least concern).

Topic 40. A MANGROVE SHIELD FOR SUNDARBANS

Important for the subject: Environment

Sundarbans:

Sundarbans are a complex network of islands set in the **delta on the Bay of Bengal** and spread across **West Bengal** and **Bangladesh**.

It is a **mangrove area** in the **delta** formed by the confluence of the **Ganges, Brahmaputra and Meghna Rivers** in the **Bay of Bengal**. **Sundarban Reserve Forest (SRF)** of **Bangladesh** is the **largest mangrove forest** in the world.

- It spans the area from the **Baleswar River** in **Bangladesh's division of Khulna** to the **Hooghly River** in **India's state of West Bengal**. It comprises closed and open mangrove forests, land used for agricultural purpose, mudflats and barren land, and is intersected by multiple tidal streams and channels. Sundarbans is home to the world's largest area of mangrove forests.
- **Chargheri** is the last village on the **south-eastern side** of the **Indian Sundarbans**. **Garal river** passes through it.
- The **4.5 million inhabitants** of these islands are constantly affected by **storms, floods, cyclones, land subsidence and coastal erosion**. **Saltwater intrusion** into **freshwater sources** and **agricultural land** has rendered the soil unfit for crops, affected mangrove integrity, resulted in higher temperatures, altered salinity levels and led to habitat loss.

Significance of mangroves in Sundarbans:

- **Mangroves** help arrest **soil erosion** from rising tides, besides easing wind and water force during a cyclone. They also remove **10 times more carbon** from the air because they transfer it to the soil.
- They are estimated to save over **\$65 billion** in property damage globally. A village embankment with a mangrove cover is said to be safer from damage than one without. Mangrove forests are nurseries for shrimps and several kinds of fishes.

Blue Carbon:

- Blue carbon is the carbon captured by the world's ocean and coastal ecosystems. Blue carbon stocks can be increased by planting mangroves in mudflat areas.
- Among all the natural systems, after seagrass, mangroves are the most efficient carbon-trapping systems.
- Mangroves capture the carbon and transfer it to the soil, where it stays unaffected even if the tree is destroyed.

Has COP taken note of mangrove conservation?

- **Anthropological activities** are harming mangroves the most. In **2022**, the **Mangrove Alliance for Climate (MAC)** was launched at **COP27** to promote them as a nature-based solution to climate change.
- Besides encouraging plantation efforts, member nations are expected to enhance the protection of mangroves through scientific, social, and economic studies, and encourage philanthropy.

Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI) Programme:

- It will be taken up for **mangrove plantation** along the **coastline** and on **salt pan**

lands, wherever **feasible**, through convergence between **MGNREGS, CAMPA Fund and other sources**.

- It envisages comprehensively exploring the possible area for the development of Mangroves covering approximately **540 Sq. Kms.** spreading across **11 States and 2 Union Territories** during **five years** commencing **FY 2023-24 onwards**.

Mangrove Alliance for Climate (MAC):

- The **UAE and Indonesia** launched the “**Mangrove Alliance for Climate**” on the sidelines of the **UN climate summit COP27**, being held in **Sharm El Sheikh in Egypt**.
- As part of this alliance, an **international mangrove research centre** will be established in **Indonesia** which will conduct studies on **mangrove ecosystem services** such as carbon sequestration and ecotourism.

Aim:

- To strengthen conservation and restoration of mangrove ecosystems worldwide. The alliance will raise awareness about the role of mangroves as a “nature-based solution to climate change”.

Partners:

- Spearheaded by the **United Arab Emirates (UAE)** in partnership with **Indonesia India, Australia, Japan, Spain and Sri Lanka** have joined it as partners.

Topic 41. INDIA ANNOUNCES PHASED INTRODUCTION OF BIOGAS BLENDING

Important for the subject :Environment

India will start blending compressed biogas with natural gas to boost domestic demand and cut reliance on natural gas imports, the government said in a statement on Saturday.

The mandatory phased introduction will **start at 1% for use in automobiles and households from April 2025**.

The share of mandatory blending will then be increased to **about 5% by 2028**. India, which is one of the world’s largest importers of oil and gas, **ships in about half of its overall gas consumption** and wants to cut its import bill. The steps are aimed at helping India achieve **net zero emissions targets by 2070**.

What is Biogas?

- It mainly **comprises hydro-carbon which is combustible and can produce heat and energy when burnt**.
- Biogas is produced through a biochemical process in which certain types of bacteria convert the biological wastes into useful bio-gas.
- Since the useful gas originates from a biological process, it has been termed as bio-gas. **Methane gas is the main constituent of biogas**.

What is the Significance of Biogas Adoption?

Pollution Free Cities:

- The biogas solution can help **make our cities clean and pollution-free**. Leaching of toxic substances from **landfills contaminated the groundwater**.
- Decomposing organic matter releases huge amounts of methane into the environment, causing air pollution and global warming as methane is a very potent GHG.

Handling Organic Waste:

- Installing large-scale municipal **biogas systems can help cities handle organic waste efficiently** to overcome the environmental and socio-economic challenges posed by overburdened landfills.
- Municipal waste can be fed into these plants to create clean and green fuel, along with biofertilizers, while keeping the cities clean and hygienic.

Helpful for Women:

- Switching to biogas could be good for women because they won't be **exposed to harmful smoke and pollution**.
- Over four million people die every year all over the world due to high levels of indoor air pollution caused by the burning of fossil fuels and biomass.
- The female members of a household are affected by indoor pollution as they spend more time inside the house.

Will Transform Energy Dependence:

- Biogas can play a critical role in transforming the energy dependence of rural and agricultural communities, which majorly depends on burning wood, dung, charcoal, coal and other fossil fuels for their energy needs.
- Only 26.53% of the total power generated in India is from renewable sources. The high dependence on non-renewable sources is the leading cause of the long-standing energy problems in the country.

Addresses Handling of Livestock Manure:

- Installing biogas plants at the micro- and macro-level can address the critical issues of handling livestock manure and agricultural wastes, deteriorating soil quality, water pollution and deforestation.

Reduces Carbon Dioxide Emissions:

- A fully functional biogas digester, for every tonne of feedstock processed, can reduce approximately 2.83 tonnes of carbon dioxide emissions in a year.
- Using biogas digesters to **convert organic waste into clean energy** can significantly contribute to countering challenges like pollution, climate change, livelihood inequalities and health in individual households as well as entire communities.

Will Improve Soil Quality:

- The **digestate**, a **by-product** generated in the **biogas** plants, can be used as a **biofertilizer** as it is **rich in organic content** and **revitalizes the soil**.

What are the Related Initiatives taken by the Government?

SATAT:

- SATAT stands for **Sustainable Alternative Towards Affordable Transportation**. It is an initiative with the **objective of setting up Compressed Biogas production plants, and make it available for market use for automotives by inviting expression of interest through potential investors**.

Topic 42. ANTARCTICA'S OZONE HOLE EXPANDS MID SPRING SINCE 2001

Important for the subject: Environment

The core (middle stratospheric layer) of the Antarctic ozone in mid spring (October) has **experienced a 26% reduction since 2004**, contrary to previously reported recovery trends in total ozone, according to a study published recently in the journal Nature Communications.

What is the Ozone Layer?

- The ozone layer, found in the stratosphere (good ozone), acts as a protective gas shield that absorbs harmful ultraviolet (UV) radiation, safeguarding us from the adverse effects of excessive UV exposure.
- Skin cancer rates are significantly influenced by UV radiation, underscoring the importance of preserving the ozone layer.

What is an Ozone Hole?

- An ozone hole is a region of the **stratosphere over Antarctica** where the ozone layer is exceptionally depleted.
- The ozone hole is not technically a “hole” where no ozone is present. Scientists use the word hole as a metaphor for the area in which ozone concentrations drop below the historical threshold of **220 Dobson Units**.
- The size of the ozone hole over Antarctica varies from year to year, typically opening in August and closing by November or December. This annual fluctuation is driven by unique climatic conditions over the region.

Mechanism Behind Ozone Hole:

- The opening of the ozone hole is a result of the Earth's rotation, which generates specific winds over the enclosed landmass of Antarctica. The polar vortex, a band of strong winds around the poles, plays a vital role in ozone hole dynamics.

- During winter, polar vortex forms due to temperature differences and acts as a protective barrier, keeping polar air separate from warmer, lower-latitude air. This isolation creates a cold environment for polar stratospheric clouds (PSCs), which trigger ozone-depleting reactions.
- The chemical reactions that occur on the surface of PSCs are responsible for the activation of chlorine and bromine compounds. These compounds, particularly chlorine, are catalysts in ozone-depleting reactions. When exposed to sunlight, they trigger the breakdown of ozone molecules.
- The size and strength of the polar vortex directly impact ozone depletion. When it weakens in spring, mixing with warmer air from lower latitudes gradually closes the ozone hole, replenishing the ozone layer.

Cause of the Ozone Hole in 2023:

- Scientists suspect that the substantial ozone hole observed in 2023 may be attributed to volcanic eruptions in Tonga during December 2022 and January 2023.
- Unlike conventional volcanic eruptions, which generally release gasses confined to the lower atmosphere, this eruption propelled a significant amount of water vapor into the stratosphere.
- This water vapor, in addition to other ozone-depleting elements like bromine and iodine, impacted the ozone layer through chemical reactions, altering its heating rate.

Topic 43. RAT-HOLE MINING

Important for the subject: Environment

Uttarakhand tunnel rescue ops

What is Rat hole mining:

It is a **method of extracting coal** from **narrow, horizontal seams**, prevalent in Meghalaya. The term “**rat hole**” refers to the **narrow pits dug** into the ground, typically just large enough for one person to descend and extract coal.

Once the pits are dug, miners descend using ropes or bamboo ladders to reach the coal seams. The **coal is then manually extracted** using **primitive tools** such as pickaxes, shovels, and baskets.

What are different types of rat mining:

- Rat-hole mining is **broadly of two types**. In the **side-cutting procedure**, **narrow tunnels** are dug on the **hill slopes and workers go** inside until they **find the coal seam**.
- The **coal seam in hills of Meghalaya** is very thin, less than 2 m in most cases. The **other type of rat-hole mining** is called **box-cutting**.
- In this type, a **rectangular opening** is made, **varying from 10 to 100 sqm**, and **through that a vertical pit is dug, 100 to 400 feet deep**. Once the coal seam is found, **rat-hole-sized tunnels are dug horizontally** through which workers can extract the coal.

What are the Environmental and safety concerns involved:

- The **mines often operate** without **regulation**, **lacking essential safety** measures like **proper ventilation, structural support, and safety gear** for the workers.
- Moreover, the **mining process contributes to land degradation, deforestation, and water pollution.**
- This mining method has **garnered severe criticism** for its **unsafe working conditions, environmental harm, and frequent accidents** resulting in injuries and fatalities.
- Despite efforts by authorities **to regulate or prohibit such practices, they persist due to economic factors and the lack of viable alternative** livelihoods for the local population.

When and why was it banned:

- In **2014**, the **National Green Tribunal (NGT)** imposed a **ban on rat-hole mining**, a **prevalent coal mining practice in Meghalaya.**
- The **NGT cited numerous instances of fatalities**, including workers and individuals, **due to flooding in mining areas** during the rainy season. The **ban was subsequently upheld in 2015.**
- In response, the **Meghalaya state government appealed the NGT’s order, seeking a review, and took the matter to the Supreme Court.**

Topic 44. IN MEXICO, ECOLOGISTS GOING ALL OUT TO SAVE THE ICONIC ‘WATER MONSTER’

Important for the subject: Environment

Ecologists from Mexico’s **National Autonomous University** relaunched a fundraising campaign to bolster conservation efforts for **axolotls.**

About Axolotls:

- It is an **iconic, endangered fish-like type of salamander.** It is a **paedomorphic salamander** closely related to the **tiger salamander.**
- It reaches adulthood without undergoing metamorphosis. Instead of taking to the land, adults remain aquatic and gilled.
- Almost all 18 species of axolotls in Mexico are **critically endangered** and considered to be **near extinction.** Mexican axolotl is found in **Lake Xochimilco**, but other species can be found across the country, from **valley of Mexico** to the **Sonora desert.**
- They have unique, admittedly **slimy**, appearance and uncanny **ability to grow limbs.** Threats- **Encroaching water pollution, deadly amphibian fungus (Chytrid fungus, it is a skin-eating disease) and non-native rainbow trout.**

About the Campaign:

- The campaign is called- **Adoptaxolotl.** It asks people for as little as **600 pesos (about \$35)** to virtually adopt one of the tiny monsters. The virtual adoption comes with live updates on your axolotl’s health.
- In their main habitat, the population density of **Mexican axolotls** has decreased by **99.5%** in under two decades.

Topic 45. COP-28 AIMS AT BOTTLING THE FOSSIL FUEL GENIE FOR GOOD

Important for the subject: Environment

The **COP-28** to the UNFCCC climate summit is scheduled to begin in **Dubai** on November 30.

Global Stocktake:

It is a **periodic review** by countries to contain **greenhouse gas (GHG) emissions** and transition their fossil-fuel-dependent energy systems to renewable energy sources.

UN Food System Coordination Hub:

- The **vision** is to stimulate and support action for **SDGs-based food systems transformations** towards the acceleration of the **2030 Agenda**.
- The **mission** is to serve countries through systemic, country-driven, customized support in translating their commitments into effective actions to reach sustainable food systems by 2030, leveraging the wider UN system's capacities.

Loss and Damage Fund (L&D):

- The L&D fund was one of the **key outcomes** at the **2022** edition of the **COP** in **Sharm el-Sheikh, Egypt**.
- It committed **rich developed countries**, held historically responsible for the climate crisis, to **compensate countries most vulnerable and already bearing the brunt of climate change**. There is an agreement to host the **L&D fund** at the **World Bank** but no other details on the corpus and contributors are known.

Climate Finance:

- In **2009**, at the **Conference of the Parties (COP)** of the UNFCCC in **Copenhagen (COP15)**, **developed country Parties committed**, in the context of meaningful mitigation actions and transparency on implementation, to a goal of **mobilising jointly US\$100 billion a year by 2020** to address the needs of **developing countries**.
- The **climate finance goal** was then **formally recognized** by the UNFCCC Conference of the Parties at **COP16** in **Cancun**. At **COP21** in **Paris**, Parties extended the **US\$100 billion goal** through **2025**.

Phase-out of fossil fuels

- The **European Union (EU)** is expected to push for a phase-out that, if accepted, will be a Many countries favour continuing the use of oil, gas, and coal together with technologies to **'capture'** their emissions, instead of avoiding the use of such fuels altogether.

Increasing the renewable energy capacity:

- To help countries shift from the unabated use of fossil fuels. Countries are supposed to **triple the RE capacity** from the existing **500 gigawatts (GW)** installed globally to **1,500 GW** by **2030**.

Topic 46. UNDERSTANDING RAT-HOLE MINING

Important for the subject: Environment

Two scientific methods of mining — **vertical drilling** and **auger** or **horizontal drilling** — were employed to rescue **41 workers** on November 28 after **17 days** of being trapped in the partially collapsed **Silkyara tunnel** in **Uttarakhand**. The last leg of the rescue involved **rat-hole mining** once used extensively in **Meghalaya**.

Coal in Meghalaya:

- The State has an estimated reserve of **576.48 million tonnes of low-ash, high-sulphur coal** belonging to the **Eocene age (33-56 million years ago)**. Unlike in **Chhattisgarh** and **Jharkhand**, **coal seams** in **Meghalaya** are very **thin**. This makes **rat-hole mining** more **economically viable** than **opencast mining**.

Auger mining:

- **Auger mining** is a **relatively low-cost method of coal mining** and is practical in areas where the **overburden** (material covering the coal seam) is **too thick** to be removed economically or where the coal seam is too thin for underground mining.
- Auger mining uses **large-diameter drills** mounted on mobile equipment to bore into a coal seam. **Holes are horizontally drilled** at regular intervals to depths of as much as **1,000 feet**. As the cutting head of the auger bites into the coalface, the cut coal is carried out by the screw portion of the bit. Once the hole is mined to its required depth, the auger machine is moved a few feet and another hole is drilled.

Rat hole mining:

- Rat-hole mining involves **digging tunnels 3-4 feet deep**, barely allowing workers to crawl in and out. They have to squat while extracting coal with pickaxes.

Two types:

- The **side-cutting type of mining** is usually done on **hill slopes** by following a **coal seam** — dark brown or black-banded coal deposited within layers of rock— visible from the outside.
- The second type called **box-cutting** entails **digging a circular or squarish pit at least 5 sq. metre in width up to a depth of 400 feet**.
- Miners who drop down in makeshift cranes or using **rope-and-bamboo ladders dig horizontally** after finding the **coal seam**. The **tunnels are dug in every direction** from the edge of the pit, resembling the tentacles of an octopus.
- It was banned by the **National Green Tribunal (NGT)** in **April 2014**.

The negative impact of Rat-hole mining:

- Asphyxiation because of poor ventilation, collapse of mines due to lack of structural support, flooding, land degradation, deforestation, and water with high concentrations of sulphates, iron, and toxic heavy metals, low dissolved oxygen, and high biochemical

oxygen demand.

- At least **two rivers, Lukha and Myntdu**, became **too acidic to sustain aquatic life**.

Why is such mining banned?

- The **Coal Mines Nationalisation Act of 1973** is not applicable in **Meghalaya**, due to being a **sixth schedule** state. The **landowners are thus also the owners of the minerals beneath**.
- There is a widespread issue of human trafficking and child labour in these mines and at least **17 miners were drowned** in an **illegal mine** in the **East Jaintia Hills** district's **Ksan** in December 2018 after water gushed in from a river.

Topic 47. MAJOR OIL AND GAS FIRMS HAVE PLEDGED TO GO CARBON NEUTRAL BY 2050: COP28 CHIEF

Important for the subject: Environment

Several oil and gas companies have committed to becoming **net zero** — or **carbon neutral** — by **2050**, the 28th Conference of Parties (COP28) President-designate Sultan Al Jaber said.

Net Zero Target:

- It is a state in which a **country's emissions are compensated by the absorption and removal of greenhouse gases** from the atmosphere.
- Further, **absorption of the emissions** can be **increased** by creating more **carbon sinks** such as forests. While the **removal of gases** from the atmosphere requires **futuristic technologies** such as **carbon capture and storage**.
- A significant number of oil and gas companies are aligned towards **net zero targets by 2050** and **net zero methane targets by 2030**. The oil and gas operations account for around **15% of total energy-related emissions** globally or about **5.1 billion tonnes of greenhouse gas emissions**.
- **85%** of the world's economies were **"behind"** the **COP28 target of tripling renewable energy**.

Steps taken by India to achieve Net Zero Target by 2070:

- **India's renewable energy targets** have steadily become more ambitious, from **175 GW by 2022** declared at **Paris**, to **450 GW by 2030** at the **UN Climate Summit**, and now **500 GW by 2030**, announced at **COP26**.
- **India** has also announced the target of **50% installed power generation capacity from non-fossil energy sources by 2030**, raising the existing target of **40%**, which has already been almost achieved.

India's Nationally Determined Contribution (NDCs):

- To **reduce the Emissions Intensity** of its **GDP by 45% by 2030**, from the **2005 level**. To achieve about **50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030**,
- To create an **additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent** through **additional forest and tree cover by 2030**.

- **India Cooling Action Plan (ICAP)** will help address cooling requirements and reduce the cooling demand in the country. **Green Hydrogen Mission** to shift from fossil fuel to clean energy sources.
- **Zero Emission Vehicle- Emerging Market Initiative (ZEV- EMI)**, launched jointly by **WBCSD** and the **U.S., U.K.** and governments under the **ZEVTC**, **aims** to elevate cooperation between governments and businesses in EMDEs to accelerate the transition to ZEVs

Topic 48. BANKING SYSTEM IN INDIA IS EXPERIENCING A NOTABLE LIQUIDITY DEFICIT

Important for the subject: Economy

The banking system in India is experiencing a notable liquidity deficit, reaching a five-year high on November 22.

Several factors contribute to this liquidity squeeze:

GST Outflows:

- **Heavy outflows are attributed to goods and services tax (GST) payments, creating a significant impact on liquidity.**

Bond Auctions:

- **Weekly bond auctions have also contributed to the liquidity deficit.**

RBI's Incremental Cash Reserve Ratio (I-CRR):

- **The central bank introduced Incremental Cash Reserve Ratio (I-CRR), which withdrew around Rs 1 lakh crore from the banking system.**

Frictional Liquidity Movement:

- **Frictional liquidity has been oscillating between a small surplus and a deficit of as much as Rs 2 lakh crore during the month.**

Historical Context:

- **Bloomberg data indicates that the current liquidity deficit is the highest since December 2018.**

Kotak Mahindra Bank Report:

- **A report from Kotak Mahindra Bank highlighted expectations of Rs 1.5 lakh crore outflows due to GST and Rs 65,000 crore due to auctions.**

Previous Liquidity Dynamics:

- **Before the introduction of I-CRR, liquidity had remained in surplus. Efforts were made to reduce the surplus, but temporary measures were not effective, leading to the implementation of I-CRR.**

I-CRR Objective:

- I-CRR was introduced to **address excess surplus liquidity caused by the withdrawal of Rs 2,000-denomination currency notes from circulation.**

Timeline of I-CRR Implementation:

- The central bank phased out I-CRR, **releasing 25 percent of the funds on September 9, another 25 percent on September 23, and the remaining 50 percent on October 7.**

RBI's Monetary Measures:

- The RBI, in conjunction with rate hikes, **used tools to tighten liquidity, transitioning from an ultra-surplus situation post-Covid to a deficit. This strategy aims to contain inflation while protecting economic growth.**

Expectations for Future Liquidity:

- **The liquidity deficit is expected to ease in the coming days due to inflows from bond redemptions and month-end government spending.**

Bond Redemption:

- Significant bond redemptions are expected, with bonds worth Rs 56,572.719 crore set to redeem on November 25 and Rs 32,500 crore on November 29.

Government Spending:

- Month-end government spending is anticipated to contribute to the improvement of the liquidity position.

Issues with Incremental Cash Reserve Ratio (I-CRR)

- The Reserve Bank of India (RBI) has **recently announced the phased discontinuation of the Incremental Cash Reserve Ratio (I-CRR), a measure implemented to manage excess liquidity in the banking system. The central bank plans to release the funds impounded under I-CRR in stages, ensuring a smooth transition and avoiding abrupt shocks to liquidity.**

How Will the RBI Implement Discontinuation of I-CRR?

- **The discontinuation of I-CRR will be carried out in stages, with 25% of each bank's impounded funds released in the first and second stages. The remaining 50% of the balance will be released in the third stage.**
- This phased approach is designed to **provide banks with sufficient liquidity to meet increased credit demand, particularly during the upcoming festival season.**

What is I-CRR?

Background:

- The RBI introduced the Incremental Cash Reserve Ratio (I-CRR) on August 10, 2023, following the demonetization of Rs 2000 notes and the announcement of monetary policy.
- Banks were mandated to maintain an I-CRR of 10% on the increase in their Net Demand and Time Liabilities (NDTL) between May 19 and July 28. The central bank stated its intention to review the measure in September 2023.

Purpose of Introducing I-CRR:

- I-CRR was introduced as a temporary measure to manage excess liquidity in the banking system.
- Factors contributing to surplus liquidity included the demonetization of Rs 2,000 banknotes, RBI's surplus transfer to the government, increased government spending, and capital inflows.
- The liquidity surge had the potential to disrupt price stability and financial stability, necessitating effective liquidity management.

Impact of I-CRR on Liquidity Conditions:

- I-CRR was expected to absorb over Rs 1 lakh crore of excess liquidity from the banking system.
- The measure temporarily turned the banking system's liquidity into a deficit on August 21, 2023, exacerbated by outflows related to Goods and Services Tax (GST) and central bank intervention to stabilize the rupee.
- However, liquidity conditions later returned to surplus.

What is the Cash Reserve Ratio (CRR)?

About:

- The Cash Reserve Ratio (CRR) is the percentage of cash that banks are required to keep in reserves against their total deposits.
- All scheduled commercial banks, including Small Finance Banks, Payments Banks, Co-operative Banks, and others, must maintain CRR with the RBI.
- CRR funds are non-lendable and do not earn interest.

Need to Have Reserve Cash with the RBI:

- Ensures security of a portion of the bank's deposits in case of emergencies. Provides readily available cash when customers request their deposits. Helps in controlling inflation by reducing the amount of money available for lending during times of inflationary threats.

Why is RBI Using I-CRR in the Case of Demonetization?

- The RBI chose to implement I-CRR during events like demonetization to address

sudden liquidity influxes precisely and without affecting other aspects of monetary policy.

- I-CRR can be implemented quickly, making it suitable for addressing liquidity surges during unique situations.
- It is intended as a temporary measure, absorbing excess liquidity temporarily and phased out once the liquidity situation stabilizes.

Monetary Policy Instruments available with RBI:

Qualitative:

- **Moral Suasion:** Persuasion and communication to influence banks' behavior.
- **Direct Credit Controls:** Regulating credit flow to specific sectors or industries.
- **Selective Credit Controls:** Targeting specific types of loans to control demand in specific areas.

Quantitative:

- **Cash Reserve Ratio (CRR):** Reserves against total deposits.
- **Repo Rate:** Interest rate for short-term lending to banks.
- **Reverse Repo Rate:** Interest rate for banks to park excess funds.
- **Bank Rate:** Rate for long-term funds provided to banks.
- **Open Market Operations (OMOs):** Buying or selling government securities.
- **Liquidity Adjustment Facility (LAF):** Includes repo and reverse repo rates.
- **Marginal Standing Facility (MSF):** Overnight funds borrowing against collateral.
- **Statutory Liquidity Ratio (SLR):** Percentage of NDTL to be maintained in approved securities.

Topic 49. GOLD IMPORT IN INDIA

Important for the subject: Economy

Amendments to Gold Import Policy: Boosting India-UAE Trade

Policy Adjustment:

The Centre has made **amendments to the gold import policy to enhance trade between India and the UAE.**

Specific Changes by DGFT:

- The **Directorate General of Foreign Trade (DGFT)** has granted permission for gold import through **India International Bullion Exchange IFSC Ltd (IIBX)**.
- Import can be done at a concessional duty rate under the **Tariff Rate Quota (TRQ) provisions of the India-UAE Comprehensive Economic Partnership Agreement (CEPA)**.

CEPA Implementation:

- The CEPA between India and the UAE came into effect in **May 2022**.

Operational Details:

- Valid India-UAE TRQ holders, as notified by the **International Financial Services Centres Authority (IFSCA)**, can **import gold through IIBX**.
- Physical delivery of the **imported gold can be obtained through IFSCA registered vaults located in Special Economic Zones (SEZs)**. This move is in line with the guidelines prescribed by IFSCA.

Facilitating Trade:

- It is expected to **benefit the Indian jewelry industry by reducing transaction costs and improving the ease of doing business**.

Potential Market Growth:

- The Chairman anticipates that this policy change will contribute to creating a vibrant gold market in India. Furthermore, it is **expected to boost the exports of value-added jewelry products**.

Government and IFSCA Efforts Appreciated:

- Appreciates the efforts of the Government of India and the IFSCA in implementing this progressive policy measure.

CEPA Duty Concession:

- Under the India-UAE CEPA, **domestic importers are entitled to a one percent duty concession on a specified quantity of gold under the TRQ provisions of the pact**.

About World Gold Council (WGC)

- The World Gold Council (WGC) serves as the **market development organization for the global gold industry**.

Mission and Scope:

- The WGC operates as the **market development organization for the gold industry, covering various aspects from gold mining to investment**.

Stimulating and Sustaining Demand:

- Its **primary goal is to stimulate and sustain demand for gold, working across all segments of the industry**.

Membership:

- The WGC is an association whose **members include some of the world's leading gold mining companies**.

Responsible Mining Advocacy:

- It actively supports its members in adopting responsible mining practices. The WGC has played a role in **developing the Conflict-Free Gold Standard, emphasizing ethical and sustainable mining practices.**

Conflict-Free Gold Standard:

- The **Conflict-Free Gold Standard is a set of guidelines designed to ensure that gold mining activities do not contribute to conflict, human rights abuses, or environmental degradation.**

Global Presence:

- The World Gold Council is **headquartered in the United Kingdom.** It has a global presence with offices in key regions, **including India, China, Singapore, Japan, and the United States.**

About Directorate General of Foreign Trade (DGFT)

- The **Directorate General of Foreign Trade (DGFT) is a government agency in India that operates under the Ministry of Commerce and Industry. It plays a crucial role in the formulation and implementation of foreign trade policies.**

Policy Formulation:

- DGFT is responsible for **formulating and implementing the foreign trade policy of India.**

Trade Facilitation:

- It works to facilitate and promote India's international trade.

Licensing and Regulation:

- DGFT issues and **regulates various licenses and authorizations related to foreign trade.**

Export Promotion:

- The organization is **involved in promoting exports and creating a conducive environment for exporters.**

Import Regulation:

- DGFT regulates and controls imports to ensure that they comply with various trade policies and regulations.

Tariff and Trade Agreements:

- It is involved in matters related to tariffs and trade agreements.

Customs and Trade Facilitation:

- **DGFT collaborates with customs authorities and other agencies to streamline and facilitate trade processes.**

Economic Zones and Export Processing Zones:

- **It plays a role in the establishment and regulation of Special Economic Zones (SEZs) and Export Processing Zones (EPZs).**

Online Services:

- **DGFT provides online services for various trade-related activities, including the issuance of licenses and permits.**

Promotion of E-commerce in Exports:

- **With the growing importance of e-commerce in international trade, DGFT works towards promoting and regulating e-commerce activities related to exports.**

About Comprehensive Economic Partnership Agreement (CEPA)

- **A Comprehensive Economic Partnership Agreement (CEPA) is a type of trade agreement between two or more countries that aims to facilitate comprehensive economic cooperation. These agreements go beyond traditional free trade agreements by not only reducing or eliminating tariffs on goods but also addressing various other aspects of economic collaboration.**

About Tariff Rate Quota (TRQ)

- **Tariff Rate Quota (TRQ) is a trade policy tool that combines elements of both protectionism and liberalization. It involves a two-tiered tariff system designed to manage imports of a specific commodity within a predetermined quantity.**
- **In summary, a Tariff Rate Quota is a trade policy mechanism that allows a certain quantity of a commodity to be imported at a lower tariff rate, while imports beyond that quantity face a higher tariff.**
- **This tool enables countries to manage trade in specific sectors, providing a degree of protection to domestic industries while allowing for controlled international market access.**

About India International Bullion Exchange IFSC Limited (IIBX)

- **India International Bullion Exchange IFSC Limited (IIBX) is a significant development in India's financial landscape, particularly in the domain of bullion trading.**

Launch and Inauguration:

- IIBX was inaugurated by the Honourable Prime Minister of India, Shri Narendra Modi, on July 29, 2022.

Promoters:

- IIBX is promoted by leading market infrastructure institutions in India, including NSE, INDIA INX (a subsidiary of BSE), NSDL, CDSL, and MCX.

Location:

- It is established at the Gujarat International Finance Tec-City (GIFT City), which is an International Financial Services Centre (IFSC) in Gandhinagar, Gujarat.

Regulation:

- IIBX is regulated by the International Financial Services Centres Authority (IFSCA).

Objective:

- The primary objective of IIBX is to provide a platform for importing bullion into India and to create a world-class bullion exchange ecosystem. This includes facilitating bullion trading, promoting investment in bullion financial products, and offering vaulting facilities within IFSCs.

Direct Import for Indian Jewellers:

- For the first time, Indian resident jewellers (Qualified Jewellers – QJ) have the opportunity to import bullion directly into India through IIBX by being a Client or a Limited Purpose Trading Member.

Bullion Trading Mechanism:

- Bullion traded on IIBX is kept in vaults authorized by IFSCA and empanelled by India International Depository IFSC Limited (IIDL). Trading is done in the form of Bullion Depository Receipts (BDRs), and a Demat account with IIDL is required for this purpose.

About International Financial Services Centres Authority (IFSCA)

- The International Financial Services Centres Authority (IFSCA) was established on April 27, 2020, under the International Financial Services Centres Authority Act, 2019.

Establishment Date:

- IFSCA was established on April 27, 2020.

Legislation:

- It was established under the International Financial Services Centres Authority Act, 2019.

Headquarters:

- IFSCA is headquartered at **GIFT City, Gandhinagar, Gujarat.**

Unified Authority:

- **IFSCA serves as a unified authority for the development and regulation of financial products, financial services, and financial institutions in the International Financial Services Centre (IFSC) in India.**

GIFT IFSC:

- **The GIFT IFSC (Gujarat International Finance Tec-City International Financial Services Centre) is the maiden international financial services centre in India.**

Previous Regulatory Framework:

- Before the establishment of IFSCA, **domestic financial regulators such as RBI (Reserve Bank of India), SEBI (Securities and Exchange Board of India), PFRDA (Pension Fund Regulatory and Development Authority), and IRDAI (Insurance Regulatory and Development Authority of India) regulated business activities in IFSC.**

Inter-Regulatory Coordination:

- Given the dynamic nature of business in IFSCs and the need for coordination within the financial sector, **IFSCA was established as a unified regulator with a holistic vision.**

Global Connectivity:

- **IFSCA aims to develop a strong global connect and focus on the needs of the Indian economy.** It also serves as an international financial platform for the entire region and the global economy.

Promoting Ease of Doing Business:

- One of the main objectives of IFSCA is to create a regulatory environment that **facilitates ease of doing business in IFSC.**

Topic 50. WHAT IS THE NEW INVESTOR RISK REDUCTION ACCESS PLATFORM***Important for the subject: Economy***

India's stock exchanges, including BSE and NSE, have jointly developed the IRRA platform to reduce risks faced by investors due to certain technical glitches.

What is the IRRA platform:

- **The IRRA platform was created to mitigate risks for investors in the event of technical glitches occurring at the trading member's primary and disaster recovery**

sites.

- This platform allows investors the opportunity to close existing positions and revoke pending orders should disruptions occur at the stock broker's end.
- An open position refers to a trade that still has the potential to generate either a profit or a loss. Essentially, the IRRA platform serves as a solution during technical glitches or unexpected outages that may render the trading member's site inaccessible.
- Its primary objective is to decrease risks for investors involved in the market. Importantly, the IRRA platform is not intended for initiating new positions or orders; its sole purpose is to facilitate the cancellation of pending orders.

Who has developed it:

- IRRA has been jointly developed by all the stock exchanges – BSE, NSE, NCDEX, MCX and Metropolitan Stock Exchange of India (MSE).

Why was there a need for it:

- As reliance on technology in the securities market grows, so does the occurrence of glitches in trading members' systems, leading to disruptions in trading services and investor grievances.
- This poses a risk for investors with open positions, especially during market volatility, as avenues to close positions may become unavailable.
- Recognizing that existing business continuity plans may not always prevent disruptions, such as delays in moving to a Disaster Recovery site or cyber-attacks, the Securities and Exchange Board of India (SEBI) announced a contingency service by stock exchanges in December of the previous year.
- Referred to as the Investor Request Router and Aggregator (IRRA), this system serves as a safety net, providing a backup solution for potential disruptions in trading services.

How will the IRRA platform work:

- The Investor Request Router and Aggregator (IRRA) can be activated by trading members facing technical glitches that impact their client services across exchanges, both at the primary and disaster recovery sites.
- Stock exchanges also have the authority to monitor factors like connectivity, order flow, and social media posts, allowing them to initiate the IRRA service independently if necessary, even without a specific request from the trading member.
- This activation by exchanges occurs only when there is a disruption in trading services for a trading member across all relevant exchanges.
- Upon invocation, the platform performs basic checks, downloads trades from all trading venues of the trading member, and notifies investors via SMS/email, providing a link to access the IRRA.

How will the platform help investors:

- Once the investors are authorized to access of the IRRA platform, investors can: View and cancel pending orders across all segments and all stock exchanges from the order book, Square off/close the open positions across segments and exchanges

Topic 51. CONCERNS RAISED BY SEBI ON BUNCHING OF IPOs

Important for the subject: Economy

The Securities and Exchange Board of India (SEBI) has expressed concern over the clustering of initial public offerings (IPOs) this week. SEBI has urged investment bankers to exercise caution regarding potential stress on intermediary infrastructure, especially IPO registrars.

Previous Alert and Current Scenario:

- SEBI had issued a similar alert in March 2021, **emphasizing the importance of avoiding glitches and recommending a staggered approach to IPO offerings.**
- The current alert is prompted by the simultaneous launch of IPOs by five companies: **IREDA, Tata Technologies, Gandhar Oil Refinery, Flair Writing Industries, and Fedbank Financial Services.**

Issues at Hand:

- The five IPOs collectively aim to raise over ₹7,000 crore. All five IPOs are being handled by a single registrar, Link Intime India.
- **The share allotment process, carried out by the registrar, faces challenges due to a high volume of applications and a shift to a shorter timeline for listing.**
- **The possibility of over 1 crore applications for the five issues poses a potential strain on the system.**

Potential Challenges:

- Bunching up of IPOs could lead to concerns, especially with a large number of applications involved.
- **The processing, although electronic due to online bidding, may face issues related to reconciliation or incorrect credit allocations.**
- Tata Technologies and IREDA, in particular, have witnessed significant application numbers.

The IPO Processing Workflow:

- All applications are uploaded on the exchange software.
- Consolidation of applications is done, followed by the allotment process.
- The registrar needs to extract information from NSDL and CDSL based on the PAN.
- Despite the electronic nature, concerns arise if there are reconciliation issues or incorrect credit allocations.

Market Observations:

- Market observers acknowledge the challenge but suggest that SEBI is unlikely to micromanage IPO timelines in the future.
- **Investment bankers discuss timelines with banks and registrars, but issues such as bunching up can be unavoidable due to market conditions, investor appetite, and**

regulatory approvals.

- The transition to a T+3 timeline, mandatory from December 1, is viewed as reasonably smooth, and any identified pain points are expected to be addressed.

Appetite for IPOs Amid Bunching:

- Despite the clustering of IPOs, there is a strong appetite for four out of the five offerings. **Robust responses are attributed to domestic liquidity, reasonable valuations, and anticipated listing gains.**
- SEBI's alert highlights the need for cautious management of IPO processes, especially in scenarios of multiple offerings within a short timeframe.

Primary Market Reforms in India:

Abolition of Controller of Capital Issues:

- Background: The **Capital Issues (Control) Act, 1947**, governed capital issues in India, administered by the **Controller of Capital Issues (CCI)**.
- Reform: The **Narasimham Committee (1991)** recommended the abolition of CCI. Consequently, the government replaced the **Capital Issues (Control) Act** and eliminated the CCI.
- Result: **Companies can approach the capital market without prior government permission, with offer documents cleared by SEBI.**

Formation of SEBI (Securities and Exchange Board of India):

- Establishment: SEBI was set up as a **non-statutory body in 1988** and gained statutory status in **January 1992**.

Reform Measures Introduced by SEBI:

- **Disclosure of all material facts and specific risk factors by companies.**
- **Introduction of a code of advertisement for public issues to ensure fair and truthful disclosures.**
- **Companies allowed to determine the par value of shares. Introduction of the “book building” process for IPOs.**

FII (Foreign Institutional Investors) Permitted:

- Reform: **Foreign institutional investors, including mutual funds and pension funds, are allowed to invest in equity shares and debt market instruments such as government securities and treasury bills.**

Accessing Global Funds Market:

- Reform: **Indian companies can access the global finance market to benefit from lower-cost funds.**

Permitted Instruments:

1. **American Depository Receipts (ADRs).**
 2. **Global Depository Receipts (GDRs).**
 3. **Foreign Currency Convertible Bonds (FCCBs).**
 4. **External Commercial Borrowings (ECBs).**
- Listing on Foreign Stock Exchanges: Indian companies can list securities on foreign stock exchanges through ADR/GDR issues.

Inclusion of Intermediaries under SEBI's Purview:

- Intermediaries: Merchant bankers, mutual funds (including UTI), portfolio managers, registrars to an issue, share transfer agents, underwriters, debenture trustees, bankers to an issue, custodians of securities, and venture capital funds.
- Reform: These intermediaries have been brought under the regulatory purview of SEBI.

Credit Rating Agencies:

- Establishment: **Various credit rating agencies, including CRISIL (1988), ICRA (1991), CARE (1993), were set up to meet the emerging needs of the capital market.**
- Reform: These agencies **play a crucial role in evaluating the creditworthiness of companies and debt instruments, providing investors with reliable information for decision-making.**

American Depository Receipts (ADRs):

- Definition: **ADRs are financial instruments representing shares in a foreign company, traded on a U.S. stock exchange. They allow non-U.S. companies to raise capital from American investors without directly listing on U.S. exchanges.**
- Process: A U.S. bank issues ADRs by purchasing shares of the foreign company and then issuing corresponding ADRs to be traded on U.S. markets.
- Advantages: **Provides a convenient way for U.S. investors to invest in foreign companies without dealing with foreign exchanges.** It enhances a foreign company's access to U.S. capital markets.

Global Depository Receipts (GDRs):

- Definition: **GDRs are similar to ADRs but are traded on exchanges outside the United States. They represent shares in a foreign company and are denominated in a currency other than the issuer's domestic currency.**
- Issuance: GDRs are typically issued by international banks, and the underlying shares are held in the depository bank, which issues GDRs to investors.
- Purpose: **Allows foreign companies to raise capital in global markets, broadening their investor base. It provides international investors with a way to invest in foreign securities without dealing with multiple local exchanges.**

Foreign Currency Convertible Bonds (FCCBs):

- Definition: **FCCBs are bonds issued by a company in a foreign currency with an embedded option allowing bondholders to convert the bonds into the issuer's equity**

at predetermined conversion rates.

- **Convertible Feature:** The conversion feature provides bondholders with the option to exchange the bonds for a specified number of shares, offering potential equity ownership in the issuing company.
- **Benefits:** Attracts capital from international markets, providing an avenue for companies to raise funds while offering investors the potential for capital appreciation through equity conversion.

External Commercial Borrowings (ECBs):

- **Definition:** ECBs refer to loans in foreign currency taken by Indian companies or entities from non-resident lenders.
- **Usage:** Typically used for expansion, modernization, or diversification of existing production activities. The funds can also be utilized for refinancing existing high-cost debt.
- **Regulation:** The Reserve Bank of India (RBI) regulates ECBs, and there are guidelines on the eligible borrowers, recognized lenders, permitted end-uses, and other aspects.
- **Currencies:** ECBs can be denominated in various foreign currencies, and the interest rates can be fixed or floating.
- **Maturity:** The maturity period for ECBs varies based on the type and amount of borrowing, ranging from short-term to long-term.

IPO Registrars: Key Points

Role and Function:

- **IPO (Initial Public Offering) registrars** play a crucial role in the process of a company going public. They act as intermediaries between the company issuing shares and the investors.

Share Allotment Process:

- The IPO registrar is responsible for managing the share allotment process. This involves allocating shares to investors based on the subscription received during the IPO.

Electronic Processing:

- The processing of share applications and allotment is predominantly electronic in modern times, facilitated by the registrar.

Handling Multiple IPOs:

- IPO registrars often handle multiple IPOs simultaneously, especially during periods of increased market activity.
- This can include managing applications, verifying details, and ensuring a smooth allotment process.

Single or Multiple Registrars:

- In some cases, a single registrar may handle all aspects of an IPO. In other

situations, multiple registrars may be involved, each managing a portion of the IPO process.

Greenshoe Option

- A “greenshoe” option, also known as an “over-allotment option,” is a provision in the underwriting agreement of an initial public offering (IPO) that grants the underwriter the right to sell additional shares to the public at the offering price, usually up to 15% of the original offering size.
- This option is named after the first company, Green Shoe Manufacturing (now part of Nike, Inc.), that used it in 1960.

IPO Process:

- A company decides to go public and issues new shares in the primary market through an IPO.
- An underwriter, typically an investment bank, facilitates the IPO by purchasing shares from the company and reselling them to the public.

Greenshoe Option Activation:

- When there is high demand for the IPO and the stock starts trading on the secondary market, the underwriter may activate the greenshoe option.
- This allows the underwriter to purchase additional shares (up to the greenshoe option limit) from the company at the offering price.

Market Stabilization:

- The underwriter can use the additional shares to stabilize the stock price in the secondary market. If the stock price falls below the offering price, the underwriter can buy back shares and provide support to the stock.

Over-allotment Impact:

- The over-allotment option increases the total number of shares available to the public, potentially generating additional proceeds for the company.

Closing the Greenshoe:

- The greenshoe option is typically exercised within 30 days of the IPO. After stabilizing the stock and assessing market conditions, the underwriter decides whether to exercise the greenshoe option.
- The greenshoe option benefits both the underwriter and the issuing company. For the underwriter, it provides a tool to manage price volatility in the aftermarket and potentially generate additional profits. For the issuing company, it allows flexibility in responding to market demand and may result in increased capital raised.

Topic 52. INVESTMENT VIA P-NOTES PARTICIPATORY NOTES SLIP TO RS 1.26 LAKH CRORE IN OCTOBER

Important for the subject: Economy

Investments in the Indian capital markets through participatory notes (P-notes) dropped to Rs 1.26 lakh crore in October-end after rising for seven consecutive months. The latest data includes the value of participatory note investments in Indian equity, debt, and hybrid securities.

P NOTES

- Participatory notes (P-notes) are **issued by registered foreign portfolio investors (FPIs)** to overseas investors who wish to be a **part of the Indian stock market without registering themselves under SEBI** directly after going through a due diligence process.
- The increase in P-notes investment is in line with the **higher net inflows of Foreign Portfolio Investors (FPIs) in the cash segment.**
- P-Notes are **Offshore Derivative Investments (ODIs) with equity shares** or debt securities as underlying assets, as they are **used by the investors abroad** but not within India.
- They **provide liquidity to the investors** as they can transfer the ownership by endorsement and delivery.
- While the **FPIs have to report all such investments each quarter to SEBI**, they **need not disclose the identity** of the actual investors.

Topic 53. IMPACT OF WAR ON AN ECONOMY

Important for the subject: Economy

Estimates of the economic impact of the war prompted Moody's to lower its growth forecast for the Israeli economy for this year to 2.4% from 3% previously. In a more pessimistic outlook for 2024, the ratings agency said it projects a contraction of around 1.5% followed by very moderate growth in 2025.

The war with the Hamas terror group is costing Israel at least NIS 1 billion (\$269 million) per day and is poised to take a bigger toll on the country's economy than previous conflicts, according to a report by global ratings agency Moody's based on an initial estimate by the Finance Ministry.

- The **impact of war on an economy can be multifaceted and depends on various factors**, including the **scale of the conflict, the duration of the war, the economic structure of the country, and the global geopolitical context.**
- **Costs of Military Operations:** Funding military operations, including the **procurement of weapons, salaries for personnel, and other associated costs, can place a significant financial burden on the government.** This can lead to increased government debt and

the need for additional financing.

- **Infrastructure Damage:** Wars often result in **damage to infrastructure, including roads, bridges, power plants, and communication networks.** The cost of rebuilding and repairing these structures can be substantial, **affecting the overall economic output.**
- **Displacement of Population:** Wars may lead to the **displacement of people, both within the country and as refugees.** This can **strain social services, increase demand for humanitarian aid, and create challenges for the labor market.**
- **Impact on Trade:** Wars can **disrupt trade routes and relations, affecting the import and export of goods.** Trade disruptions can lead to **shortages of essential goods, inflation, and a decline in economic activity.**
- **Investment Uncertainty:** Ongoing conflicts create an **environment of uncertainty, deterring both domestic and foreign investment.** Investors are generally cautious in situations of political instability and armed conflict.
- **Human Capital Loss:** **Loss of life and injuries among the working-age population can lead to a decline in human capital.** This loss can have long-term effects on labor productivity and economic growth.
- **Social and Humanitarian Costs:** Wars often result in **significant social and humanitarian costs, including increased poverty, malnutrition, and health crises.** Rebuilding social structures can take years, impacting overall human development.
- **Global Economic Effects:** In a globally interconnected world, **regional conflicts can have spillover effects on the global economy. For example, disruptions in the supply of critical resources or energy can impact countries far beyond the conflict zone.**
- **Global Economic Trends:** The war compounds existing adverse global economic trends, including **rising inflation, extreme poverty, increasing food insecurity, deglobalization, and worsening environmental degradation.**
- **Impact on Inflation:** **Fuel and food shortages caused by the war exacerbate post-pandemic inflation, which was already at multi-decade highs globally.**
- **Supply Chain Disruptions:** **Supply chain disruptions, exacerbated by a sudden surge in demand, contribute to inflation.** The strain on supply chains existed even before the conflict
- **Risks to Central Banks:** **Central banks may need to raise interest rates to curb inflation, but the extent and duration of rate increases remain uncertain.** Prolonged high inflation could pose challenges to central bank credibility.
- **Fiscal Policy Challenges:** The war's short-term impact on fiscal policy is modest compared to pandemic-era stimulus programs. However, the **long-term effects could be significant, especially if there's a shift in fiscal priorities, such as increased defense spending.**
- **Inflation and Globalization:** **Globalization, viewed as a "secret sauce" for bringing down inflation in the past, could face challenges due to deglobalization. The interconnectedness of economies and supply chains plays a crucial role in shaping inflation dynamics.**

Topic 54. SEBI APPROVES RULES FOR INDEX PROVIDERS

Important for the subject: Economy

The market regulator introduces a regulatory framework for index providers with the objective of fostering transparency and accountability; SEBI also amends rules to encourage Small & Medium REITs with an asset value of at least ₹50 crore and to strengthen investor protection in AIFs

What are market index providers?

Index providers are companies that design and calculate indexes. They have the responsibility to set the rules that decide what securities to include in each index, how the index will be managed and how securities will be added or removed from that index over time.

Need for regulation

- **SEBI had stressed the need for greater oversight on currently unregulated index providers like NSE Indices (a National Stock Exchange subsidiary) and the Asia Index Pvt. Ltd. (a BSE joint venture with Dow Jones), citing their growing dominance due to the “proliferation” of index funds.**
- A draft regulatory framework for index providers mooted by the market watchdog in December had raised concerns about possible conflicts of interest that could arise in their governance.
- These firms could “**exercise discretion through changes in methodology resulting in exclusion or inclusion of a stock in the index or change in the weights of the constituent stocks**” and their decisions can impact the volumes, liquidity and price of such stocks, as well as investors’ returns from index funds.

Securities Exchange Board of India (SEBI)

- SEBI is a statutory body established on April 12, 1992 in accordance with the provisions of the **Securities and Exchange Board of India Act, 1992.**

Background:

- Before SEBI came into existence, Controller of Capital Issues was the regulatory authority; it derived authority from the Capital Issues (Control) Act, 1947.
- In April, 1988 the SEBI was constituted as the regulator of capital markets in India under a resolution of the Government of India.
- Initially SEBI was a non-statutory body without any statutory power. It became autonomous and given **statutory powers by SEBI Act 1992.**

Aim:

- To **protect the interests of investors** in securities and to promote the development of, and regulate the securities market.
- It is the regulator of the securities and commodity market in India owned by the

Government of India.

Powers & Functions:

- It is a **quasi-legislative and quasi-judicial body** which can draft regulations, conduct inquiries, pass rulings and impose penalties.
- To **protect the interests of Indian investors** in the securities market. To promote the development and hassle-free functioning of the securities market. To **regulate the business operations** of the securities market.
- To **serve as a platform for portfolio managers**, bankers, stockbrokers, investment advisers, merchant bankers, registrars, share transfer agents and other people.

What is a Real estate Investment Trust?

- REIT refers to an entity created with the sole **purpose of channeling investible funds into operating, owning or financing income-producing real estate.**
- REITs are **modeled on the lines of mutual funds** and provide investors with an extremely liquid way to get a stake in real estate.
- It is a **type of security that provides all types of investors**, big or small, with an outlet for regular income, portfolio diversification, and long-term capital appreciation. Like any other security, REITs can enlist themselves on a stock exchange. In India, the **REIT were introduced by the SEBI in 2007.**

Topic 55. WHY HAS BINANCE BEEN FINED BY THE U.S.?

Important for the subject: Economy

The U.S. government last week slammed Binance, the **world's largest cryptocurrency exchange**, with a \$4.3 billion fine after confirming serious protocol failures as it frequently violated U.S. sanctions.

Thereafter, on November 22, Binance's CEO and one of the crypto industry's most powerful players, billionaire Changpeng Zhao, announced his resignation. The latest update has **shocked thousands of traders worldwide who rely on Binance (legally or illegally) to conduct their crypto trades.**

What are FTX and Binance?

- FTX and Binance are **cryptocurrency exchanges**, meaning they **enable customers to trade digital currencies for other digital currencies or traditional money, and vice versa.** The two exchanges process the majority of all crypto trades in the world.
- FTX, one of the **world's largest exchanges**, was run by Sam Bankman-Fried and is headquartered in the Bahamas. Binance, the largest exchange, is run by billionaire Changpeng Zhao.
- Both companies **built their businesses on risky trading options that are not legal in the United States.**

Cryptocurrencies Exchange

- A cryptocurrency exchange, or a **digital currency exchange (DCE)**, is a **business that allows customers to trade cryptocurrencies** or digital currencies for other assets, such as conventional fiat money or other digital currencies.
- **Exchanges may accept credit card payments**, wire transfers or other forms of payment in exchange for digital currencies or cryptocurrencies.
- A **cryptocurrency exchange can be a market maker that typically takes the bid–ask spreads as a transaction commission for its service or, as a matching platform, simply charges fees.**

What is Cryptocurrency?

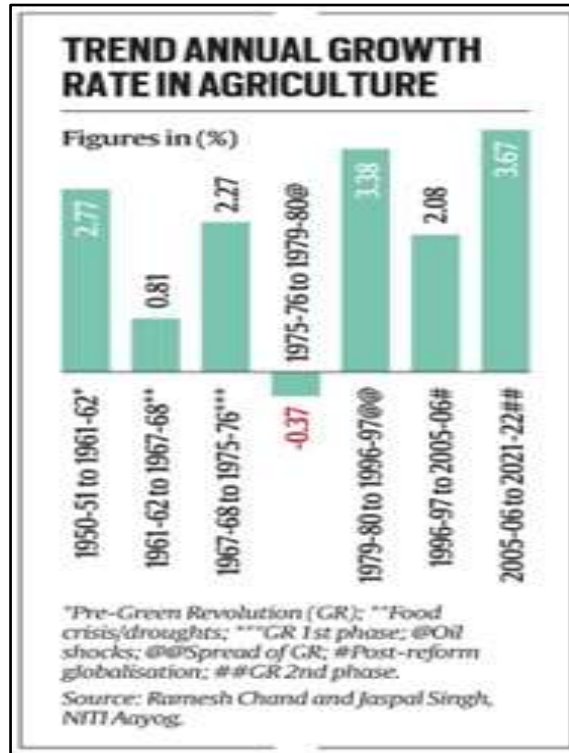
- A cryptocurrency is a **medium of exchange**, such as the rupee or the US dollar, **but is digital in format that uses encryption techniques to both control the creation of monetary units and to verify the exchange of money.**
- **Bitcoin is considered to be the world’s best known cryptocurrency** and is the largest in the world according to market capitalisation.
- Most cryptocurrencies are **not regulated by national governments**, they are considered alternative currency or means of financial exchange that are outside the scope of state monetary policy.
- However, In September 2021, El Salvador became the **first country in the world to introduce Bitcoin as legal tender.**

Where does India Stand in terms of Regulating Cryptocurrency?

- **In 2017, the Reserve Bank of India (RBI) issued a warning that virtual currencies/cryptocurrencies are not a legal tender in India.** However, no ban on virtual currencies took place.
- **In 2019, RBI issued that trading, mining, holding or transferring/use of cryptocurrencies is Important for the subject to punishment in India** with a financial penalty or/and imprisonment up to 10 years.
- **RBI also declared that it may launch digital rupee as a legal tender in India in future. In 2020, the Supreme Court of India removed the ban on crypto currencies imposed by RBI.**
- **In 2022, the Government of India clearly mentioned in the Union budget 2022-23 that-the transfer of any virtual currency/crypto currency asset will be Important for the subject to 30% tax deduction.**
- Gifts in the form of virtual assets/crypto currencies will be taxed in the hands of the receiver. **In July 2022, The Reserve Bank of India (RBI) recommended a ban on crypto currencies citing ‘destabilising effects’ for the country’s monetary and fiscal health.**

Topic 56. OVERVIEW OF THE ISSUES RAISED ON AGRICULTURE AT WTO MEETING

Important for the subject: Economy



The three-day WTO Committee on Agriculture (CoA) meeting is set to begin.

Clarifications on the **WTO-compatibility of the five-year extension for the PM Garib Kalyan Ann Yojna (PMGKAY) or the free foodgrains scheme.**

Detailed information on the reasons **behind the ban on the export of non-basmati rice.**

Countries Submitting Questions:

- The US, EU, Canada, Australia, Switzerland, and New Zealand have submitted questions. The questions primarily relate to **India's Minimum Support Price (MSP) commitments and export restrictions.**

Canada's Inquiries:

- Canada seeks information on **whether procurement under the extended PMGKAY will be done at administered prices instead of the current market price.**
- Inquiry about India's consideration of the impact of this approach on its WTO domestic support commitments.

'Peace Clause' and Subsidy Limits:

- The 'peace clause' allows developing countries to breach the 10% subsidy limit under specific conditions.
- **India has invoked the 'peace clause' for breaching the subsidy limit on rice.**

Export Ban on Non-Basmati Rice:

- Questions on the basis for **imposing an export ban on non-basmati rice**. Concerns raised about the **adequate availability of non-basmati rice**.

Granting Export Quotas:

- Questions about **India's decision to grant export quotas for non-basmati rice to certain countries after the export ban**.

Expiry Dates for Farm-Related Measures:

- Many countries demand that **India should provide expiry dates for its farm-related products**.

Expected Discussions:

- Discussions will likely focus on **India's agricultural policies and their compliance with WTO rules**. Emphasis on **subsidies and export restrictions in the agricultural sector**.

Agreement on Agriculture (AoA) in WTO:

Introduction:

- The AoA is a **WTO treaty negotiated during the Uruguay Round of GATT in 1994 and ratified in Marrakesh, Morocco**.
- Came into **effect in 1995 with reduction commitments for both developing and developed countries**.

Scope and Exclusions:

- **Covers agricultural products but excludes forestry, fishery, rubber, sisal, jute, coir, and abaca**. Least Developed Countries (LDCs) were **exempt from reduction commitments**.

Market Access:

Tariffication:

- **Abolishment of non-tariff barriers, converted to tariffs**.

Tariff Reduction:

- Developing countries **obliged to reduce tariffs by 24% in 10 years**. Minimum access opportunities established, starting at 3% of domestic consumption in 1986-88, rising to 5% by 1995.

Export Subsidies:

Reduction Mandate:

- Developed countries to **reduce export subsidy volume by 21% and expenditure by 36% in 6 years**. Developing countries to **reduce volume by 14% and expenditure by 24% over ten years**.

Domestic Support:

Reduction Requirements:

- Reduction in domestic subsidies distorting free trade and fair prices. **Developed countries to reduce Aggregate Measurement of Support (AMS) by 20% in 6 years; developing countries by 13% in 10 years.**

Trade Distorting (Amber Box):

- **Reduction of total AMS, with policies below 5% for developed, and 10% for developing countries excluded.**

Non-Trade Distorting (Green Box):

- Excludes assistance from reduction commitments, includes environmental programs. **Government-funded, unrelated to current production or prices, and covers diverse areas like research and rural infrastructure.**

Blue Box:

- **“Amber Box with Conditions” to reduce distortion, includes direct payments with an upper limit.**

Special and Differential Box:

- **Allows developing countries to implement measures Important for the subject to reduction, such as investment and input subsidies.**

Peace Clause:

- Legally protects countries from disputes regarding food security programs even if subsidy limits are breached.
- **Protects India’s food procurement programs against WTO actions for breaching the subsidy ceilings.**

WTO and Subsidies:**WTO’s “Box” Classification:**

- **Subsidies are categorized into boxes with colors resembling traffic lights: green (permitted), amber (need reduction), and blue (exemption).**
- Agriculture Agreement lacks a red box **but prohibits domestic support exceeding reduction commitment levels in the amber box.** The blue box is for subsidies tied to production-limiting programs.

Types of Subsidies in AoA:**Green Box:**

- Non-distorting or **minimally distorting subsidies.** Not restricted by the trade agreement as they are considered non-trade-distorting.
- **Must be government-funded, not involving price support, and not directed at specific products.**

Amber Box:

- Domestic support measures **distorting production and trade.** 30 WTO members commit to **reducing trade-distorting supports in this box.**

- **Others must maintain supports within five to ten percent of the value of production.**

Blue Box:

- **Includes support payments exempt from amber box reduction.** Direct payments under production-limiting programs.
- **Payments linked to fixed areas, yields, or livestock numbers, with limitations on production.**

Peace Clause, Public Stockholding (PSH) for Food Security Purposes, and Special Safeguard Mechanism (SSM):

Peace Clause:

- **The Peace Clause is an agreement reached at the World Trade Organization's (WTO) Bali Ministerial meeting in December 2013.**
- **It provides developing countries with certain flexibilities, allowing them to exceed subsidy limits on food crops, specifically addressing concerns related to Public Stockholding (PSH) for food security.**
- **A provision in WTO agreements that protects a member country's domestic support measures from legal challenges even if they exceed agreed-upon limits.**
- **Purpose:** Allows developing countries to **exceed subsidy limits temporarily without facing disputes, particularly concerning food security programs.**
- **Conditions:** Includes conditions related to notifications, data submission, and protecting the food security of other countries.

Public Stockholding (PSH) for Food Security Purposes:

- **Refers to government holding and maintaining stocks of essential food commodities to ensure food security for the population.** Addressed under the WTO Agreement on Agriculture (AoA).
- **Challenges:** Developing countries faced demands for more data and **proof to establish that subsidized stocks were not being dumped in the global market.**
- **Peace Clause:** Invoked under the peace clause to **exceed the 10% subsidy limit on rice.**

Special Safeguard Mechanism (SSM):

- **A mechanism that allows developing countries to impose additional tariffs on agricultural products in the face of import surges or price declines, providing a**

safeguard against sudden import increases.

- Part of the AoA to protect developing countries' agricultural sectors. Typically **triggered by specified import quantity or price thresholds**.
- **Helps developing countries protect domestic farmers from import surges** that could harm local production and food security. Developing countries often **advocate for strengthening the SSM to enhance their ability to respond to import disruptions**.

G33:

- The G33 is a coalition of developing countries within the World Trade Organization (WTO) that focuses on issues related to agriculture.
- It includes countries from Asia, Africa, the Caribbean, and Latin America.
- The primary objective of the G33 is to **address the concerns of developing countries regarding agriculture, particularly issues related to food security and rural livelihoods**.

Focus Areas:

- **Special Products (SP):** The G33 advocates for the **designation of certain agricultural products as "Special Products," allowing developing countries to maintain higher levels of support for these products** without facing challenges under WTO rules.
- **Special Safeguard Mechanism (SSM):** Members of the G33 often support the enhancement of the Special Safeguard Mechanism, which allows developing countries to impose additional tariffs on agricultural products to safeguard against import surges or price declines.
- **Public Stockholding (PSH):** G33 members emphasize the importance of public stockholding for food security purposes and seek flexibility in implementing such programs without facing disputes.

Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY):

Objective:

- Scheme is a part of Atmanirbhar Bharat, **PM-GKAY aims to provide free food grains to migrants and the poor**.

Overview:

- **World's largest food security scheme designed to ensure sufficient food during the COVID-19 crisis**. Announced as **part of the initial relief package** in response to the

pandemic.

Beneficiaries:

- Targets beneficiaries under the **public distribution system (TPDS)**, including **Antyodaya Anna Yojana (AAY)** and **Priority Household (PHH) ration cardholders**.
- Eligible beneficiaries receive **5kg of food grains and 1 kg of Gram per month**.

Eligibility Criteria:

AAY Category:

- Identified by States/UTs based on criteria prescribed by the Central Government. Includes households headed by **widows, terminally ill persons, disabled persons, or individuals aged 60 years or more with no assured means of subsistence or societal support**.
- Also covers **widows, terminally ill persons, disabled persons, individuals aged 60 years or more, single women or men with no family or societal support, and all primitive tribal households**.

PHH Category:

- Identified by State Governments/Union Territory Administrations based on their criteria. Encompasses **landless agriculture laborers, marginal farmers, rural artisans / craftsmen, slum dwellers, and those earning livelihoods in the informal sector**. Includes **eligible Below Poverty Line families of HIV positive persons**.

Introduction:

In agriculture, there are **four “factors of production”**: **Land, water, labour and energy**. Farmers use these factors or inputs to produce crops. For a given level of technology, the output produced by them is largely determined by the quantity of inputs used.

In the **pre-Green Revolution era**, **agricultural production** was **primarily limited** by the **extent** and **quality of land** available for cultivation.

The extent of land under agriculture:

- **India’s farm sector** grew by an average **2.8%** a year during **1950-51 to 1961-62**. The driver was **expansion in the land** brought under the plough. The country’s **net sown area** rose from **118.75 lakh** to **135.40 lakh hectares (lh)** over this period.

Quality of land:

- Agricultural land quality is a function of **soil fertility** and **water availability**. The **alluvial soils** in the **Indo-Gangetic plains** and the **Kaveri, Krishna, Godavari and Mahanadi deltas** of the **eastern coast** are the **most fertile**, followed by the **black cotton soils** of the **Deccan, Malwa and Saurashtra plateaus**. These yield more **crops per acre** than the **lands with red, brown, laterite, mountain and desert soils**, ranking in descending order of fertility.
- **Water availability** is dependent on both **rainfall** and **access to irrigation** from rivers, lakes, tanks and ponds.

Factors of technology:

- There are considered to be **four factors** of technology. They together enable

more **efficient use of the factors of production** and result in **higher yields** – more produce from the same acre of land or number of labourers – besides **better utilisation of water resources** and **replacement of animal and human power with mechanical and electrical power**.

- They are: Genetics, **Crop nutrition**, **Crop protection** and **Agronomic interventions**.

Genetics:

- It is about seeds and plant breeding. It offers many desirable traits in plants like disease and pest resistance, drought and heat stress tolerance, nutrient use efficiency or even stem sturdiness and erect/compact canopy to allow mechanical harvesting.

Crop nutrition:

- **Farmyard manure** – the decomposed mixture of dung and urine along with other farm residues – contains **0.5% nitrogen (N)**, **0.2% phosphorous (P)** and **0.5% potassium (K)** on average.
- **Chemical fertilisers** have much **higher NPK content: Urea (46% N)**, **di-ammonium phosphate (18% N and 46% P)** and **muriate of potash (60% K)**. Synthetic fertilisers, in combination with the breeding of varieties responsive to high nutrient doses, led to a soaring of crop yields.

Crop protection:

- It signifies defending plants against insect pests, pathogens (fungi, bacteria and viruses) and weeds, from the time of their sowing to harvesting and marketing.
- **Crop protection chemicals** are aimed at ensuring that the yield gains from genetics/breeding and nutrition/fertilisers are realised, to the maximum possible extent, in farmers' fields. Some are **labour-saving** like **Herbicides**, which can replace the manual removal of weeds.

Agronomic interventions:

- These are- **tractors**, **rotavators** and **reversible mould board ploughs** that can do deep tillage, mixing and pulverisation of the soils and break their hardpan layers.
- Water-saving technologies – **drip irrigation** and **laser land levellers** (which help in uniform placement of seed and fertiliser too) – and **intercropping** or growing more than one crop simultaneously on the same piece of land.

More from same or less:

- The **net sown area** in **India** rose by just **3.3%** – from **135.4 lh** to **139.9 lh** – between **1961-62** and **2019-20**, as against **14%** during **1950-51** to **1961-62**.
- The annual growth in **gross value added from agriculture and allied activities** during the period from **2005-06** to **2021-22**, at **3.7%**, has been the **highest among all phases**.

Topic 57. UNDERSTANDING JAVIER MILEI AND DOLLARISATION, HIS RADICAL POLICY TO SAVE ARGENTINA'S ECONOMY

Important for the subject: Economy

The self-proclaimed “libertarian” and “anarcho-capitalist” Javier Milei has become the **President-elect** of **Argentina**, one of the **world's biggest economies** which has been

grappling with **high inflation** of more than **100%**.

Milei wants to disband Argentina's currency and central bank, adopt the US dollar as its currency and open trade unilaterally.

Libertarian and Anarcho-capitalist:

- A person of this thought believes that the government has either little or no role in the functioning of a country and an economy.

Libertarianism:

- **Libertarianism** is a political philosophy that gives **primacy to individual liberty over everything else**. A **libertarian** believes that **individuals have certain God-given rights** — such as the right to life and liberty, freedom of speech, right to property, freedom of worship, moral autonomy etc. — and seeks to define the powers of a government in this context.
- The **purpose of government**, according to liberals, is to protect these and other individual rights, and in general, liberals have contended that government power should be limited to that which is necessary to accomplish this task.

Anarcho-Capitalism:

- The term was coined by **Murray Rothbard**, a leading figure in the **American libertarian movement** from the **1950s** until his death in 1995.
- It seems to take the **libertarian view** to what would appear like an **extreme**. Anarcho-capitalism is a political philosophy that **advocates the voluntary exchange of goods and services in a society broadly regulated by the market rather than by the state**.

A Libertarian and Anarcho-Capitalist society:

- It would be a society where even law & order as well as justice delivery is privatised. In such a society, the government has no monopoly on police like it has at present.
- Almost every sector of the economy is run on free market principles with the belief that people, as consumers, will choose the best option among the available ones and that demand for better quality goods and services (say policing) will incentivise entrepreneurs to come up with the most efficient solutions.

High inflation in Argentina:

- **Argentina's inflation rate** is anywhere between **110% to 150%**. It means the domestic currency is fast losing its value.
- **Reason:** The pandemic, Russia-Ukraine Conflict and excess government spending on welfare programmes.
- The size of the **Argentine economy (GDP)** and **per capita income** have stagnated over the past decade.
- **Consequences:** Fall of domestic economic activities, trade suffering and sharp worsening of country's exchange rate.

Milei's solution: Dollarisation:

- One solution he proposed is to **severely cut government spending**.
- And, another is to **disband the domestic currency (Argentinian Peso)** and the **central**



bank and shift to the US dollar as the official currency. This is called **Dollarisation**. The basic idea behind Milei's plan to dollarise is two-fold:

- To bring price stability to the economy in a quick manner. To ensure that the government and the central bank are in no position to influence monetary policy.

Why Dollarisation may fail?

- Just because there isn't a central bank to print money doesn't necessarily mean that governments will not spend beyond their means.
- For a country's system to shift to dollars, its banks and its government should have the dollars to begin with. If they don't have the dollars then how can the economy shift to dollars?
- **Argentina's government needs \$40 billion** to make the shift. It is also reported that at present **Argentina** is struggling to pay back the **IMF's debt of \$44 billion**.

Why Dollarisation may work?

- Latin America's three fully dollarized countries—**Panama, Ecuador, and El Salvador**—have had the **region's lowest inflation levels** during the past 20 years or so.
- **Argentina's central bank's total liabilities** stand at around **18.8 trillion pesos**. **Central bank liabilities** refer to **all the money it prints; its assets are things like gold and hard currencies** (such as US dollars).
- If these liabilities are exchanged at the free market rate of 470 pesos to a dollar, Argentina will have the **\$40 billion** it needs.

Topic 58. RBI SUPERSEDES MUMBAI-BASED ABHYUDAYA CO-OP BANK'S BOARD

Important for the subject: Economy

The Banking Regulations Act, enables RBI to supersede the board of directors of a bank for up to 12 months if it feels that the board is not working in the interest of shareholders and depositors. If such a step is taken, RBI could run the bank by appointing an administrator till a new board is appointed. In such a scenario, while shareholders wealth decline, depositors money stay safe.

- The central bank can supersede the board if the top management fails to deliver. RBI also retains the discretion to levy penalties depending on the gravity of the non-compliance, with powers available under the RBI Act of 1934.

Topic 59. INDIA-NORDIC-BALTIC REGION AIM TO CREATE LONG TERM SYNERGIES AMONG INVESTORS FROM BOTH REGION

Important for the subject: International Relations



External Affairs Minister **S Jaishankar** expressed optimism for the ongoing **India-EU Free Trade Agreement (FTA)** negotiations, hoping for a **prompt conclusion during the 2nd India Nordic Baltic Business Conclave**.

Highlighting the **promising India-Nordic Baltic relationship**, Jaishankar emphasized **natural synergies**, proposing collaboration in addressing **Global South challenges** and advancing the **Global Biofuels Alliance**.

- He noted **opportunities for Nordic-Baltic countries in India**, including **expanded trade, joint R&D projects, and telemedicine**.
- Positive developments such as **institutional frameworks for business cooperation and direct flights** were highlighted.
- Ministers from **Nordic-Baltic countries emphasized collaboration in sustainability, digitalization, education, and innovation**, viewing India as crucial for economic growth and identifying potential partnerships in **fishing expertise and aquaculture**.

Some more facts about The Nordic Baltic Eight (NB8)

- NB8 is a **regional framework** consisting of the **five Nordic countries i.e Denmark, Finland, Iceland, Norway, and Sweden** and the **three Baltic countries i.e Estonia, Latvia, and Lithuania**.
- It was **established in 1992** to foster closer ties between the **Nordic and Baltic countries**.

Topic 60. UK SUPREME COURT FINDS UK-RWANDA ASYLUM SCHEME UNLAWFUL

Important for the subject: International Relations

UK Supreme Court Finds UK-Rwanda Asylum Scheme Unlawful

What is the Rwanda deal:

The **Migration and Economic Development Partnership (MEDP)** was unveiled by former Prime Minister Boris Johnson.

This initiative aims to establish a system for relocating asylum seekers, deemed inadmissible by the UK, to Rwanda, particularly those entering through irregular routes like the English Channel.

- As outlined in the Memorandum of Understanding between the two nations, the UK will assess asylum applications and coordinate the safe transportation of individuals to Rwanda.
- Upon arrival, Rwanda is obligated to provide accommodation, ensuring protection from mistreatment and refoulement. The authority to recognize or deny refugee status lies solely with Rwanda.
- Those not granted recognition will be repatriated to their country of origin.

Why did the U.K. choose Rwanda:

- Rwanda provides three options for individuals expelled by the U.K.:
- Repatriation to their home country, Relocation to a third country, Settlement in Rwanda with proper housing, universal health insurance, and the right to work.
- The U.K. covers accommodation and transit expenses. Rwanda was not the initial choice; former Prime Minister Tony Blair unsuccessfully sought asylum arrangements with Tanzania.
- The historical context draws parallels between the current situation and Britain's colonial past, where specific migrant labor groups were relocated to certain territories.
- This echoes past practices where the U.K. moved refugees to colonized regions under the pretext of development and economic growth, aligning with the Migration and Economic Development Partnership (MEDP) arrangement.

Why was it ruled unlawful:

- The Supreme Court's ruling hinged on two key issues. Firstly, it questioned the Court of Appeal's authority to intervene in the High Court's decision.
- The Supreme Court deemed the High Court's decision flawed as it failed to assess the evidence of the risk of refoulement, emphasizing the U.K.'s responsibility, under the European Court, to safeguard refugees from refoulement and ensure asylum. The High Court, instead, placed trust in Rwanda's expertise and assurances.
- Secondly, the Supreme Court found credible evidence indicating that asylum seekers

face a genuine risk of ill-treatment through refoulement. Rwanda’s human rights track record and its failure to comply with assurances were cited as evidence supporting the real risk of refoulement.

- Despite Rwanda’s standing as a significant U.K. partner, the court underscored periods of violence in Rwanda since 1994 and the critical assessment of its human rights record in influencing the ruling.

Some facts about Rwanda:

- Republic of Rwanda, is a **landlocked country** in the **Great Rift Valley of Central Africa**, where the **African Great Lakes region** and **Southeast Africa converge**.
- It is bordered by **Uganda, Tanzania, Burundi**, and the **Democratic Republic of the Congo**. It is known as the **“Land of a Thousand Hills”** due to its hilly terrain.
- **Kigali** is the capital of Rwanda. **Kinyarwanda** is the **official language**. **Rwanda has the highest percentage of women in parliament in the world.**

Topic 61. CAG MURMU ELECTED AS VICE CHAIR OF UN EXTERNAL AUDITOR PANEL

Important for the subject: International Relations

Panel Members and Organizations Audited		
The current and incoming members of the Panel, the organizations audited, and the duration of each member’s term of office, are as follows:		
Panel Members	Organizations Audited	Duration
Comptroller General of the Republic of Chile	<ol style="list-style-type: none"> 1. United Nations Joint Staff Pension Fund (UNJSPF) 2. United Nations Population Fund (UNFPA) 3. United Nations Children’s Fund (UNICEF) 4. United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women) 5. The International Residual Mechanism for Criminal Tribunals (IRMCT) 6. United Nations Office on Drugs and Crime (UNODC) 7. United Nations University (UNU) 8. United Nations Institute for Training and Research (UNITAR) 	Term ends 30 June 2024
The Audit Board of The Republic of Indonesia	<ol style="list-style-type: none"> 1. International Maritime Organization (IMO) 	Term ends 30 June 2024
President of the German Federal Court of Auditors	World Food Programme (WFP)	Term ends 30 June 2028
Auditor General of the People’s Republic of China	<ol style="list-style-type: none"> 1. United Nations Headquarters (Volume I) 2. International Trade Centre (ITC) 3. United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) 4. United Nations Relief and Works Agency for Palestine Refugees in the Near East Microfinance Department (UNRWA-MD) 5. United Nations Relief and Works Agency for Palestine Refugees in the Near East Provident Fund (UNRWA-SPF) 6. Fund of the United Nations Environment Programme (UNEP) including Global Environmental Facility (UNEP-GEF) 7. United Nations Human Settlements Programme (UN-HABITAT) 8. United Nations Office for Project Services (UNOPS) 	Term ends 30 June 2026

CAG Murmu elected as vice chair of UN external auditor panel

Girish Chandra Murmu, the Comptroller and Auditor General of India, has been elected as the **Vice-Chair of the UN Panel of External Auditors** during the **sixty-third session** held at the UN headquarters in New York from 20-21 November 2023.

This appointment reflects **India's dedication to the highest standards** of external audit and **active involvement** in shaping the global audit landscape.

- The Panel, composed of heads of 12 Supreme Audit Institutions globally, oversees the external audit of the UN Secretariat, funds, programmes, and specialized agencies, conducting financial, performance, and compliance audits of UN entities.
- The meeting also served as a platform for discussions on follow-up actions related to the Secretary-General's response, with Murmu leading discussions on financial and management issues affecting UN organizations.

Some facts about UN Panel of External Auditors

- The **Panel of External Auditors of the United Nations**, the Specialized Agencies and the International Atomic Energy Agency was established by the **General Assembly Resolution 1438 (XIV) of 5 December 1959**.

It is made up of:

- The **members of the United Nations Board of Auditors**; The external auditors of the **Specialized Agencies of the United Nations and of the International Atomic Energy Agency**.
- The **main objectives of the Panel** are to further the coordination of the audits for which its members are responsible, and to exchange information on audit methods and findings.
- The Panel may submit to the executive heads of the organizations audited any observations or recommendations it may wish to make in relation to the accounts and financial procedures of the organization concerned.
- The executive heads of the participating organizations may also, through their auditors, submit requests to the Panel for its opinion or recommendation on any matter within its competence.

Comptroller and Auditor General of India	1. Food and Agriculture Organization of the United Nations (FAO)	Term ends 31 December 2025
	2. World Health Organization (WHO)	Term ends 31 December 2023
	3. International Atomic Energy Agency (IAEA)	Term ends 31 December 2027
Comptroller and Auditor General of the United Kingdom of Great Britain and Northern Ireland	World Intellectual Property Organization (WIPO) (Starting 1 January 2024 Indonesia will take over the audit of WIPO until 31 December 2029)	Term ends 31 December 2023
	International Telecommunication Union (ITU)	Term ends 31 December 2025
First President of the Court of Accounts of France	1. United Nations Peacekeeping Operations (UNPKO)	Term ends 30 June 2028
	2. United Nations High Commissioner for Refugees (UNHCR)	
	3. United Nations Development Programme (UNDP)	
	4. Global Environment Facility (UNDP-GEF)	
	5. United Nations Capital Development Fund (UNCDF)	
	6. United Nations Framework Convention on Climate Change (UNFCCC)	
	7. United Nations Convention to Combat Desertification (UNCCD)	
	8. Strategic Heritage Plan (SHP)	
Chairman, Philippine Commission on Audit	International Labour Organization (ILO) (Starting 1 April 2024 India will take over the audit of ILO until 31 March 2027)	Term ends 31 March 2024
Director, Swiss Federal Audit Office	1. Universal Postal Union (UPU)	Term ends 31 December 2025
	2. International Civil Aviation Organization (ICAO)	Term ends 30 June 2026
President, Corte dei Conti	1. International Telecommunication Union (ITU) ITU will be audited by the NAO United Kingdom starting 1 January 2023	Term ends 31 December 2022
	2. World Meteorological Organization (WMO)	Term ends 30 June 2024

Topic 62. VENEZUELA GOVT FANS DISPUTE WITH GUYANA OVER OIL-RICH REGION

Important for the subject: International Relations



Essequibo region:

Venezuela considered the **Essequibo region** of **Guyana** as their own territory since gaining independence from **Spain in 1811**.

It does **not** recognise the **international border** with **Guyana** decided in **1899**, when **Guyana** was a **British colony**. **Essequibo region** near the **Atlantic coast** is a territory larger than Greece and **rich in oil and minerals**. In **2015**, **ExxonMobil** found oil in commercial quantities off the **Essequibo coast**.

The **Essequibo River** is the **largest river** in **Guyana** and the **largest river** between the **Orinoco** and **Amazon**. Rising in the **Acarai Mountains** near the **Brazil–Guyana border**.

Guyana:

- **Guyana** is the **world's fastest-growing economy** (**GDP growth of 62.3% in 2022**) and is on track to **grow by more than 100%** by 2028. The growth is largely fueled by profits from its **oil production** and **export sector**. It is a country on the **northern mainland of South America**.
- **Guyana** is an **indigenous word** which means “**Land of Many Waters**”. The capital city is **Georgetown**. It is the **third-smallest sovereign state by area** in **mainland South America** after **Uruguay** and **Suriname**.
- Bordered by the **Atlantic Ocean** to the north, **Brazil** to the south and southwest, **Venezuela** to the west, and **Suriname** to the east.

Venezuela:

- **Venezuela** has the **world's largest known oil reserves** and has been **one of the world's leading exporters of oil**.
- Capital and largest city- **Caracas**.
- Colonized by **Spain in 1522**.
- It was a part of the **Republic of Colombia** and separated as a **full sovereign country** in **1830**.

Topic 63. SPIKE IN PNEUMONIA CASES IN CHINA, WHO SEEK MORE INFORMATION

Important for the subject: International Relations

WHO seek more information on spike in Pneumonia cases in china

The **World Health Organization (WHO)** has **formally requested** detailed information from **China** regarding a **surge in respiratory illnesses**, particularly **pneumonia clusters in children**. Chinese authorities attributed the increase to the **lifting of COVID-19** restrictions and the circulation of known **pathogens, including influenza and the virus causing COVID-19**.

- The **WHO** emphasized the need for enhanced disease surveillance and strengthening the healthcare system.
- **Concerns about transparency in reporting, dating back to the early days of the COVID-19 pandemic, have been raised.**
- Recently, **groups reported undiagnosed pneumonia clusters in northern China, and the WHO is seeking more information to determine if they are linked to the previously reported respiratory infections.**
- The agency recommended measures to reduce the risk of respiratory illness, including **vaccination, maintaining distance from sick individuals, staying home when unwell, testing, wearing masks, ensuring good ventilation, and regular handwashing.**

Some facts about World Health Organization (WHO):

- The World Health Organization (WHO) is a **specialized agency of the United Nations responsible for international public health. It was founded in 1948.**
- **Headquartered in Geneva, Switzerland, it has six regional offices and 150 field offices worldwide.**
- It is an **intergovernmental organization** and works in **collaboration with its member states usually through the Ministries of Health.** On 7 April 2023 – World Health Day – the World Health Organization will observe its 75th anniversary.

Some of the important objectives of WHO are:

- **Lead global efforts to expand universal health coverage. Focus on the areas of disease prevention, control and elimination, and the promotion of health and well-being.**
- Provide **leadership on global health issues, set standards for public health, and provide technical assistance and support to countries.**
- **Collaborate with various partners, including other UN agencies, governments, civil society organizations, and the private sector.**

What is the governance structure and functioning of WHO:

- The structure of the **WHO governance is specifically crafted to facilitate the execution of its mandate and the attainment of its objectives.**

This structure comprises:

- **Membership:** The WHO currently **boasts 194 member states.**
- **World Health Assembly (WHA):** Serving as the **highest decision-making body, the WHA is constituted by representatives from all member states.**
- **Secretariat:** Tasked with **implementing the policies and programs approved by the WHA.**
- **Director-General:** The **Director-General leads the WHA and is assisted by a senior management team.**
- **Regional Offices:** The WHO operates **six regional offices, namely Africa, the Americas, Southeast Asia, Europe, Eastern Mediterranean, and Western Pacific.** Each regional office is **responsible for coordinating and supporting the WHO's initiatives within its designated geographic area.**

What is the funding mechanism of WHO:

- WHO gets its funding from two main sources
- **Assessed Contributions:** Countries contribute dues to maintain their membership in the Organization.
- **Voluntary Contributions:** Member States, in addition to their assessed contributions, and various partners such as United Nations organizations, intergovernmental organizations, philanthropic foundations, and the private sector, contribute voluntarily to support the WHO's initiatives.
- In 1948, countries of the world came together and founded WHO to promote health, keep the world safe and serve the vulnerable – so everyone, everywhere can attain the highest level of health and well-being.

Topic 64. DUBLIN

Important for the subject: International Relations



Protesters take to streets in Dublin after knife attack injures three children. **Violent clashes** erupted in central **Dublin** following a **knife attack** that left a **five-year-old**

girl seriously injured.

The **attack occurred outside** a school, **leading to a surge** of about 100 people on the streets, some armed with metal bars.

- Riot police were **deployed to quell the unrest. Demonstrators clashed with law enforcement, damaging police vehicles, a tram, and setting a bus and car on fire.**

Some facts about Dublin:

- Dublin is the **capital of Republic of Ireland**
- It is **located on the east coast of Ireland, at the mouth of the River Liffey.** It is a **UNESCO City of Literature**, and it has a rich literary heritage.
- It is home to **many famous writers, including James Joyce, Oscar Wilde, and Samuel Beckett.**

Topic 65. SIERRA LEONE

Important for the subject: International Relations

Sierra Leone's president declared a nationwide curfew after gunmen attacked the military's main and largest barracks. Sierra Leone's president imposed a **nationwide curfew following a violent attack by gunmen on the capital's main** military barracks, leading to the **overrun of detention centers**, including a major prison holding over 2,000 inmates.

The incident has **heightened concerns about a potential breakdown** of order in the region, which has **witnessed a series of military coups** in recent years.

Some facts about Sierra Leone

- Sierra Leone, officially the **Republic of Sierra Leone**, is a country on the **southwest coast of West Africa.**
- The country is **bordered by Guinea to the north and east, Liberia to the southeast, and the Atlantic Ocean to the west and southwest**
- The **country's capital, Freetown**, was founded as a **settlement for freed slaves** in the late 18th century.
- **Temne and Mende are the largest ethnic group of Sierra Leone.** The country is rich in natural resources, especially **diamond, gold, bauxite and aluminum.**
- Sierra Leone has **one of the world's largest deposits of rutile, a titanium ore** used as paint pigment and welding rod coatings.

Topic 66. GREEK ISLAND OF LESBOS

Important for the subject: International Relations

4 Indians among 13 crew members missing after ship sinks off Greek island. The **cargo ship "Raptor"** sank off the **Greek island of Lesbos** in stormy seas.

The ship, en route to Istanbul from Alexandria, Egypt, with a cargo of 6,000 tons of salt, reported a mechanical problem before sending a distress signal and disappearing southwest of Lesbos.

The crew of 14 included Egyptians, Indians, and Syrians.

One crew member was found dead, one was rescued, and 12 remain missing.

Some facts about Lesbos:

- Lesbos, also known as Lesvos or Mitilini, is a Greek island located in the northeastern Aegean Sea.
- It is the third-largest island in Greece and the eighth-largest in the Mediterranean
- It is separated from Asia Minor by the narrow Mytilini Strait. On the southeastern coast is the island's capital and largest city, Mytilene

Topic 67. AHEAD OF COP28, THREE UNEP REPORTS PAINT A GRIM PICTURE OF CLIMATE REALITY

Important for the subject : International Relations

The leading theme of COP28 to the UNFCCC is ‘Global Stocktake’, which means the focus will be on checking what each country has done in terms of climate action vis-à-vis its promise.

Three recent reports put out by the United Nations Environment Programme (UNEP) show that the global collective action on climate action is woefully inadequate compared with what it ought to be.

The three reports published by UNEP are:

Emissions Gap Report of 2023

- The global emissions of greenhouse gases will increase by 3 per cent in 2030 when they ought to decrease by 28 per cent if the rise in global warming is to be limited to 2 degrees and 42 per cent for the ambition of 5 degrees.

Production Gap Report 2023

- The governments plan to produce around 110 per cent more fossil fuels in 2030, which would be consistent with limiting warming to 1.5°C and 69 per cent more for the 2°C target.

Adaptation Gap Report 2023

- The adaptation finance needs of developing countries are 10–18 times as big as international public finance flows. Developing countries will need adaptation financing of \$387 billion a year. In contrast, they got \$21 billion in 2021.

Topic 68. PAKISTAN BEAT INDIA TO BAG UNESCO VICE CHAIR

Important for the subject: International Relations

Pakistan beats India in vote to bag UNESCO vice chair role

Pakistan secured a significant victory over India in the recent UNESCO executive board election for the post of vice-chair.

The **Pakistani candidate received 38 votes**, while the **Indian candidate received only 18.**

This **outcome is considered** a major setback for **Indian diplomats at the UN**, prompting the **Indian Ministry of External Affairs** and Human Resource Development ministry to assess the reasons behind the defeat and its potential impact.

- The **elected Pakistani vice chair** expressed **gratitude for the overwhelming support from the executive board members and all UNESCO member states**, emphasizing **Pakistan's commitment to fulfilling its responsibilities with credibility, honest dialogue, and mutual respect.**
- The defeat is seen as a **rare failure for Indian diplomats** who have previously celebrated victories in various UN and international organizations.

Some facts about UNESCO:

- The **United Nations Educational, Scientific and Cultural Organization (UNESCO)** operates as a **specialized agency within the United Nations (UN)**, striving to **foster global peace through collaborative efforts in the fields of Education, Sciences, and Culture.**
- **UNESCO was founded in 1945** as the successor to the **League of Nations' International Committee on Intellectual Cooperation.**
- It has **194 member states and 12 associate members**, as well as partners in the **non-governmental, intergovernmental, and private sector**
- Membership of UNESCO is **governed by Articles II and XV of the Constitution and by rules 98 to 101 of the Rules of Procedure of the General Conference.** Membership of the **United Nations** carries with it the **right to membership of UNESCO.**
- States that are **not members of the United Nations may be admitted to UNESCO**, upon **recommendation of the Executive Board**, by a two-thirds majority vote of the General Conference.
- Three UNESCO member states are **not UN members: Cook Islands, Niue, and Palestine.** Two UN member states **Israel and Liechtenstein** are **not UNESCO members**
- UNESCO is **governed by the General Conference, composed of member states and associate members**, which meets **biannually to set the agency's programmes and the budget.**
- It also **elects members of the Executive Board**, which manages UNESCO's work, and **appoints every four years a Director-General**, who serves as UNESCO's chief

administrator

What are key reports published by UNESCO

- Global Education Monitoring Report
- The United Nations World Water Development Report
- World Trends in Freedom of Expression and Media Development
- Global Ocean Science Report

Topic 69. WARM TEMPERATURES FOR PROLONGED PERIODS MAY HAVE LED TO MASSIVE PEST ATTACK IN ASSAM

Important for the subject: Geography

Continuous warm temperatures for prolonged periods may have led to the serious pest infestation in Assam that damaged around 28,000 hectares of paddy crop in at least 15 districts. The crop was nearing maturity and about to be harvested when the pests attacked it.

The affected farmers will get benefits under the Pradhan Mantri Fasal Bima Yojana, the national crop insurance policy.

Pest- Mythimna separata

- The pest was first reported as a sporadic pest from Tamil Nadu in 1937 and Kerala and Odisha in 1957.
- They are known as the ear-head-cutting caterpillar, rice ear-cutting caterpillar, or armyworm.
- It feeds on leaves and can cut off panicles from the base of a crop plant, frequently leaving the field looking like it has been grazed by cattle.
- During an outbreak, the pest multiplies in large numbers and moves in swarms from field to field, like an army, to feed and attack the crops.

Reason for pest attack:

- An increase in temperatures with dryness creates a favourable condition for the pest population to increase.
- According to a study, every small rise in global temperatures will reduce the lifecycle of insects, resulting in a higher population of pests, increasing generations, an extension of geographical range and development season, and high risks of invasion by migrant pests and overwintering.
- In India, which is home to 6.83 per cent of the world’s insect species, a degree Celsius rise in temperature would enable them to expand in presence about 200 kilometres northwards and 40 metres upward in terms of altitude.

PM Fasal Bima Yojana (PMFBY):

- Launched on 18 February 2026. It aims to reduce the premium burden on farmers and ensure early settlement of crop assurance claims for the full insured sum.
- The Scheme covers all Food & Oilseeds crops and Annual Commercial/Horticultural

Crops for which past yield data is available and for which a requisite number of **crop-cutting experiments (CCEs)** are being conducted under the **General Crop Estimation Survey (GCES)**.

Objectives:

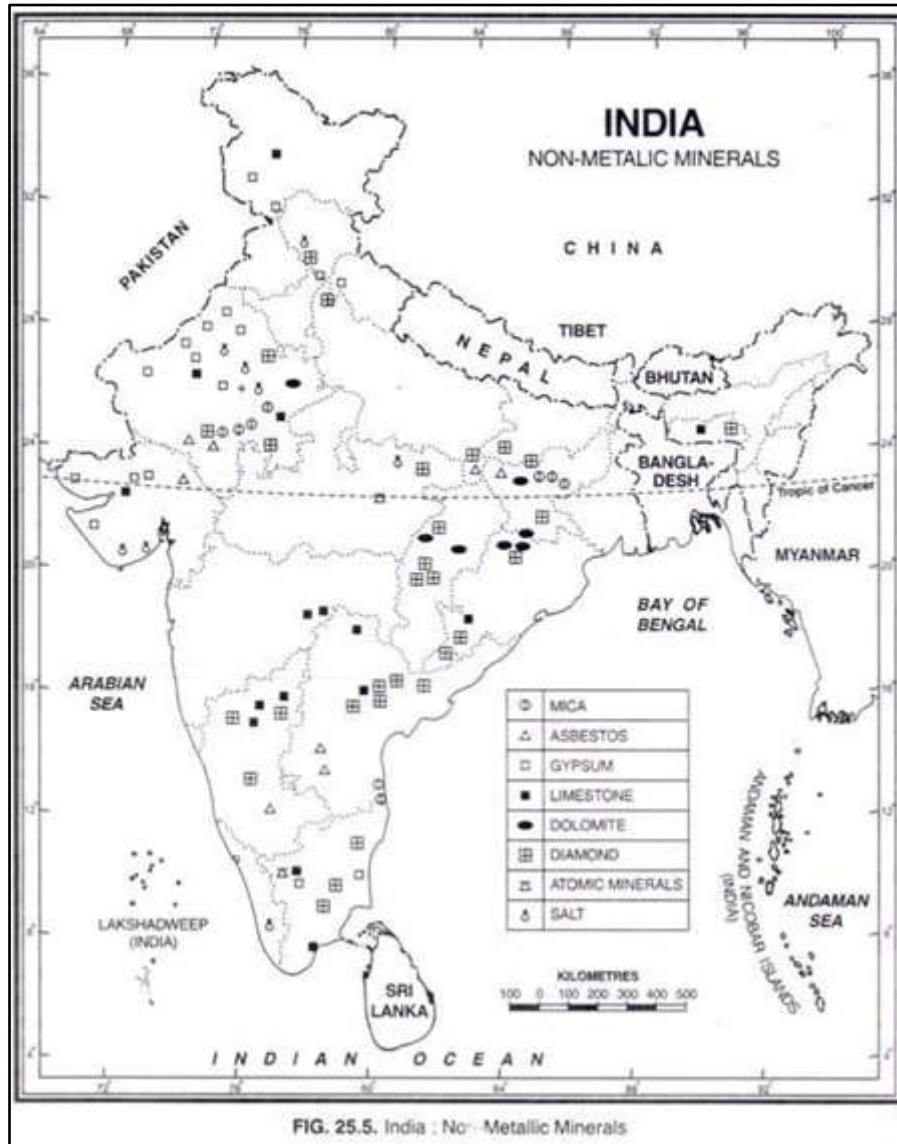
- To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crops as a result of natural calamities, pests & diseases.
- To stabilise the income of farmers to ensure their continuance in farming.
- To encourage farmers to adopt innovative and modern agricultural practices.
- To ensure the flow of credit to the agriculture sector.

Implementing Agency:

- It will be implemented through a **multi-agency framework** by **selected insurance companies** under the **overall guidance & control** of the **Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW), Ministry of Agriculture & Farmers Welfare (MoA&FW), Government of India (GOI)** and the **concerned State** in coordination with various other agencies; viz Financial Institutions like Commercial Banks, Co-operative Banks, Regional Rural Banks and their regulatory bodies, Government Departments viz. Agriculture, Co-operation, Horticulture, Statistics, Revenue, Information/Science & Technology, Panchayati Raj etc.

Topic 70. CYCLING OF SOLUTION NEEDED FOR DOLOMITE CRYSTALS TO GROW

Important for the subject: Geography



A team of researchers from the **University of Michigan** and **Hokkaido University** in **Sapporo, Japan** have finally succeeded in growing a common mineral (dolomite) in the laboratory under the conditions believed to have formed it naturally, thanks to a new theory developed from atomic simulations.

Dolomite:

- **Limestone with more than 10% of magnesium** is called dolomite.
- Modern dolomite is primarily found in natural environments with pH or salinity fluctuations. This resource is **distributed** in the **states of Madhya Pradesh(29%), Andhra Pradesh, Chattisgarh, Odisha, Karnataka, Gujarat,**

Rajasthan and Maharashtra

- **Chhattisgarh** is the **largest dolomite-producing state of India**, and it contributes more than **30%** of the total production of the country. The **economic uses of Dolomite** are chiefly **Metallurgical**; as **refractories**, as **flux in blast furnaces**.

Top Dolomite Suppliers (exporters) by country:

1. **China** – 14.3% of the world exports (\$)
2. **Belgium** – 12% (\$)
3. **Spain** – 8.87% (\$)
4. **Canada** – 8.18% (\$)
5. **Brazil** – 8.15% (\$)

Growing Dolomite in the lab:

- **Dolomite** is very abundant in **rocks older than 100 million years**, but nearly **absent in younger formations**.
- It is a **key mineral** in the **Dolomite mountains in Italy**, **Niagara Falls**, the **White Cliffs of Dover** and **Utah's Hoodoos**. The secret to finally **growing dolomite in the lab** was **removing defects in the mineral structure** as it grows.
- When **minerals form in water**, **atoms** usually deposit neatly onto the edge of the growing crystal surface. However, the **growth edge of dolomite** consists of alternating rows of **calcium** and **magnesium**.
- In **water**, **calcium** and **magnesium** will randomly attach to the growing **dolomite** crystal, often lodging into the wrong spot and creating defects that prevent additional layers of dolomite from forming. These defects get dissolved when washed with water.
- Repeatedly rinsing away these defects- with rain or tidal cycles- **allows a dolomite layer to form in only a matter of years**. Over **geologic time**, **mountains of dolomite can accumulate**.
- To simulate dolomite growth accurately, the researchers needed to calculate how strongly or loosely atoms would attach to an existing dolomite surface. And scientists have calculated it with the help of precise software.

Topic 71. INDIA STEPS UP EXPLORATION FOR CRITICAL MINERALS, INCLUDING LITHIUM

Important for the subject: Geography

India has stepped up its exploration for critical and strategic minerals, including lithium, rare earth elements, and vanadium, among others.

Minerals such as **antimony**, **cobalt**, **gallium**, **graphite**, **lithium**, **nickel**, **niobium**, and **strontium**, among others, are **critical for green technologies**, **high-tech equipment**, **aviation**, and **national defence manufacturing** needs.

India has a **high import dependence** for many of these minerals.

Rare Earth Elements (REEs):

- There are **17 REEs** — **15 lanthanides** (lanthanum, cerium, praseodymium; neodymium, promethium; samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium), scandium, and yttrium. The **lanthanide elements** are divided into **two groups** — **light** and **heavy**.
- **REEs** are used in industrial applications including electronics, clean energy, aerospace, automotive and defence.
- The manufacture of **permanent magnets** is the **single largest and most important end-use for REEs**, accounting for **43 per cent** of demand in 2021

Exploration of REEs:

- The explorations are spread across states like **Chhattisgarh** (Raigarh), **Maharashtra** (Nagpur, Chandrapur, and Sindhudurg), **Bihar**, **Jharkhand** (Giridih, Simdega, and Koderna), **Odisha** (Nayagarh, Ganjam, and Angul), **West Bengal** (Purulia), **Arunachal Pradesh** (Kurung Kumey), **Assam** (West Karbi Anglong), **Meghalaya** (South West Khasi Hills and Ri-Bhoi), **Uttar Pradesh** (Lalitpur and Sonbhadra), **Andhra Pradesh** (Anantapur, East Godavari, Alluri Sitharama Raju, Chittoor, Annamayya, Nellore, and Prakasam), **Kerala** (Kottayam, Idukki, Thiruvananthapuram, Kollam, and Wayanad), **Telangana** (Bhadradri and Jayashankar), **Tamil Nadu** (Kanyakumari), **Karnataka** (Chamarajanagar), **Gujarat** (Chhota Udepur, Aravalli, Mehsana, and Banaskantha), and **Rajasthan** (Alwar, Udaipur, Sirohi, and Barmer), among others.

Lithium exploration:

- **Lithium**, a **non-ferrous alkali mineral**, is in demand for the **lithium-ion batteries** needed to run **electric vehicles**.
- It is vital to **India's EV transition** in the public and private transportation space. **India's only lithium** find has been in **Resai**, to the tune of **5.9 million tonnes (mt)**.
- **Lithium exploration** projects are underway in at least **three states**, including **Korba district in Chhattisgarh**; **South Garo Hills** and **East Garo Hills** in **Meghalaya**; and **Jammu, Ramban, Resai, Rajoury** and **Udhampur** in **Jammu and Kashmir**.
- **Mineral Exploration and Consultation Ltd** is carrying out **exploration** for **lithium** and **potassium** (under the **National Mineral Exploration Trust**) at the **Merak block** in the **Union Territory of Leh**.

Other Critical Minerals:

Vanadium–

- It is an **elemental metal**, and is **rarely found in nature**, but once **isolated artificially**, the formation of an **oxide layer stabilises the free metal** against further oxidation.
- **Exploration** for other minerals like **vanadium** is at the G4 stage in **Madhya Pradesh**, **Himachal Pradesh**, **Arunachal Pradesh** and **Kerala**. **Vanadium** is used in nuclear reactors,

spacecraft and aircraft.

Niobium:

- It is used in **jet engines** and **rockets, girders** and **beams**. Its explorations have restarted in **West Bengal** (Purulia) and **Rajasthan** (Jhunjhunu and Sikar).

Mineral Exploration and Consultation Ltd. (MECL):

- **MECL** was established as an **autonomous Public Sector Company** in October **1972**, under the **administrative control of the Ministry of Mines**, Government of India for **systematic exploration of minerals**, to bridge the gap between the initial discovery of a prospect and its eventual exploitation.
- **MECL** has the **Mission** to provide high-quality, cost-effective and time-bound geo-scientific services for the exploration and exploitation of minerals.

National Mineral Exploration Trust (NMET):

- The **NMET** was established by the **Government of India** in 2015, in pursuance of **subsection (1) of Section 9C** of the **Mines and Minerals (Development and Regulation) Act, 1957**, with the objective of **expediting mineral exploration** in the country.

Topic 72. CCI BUYS COTTON AT MSP AS PRICES DROP

Important for the subject: Geography

With cotton prices remaining subdued due to lack of demand, the Cotton Corporation of India (CCI) has purchased nearly two lakh bales of cotton at the Minimum Support Price (MSP).

About Cotton Corporation of India

- Cotton Corporation of India was **established in 1970 under Companies Act 1956**. It's a Government of India's corporate agency, **engaged in diverse activities related to trade, procurement, and export of cotton**.
- CCI is governed by the **Textile Policy 1985** issued by Ministry of Textiles, Government of India. CCI operates in the following states as of now – Punjab, Haryana, Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Andhra Pradesh, Karnataka, Tamil Nadu and Orissa.
- The **major role of the CCI is to undertake price support operations, whenever the market prices of cotton falls below the minimum support prices (MSP)**.

About Crop Cotton

- Cotton is a **kharif crop which requires 6 to 8 months to mature**. Its time of sowing and harvesting differs in different parts of the country depending upon the climatic conditions.
- Cotton is the crop of **tropical and sub-tropical areas** and requires uniformly high temperature varying between 21°C and 30°C. The growth of cotton is retarded when the temperature falls below 20°C.

- **Cotton is a drought – resistant crop** ideal for arid climates and requires an average annual rainfall of 50- 100 cm. It **requires at least 210 frost free days in a year.**
- It occupies just 2.1 % of the world’s arable land, yet it **meets 27% of the world’s textiles need.** In addition to its fibre used in textiles and apparel, food products are also derived from cotton like edible oil and animal feed from the seed.

India is the second largest producer of cotton in the world after China.

- Between 2011 and 2018, India implemented a Cotton Technical Assistance Programme (Cotton TAP-I) for seven African countries namely Benin, Burkina Faso, Mali and Chad and also Uganda, Malawi and Nigeria.
- The technical assistance focused on improving the competitiveness of the cotton and cotton-based textiles and apparel industry in these countries through a series of interventions which had significant outcomes leading to a demand for a follow on project.

Topic 73. PULSES, OIL SEEDS, FRUIT OUTPUT TO LAG DEMAND TILL AT LEAST 2030-31: REPORT

Important for the subject: Geography

India’s output shortfalls vis-a-vis demand for the **key protein source (pulses)**, as well as **edible oils and fruits**, are expected to persist or even widen over the next seven years, as per a new research report by agricultural economists.

Report title: ‘**Prospects of India’s Demand and Supply for Agricultural Commodities towards 2030**’

Published by: **National Bank for Agriculture and Rural Development (NABARD)** and the **Indian Council for Research on International Economic Relations (ICRIER).**

- The report reiterated the recommendation of a **2012 report** from the **Commission for Agricultural Costs and Prices (CACP)** to **raise the import duty** whenever the **import price of crude palm oil falls below \$800 per tonne** to protect **Indian producers.** However, it also added that **attaining self-reliance in water-intensive and long gestation crops** like **oil palm** may not be worth pursuing as a sustainable goal either.
- The **food deficit** will lead to **high import bills** in the long run. **Commodities** like **oilseed, pulses and fruits** are expected to experience a supply and demand gap in the coming years.
- Therefore, there is a need to **increase the level of production and productivity** of **oilseeds, pulses, and fruits** since their demand in the future shows an increasing trend.

Reason for rising demands:

- As **per capita incomes rise**, the **consumption basket** of people tends to **diversify** towards **nutritious and high-valued commodities**, including **fruits and vegetables** and **dairy products** and away from staples such as rice and cereals.
- So **demand growth for non-cereals and high-valued commodities** is expected

to exceed the population growth rate and cereal commodities' growth in coming years.

- Oil seeds production is expected to rise to around 35 to 40 million tonnes (MT) by 2030-31, with the gap between demand and supply likely to expand to 3 MT by 2025-26 and 6 MT by 2030-31, even if per capita incomes rise just 5.1%.

Report recommendations:

- There is a need for policy attention to ensure a balance between domestic production and the absorption of these commodities, diversification towards high-value commodities that require major investments in market infrastructure, processing, and cold storage and warehousing facilities to build an efficient and reliable value chain.
- Such measures can significantly reduce food wastage.

Topic 74. MGNREGS AUDIT CROSSES 50% LOCAL BODIES IN JUST SIX STATES- SOCIAL AUDIT CLAUSE MNREGA

Important for the subject: Government schemes

MGNREGS audit crosses 50% local bodies in just six States

Among the 34 States and Union Territories in India, only six have completed social audits of works done under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in more than 50% of gram panchayats.

What is MGNREGA?

- **About:** MGNREGA is one of the largest work guarantee programmes in the world launched in 2005 by the Ministry of Rural development.
- The primary objective of the scheme is to guarantee 100 days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work.
- As of 2022-23, there are 15.4 crore active workers under the MGNREGA. **Legal Right to Work:** Unlike earlier employment guarantee schemes, the act aims at addressing the causes of chronic poverty through a rights-based framework.
- At least one-third of beneficiaries have to be women. Wages must be paid according to the statutory minimum wages specified for agricultural labourers in the state under the Minimum Wages Act, 1948.
- **Demand-Driven Scheme:** The most important part of MGNREGA's design is its legally-backed guarantee for any rural adult to get work within 15 days of demanding it, failing which an 'unemployment allowance' must be given. This demand-driven scheme enables the self-selection of workers.
- **Decentralised planning:** There is an emphasis on strengthening the process of decentralisation by giving a significant role in Panchayati Raj Institutions (PRIs) in planning and implementing these works.

- The act mandates Gram sabhas to recommend the works that are to be undertaken and at least 50% of the works must be executed by them.

What are the Issues Associated with Implementation of Scheme?

- **Delay and Insufficiency in Funds Dispersal:** Most states have failed to disburse wages within 15 days as mandated by MGNREGA. In addition, workers are not compensated for a delay in payment of wages.
- This has turned the scheme into a supply-based programme and subsequently, workers had begun to lose interest in working under it. There is ample evidence by now, including an admission by the Ministry of Finance, that delays in wage payments are a consequence of insufficient funds.
- **Caste Based Segregation:** There were significant variations in delays by caste. While 46% of payments to SC (Scheduled Caste) workers and 37% for ST (Scheduled Tribes) workers were completed in the mandated seven-day period, it was a dismal 26% for non-SC/ST workers.
- The negative impact of caste-based segregation was felt acutely in poorer States such as Madhya Pradesh, Jharkhand, Odisha and West Bengal.
- **Ineffective Role of PRI:** With very little autonomy, gram panchayats are not able to implement this act in an effective and efficient manner.
- **Large Number of Incomplete works:** There has been a delay in the completion of works under MGNREGA and inspection of projects has been irregular. Also, there is an issue of quality of work and asset creation under MGNREGA.
- **Fabrication of Job cards:** There are several issues related to the existence of fake job cards, the inclusion of fictitious names, missing entries and delays in making entries in job cards.

Social Auditing under MGNREGA

- Social audits are an anti-corruption measure under MGNREGA, mandated by **Section 17 of the act**.
- Social audit units in each state work independently of implementing authorities, and auditing standards by the Comptroller and Auditor General were issued on December 19, 2016.
- The audit involves quality checks of infrastructure created under MGNREGA and checking for financial misappropriation in wages and procedural deviations.
- The Ministry of Social Justice and Empowerment has formulated a scheme, namely Information-Monitoring, Evaluation and Social Audit (I-MESA) in FY 2021-22. Under this scheme, Social Audits are to be conducted for all the schemes of the Department starting FY 2021-22. These social audits are done through Social Audit Units (SAU) of the States and National Institute for Rural Development and Panchayati Raj.

Topic 75. AYUSHMAN BHARAT CENTRES TO BE NOW CALLED AYUSHMAN AROGYA MANDIR

Important for the subject: Govt Schemes

The Union government has decided to rename Ayushman Bharat Health and Wellness Centres (AB-HWCs) to 'Ayushman Arogya Mandir' with the tagline '**Arogyam Parmam Dhanam.**'

The renaming aims to emphasize a **shift from illness to wellness** and promote Ayushman India's vision. States are urged to complete the rebranding by the end of 2023, **uploading photographs of the rebranded facilities onto the AB-HWC portal.**

- The logo of the National Health Mission (NHM) will be maintained in the newly rebranded centers.
- The initiative includes a proposed fund allocation of ₹3,000 per facility for renaming. Over 1.6 lakh AB-HWCs across India provide comprehensive primary healthcare services, including screenings and essential drugs.

What is Ayushman Bharat-PMJAY?

- PM-JAY is the **world's largest health insurance scheme** fully financed by the government. Launched in February 2018, it offers a sum insured of **Rs.5 lakh per family for secondary care and tertiary care.** Health Benefit Packages covers surgery, medical and day care treatments, cost of medicines and diagnostics.

Beneficiaries:

- It is an entitlement-based scheme that targets the beneficiaries as identified by latest **Socio-Economic Caste Census (SECC) data.**
- The **National Health Authority (NHA)** has provided flexibility to States/UTs to use non- Socio-Economic Caste Census (SECC) beneficiary family databases with similar socio-economic profiles for tagging against the leftover (unauthenticated) SECC families.

Funding:

- The funding for the scheme is shared – **60:40 for all states and UTs** with their own legislature, **90:10 in Northeast states** and Jammu and Kashmir, Himachal and Uttarakhand and 100% Central funding for UTs without legislature.

Nodal Agency:

- The **National Health Authority (NHA)** has been constituted as an autonomous entity under the Society Registration Act, 1860 for effective implementation of PM-JAY in alliance with state governments.
- The **State Health Agency (SHA)** is the **apex body** of the State Government responsible for the implementation of AB PM-JAY in the State.

Topic 76. SCHEME TO PROVIDE DRONES TO 15000 SELF HELP GROUPS GETS CABINET NOD

Important for the subject: Schemes

The Union Cabinet has approved a central sector scheme to provide drones to women self help groups (SHGs).

The Union Cabinet has sanctioned a central sector scheme worth Rs 1,261 crore to supply drones to women self-help groups (SHGs).

The initiative, spanning from 2023-24 to 2025-26, aims to empower 15,000 selected women SHGs to offer drone rental services to farmers for agricultural purposes.

- Under the scheme, women SHGs will receive 80% of the drone cost, including accessories, up to Rs 8 lakh as Central Financial Assistance.
- The program integrates efforts from various departments and entities, including Agriculture & Farmers Welfare, Rural Development, Fertilizers, Women SHGs, and lead fertilizer companies.
- Identified clusters where drone use is economically viable will be chosen for SHG selection.
- The SHGs will receive training, and the scheme envisions providing sustainable business opportunities, additional income, and technological advancements in agriculture.

Topic 77. ETHICS AND EPISTEMOLOGY OF ANCIENT INDIAN MATERIALISTS- INDIAN PHILOSOPHIES

Important for the subject: History

Introduction

The Indian philosophical tradition was born of the same principle by which all philosophical traditions in the world were developed. **By the observation, and contemplation of the world around them.**

Through these observations, various schools of philosophy developed their own fundamental ideas of the world, and set forth their ontological, epistemological, and axiological notions.

Background of Indian Philosophy

- Philosophy arose in India as **an enquiry into the mystery of life and existence**. Indian Philosophy refers to several traditions of philosophical thought that originated in the Indian subcontinent.
- Over centuries, India's intellectual exploration of truth has come to be represented by six systems of philosophy. These are known as Vaishesika, Nyaya, Samkhya, Yoga, Purva Mimamsa and Vedanta or Uttara Mimamsa.
- **These six systems of philosophy** are said to have been founded by sages Konada,

Gotama, Kapila, Patanjali, Jaimini and Vyasa, respectively. These philosophies still guide scholarly discourse in the country.

- The six systems of philosophy were developed over many generations with contributions made by individual thinkers. However, today, we find an underlying **harmony in their understanding of truth**, although they seem distinct from each other.

Orthodox Schools of Indian Philosophy

- Orthodox (astika) schools, originally called sanatana dharma, are collectively referred to as Hinduism in modern times. The ancient Vedas are their source and scriptural authority. Hinduism consists of six systems of philosophy & theology.

Samkhya (Kapila):

- Samkhya is the **oldest** of the orthodox philosophical systems, and it postulates that **everything in reality stems from purusha (self, soul or mind) and prakriti (matter, creative agency, energy)**.
- Purush cannot be modified or changed while prakriti brings change in all objects.

Yoga (Patanjali):

- Yoga literally means the **union of two principal entities**. Yogic techniques **control body, mind & sense organs, thus considered as a means of achieving freedom or mukti**.
- This freedom could be attained by practising self-control (yama), observation of rules (niyama), fixed postures (asana), breath control (pranayama), choosing an object (pratyahara) and fixing the mind (dharna), concentrating on the chosen object (dhyana) and complete dissolution of self, merging the mind and the object (Samadhi).
- Yoga admits the **existence of God as a teacher and guide**.

Nyaya (Gautama Muni):

- Nyaya Philosophy states that **nothing is acceptable unless it is in accordance with reason and experience (scientific approach)**. Nyaya is considered as a technique of **logical thinking**.
- Nyaya Sutras say that there are four means of attaining valid knowledge: **perception, inference, comparison, and verbal testimony**.

Vaisheshika (Kanada):

- The basis of the school's philosophy is that **all objects in the physical universe are reducible to a finite number of atoms and Brahman is regarded as the fundamental force that causes consciousness in these atoms**.

Vaisheshika system is considered as the realistic and objective philosophy of universe.

- The reality according to this philosophy has many bases or categories which are substance, attribute, action, genus, distinct quality and inherence.
- Vaisheshika thinkers believe that all objects of the **universe are composed of five elements—earth, water, air, fire and ether**. They believe that God is the guiding principle. The living beings were rewarded or punished according to the law of karma,

based on actions of merit and demerit.

- The Vaisheshika and Nyaya schools eventually merged because of their closely related metaphysical theories (Vaisheshika only accepted perception and inference as sources of valid knowledge).

Purva Mimamsa (Jaimini):

- This philosophy encompasses the Nyaya-vaisheshika systems and emphasizes the concept of valid knowledge. According to Purva Mimamsa, **Vedas are eternal and possess all knowledge.**
- According to Mimamsa philosophy Vedas are eternal and possess all knowledge, and religion means the fulfilment of duties prescribed by the Vedas.
- It says that the **essence of the Vedas is dharma.** By the execution of dharma one earns merit which leads one to heaven after death.

Vedanta:

- The **Vedanta, or Uttara Mimamsa, school concentrates on the philosophical teachings of the Upanishads (mystic or spiritual contemplations within the Vedas), rather than the Brahmanas (instructions for ritual and sacrifice).** The school separated into six sub-schools, each interpreting the texts in its own way and producing its own series of sub-commentaries:
- **Advaita (Adi Shankara):** It states that both the individual self (Atman) and Brahman are the same, and knowing this difference causes liberation.
- **Visishtadvaita (Ramanuja):** It believes that all diversity is subsumed to a unified whole.
- **Dvaita (Madhvacharya):** It considers Brahman and Atman as two different entities, and Bhakti as the route to eternal salvation.
- **Dvaitadvaita (Nimbarka):** It states that the Brahman is the highest reality, the controller of all.
- **Shuddhadvaita (Vallabhacharya):** It states that both God and the individual self are the same, and not different. Achintya BhedaAbheda (Chaitanya Mahaprabhu): It emphasizes that the individual self (Jivatman) is both different and not different from Brahman.

Unorthodox Schools of Indian Philosophy

- Schools that do not accept the authority of Vedas are by definition unorthodox (nastika) systems. The following schools belong to heterodox schools of Indian Philosophy.

Charvaka (Brihaspati):

- **Charvaka is a materialistic, sceptical and atheistic school of thought.** According to Charvaka there is no other world. Hence, **death is the end of humans & pleasure is the ultimate object in life.** It is also known as the Lokayata Philosophy-the philosophy of masses.

Buddhist philosophy (Siddhartha Gautama):

- **Buddhism is a non-theistic philosophy** whose tenets are not especially concerned with the existence or nonexistence of God. **Buddha considered the world as full of misery**

and considered a man's duty to seek liberation from this painful world. He strongly criticized blind faith in the traditional scriptures like the Vedas

Jain philosophy (Mahavira):

- A basic principle is anekantavada, the idea that reality is perceived differently from different points of view, and that **no single point of view is completely true.**
- According to Jainism, only the Kevalins, those who have infinite knowledge, can know the true answer, and that all others would only know a part of the answer.

Topic 78. MIRABAI A UNIQUE EXAMPLE OF PURE DEVOTION AND FAITH

Important for the subject : History

Prime Minister Narendra Modi on Thursday offered prayers at Sri Krishna Janmabhoomi Temple in Mathura and attended 'Mirabai Janmotsav', organised to celebrate the 525th birth anniversary of the poet and Krishna devotee.

About Mirabai:

- Mirabai (Meera), was born into the **Rathore Rajput royal family in Kudki, located in the present-day Pali district of Rajasthan.**
- She spent her formative years in Merta and was the **great-granddaughter of Rana Jodhaji, the founder of Jodhpur.** In 1516, she was unwillingly married to **Bhoj Raj, the crown prince of Mewar,** and faced various challenges in her marital life.
- Mirabai's life took a transformative turn when she became a **devoted follower of Lord Krishna.** Her unwavering devotion led her to abandon the royal palace and embark on a spiritual journey. She saw Krishna as the beloved and is considered to be high **example of Premabhakti.**
- After the death of her husband, she left the kingdom of Mewar and embarked on pilgrimages. In her later years, she is said to have lived in Dwarka or Vrindavan. Mirabai advocated for the inclusion of all, irrespective of factors like birth, poverty, age, and sex, in receiving divine grace.
- Mirabai's contribution to the Bhakti movement is manifested in her devotional songs and lyrics, constituting a rich cultural heritage and her bhajans continue to be sung across India.
- Mirabai's legacy endures through the continued singing of her compositions, especially the popular '**Payoji Maine Naam Ratan Dhan Payo.**' She is mentioned in **Bhaktamal** written by Nabha Dass.

Bhakti movement in India

- It originated in the **Tamil region during the 6th-7th centuries AD** and gained prominence through the poetic expressions of the Alvars and Nayanars, representing **Vaishnavite and Shaivite perspectives,** respectively.
- In the 12th century, Basavanna initiated a significant phase of the Bhakti movement in the Kannada region.

- Despite posing a threat to the caste hierarchy and societal fabric, **Basavanna** (a minister of King Bijjala from Kalachuri Dynasty) and his disciples, including Akkamahadevi, Allama Prabhu, and Devara Dasimayya, produced a rich literary tradition known as Vachana sahitya.
- These **Vachanas conveyed profound observations on spiritual and social aspects**. In Maharashtra, the Bhakti movement gained momentum in the late 13th century, led by the Varkaris. Influential figures like **Jnanadev, Namdev, and Tukaram played a pivotal role**, leaving behind verses that encapsulated the essence of Bhakti.
- **Tukaram, a Shudra by caste, rebelled against societal norms by becoming a merchant and defying Brahminical injunctions against writing on religious matters**. Writing in Marathi rather than Sanskrit, Tukaram faced opposition from the orthodoxy.

Expansion of Bhakti movement to the North:

- As the Bhakti movement gained traction in South India, Vaishnava scholars and saints played a pivotal role in elucidating its philosophical teachings.
- **Ramanuja**, for instance, introduced the doctrine of Vishistadvaita, also known as qualified monism, which stood in contrast to the absolute monism advocated by Adi Sankara.
- The Bhakti movement originating in Kerala and Tamil Nadu, subsequently spread to Karnataka, Maharashtra, and eventually reached North India in the 15th century. It reached its pinnacle during the 15th and 17th centuries.

Causes for the origin of Bhakti movement:

Social evils and dissatisfaction

- The genesis of the Bhakti movement can be traced to the prevalent **social evils in Hindu society**.
- The rigid caste system, irrelevant rituals, blind faiths, and economic disparities due to casteism created discontent among common people.
- The monopolization of religion by Brahmins further fuelled dissatisfaction, prompting a need for a more liberal form of religion.

Challenge from Islam

- The emergence of Islam in India posed a significant challenge to Hinduism. **Unlike Buddhism and Jainism, which lost vitality over time due to the tolerant outlook of Hinduism, Islam presented a formidable challenge**.
- With Muslims becoming rulers by the 13th century AD, their religion, characterized by universal brotherhood, equality, absence of caste system, and monotheism, attracted Hindus, especially the oppressed Sudras.

Influence of Sufism

- Sufism, a reform movement within Islam, played a crucial role in the origin of the Bhakti movement.
- Prominent Sufi saints like **Hazrat Khwaja Moinuddin Chisti and Hazrat Khwaja Nizamuddin Auliya fostered a spirit of reconciliation between Hindus and Muslims**.

- The liberal approach of Sufism influenced Hindu saints, contributing to the development of Bhakti ideals.

Appeal of simple devotion

- The **complexity of Vedic and Upanishadic philosophy** led common people to seek a simpler form of worship and religious practices.
- The paths of **Gnana marga and Karma marga were perceived as difficult**, making Bhakti marga, a simple way of devotion, an appealing alternative for salvation from worldly life.

Role of religious reformers

- Hindu **religious reformers responded to the egalitarian message of Islam**, especially appealing to the lower classes of Hindu society.
- The medieval period witnessed various revivalist movements in Hinduism under different sages and saints, all rooted in the Bhakti philosophy.

Salient features of Bhakti movement:

- Bhakti reformers **championed the principle of monotheism**, advocating the belief in the oneness of God. This foundational concept sought to unify spiritual practices and direct devotion towards a singular divine entity.
- The Bhakti movement **underscored the significance of self-surrender** as a means to attain divine bliss and grace. Devotees were encouraged to submit themselves entirely to the will of God in their spiritual journey.
- Recognizing the need for guidance, **Bhakti reformers acknowledged the role of gurus as mentors and preceptors**. These spiritual leaders played a crucial part in guiding individuals on their path to salvation.
- A key principle of the Bhakti movement was the promotion of universal brotherhood. Bhakti leaders rejected societal divisions based on birth, emphasizing the idea that all living beings, including humans, were children of God.
- **Bhakti reformers were vocal critics of idol worship, challenging the prevalent practice of revering physical representations of deities**. They argued for a more direct and personal connection with the divine.
- A distinctive feature of the Bhakti movement was the stress on singing hymns with profound devotion. Devotees expressed their love and devotion to God through the composition and recitation of devotional songs.
- Bhakti leaders vehemently condemned the caste system, emphasizing that all individuals, regardless of their birth, were considered as God's children. This stance aimed at breaking down social barriers and fostering equality.
- The **Bhakti movement rejected the significance of ritualistic practices**, pilgrimages, and fasting as a means of achieving spiritual growth. Instead, emphasis was placed on the purity of heart and devotion.
- A notable aspect of the Bhakti movement was its disregard for the sanctity of any particular language. Bhakti leaders composed poems and hymns in the language of the common people, making spirituality accessible to a wider audience.

Topic 79. KAMBALA

Important for the subject: History

Kambala comes to Bengaluru Over the weekend, **Bengaluru hosted its inaugural Kambala race**,

The **Karnataka government**, recognizing its **popularity**, **amended legislation to permit and facilitate** the continuation of these races

The event attracted a significant turnout, with thousands of spectators visiting the venue to witness the races.

What is Kambala:

- Kambala is an **annual buffalo race** held in the **south western Indian state of Karnataka**. Traditionally, it is **sponsored by local Tuluva landlords** and households in the **coastal districts of Dakshina Kannada and Udupi of Karnataka and Kasaragod of Kerala**, a region collectively known as **Tulu Nadu**.
- The Kambala season **generally starts in November** and lasts until March. The Kambalas are **organized through Kambala samithis** (Kambala Associations)
- During the race, **the racers try to bring the buffaloes under control by holding their reins tight and whipping them**.
- In its traditional form, Kambala was **non-competitive** and buffalo pairs raced one after another in paddy fields. **Slushy/marshy paddy field track** is used for **Kambala**.
- It was also **observed as thanksgiving** to gods for protecting the animals from diseases.

What are the categories in Kambala:

- Kambala races are typically **organized into four categories**. The **first, Negilu (plough)**, involves using **lightweight ploughs** to tether buffaloes for **entry-level races**.
- In the **second category, Hagga (rope)**, jockeys **race buffaloes** with just a rope connecting the pair.
- The **third category, Adda Halage**, has jockeys **standing on a horizontal plank** pulled by buffaloes, **distinguishing it from Hagga and Negilu** where jockeys **run behind the animals**.
- **Kane Halage**, the **fourth category**, features a **wooden plank** attached to buffaloes. As the **plank is dragged through slush tracks**, **water gushes out of holes**, and the height of the **splashes determines the event's winner**.

Why was Kambala outlawed by the Supreme Court:

- Various **organizations, including People for the Ethical Treatment of Animals (PETA)**, lodged a **petition against traditional sporting events, alleging animal abuse**.
- The specific concern with Kambala was the **tying of buffaloes' noses with ropes and continuous whipping during races**, constituting cruelty.
- The Supreme Court, **after hearing these petitions**, issued a **ban on Jallikattu, Kambala, and bullock cart racing in 2014**.

How was the ban lifted:

- In **January 2016**, the **Environment Ministry** issued a **notification** creating an **exception** allowing the **training of bulls** for events such as **Jallikattu** in **Tamil Nadu** and **Bullock Cart Races** in **Maharashtra, Karnataka, Punjab, Haryana, Kerala, and Gujarat**.
- This **exception** was **granted under** the condition that **certain measures** be taken to **minimize the suffering** of animals involved in these sports.
- Simultaneously, **state governments** **amended the Prevention of Cruelty to Animals Act** to **provide legal exemptions** for these events. Despite legal challenges, a **five-judge Constitutional Bench** in **May** of the same year **upheld the amendments** made by **Karnataka, Tamil Nadu, and Maharashtra**.

Why has Kambala been accused of caste discrimination:

- Historically, **members of the Koraga community**, formerly deemed “**untouchable**,” were **Important** for the **subjected to mistreatment** preceding the festival, with **instances of them being compelled** to participate in the races instead of the buffaloes.
- Critics contend that **even today, the sport is predominantly controlled by higher caste groups, while individuals from lower castes often find themselves relegated to menial tasks during the event.**