

MARCH EDITION 2023

VOL. II ISSUE 03

# Varthaman

MONTHLY CURRENT AFFAIRS MAGAZINE  
BY RV TRAINING ACADEMY

## BHARATPUR BIRD SANCTUARY

The Rajasthan state Forest Department has proposed to construct a zoo inside Keoladeo National Park, a World Heritage Site popularly known as Bharatpur bird sanctuary.



CURRENT AFFAIRS  
& PRACTICE QUESTIONS

## **COURSE HIGHLIGHTS**

- **BASIC NCERT FOUNDATION**
- **PRELIMS CLASSES**
- **WEEKLY CURRENT AFFAIRS**
- **MAINS UPGRADATION**
- **ANSWER WRITING PRACTICE**
- **PERSONALISED MENTORING**
- **STUDY MATERIALS**

**Admissions  
Open**

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**New Batch Starts  
June' 2023**





# EMINENT PERSONALITIES



## MICHELANGELO BUONARROTI

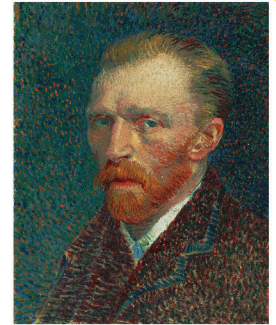
Date of Birth : 6th March 1475

*One of the greatest artistic geniuses of the Italian Renaissance*



**Did you know?**

- Michelangelo is known to have signed only one artwork with his name, the "Pietà" which depicts Mary mourning the loss of Jesus Christ who is laid across her lap. Many a time he would simply paint his portrait on his paintings. The most famous being The Last Judgment where his face was used to represent Saint Bartholomew on a piece of flayed skin.
- It was said that Michelangelo was very demanding about the quality of marble that he used for his sculptures. Yet surprisingly, he used a block of marble that had been considered unworkable by other sculptors to make his famous statue, "David".
- Michelangelo created artworks for nine Catholic Popes consecutively, from Julius II to Pius IV, starting in 1505. During that time, his work was large in scope, ranging from ornamental knob crafting for the Pope's bed to the four-year-long process of painting the Sistine Chapel.



## VINCENT VAN GOGH

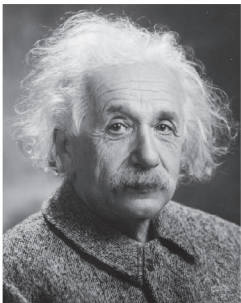
Date of Birth : 30th March 1853

*Post-Impressionist painter*



**Did you know?**

- During his lifetime, Vincent Van Gogh created about 2,100 pieces of art, 860 of which were oil paintings. Most of them were done in the last 2 years of his life.
- While he was alive, Vincent Van Gogh only sold one painting, "The Red Vineyard". He didn't become famous until after he died.
- Vincent Van Gogh had many illnesses, including epilepsy, hallucinations, and mental issues. The most famous piece of work done by him, "Starry Night", was done while Vincent was staying in an asylum in France that he checked himself into.
- While he was having an epileptic seizure, Vincent made a move to attack his friend with a razor. He ended up cutting off a piece of his own ear, but not the entire thing.



## ALBERT EINSTEIN

Date of Birth : 14th March 1879

*An exceptional physicist*



**Did you know?**

- One of the most interesting Albert Einstein facts is that he was a late talker. Because of this, social theorist Thomas Sowell would later use the term "Einstein Syndrome" to describe bright children who also experience late language emergence.
- Upon his birth, Albert Einstein became a citizen of the German Empire. However, when he was 16 years old, with the approval of his father, he renounced his German citizenship to avoid military service. Because of this, Einstein became a stateless individual for five years before becoming a naturalized citizen of Switzerland. He then kept his Swiss citizenship for the rest of his life.
- During the Nazi rule, Albert Einstein corresponded with various leaders such as Winston Churchill, Lloyd George, Austen Chamberlain, and İsmet İnönü. In their correspondence, Einstein convinced the leaders to seek out Jewish scientists in Germany and employ them in their respective countries. As a result, Einstein helped save thousands of lives.

## MANABENDRA NATH ROY

Date of Birth : 21st March 1887

*Father of Indian Communism and the first revolutionary leader of India.*



**Did you know?**

- Having begun his political career at an early age, Roy first emerged as a powerful radical voice against the 1905 Partition of Bengal.
- He has unique distinction of having worked with Lenin, Trotsky and Stalin.
- In 1915, after World War I had begun, Roy made several trips to Indonesia, with help from German contacts, to procure arms to overthrow the British.
- In 1916, he landed in the United States. Roy was tracked so closely by British Intelligence that the day he landed at San Francisco, a local newspaper published a report headlined, "Mysterious Alien Reaches America, Famous Brahmin Revolutionary or Dangerous German Spy."
- This forced him to flee south to Palo Alto, California. It was here that he changed his name from Narendranath Bhattacharya and became Manabendra Nath Roy.

## Purpose of the magazine

The purpose of Varthaman is to focus solely on issues which are relevant to the actual as well as applied aspects of the General Studies syllabus. The unique way the "Varthaman" team puts forward the facts and analysis would help you understand, retain and reproduce the information during the journey towards toppers' list.

## The sources relied for selection and application of issues

The Hindu  
The Indian Express  
Times of India  
PIB  
Live Mint  
Hindustan Times  
News on Air  
Prasar Bharati website  
IDSA Website  
NASA website  
PRS India Website  
Down to Earth  
Rajya Sabha TV website  
Lok Sabha TV website  
Economic and Political Weekly  
Yojana  
Kurukshetra  
NITI Aayog reports  
BBC

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## Features of the magazine

### Current Affairs Analysis

- This month's edition covers the analysis of news from the immediately preceding month.
- The news are categorized subject wise viz. Polity, Economics, Environment and Ecology, Science and Technology, International Relations, etc. for easy and efficient study.
- Lead articles on burning issues are included.

### Practice Questions

- Prelims Practice Questions
- Mains Practice Questions



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# POLITY AND GOVERNANCE

## DEPUTY SPEAKER OF THE LOK SABHA

**In News:** The Supreme Court has sought a response from the Centre on a Public Interest Litigation (PIL) that contends that not electing a Deputy Speaker to the 17th (present) Lok Sabha, since 2019, is “against the letter and spirit of the Constitution”.



### More on the Topic:

#### Constitutional Provisions related with Deputy Speaker.

- It will be managed by the United Nations Multi-Partner Trust Fund Office (UN MPTFO), New York.
- **Article 93 of the Constitution of India** establishes the post of the Deputy Speaker of Lok Sabha and Articles 94-96 detail their appointment, removal, and powers.
- In the absence of the Speaker, the Deputy Speaker serves as the Speaker and wields the full powers of the Speaker.
- Deputy Speaker is not subordinate to the Speaker and is directly responsible to the House.
- **Article 178 of the Constitution** establishes the post of Deputy Speaker of assemblies and Articles 179-181 deal with their powers and appointment or resignation.
- Constitutional experts point out that both **Articles 93 and 178 use the word “shall”**, indicating that the election of Speaker and Deputy Speaker is mandatory under the Constitution.
- **Article 95(1) says:** “While the office of Speaker is vacant, the duties of the office shall be performed by the Deputy Speaker”.
- The Deputy Speaker has the same powers as the Speaker when presiding over a sitting of the House. All references to the Speaker

in the Rules are deemed to be references to the Deputy Speaker when he presides.

#### Position of the Union government on the current vacancy in the post of Deputy Speaker.

- The Treasury benches have maintained there is no “immediate requirement” for a Deputy Speaker as “bills are being passed and discussions are being held” as normal in the House.
- A Minister argued that “there is a panel of nine members — senior, experienced and selected from different parties — who can act as chairpersons to assist the Speaker to run the House”

#### Can the Judiciary Intervene in the Matter?

- Courts usually don't intervene in the procedural conduct of Parliament. However, Experts argue that the courts do have jurisdiction to at least inquire into why there has been no election to the post of Deputy Speaker since the Constitution does envisage an election “as soon as may be”.
- **Article 122** says, “The validity of any proceedings in Parliament shall not be called in question on the ground of any alleged irregularity of procedure.”

## LAW COMMISSION OF INDIA

**In News:** Term of 22nd Law Commission has been extended till August, 2024.

### More on the Topic:

- Besides identifying laws which are no longer relevant, it is also mandated to suggest enactment of new legislations as may be necessary to implement the Directive Principles and to attain the objectives set out in the Preamble of the Constitution.
- Law commission is an executive body established by an order of the Government of India.
- **Originally formed in 1955**, the commission is reconstituted every three years and so far, 277 reports have been submitted to the government.

#### Composition:

- Apart from having a full-time chairperson, the commission will have four full-time members, including a member-secretary.
- **Law and Legislative Secretaries in the Law Ministry** will be the ex-officio members of the commission.

- It will also have not more than five part-time members.
- A retired Supreme Court judge or Chief Justice of a High Court will head the Commission.

## OFFICE OF PROFIT

In News: Office of Profit is in news related with the current Chief Minister of Jharkhand.

### What the law says

**Article 102 (1)(a)** says a person shall be disqualified from being a member of either House of Parliament if he holds any office of profit, among other grounds

**Article 103** says if a question arises whether a member has incurred such disqualification, it will be referred to the President's decision. The President shall obtain the Election Commission's opinion and act accordingly

**Article 191(1)** contains a similar provision for MLAs and MLCs in the States. Legislators in Delhi are covered by corresponding provisions in the Government of National Capital Territory Act, 1991



### More on the Topic:

- Under Article 102 (1) and Article 191 (1) of the Indian Constitution, an MP or an MLA (or an MLC) is barred from holding any office of profit under the central or state government, but Indian Constitution or any law does not clearly define what constitutes an office of profit, the definition has evolved over the years with various court judgments.
- The rationality behind the disqualification under the office of profit law is that if legislators hold an 'office of profit' under the government, they might influence the government, and may not discharge their constitutional duty.
- Disqualification under "office of profit" ensures that there should be no conflict between the duties and interests of an elected member.
- Disqualification based on the office of profit upholds the principle of separation of power between the legislature and the executive; an essential feature of the Indian Constitution.

## DELIMITATION COMMISSION

In News: The Supreme Court has dismissed a plea challenging the Centre's decision to constitute a Delimitation Commission for the Union Territory of Jammu and Kashmir under provisions of the Delimitation Act, 2002.

### What is delimitation

**The process of redrawing boundaries** of Lok Sabha and state Assembly seats to represent changes in the population.

**The main task of the Delimitation Commission** is redrawing the boundaries of the various assembly and Lok Sabha constituencies based on a recent census.



### More on the Topic:

- Delimitation is the act of redrawing boundaries of Lok Sabha and state Assembly seats to represent changes in population.
- The main objective of delimitation is to provide equal representation to equal segments of a population. For instance, in 1971, Assam's population was 1.46 crore. In 2001, it increased to 2.66 crores.
- Further, the population does not grow uniformly across all areas of a state.
- Hence, delimitation of constituencies is periodically carried out to reflect not only an increase in population but changes in its distribution.

### Who carries out delimitation?

- Under Article 82, Parliament enacts a Delimitation Act after every Census establishing a DC.
- Delimitation is carried out by an independent **Delimitation Commission**, appointed by the Government of India under provisions of the Delimitation Commission Act.
- Under Article 170, States get divided into territorial constituencies
- The Delimitation Commission is appointed by the **President of India and works in collaboration with the Election Commission of India.**
- It is composed of the following: a retired Supreme Court judge, the Chief Election Commissioner of India and respective State



Election Commissioners.

- The Delimitation Commission is to work without any executive influence. The Constitution mandates that the Commission's orders are final and cannot be questioned before any court as it would hold up an election indefinitely.
- DC have been constituted in 1952, 1963, 1973 and 2002.

## PARLIAMENTARY PRIVILEGES AND POWERS

In News: Leader of Opposition in the Rajya Sabha Mallikarjun Kharge has written a letter to the chairman of the House stating that MPs have freedom of speech.

Parliamentary privileges	
Collective for Parliament	Individual to Members
<ul style="list-style-type: none"><li>• 44th Amend. 1978 restored freedom of press to publish reports of parliament without prior. <b>But not of secret sitting</b></li><li>• Exclude strangers from secret</li><li>• Make rules to regulate its own procedure</li><li>• Punish members/outside for breach of privileges / contempt ( suspension or expulsion).</li><li>• Right to receive info. of the arrest, detention etc. of a member.</li><li>• Institute inquiries + order attendance of witnesses etc.</li><li>• Courts can not inquire into proceedings</li><li>• No member from proceedings can be arrested, without the permission of the presiding officer.</li></ul>	<ul style="list-style-type: none"><li>• Can't be arrested during session of Parliament &amp; 40 days before/after. (privilege NOT available in CRIMINAL cases)</li><li>• Freedom of speech in Parliament. (Not liable to anything said or vote given in Parliament + committees.</li><li>• <b>Exempted from jury service.</b> CAN refuse to give evidence and appear as a witness in pending case (if session going on)</li></ul>

### More on the Topic:

- The letter is written as a protest of chairman's expunction of Leader of opposition's remarks.

### About Article 105:

- Article 105 of the Constitution deals with "powers, privileges, etc of the Houses of Parliament and of the members and committees thereof", and has four clauses. It provides,
- Subject to the provisions of this Constitution and to the rules and standing orders regulating the procedure of Parliament, there shall be freedom of speech in Parliament.
- Members of Parliament are exempted from any legal action for any statement made or act done in the course of their duties. For example, a defamation suit cannot be filed for a statement made in the House.
- This immunity extends to certain non-members as well, such as the Attorney General for India or a Minister who may not be a member but speaks in the House.
- In cases where a Member oversteps or exceeds the contours of admissible free speech, the Speaker or the House itself will deal with it, as opposed to the court.

### Reasonable Restrictions:

- There are reasonable restrictions exists. For example Article 121 of the Constitution prohibits any discussion in Parliament regarding the "conduct of any Judge of the Supreme Court or of a High Court in the discharge of his duties except upon a motion for presenting an address to the President praying for the removal of the Judge".
- **Supreme Court on Parliamentary Privileges:** Supreme Court in *Tej Kiran Jain v N Sanjiva Reddy (1970)* and *P V Narasimha Rao vs. State case (1998)* gave a wider ambit to protection accorded under Article 105.

## BAR COUNCIL OF INDIA (BCI)

In News: A five-judge bench, headed by justice Sanjay Kishan Kaul, held that the Bar Council of India (BCI) was authorised under the law to conduct the exam.



### More on the Topic:

- The Bar Council of India is a statutory body established under the section 4 of Advocates Act 1961 that regulates the legal practice and legal education in India.
- Its members are elected from amongst the lawyers in India and as such represents the Indian bar.
- Functions: It sets standards for legal education and grants recognition to Universities whose degree in law will serve as qualification for enrollment as an advocate.

## APPOINTMENT OF SC JUDGES

In News: Chief Justice of India (CJI) D.Y. Chandrachud is scheduled to read out the oath of allegiance to the Constitution to five new judges of the Supreme Court.

**Article 124(2)** of the Indian Constitution provides that the Judges of the Supreme Court are appointed by the President after consultation with such a number of the Judges of the Supreme Court and of the High Courts in the States as the President may deem necessary for the purpose.

**Article 217** of the Indian Constitution states that the Judge of a High Court shall be appointed by the President consultation with the Chief Justice of India, the Governor of the State, and, in the case of appointment of a Judge other than the Chief Justice, the Chief Justice of the High Court.

### More on the Topic:

- It is a sign that the court has prevailed over the government's continuous attacks on the collegium system.
- The court has refused to let the disparaging public comments made by government functionaries about the collegium affect it.
- Instead, the court had used the opportunity to put pressure on the government through judicial orders and collegium resolutions to clear pending appointments.
- In the process, the Collegium has also fine-tuned its functioning to usher in transparency. The court has also used the acrimony initiated by the Centre to set down some ground rules for the government while making judicial appointments.

### Appointment of SC judges:

- The judges of the supreme court are appointed by the president.
- The chief justice is appointed by the president after consultation with such judges of supreme court and the other judges are appointed by president after the consultation with the chief justice and such other judges of the supreme court.
- The consultation with the chief justice is obligatory in case of appointment of a judge other than chief.
- Controversy over consultation: The supreme court has given different interpretation of the word consultation.
- In first judges case: The court held that consultation does not mean concurrence and it only implies exchange of view.
- Second judges case: the court reversed its earlier ruling and changed the meaning of the word consultation. Hence, it ruled that the advice tendered by the chief justice of India is binding on the president in matters of appointment of the judges of the supreme court. But, the chief justice would tender his

advice on the matter after consulting two of his senior most colleagues.

- **Third judges case:** The court held that the consultation process to be adopted by the chief justice of India requires consultation of plurality judges. Sole opinion of chief justice of India does not constitute the consultation process. He should consult a collegium of four senior most judges of supreme court and even if two judges give an adverse opinion, he should not send the recommendation to the government. The court held that the recommendation made by the chief justice of India without complying with the norms and requirements of the consultation process are not binding on the government.

### Additional Information:

- The 99th constitutional amendment act of 2014 and the national judicial appointments commission Act of 2014 have replaced the collegium system of appointing judges to the supreme court and high Court with a new body called the national judicial appointments commission (NAJC).
- However, in 2015 the supreme court has declared both the 99th constitutional amendment as well as NJAC act as Unconstitutional and void.
- Consequently, the earlier collegium system became operative again.
- This Verdict was delivered by the supreme court in the fourth judges case (2015). The court opined that:
- The new system (i.e., NJAC) would affect the independence of the judiciary.

## PRAKASH SINGH VS UNION OF INDIA

In News: Appointments of DGPs are now made on the basis of the Supreme Court judgment on police reforms in Prakash Singh vs Union of India 17 years ago. This is in news related to Nagaland expressing concerns over DGP appointment.

### SUPREME COURT DIRECTIVES ON POLICE REFORM IN

PRAKASH SINGH & OTHERS VS. UNION OF INDIA AND OTHERS 2006 (8) SCC 1

**WHAT ARE THE SEVEN DIRECTIVES?**

- STATE SECURITY COMMISSIONS:** Every State should have a State Security Commission to lay down the broad policy guideline for policing in the State and ensure that the State police is not under unwarranted influence or pressure by the State Government.
- TENURE AND SELECTION OF THE DGP:** The Director General of Police (DGP) of the State shall be selected by the State Government from amongst the three senior-most officers shortlisted by the Union Public Service Commission based on objective criteria. Once selected for the job, the DGP should have a minimum tenure of at least two years and not be arbitrarily removed.
- MINIMUM TENURE OF INSPECTOR GENERAL OF POLICE (IGP) AND OTHER OFFICERS:** Police officers in leading field positions - the IG Police in charge of a Zone, DGP in-charge of a Range, SP in-charge of a district and SDO in-charge of a Police Station - shall have a fixed minimum tenure of two years and not be arbitrarily removed.

### SEPARATION OF INVESTIGATION AND LAW AND ORDER FUNCTIONS:

The work of 1) crime investigation, and 2) attending to law and order, will be separated at the police station level, with dedicated staff for each, to ensure speedier investigation and deeper expertise.

**POLICE ESTABLISHMENT BOARD:** A Police Establishment Board, made up of the DG Police and four other senior police officers, will oversee police service related matters in every state, with the powers to recommend transfers, postings, and promotions for officers of the rank of SP and above, and decide for officers of and below the rank of DySP.

**POLICE COMPLAINTS AUTHORITY:** There shall be an independent complaints body called the Police Complaints Authority at the state level headed by a retired Judge of the High Court/Supreme Court, and in every district headed by a retired District Judge. The Authority can inquire into complaints by the public of serious misconduct by the police involving death, grievous hurt or rape in police custody.

**NATIONAL SECURITY COMMISSION:** The Central Government shall set up a National Security Commission at the Union level, headed by the Union Home Minister to prepare a panel for being placed before the appropriate Appointing Authority, for selection and placement of Chiefs of the Central Police Organisations (CPOs).



### More on the Topic:

- According to the SC's guidelines on the appointment of police chiefs, the DGP is to be selected by the state government from among the three senior most officers who have been empanelled for promotion to that rank by the UPSC "on the basis of their length of service, very good record and range of experience for heading the police force".
- The DGP should have a fixed tenure of two years in the post, irrespective of the date of retirement. A DGP can be removed only in exceptional circumstances.

## MOTION OF THANKS

**In News:** Motion of Thanks was passed by both the houses recently.

### More on the Topic:

- Article 87 provides for the special address by the President.
- The article provides that at the commencement of the first session after each general election to the House of the People and at the commencement of the first session of each year, the President shall address both Houses of Parliament assembled together and inform Parliament of the causes of its summons.
- Such an Address is called 'special address', and it is also an annual feature.
- This Address has to be to both Houses of Parliament assembled together.
- Following this, a 'motion of thanks' is moved in two Houses thanking President for his/her address, which is then put to vote.
- MPs can express their disagreement by moving amendments to the motion.
- Defeat of 'Motion of thanks' is seen as a 'defeat of the government'.

## CENTRAL DRUGS CONTROL STANDARD ORGANISATION (CDSCO)

**In News:** The union health ministry is intending to create a centralised system of drug registration under the Central Drugs Control Standard Organisation (CDSCO)

### More on the Topic:

- This plan comes in the backdrop of allegedly

toxic cough syrups causing children's deaths in Gambia and Uzbekistan; and contaminated eye drops in the US causing a death, denting India's image as reliable supplier of drugs.

- The proposed plan involves repurposing CDSCO's online portal Sugam which maintain quality checks on new drugs.
- Currently, many pharmaceutical companies get the registration of a new drug formulation at the state level, if their application is rejected by Drug Controller General of India.

### Drug Regulation in India:

- The Central Drugs Standard Control Organisation (CDSCO) under Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India is the National Regulatory Authority (NRA) of India.
- Under the Drugs and Cosmetics Act, CDSCO is responsible for approval of Drugs, Conduct of Clinical Trials, laying down the standards for Drugs, control over the quality of imported Drugs in the country and coordination of the activities of State Drug Control Organizations by providing expert advice with a view of bring about the uniformity in the enforcement of the Drugs and Cosmetics Act.
- Further CDSCO along with state regulators, is jointly responsible for grant of licenses of certain specialized categories of critical Drugs such as blood and blood products, I. V. Fluids, Vaccine and Sera.

### Challenges associated with Drug Regulation in India:

- The distinction between minor and major offenses isn't scientific in India. States do not prosecute dissolution, disintegration, or impurity failures because they deem them minor offense.
- Drugs Consultative Committee, an advisory body to state regulators, issued guidelines in 1993 and then in 2010. These guidelines argue that prosecuting every case of substandard drugs would lead to the harassment of manufacturers. So, the committee called to prosecute the manufacturers judiciously. This led to soft approach towards Pharma crimes.
- To protect the emerging pharma industries, the state drug regulators initially take only administrative action—such as a temporary suspension of the license for an offence.
- There is a competition between states to outbid

each other. This leads to substandard quality of drugs.

- Many times manufacturing licences are issued to applicant without looking into whether Good Manufacturing Practices and other requirements are being followed.

## TRIPARTITE MOU TO DEAL WITH DOPING

**In News:** Tripartite MoU was signed amongst Ministry of Youth Affairs & Sports, NIPER Hyderabad and FSSAI to deal with problem of doping in sports.



### More on the Topic:

- The (MoU) intends to create nutritional supplement testing capacity in India, provide information and build awareness about the risks associated with use of nutritional supplements, increase research opportunities in the clean sport and anti-doping domain and provide options for safe and dope-free nutritional supplements for sportspersons.

### Significance of the MOU:

- In the current scenario, inadvertent cases of doping due to lack of awareness around risks associated with use of nutritional supplements, presence of contaminated products in the market and absence of relevant information about nutritional supplements leads to anti-doping rule violations and risks the careers of athletes.
- This MoU is a step towards combatting inadvertent cases of doping and create a safe sporting environment in the country.

### Government Efforts related to Anti Doping:

- Ministry of Youth Affairs & Sports, Government of India and the **National Anti Doping Agency, India (NADA)** are committed to safeguard the athletes against inadvertent cases of doping.
- Previously in 2022, a tripartite MoU was signed amongst Ministry of Youth Affairs & Sports,

Government of India, Food Safety & Standards Authority of India (FSSAI) and National Forensic Sciences University (NFSU) to create nutritional supplements testing capacity and research in the country.

- NADA is also working towards sensitizing athletes and the sports ecosystem about risks associated with nutritional supplements through awareness campaigns, IEC material, social media information outreach and audio-visual content.
- The Lok Sabha passed the National Anti-Doping Bill 2021 Bill that seeks to create a statutory framework for the National Anti-Doping Agency (NADA).
- The Bill provides for constituting this National Anti-Doping Agency as a statutory body.
- It will be headed by a Director General appointed by the central government.
- The bill helps in establishing a robust, independent mechanism for anti-doping adjudication.

### About Doping:

- Doping is the use of banned drugs by athletic to enhance their performance.
- As per 2019 report by the World Anti-Doping Agency, India ranked 3rd among the nations with the most anti-doping rule violations.
- Only Russia and Italy were worse off.

## BENAMI TRANSACTION ACT

**In News:** The Centre sought from the Supreme Court an open court hearing on its plea seeking review of the judgement by which several provisions of the Benami Transactions (Prohibition) Amendment Act, 2016 were struck down.



### More on the Topic:

- A three-judge Bench, declared as unconstitutional Sections 3(2) and 5 introduced through the Benami Transactions (Prohibition) Amendment Act, 2016.
- The 2016 law amended the original Benami Act of 1988, expanding it to 72 Sections from



a mere nine.

- One of the struck down provisions provided for the punishment of a maximum jail term of three years or a fine or both for those indulging in 'benami' transactions.
- The apex court had termed the provision as "unconstitutional".
- The bench held that the provision violated Article 20(1) of the Constitution.
- It had also held that the amended Benami law of 2016 did not have retrospective application and the authorities cannot initiate or continue criminal prosecution or confiscation proceedings for transactions entered into prior to the coming into force of the legislation.
- The apex court had also said that section 3(2) and section 5 of the Benami Transactions (Prohibition) Act, 1988 were vague and arbitrary.

#### **About Benami:**

- Benami literally means 'without a name'. Therefore, an asset without a legal owner or a fictitious owner is called benami.
- It can be a property of any kind, whether movable or immovable, acquired by way of benami transaction.
- Benami transactions were first prohibited in India under Section 2(a) of the Benami Transactions (Prohibition) Act, 1988.
- The legislative intent behind the prohibition on benami transactions was to deter people from engaging in such transactions for dishonourable purposes, such as money laundering, tax evasion, etc.
- However, no rules were enacted to govern the procedural execution of the legislation.
- As a result, until the changes made by the Benami Transactions (Prohibition) Amendment Act 2016, the original Act's practical application was ineffective.

#### **What is Benami Transaction Amendment Act 2016?**

- In 2016, the government of India amended the Benami Transaction Amendment Act. The motive of this amendment was to curb black money in India.
- This amendment came into effect in November 2016. This new law amended the Benami Transactions Act, 1988 and renamed the same as Prohibition of Benami Property Act (PBPT), 1988.

- It has defined Benami transaction and Benamidar
- Provides for an Appellate Tribunal to hear appeals against any orders passed by the Adjudicating Authority.
- Appeals against orders of the Appellate Tribunal will lie to the high court.
- The prescribed authorities under the Act have very wide powers including
- Enforcing the attendance of any person, including officers of banking, financial institution, any other intermediary or reporting entity.
- Confiscation of benami property.
- Once it is adjudicated that a property is benami, it can be confiscated by the Central government.

#### **Penal consequences:**

- A person found guilty of the offence of benami transaction can face rigorous imprisonment from one to seven years.
- Fine is also levied up to 25% of the fair market value of the property.

#### **JAIPUR DECLARATION**

**In News:** The 18th UIC World Security Congress, jointly organized by the Railway Protection Force(RPF) and the International Union of Railways (UIC), concluded with the adoption of the Jaipur Declaration.

#### **More on the Topic:**

- The conference brought together experts, stakeholders, and delegates from around the world to discuss the latest developments and best practices in railway security, focusing on the theme of "Railway Security Strategy: Responses and Vision for Future"
- The declaration highlighted the commitment of UIC to provide a more safe and secure rail network across the globe, by fully activating the Asia-Pacific, Latin America and African regional assemblies by 2025.

# GOVERNMENT SCHEMES

## SAGAR PARIKRAMA PHASE III PROGRAM

**In News:** Department of Fisheries will host Sagar Parikrama Phase III Program from Gujarat to Maharashtra.



### More on the Topic:

- It is conducted as a spirit of 75th Azadi Ka Amrit Mahotsav saluting our great freedom fighters, sailors, and fishers.
- It is an initiative of Government of India, aiming to resolve the issues of the fishers and other stakeholders and facilitate their economic upliftment through various fisheries schemes and programs being implemented by the Government of India such as Pradhan Mantri Matsya Sampada Yojana.
- The program aims to promote responsible fisheries with focus on sustainable balance between utilization of marine fisheries resources for food security of nation and livelihoods of coastal fisher communities.

### About India's Fishing Industry :

- India is the third largest fish producing country in the world accounting for 7.96% of the global production and second largest producer of fish through aquaculture, after China.
- Fishing in India contributed over 1% of India's annual gross domestic product.
- India is 4th largest exporter of fish in world. Exports from India contribute 7.7% to global fish production.
- Fishing Sector provides livelihood support to about 280 lakh people at primary level and almost twice the number along different value chains associated with.

## Government Schemes Related to Fisheries:

- **Blue Revolution:** The Ministry of Agriculture and Farmers Welfare, has restructured the scheme by merging all the ongoing schemes under an umbrella of Blue Revolution.
- The restructured scheme provides focused development and management of fisheries, covering inland fisheries, aquaculture, marine fisheries including deep sea fishing, mariculture and all activities undertaken by the National Fisheries Development Board (NFDB).
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** was launched on 10th September 2020. The aim of the scheme is to bring about Blue Revolution through the sustainable development of the fisheries sector over a period of five years (2020-2025.)
- **Kisan Credit Cards for Fishermen (2018-19):** the facility of Kisan Credit Card (KCC) to fisheries and animal husbandry farmers to help them meet their working capital needs
- This will help fisheries and animal husbandry farmers to meet their short term credit requirements of rearing of animals, poultry birds, fish, shrimp, other aquatic organisms and capture of fish.

## AADI MAHOTSAV

**In News:** PM has inaugurated Aadi Mahotsav at Major Dhyan Chand National Stadium in Delhi.



### More on the Topic:

- Aadi Mahotsav is an attempt to showcase tribal culture on the national stage and it celebrates the spirit of tribal culture, crafts, cuisine, commerce and traditional art.
- It is an annual initiative of the Tribal Cooperative Marketing Development Federation Limited (TRIFED) under the Ministry of Tribal Affairs.



- The Prime Minister paid floral tributes to Bhagwan Birsa Munda and took a walk-through of the stalls at the exhibition.
- On the occasion, there were numerous dance performances that oozed with energy and vibrancy.
- The performance included Bagurumba of Assam, Panthi Dance of Chhattisgarh, Gusadi of Telangana, Baiga Pardhauni of Madhya Pradesh, Tamang Selo of Sikkim, Siddhi Dhamal of Gujarat, Purulia Chhau of West Bengal, and Harul dance of Uttarakhand (Harul nritya).

#### **About Birsa Munda:**

- Birsa Munda, who belonged to the Munda tribe, was born on November 15 in 1875.
- During British rule in the late 19th century, he spearheaded an Indian tribal religious Millenarian movement across the tribal belt of modern-day Bihar and Jharkhand.
- Munda revolt was led by Birsa Munda in the south of Ranchi in 1899-1900.
- The movement targeted,
- The land policies of the British were destroying their traditional land system.
- Hindu landlords and moneylenders were taking over their land.
- Missionaries were criticising their traditional culture.
- The revolt was also called as 'Ulgulan' or the 'Great Tumult'.
- It was aimed at establishing Munda Raj by driving out the British.

#### **VIBRANT VILLAGE PROGRAM**

**In News:** The Union Cabinet has approved Centrally Sponsored Scheme- "Vibrant Villages Programme" (VVP) for the Financial Years 2022-23 to 2025-26.



#### **More on the Topic:**

- The scheme will provide funds for development of essential infrastructure and creation of livelihood opportunities in 19 Districts and 46 Border blocks 4 states and 1 UT along the northern land border of the country.
- It will help in achieving inclusive growth and retaining the population in the border areas.
- Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Sikkim and Ladakh are included in the project.
- In the first phase 663 Villages will be taken up in the programme.
- The scheme aids to identify and develop the economic drivers based on "Hub and Spoke Model".
- The development will be through promotion of social entrepreneurship, empowerment of youth and women through skill development and entrepreneurship, leveraging the tourism potential through promotion of local cultural, traditional knowledge and heritage and development of sustainable eco-agribusinesses.
- The activities will be designed on the concept of "One village-One product" through community based organisations, Cooperatives, SHGs, NGOs etc.

#### **Implementation:**

- **Vibrant Village Action Plans** will be created by the district administration with the help of Gram Panchayats. 100 % saturation of Central and state schemes will be ensured.
- **Key outcomes expected:** connectivity with all weather road, drinking water, 24x7 electricity – Solar and wind energy to be given focused attention, mobile and internet connectivity.
- Tourist centres, multi-purpose centres and health and wellness Centers.
- There will not be overlap with Border Area Development Programme.

#### **NETWORK PLANNING GROUP (NPG)**

**In News:** 43rd meeting of the Network Planning Group (NPG) has been held.

#### **More on the Topic:**

- Network Planning Group constituted under the institutional framework of PM GatiShakti National Master Plan'.



- NPG consists of heads of the network planning wing of respective infrastructure ministries and it will assist the empowered group of secretaries (EGOS), which is headed by the cabinet secretary.
- EGOS consists of secretaries of 18 ministries as members and Head of Logistics Division, under the DPIIT, as member convener.
- Infrastructure projects, entailing investment of over 500 crore, would now route through the network planning group (NPG) constituted under the PM Gati Shakti initiative with the Finance Ministry issuing the necessary instructions and creation of the national masterplan digital platform.

#### The PM Gati Shakti Plan:

- The PM Gati Shakti plan was announced last year with an aim to break departmental silos and bring in more holistic and integrated planning and execution of projects with a view to addressing the issues of multi-modal and last-mile connectivities.

### KRISHI UDAN SCHEME

**In News:** The government will soon add 21 more airports under the Krishi Udan scheme.



#### More on the Topic:

- Krishi UDAN Scheme was launched by Ministry of Civil Aviation in August 2020, on international and national routes to assist farmers in transporting agricultural products so that it improves their value realisation.
- The scheme aims to ensure seamless, cost-effective, time-bound air transportation

and associated logistics for all Agri-produce originating especially from Northeast, hilly and tribal regions of the country.

- Krishi Udan Scheme 2.0 was launched in October 2021 to promote transportation of perishable agricultural produce from the north-eastern, hilly and tribal regions.
- The Airports Authority of India provides waiver of landing charges, parking charges, terminal navigation landing charges and route navigation facility charges to cargo aircraft.

### MISSION ANTYODAYA SURVEY

**In News:** The Union Minister for Rural Development and Panchayati Raj will inaugurate the Mission Antyodaya Survey (MAS) 2022-23).



#### More on the Topic:

- The Department of Rural Development has been conducting Mission Antyodaya Survey across all Gram Panchayats in the country since 2017-18 with the purpose of transforming lives and livelihoods of people on measurable outcomes through convergence of various schemes.
- Annual survey in Gram Panchayats across the country is an important aspect of Mission Antyodaya framework.
- The survey aims to lend support to the process of participatory planning for Gram Panchayat Development Plan (GPDP) which will improve service delivery, enhance citizenship, create pace for an alliance of people's institutions, and groups and improve governance at the local level.
- The preparation of GPDPs is a comprehensive exercise that uses both primary and secondary data for preparing final plan document for any GP.
- MA Survey presents secondary data to carry out gap analysis. MA Survey data will also serve as a key input in the preparation of block and district plans.



## MARKET ACCESS INITIATIVE (MAI) SCHEME

In News: MAI scheme has organised Reverse Buyer-Seller Meet.



### More on the Topic:

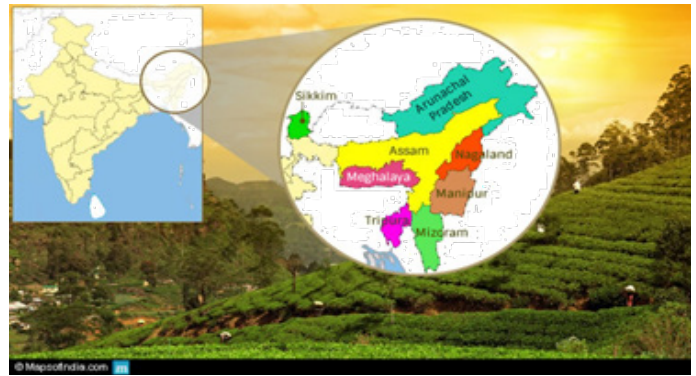
- Market Access Initiative (MAI) Scheme is an Export Promotion Scheme envisaged to act as a catalyst to promote India's exports on a sustained basis.
- The scheme is formulated on focus product-focus country approach to evolve specific market and specific product through market studies/survey.
- Assistance would be provided to Export Promotion Organizations/Trade Promotion Organizations/National Level Institutions/Research Institutions/Universities/Laboratories, Exporters etc., for enhancement of exports through accessing new markets or through increasing the share in the existing markets.
- Under the Scheme the level of assistance for each eligible activities has been fixed.

**The following activities will be eligible for financial assistance under the Scheme:**

- Marketing Projects Abroad
- Capacity Building
- Support for Statutory Compliances
- Studies
- Project Development
- Developing Foreign Trade Facilitation web Portal
- To support Cottage and handicrafts units

## THE YUVA SANGAM REGISTRATION PORTAL

In News: The "Yuva Sangam" registration portal was launched recently.



### More on the Topic:

- The Yuva Sangam is an initiative to build close ties between the youth of North East Region and rest of India under the spirit of Ek Bharat Shreshtha Bharat.
- Yuva Sangam, the program will give an opportunity to see, know, understand India and do something for the country.
- This wide Cultural Exchange Program will also give an opportunity to our youth to celebrate the ancient culture and natural diversity of India.
- Over the next few months, more than 20,000 students will travel across India and enhance their mutual understanding.

## KHELO INDIA

In News: The Ministry of Youth Affairs and Sports along with Lieutenant Governor of J&K launched the 3rd Khelo India Winter Games Mascot, theme song and jersey.



### More on the Topic:

- The Khelo India Scheme is the flagship Central Sector Scheme of the Ministry of Youth Affairs and Sports.
- Khelo India was introduced to revive sports culture in India at grass-root level by building a strong framework for all sports played in our country

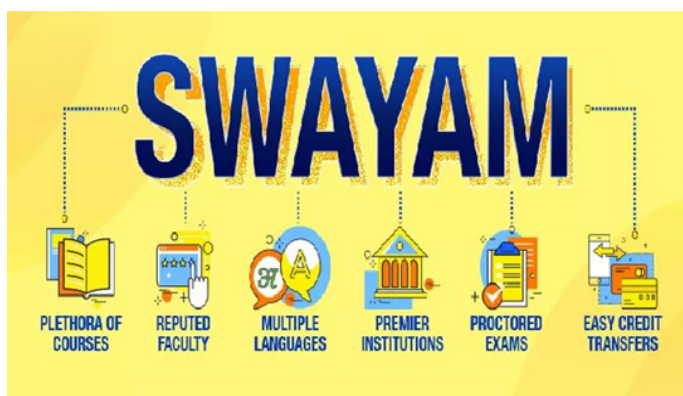


- Under the Scheme, eight years of annual financial aid in the amount of Rs. 5 lakh are given to talented athletes in priority sports disciplines at various levels.
- About 20 million kids between the ages of 10 and 18 will be a part of the National Physical Fitness Campaign as a result of this program.
- Children's physical fitness will be the only focus of this; nevertheless, fitness-related activities will also be supported.
- Additionally, the government committed to promoting 20 universities as centres of excellence in sports throughout India.
- SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.
- This is done through an indigenous developed IT platform that facilitates hosting of all the courses taught in classrooms to be accessed by anyone, anywhere at any time.
- All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India.
- SWAYAM platform is a Ministry of Education (MoE) initiative.

### About Digital Divide in India:

### SWAYAM PLATFORM

**In News:** The government-run Swayam Massive Open Online Courses (MOOC) has outperformed any other eLearning platform by a big margin.



### More on the Topic:

- The total enrolment, including those in courses which don't have examinations and credits, is 3.1 crore.
- The female to male ratio for different courses conducted was 40:60.
- The popularity of Swayam is also due to the increased participation of the universities offering their courses via MOOCs as well as accepting the credits earned through the Swayam exams.
- At present 288 universities have given formal acceptance of SWAYAM credits, which in January 2022 were 155.
- The digital divide refers to the gap between demographics and regions that have access to modern information and communications technology and those that don't have access.
- It is the gap that exists between individuals who have access to modern information and communication technology and those who lack access.
- **Linguistic Divide:** More than 80% of the content in the internet is English. Indian rural population who are not having English knowledge faces issues with accessibility.
- **Rural and Urban Divide:** As per the report by NSO, most of the internet-enabled homes are located in cities, where 42% have internet access. In rural India, however, only 15% are connected to the internet.
- Across India, only one in ten households have a computer — whether a desktop, laptop or tablet. Almost 25% of all homes have Internet facilities, accessed via a fixed or mobile device.
- The urban-rural disparity in digital divide is evident from the extent of internet penetration in the country. As per the NSO, there is less than 20% Internet penetration, even in States with software hubs such as Karnataka and Tamil Nadu.
- **Gender Divide:** In India, Over 61% of men owned a mobile phone in 2021 as opposed to 31% of women.
- Women are 15% less likely to own a mobile phone and 33% less likely to use mobile internet services than men. Data from - 'India Inequality Report 2022: Digital Divide' by Oxfam India
- SWAYAM (Study Webs of Active–Learning for Young Aspiring Minds) is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality.

### About Swayam learning portal:

## VIVAD SE VISHWAS PROGRAM

**In News:** Government has introduced Vivad se Vishwas-2 to cut litigation costs, improve ease of doing business.



### More on the Topic:

- This is the second version of the scheme. The first version, which was introduced in 2020, resulted in the resolution of more than 148,000 income tax cases, with recovery of about 54% of the amount under litigation.

### About the Scheme:

- The Direct Tax 'Vivad se Vishwas' Act, 2020 was enacted on March 17, 2020, with the objective to reduce pending income tax litigation, generate timely revenue for the government and to benefit taxpayers.
- The scheme aims to end litigation and legacy disputes under the direct taxes category as 9.32 lakh crore worth of revenue is blocked in approximately 4.8 lakh appeals pending at various income tax appellate forums.
- The entities who opt for the scheme have to pay a requisite tax following which all litigation against them are closed by the tax department and penal proceedings dropped.

## E-MMS AND SAMAR PORTAL

**In News:** At Aero India 2023, Ministry of Defence has launched the Indian Air Force e-MMS and SAMAR (System for Advance Manufacturing Assessment & Rating) portal.

### More on the Topic:

- E-MMS is one of the largest and technologically complex digital Enterprise Asset Management solutions implemented in the world.
- It is a software that helps an organization track the status of maintenance tasks, and schedule equipment repairs.
- SAMAR is a portal of DRDO's Aeronautical Research and Development Board (AR&DB)

and is an outcome of DRDO and Quality Council of India (QCI).

- It is the benchmark to measure the competency of defence manufacturing enterprises.

## E-GRAM SWARAJ

**In News:** Ministry of Panchayati Raj organized Manthan: Charting New Paths, an Industry consultation on e-Gram SWARAJ 2.0.



### More on the Topic:

- A unified tool e-Gram SWARAJ portal has been developed by the Ministry of Panchayati Raj for effective monitoring and evaluation of works taken up in the Gram Panchayats.
- It will bring in better transparency and strengthening of the e-Governance in Panchayati Raj Institutions (PRIs) across the country through decentralized planning, progress reporting and work-based accounting.
- It will also assist in enhancing the credibility of Panchayats which would induce greater devolution of funds to PRIs.
- It will help in establishing a strong financial system by integrating the PRIASoft and Public Financial Management System (PFMS).

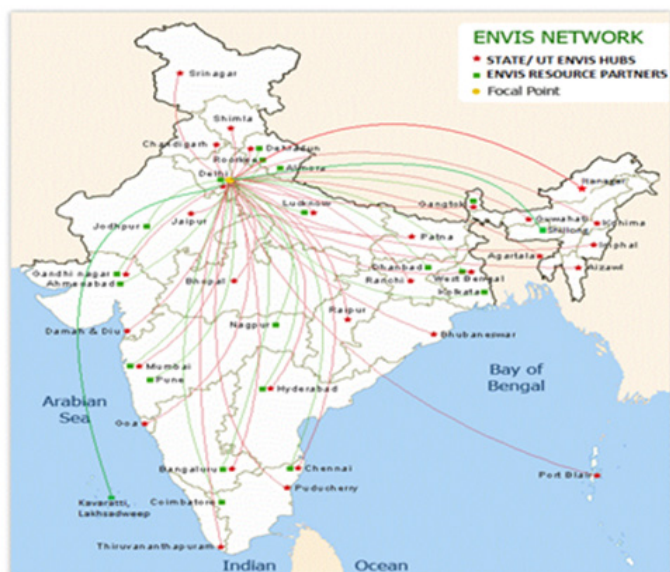
## THE ENVIRONMENTAL INFORMATION, AWARENESS, CAPACITY BUILDING AND LIVELIHOOD PROGRAMME (EIACP)

**In News:** The Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) organised a 'National workshop on LiFE'.

### More on the Topic:

- LiFE was introduced by Prime Minister Narendra Modi at COP26 in Glasgow in November 2021 as a mass movement for "mindful and deliberate utilization, instead of mindless and destructive consumption" to protect and preserve the environment.
- It aims to nudge individuals and communities

- Those who practice such a lifestyle are recognised as pro planet people.
- India is the first country to include LiFE in its **Nationally Determined Contributions**.



- Promotion of environmental-friendly daily practices among people (demand)
- Enable industries and markets to respond to the shift in demand (supply)
- Influence government and industrial policy to support both sustainable consumption and production (policy).

- **Environmental Information System (ENVIS) was renamed as EIACP (Environmental Information, Awareness, Capacity Building and Livelihood Programme).**
- **ENVIS came into existence as a plan programme in 1983.**
- **It serves as a single-stop web-enabled repository of comprehensive environmental information with collection, collation, storage, retrieval and dissemination of the same through a nationwide network of ENVIS Hubs and ENVIS Resource Partners (RPs).**

## In News: Atal Innovation Mission inaugurates ACIC-CBIT centre.



## ATAL INNOVATION MISSION

- ACIC-CBIT has been established with an aim to build a **community innovation and entrepreneurship ecosystem** to nurture innovators and startups of unserved and underserved regions.
- ACIC believes and mandates the creation of a strong community innovation ecosystem to include expert mentors; access to infrastructural support such as maker space; funding facilitation; building capacities through training and mentoring.
- **ACIC CBIT Foundation Sectoral Areas and Targeted SDGs:**
- Good Health & Well-being (Goal 03 in UN SDGs)
- Industry Innovation & Infrastructure (Goal 09 in UN SDGs)
- Sustainable Cities and Communities (Goal 11 in UN SDGs)

- Health-tech
- AI/ML/IoT Based Smart Engineering Products
- Renewable Energy and Environmental Sustainability

- AIM is the Government of India's endeavor to promote a culture of innovation and entrepreneurship.
- It was set up in 2016 under NITI Aayog.
- It aims to promote a culture of innovation and entrepreneurship in the country.
- Its objective is to serve as a platform for the promotion of world-class innovation hubs, grand challenges, start-up businesses, and other self-employment activities, particularly in technology-driven areas.

**In News:** The budget has introduced Mishti scheme.





### More on the Topic:

- MISHTI is a new programme that will facilitate mangrove plantation along India's coastline and on salt pan lands.
- The programme will operate through "convergence between MGNREGS, Campa Fund and other sources.
- This new programme will aim at intensive afforestation of coastal mangrove forests.
- India has such forests on both its Eastern and Western coasts with the Sundarbans in Bengal being one of the largest mangrove forests on the planet.

### Why does this matter?

- Mangroves are not just some of the most bio-diverse locations in India; they also protect the coastlines from the vagaries of inclement weather.
- As climate change increases the incidence of extreme weather events across the world, mangrove plantations have shown to make coastal lands resilient, preventing flooding, land erosion and acting as a buffer for cyclones.
- Furthermore, they are also excellent carbon sinks.
- Mangrove trees can grow in saline waters, and can sequester up to four times more carbon than tropical rainforests.

## MONUMENT MITRA SCHEMES

**In News:** The government will hand over around 1,000 monuments under the control of the Archaeological Survey of India to the private sector for their upkeep under the Monument Mitra Scheme.

### More on the Topic:

- The government has set the target to hand over 500 sites under the revamped Monument Mitra Scheme by the end of

Azadi ka Amrit Mahotsav on 15 August 2023.

- The scheme comes under the Ministry of Culture in respect of the monuments under

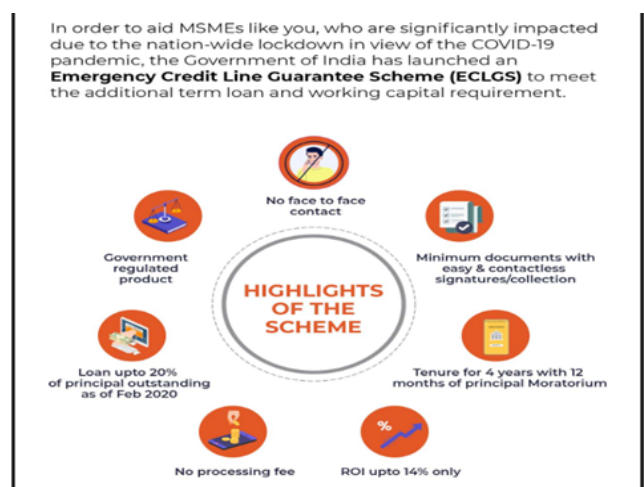


### the Archaeological Survey of India.

- The scheme aims to ensure quality & inclusive provision of amenities and facilities across heritage, natural, & tourist sites through the active participation of private and public sector organisations and individuals.
- Corporate entities will take over these monuments as part of their Corporate Social Responsibility.
- These organizations would be known as "Monument Mitras" for their collaboration initiative.

## EMERGENCY CREDIT LINE GUARANTEE SCHEME (ECLGS)

**In News:** At least 14.6 lakh micro, small and medium enterprises (MSMEs) accounts were saved due to the Emergency Credit Line Guarantee Scheme (ECLGS) launched by the government during the pandemic.



### More on the Topic:

- This has saved millions of jobs till November.
- In absolute terms, MSME loan accounts worth Rs 2.2 lakh crore have improved since the

inception of ECLGS for the entire banking industry.

- This means that around 12% of the outstanding MSME credit has been saved from slipping into NPA because of the ECLG scheme.

#### **Concerns about ECLGS:**

- This scheme was announced as part of the Atma Nirbhar Bharat Package in 2020.
- The objective of the scheme is to help businesses including MSMEs to meet their operational liabilities and resume businesses after the COVID-19 crisis.
- Under the scheme, borrowers could avail additional credit of up to 20% of their overall outstanding credit as on February 29, 2020.
- Government provides Member Lending Institutions (MLIs), 100% guarantee against any losses suffered by them due to non-repayment of the ECLGS funding by borrowers.
- ECLGS is a demand driven scheme. So sanctions/disbursements are made by lending institutions based on assessment of borrower's requirement and their eligibility.
- The overall ceiling initially announced for ECLGS was Rs 3 lakh crore which was later enhanced to Rs 4.5 lakh crore.
- ECLGS is under the Department of Financial Services (DFS) of Ministry of Finance.
- To ensure easy repayment Government has capped the interest rate under ECLGS scheme at 9.25% for Banks and Financial Institutions and 14% for Non-Banking Financial Institutions.
- This scheme also offers a one year moratorium on payment of principle component.

#### **Additional Information on MSMEs of India:**

- According to the SBI report, the cluster-based approach of MSME financing is enabling scaling up of the MSME sector through technology upgradation among other things.
- There is an urgent need to revamp the Credit Guarantee Scheme for the MSME sector.
- India has less than half the number of MSMEs when compared to China (64 million against 140 million Chinese enterprises).
- The government launched Udyam Assist Platform (UAP), developed by SIDBI, to bring all the Informal Micro Enterprises (IMEs) into the formal ambit, which constitute around 99% of the MSMEs in the country, without complex and complicated paperwork.

## **INDIAN ECONOMY**

### **INDIA'S FIRST MUNICIPAL BOND INDEX**

**In News:** The National Stock Exchange (NSE) has launched India's first municipal bond index- IBMX.



#### **More on the Topic:**

- The Nifty India Municipal Bond Index tracks the performance of municipal bonds issued by Indian municipal corporations across maturities and having investment grade credit rating.
- The index includes municipal bonds issued as per the Securities Exchange Board of India Issue and Listing of Municipal Debt Securities Regulations, 2015.
- Presently, the index has 28 municipal bonds issued by 10 issuers all having credit rating in the AA rating category.

#### **About Municipal Bonds:**

- A municipal bond is a debt security issued by a state, municipality or county to finance its capital expenditures, including the construction of highways, bridges or schools.
- Through municipal bonds, a municipal corporation raises money from individuals or institutions and promises to pay a specified amount of interest and returns the principal amount on a specific maturity date.

### **PERIODIC LABOUR FORCE SURVEY (PLFS)**

**In News:** The National Sample Survey Office (NSSO) released the Periodic Labour Force Survey (PLFS) report.

#### **More on the Topic:**

#### **Key highlights from the Report:**

- The unemployment rate (UR) has fallen further in the 2021-22 PLFS round. UR has decreased

to 4.1% (Rural-3.2%, Urban-6.3%; Male-4.4%, Female-3.3%) from 4.2% in 2020-21

- UR is the percentage of persons unemployed among the persons in labour force.
- **Labour Force Participation Rate (LFPR)** increased to 55.2% (Rural-57.5%, Urban-49.7%; Male-77.2%, Female-32.8%) from 54.9% in 2020-21.
- LFPR, which measures the share of the working-age population working or looking for work, has fallen only marginally between 2020-21 and 2021-22 and is still higher than the levels seen in pre-pandemic PLFS rounds.
- **Worker Population Ratio (WPR)** increased to 52.9% (Rural-55.6%, Urban-46.6%; Male-73.8%, Female-31.7%) from 52.6% in 2020-21.
- WPR is the percentage of employed persons in the population.
- The increase in the employment share of agriculture seen in the 2020-21 round has been reversed.
- The 2021-22 PLFS report suggests that some migrants who came back to their villages have gone back to the cities again, with agriculture's share decreasing to 45.5%, just below the level seen in 2019-20, but still higher than in 2017-18 and 2018-19.
- The share of unpaid family workers (a category of self-employment) continued to increase in 2021-22, reaching 17.5%, which is 4.2 percentage points more than what it was in 2018-19.



#### About Periodic Labour Force Survey:

- Considering the importance of the availability of labour force data at more frequent time intervals, the NSO launched the Periodic Labour Force Survey (PLFS) in April 2017.
- The objective of PLFS is primarily twofold:
- To estimate the key employment and unemployment indicators (viz. Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate) in the short time interval of three months

for the urban areas only in the CWS.

- To estimate employment and unemployment indicators in both usual Status and CWS in both rural and urban areas annually.

#### AGRICULTURAL PRODUCE MARKETING COMMITTEE (APMC)

**In News:** The Government has approved the integration of 101 agricultural produce marketing committee (APMC) mandis (markets or yards) into the electronic platform e-NAM.

#### More on the Topic:

- This will bring total number of APMC mandis to 1,361 by March end and boost turnover of electronic National Agriculture Market (e-NAM) platform in current fiscal.

#### About e-NAM:

- National Agriculture Market (e-NAM) is a pan-India online trading platform for agricultural commodities developed by Nagarjuna Fertilizers and Chemicals Limited (NFCL).
- Launched on April 14th 2016, it is driving agricultural trade towards the objective of remunerative prices for farmers by plugging the rampant trade malpractices in mandis.
- It is managed by Small Farmers' Agribusiness Consortium (SFAC) under the Department of Agriculture, Cooperation and Farmers' Welfare. It links agricultural produce market committees (APMCs) across all states with online trading of commodities.
- While the farmer is the primary stakeholder, e-NAM also provides traders, commission agents and exporters with better business opportunities through a unified and extensive market place.
- It aims to help them discover better prices and facilitates for smooth marketing of the products through mobile and web applications.

#### Significance e-NAM:

- Administration of agriculture marketing is carried out by respective states.
- Each state has its own APMC Act, with varied provisions.
- The lack of uniformity and compatibility has led to the fragmentation of agricultural markets, where each state functions as a separate market.



- Every state is further divided into several market areas. These separate areas formed will be administered by a separate Agricultural Produce Marketing Committee (APMC), which imposes its own marketing regulation.
- This fragmentation of markets even within the state level hinders the free flow of agri-commodities between different markets.
- Multiple handling of agri-produce and multiple levels of mandi charges lead to escalated price for the consumers without equivalent benefits for the farmers.
- These challenges are addressed by e-NAM by creating a unified market via online trading platform both at the state and at the national level.
- For seamless operations, e-NAM mandates three changes in the agricultural marketing laws of states.

#### Benefits of e-NAM:

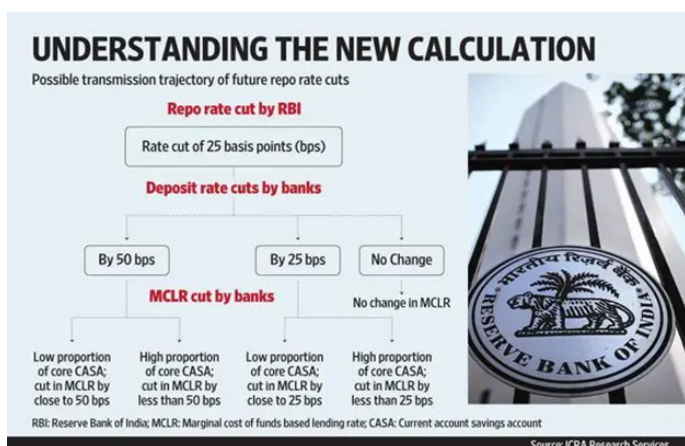
- e-NAM ensures transparent online trading with enhanced accessibility to the market.
- Real time price discovery for better & stable price realization for producers.
- This leads to reduced transaction cost for buyers.
- e-NAM has more efficient supply chain & warehouse based sales.
- E Nam also facilitates online payment directly to the bank accounts of the farmers.

#### More on the Topic:

- Last week, the RBI raised its benchmark repo rate – the rate at which it lends to banks by 25 bps to 6.5%.
- Introduced on April 1, 2016, MCLR is the minimum interest rate below which banks cannot lend.
- Banks calculate all operating costs as a percentage of marginal cost of funds for computing MCLR. Under the MCLR regime, banks decide on the interest rate at which they will offer to borrowers on the basis of the marginal cost at which they get funds, through funds and by borrowing from the RBI.
- Any change in the repo rate, the rate at which the RBI lends money to banks to meet their short-term funding needs impacts the interest rate for borrowers.
- Banks review their MCLR of different maturities every month on a pre-announced date with approval from their boards.
- In order to further improve the transmission of repo rate to banks' lending and deposit rates, the RBI in October 2019 introduced the external benchmark linked lending rate (EBLR) system.
- Banks now offer lending rates which are linked to the RBI's repo rate or yields on treasury bills.
- Any change in repo rate immediately gets reflected in the banks' lending rate.

### MARGINAL COST OF FUNDS BASED LENDING RATE

In News: Following the 25 basis points (bps) hike in repo rate by the Reserve Bank of India, multiple lenders have raised their marginal cost of fund-based lending rates (MCLR) by up to 15 basis points.



### DRAFT NORMS FOR LENDING AND BORROWING OF GOVERNMENT SECURITIES

In News: The Reserve Bank of India has come out with draft norms for lending and borrowing of government securities with wider participation in the securities lending market.



### More on the Topic:

- The RBI proposed introduction of securities lending and borrowing in government securities (G-secs) with an aim to facilitate wider participation in the securities lending market by providing investors an avenue to deploy idle securities and enhance portfolio returns.
- **Government Securities Lending (GSL)** transactions shall be undertaken for a minimum period of one day and a maximum period of ninety days.

### Eligibility:

- Government securities issued by the central government excluding Treasury Bills would be eligible for lending/borrowing under a GSL transaction.
- Government securities issued by the central government (including Treasury Bills) and the state governments would be eligible for placing as collateral under a GSL transaction.
- An entity eligible to undertake repo transactions in government securities, and any other entity approved by the Reserve Bank would be eligible to participate in GSL transactions as lender of securities.
- Securities borrowed under a GSL transaction shall be eligible for **Statutory Liquidity Ratio (SLR) for borrower** (not for lender).

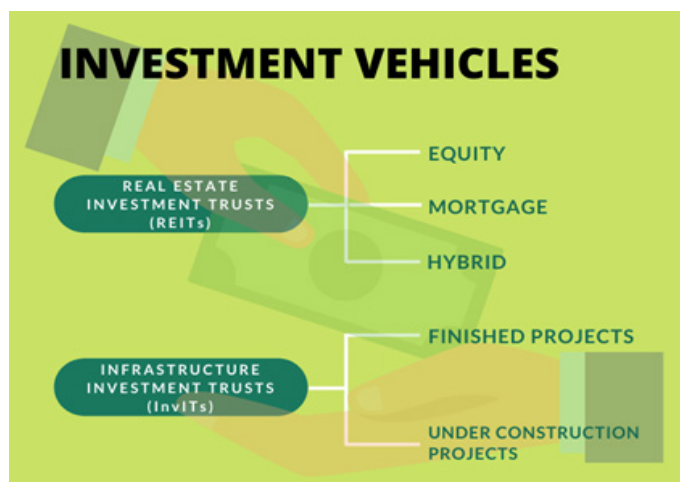
### About Government Securities:

- G-Secs are government-issued debt instruments that allow the government to borrow money.
- **Treasury bills** – short-term instruments that mature in 91 days, 182 days, or 364 days – and **dated securities** – long-term instruments that mature between 5 and 40 years – are the two main kinds.
- Treasury bills and bonds, also known as dated securities, are both issued by the central government.
- State governments issue only bonds or dated securities, which are known as **State development loans**.
- They are known as **Risk-free gilt-edged instruments** because they are issued by the government and hence there is no danger of default.
- **FPIs (Foreign Portfolio Investment)** are authorised to trade in G-Secs as long as they stay within the quantitative limits that are set from time to time.

- The Reserve Bank of India has allowed retail investors to invest in G-Secs from November 2021.

## REAL ESTATE INVESTMENT TRUSTS AND INFRASTRUCTURE INVESTMENT TRUSTS

**In News:** SEBI has notified governance norms for Real Estate Investment Trusts (REITs) and Infrastructure Investment Trusts (InvITs) on the lines of listed companies.



### More on the Topic:

- REITs or InvITs would not appoint an individual as the auditor for more than one term of five consecutive years, while an audit firm cannot be appointed as the auditor for more than two terms of five consecutive years.
- Investment by these investment vehicles in overnight mutual funds would be considered as cash and cash equivalent, for the purpose of computation of leverage.
- Besides, unclaimed or unpaid distributions for REITs/ InvITs would be transferred to the 'Investor Protection and Education Fund' constituted by Sebi.

### About REITs:

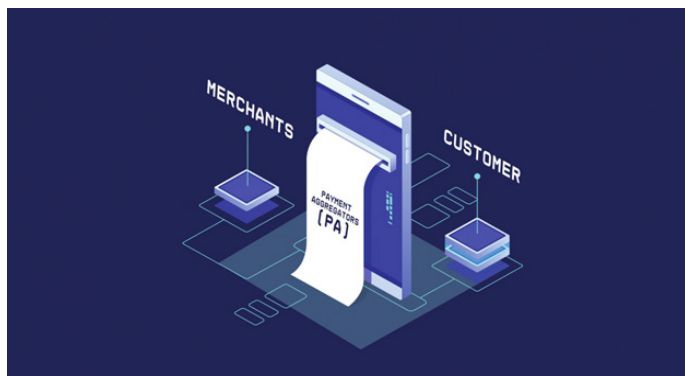
- REITs are similar to mutual funds. While mutual funds provide for an opportunity to invest in equity stocks, REITs allow one to invest in income-generating real estate assets.
- They are collective investment vehicles that operate and manage property portfolios and give returns to investors.
- Securities and Exchange Board of India (SEBI) mandated that all REITs be listed on exchanges and make an initial public offer to raise money.

### About InvITs:

- InvITs are instruments that work like mutual funds.
- They are designed to pool small sums of money from a number of investors to invest in assets that give cash flow over a period of time. A Part of this cash flow would be distributed as dividend back to investors.
- The minimum investment amount in an InvIT Initial Public Offering (IPO) is Rs 10 lakh, therefore, InvITs are suitable for high net worth individuals, institutional and non-institutional investors.

### PAYMENT AGGREGATOR LICENSE

**In News:** The Reserve Bank of India released a list of applicants that have received in-principle approval to operate as payment aggregators.



### More on the Topic:

- A Payments Aggregator, or PA license, allows companies to provide payment services for merchants (online businesses or e-commerce firms) by accepting payment instruments from customers.
- As part of the process, PAs pool the funds received from customers and transfer them to merchants after a certain time period.

### Significance of PA licensing:

- To protect the welfare of citizens and businesses, the RBI released PA guideline in March 2020 wherein it was highlighted that the payment gateways need a license to acquire merchants and provide them with digital payment acceptance solutions.
- Another significant reason for bringing in the license application is to curb PAs from getting into KYC (Know Your Customer) related issues and undertaking any dealings with crypto currency exchanges and Chinese gaming apps.

- The PA license will bring more transparency, standardisation and trust within India's fintech ecosystem.

### Eligibility to Become a Payment Aggregator:

- The main eligibility to comply with RBI guidelines and receive the "In-Principle authorisation to act as a payment aggregator," a fintech firm must have had a net worth of Rs 15 crore by March 2021, Rs 25 crore by March 2023, and Rs 25 crore at all times thereafter.

### Payment Gateways:

- There is difference between PA and payment gateways.
- A payment gateway is a payment processing software. Payment gateways only deal with online transactions and are equipped with restricted payment options.
- Examples of payment gateways include Axis bank, HDFC, Union Bank of India, etc., as in India, most banks act as payment gateways.

### RETAIL INFLATION

**In News:** India's retail inflation has shot up to 3-month high of 6.5% in January as food prices increased.



### More on the Topic:

- High cereal and protein prices pushed India's retail inflation beyond RBI's tolerance zone once again in January, with the headline Consumer Price Index (CPI) print coming in at 6.5%, significantly higher than the 6% value projected.

### Steps being taken to control Inflation:

- The RBI is expected to keep inflation within a band of 2-6%. It has been raising lending rates to control inflation.



- Recently, the Monetary Policy Committee (MPC) of the Reserve Bank of India hiked the Key Policy Rate-the Repo rate or the rate at which the RBI lends funds to banks, by 25 basis points to 6.50% in a bid to rein in retail inflation.

#### **About Retail Inflation:**

- The CPI monitors **retail prices at a certain level for a particular commodity**; price movement of goods and services at rural, urban and all-India levels.
- The change in the price index over a period of time is referred to as CPI-based inflation, or retail inflation.
- Generally, CPI is used as a macroeconomic indicator of inflation, as a tool by the central bank and government for inflation targeting and for **inspecting price stability, and as deflator in the national accounts.**
- CPI also helps **understand the real value of salaries, wages, and pensions, the purchasing power of the nation's currency, and regulating rates.**
- CPI, one of the most important statistics to **ascertain economic health**, is generally based on the weighted average of the prices of commodities. It basically gives an idea of the cost of the standard of living.
- Simply put, **CPI specifically identifies periods of deflation or inflation for consumers in their day-to-day living expenses.** If there is inflation (when goods and services cost more) the CPI will rise over a period of time.
- If the CPI drops, that means there is deflation, or a steady reduction in the prices of goods and services.

#### **How is CPI calculated (CPI formula)?**

- To calculate CPI, multiply 100 to the fraction of the cost price of the current period and the base period.
- CPI formula:  $(\text{Price of basket in current period} / \text{Price of basket in base period}) \times 100$ .

### **INVESTOR PROTECTION**

**In News:** The Supreme Court has expressed concerns about protecting Indian investors and sought the views of the Union Government and the Securities and Exchange Board of India (SEBI) on suggestions to improve the regulatory mechanism.

#### **More on the Topic:**

##### **Background:**

- Hindenburg Research has alleged that the Adani Group was **"engaged in a stock manipulation and accounting fraud"**.
- The Adani Group has interests in varied sectors such as ports and logistics, power generation, agribusiness, real estate, defence, solar energy, financial services, natural resources and media.
- The research firm alleges that the Adani group has engaged in 17.8 trillion (US\$ 218 billion) brazen stock manipulation and accounting fraud schemes over the course of decades.
- The Hindenburg's report says that the Adani family controlled offshore shell entities in tax havens spanning the Caribbean and Mauritius to the United Arab Emirates, which it claims were used to facilitate corruption, money laundering and taxpayer theft, while siphoning off money from the group's listed companies.
- **Adani group has taken a lot of debt from Indian banks.** So there is a looming threat around whether the business tycoon would be able to return the debt on time or not.
- **There is risk involved in banks lending huge sums of money against shares** since when a company is unable to fulfil its debt obligations its share price also often drops.
- **LIC has also invested its money in the Adani group business.** The investment fell sharply due to the report and there is a fear among the investors regarding the loss of money.

#### **How Investors are protected in India:**

- 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.
- SEBI appoints various committees, whenever required to look into the pressing issues of that time.
- Further, a **Securities Appellate Tribunal (SAT)** has been constituted to protect the interest of entities that feel aggrieved by SEBI's decision.

## Recent initiatives of SEBI:

- SEBI has enhanced disclosure norms for IPO bounds companies.
- Framework for preventing insiders trading.
- New framework for credit rating agencies.
- Allowed T+1 settlement for shorter trade settlement cycle.
- SCORES a web-based centralized grievance redress system.

## Investor Education and Protection Fund (IEPF):

- Set up under the Ministry of Corporate Affairs, Government of India as a statutory body under Companies Act 2013.
- It aims to administer the Investor Education and Protection Fund with the objective of promoting Investor's Education, Awareness and Protection.
- The Authority takes various initiatives to fulfil its objectives through Investor Awareness Programmes and various other mediums like print, electronic, social media, and community radio etc.
- **Composition:** The Secretary, Ministry of Corporate Affairs is the Chairperson of the Authority. The Joint Secretary, Ministry of Corporate Affairs is the Chief Executive Officer of the Authority.

## EQUALISATION LEVY

**In News:** The Central Board of Direct Taxes (CBDT) released the notification of Centralised Processing of Equalisation Levy Statement Scheme, 2023.



## More on the Topic:

- Provisions are part of Centralised Processing of Equalisation Levy Statement Scheme, 2023 for processing of statements furnished under Finance Act, 2016.
- Presently, procedure for processing of EL statements is lacking which had created some uncertainty, especially regarding refund

claims made.

## About Equalisation Levy:

- Equalization Levy 1.0 – Commonly known as Google Tax, EL 1.0 was introduced in 2016 as a withholding tax
- It covered **only services** and is introduced via part of Finance Act and not by way of amendment to the Income Tax Act 1961.
- It charged an equalisation levy at the rate of 6% of the amount of consideration for any specified service received or receivable by a -resident from a person resident in India or a non-resident having a permanent establishment in India.
- Equalization Levy 2.0 - Commonly known as the Amazon Tax, EL 2.0 was introduced in 2020 which is directly levied on the Non-resident.
- EL 2.0 covered e-commerce supply or services and was made by way of amendment to Finance Act 2016.
- It charged an equalisation levy at the rate of 2% of the amount of consideration received or receivable by an e-commerce operator (non-resident) from e-commerce services to a person resident in India or a non-resident or a person who buys goods and services using internet protocol address located in India.
- EL 2.0 is applicable to e-commerce operators (ECO) having sales, turnover, or gross receipts of Rs20 million in a financial year.

## Related News -OECD/G20 Inclusive Framework tax deal:

- India has joined the G20–OECD inclusive framework deal that seeks to reform international tax rules and ensure that multinational enterprises pay their fair share wherever they operate.
- 130 countries and jurisdictions, representing more than 90% of global GDP, have signed the deal.

## Two pillars of framework:

- **Pillar:1 - Dealing with transnational and digital companies.** This pillar ensures that large multinational enterprises, including digital companies, pay tax where they operate and earn profits.
- **Pillar: 2 - Dealing with low-tax jurisdictions to address cross-border profit shifting and**

**treaty shopping.** This pillar seeks to put a floor under competition among countries through a global minimum corporate tax rate, currently proposed at 15%.

## **DIRECTORATE OF REVENUE INTELLIGENCE (DRI)**

**In News:** The Directorate of Revenue Intelligence (DRI) on Monday said that its personnel have arrested eight persons for smuggling gold through the Bangladesh border.

### **More on the Topic:**

- The Directorate of Revenue Intelligence (DRI) launched an operation codenamed 'Operation Eastern Gateway', which involved developing the intelligence over a substantial period of time to bust the smuggling modus operandi.
- A syndicate based in Bangladesh, Tripura, Assam and West Bengal was smuggling huge quantities of Gold from Bangladesh to India through Indo- Bangladesh border in the state of Tripura.

### **About DRI:**

- The Directorate of Revenue Intelligence (DRI), under the Central Board of Indirect Taxes and Customs (CBIC), Department of Revenue, Ministry of Finance is the apex agency of the Indian Customs in the field of anti-smuggling in India.
- DRI enforces the provisions of the Customs Act, 1962 and over fifty other allied Acts including the Arms Act, NDPS Act, COFEPOSA, Wildlife Act, Antiquities Act etc.
- DRI undertakes collection, collation, analysis and dissemination of intelligence relating to smuggling, carries out investigations, adjudication of cases and prosecution of the arrested persons.

## **INDUSTRIAL CORRIDOR PROJECT**

**In News:** Prime Minister Narendra Modi laid the foundation stone of South India's 1st Industrial Corridor Project to be implemented at Tumakuru which has been planned with holistic and integrated approach in line with the principles of PM-GatiShakti.

### **More on the Topic:**

- It aims to address the issue of last mile multi-modal connectivity to the economic zone

and is spread over 8500 acre of land under the Chennai Bengaluru Industrial Corridor.

- The Government of India, through the National Industrial Corridor Development and Implementation Trust (NICDIT), and the Government of Karnataka, through the Karnataka Industrial Area Development Board (KIADB), has taken up the development of the Industrial Township at Vasanthanarsapura, spread across 8500 acres in three phases in Tumakuru district through the project Special Purpose Vehicle (SPV).

### **Significance of the Project:**

- The Multi Modal connectivity ecosystem will ensure a seamless movement of raw material and finished goods.
- The project will be a mixed-use development comprising of land uses like industrial, institutional, residential, commercial, green spaces etc. making it a completely self-sustainable and resilient smart industrial city.
- It will facilitate investments, foster innovation, enhance skills development and build finest manufacturing ecosystem for pitching India as a global investment destination.
- Target sectors are Food Products, Textile and Apparels, Electronics, Auto & Auto Components, Pharmaceuticals, Chemicals, Engineering, General Manufacturing etc.

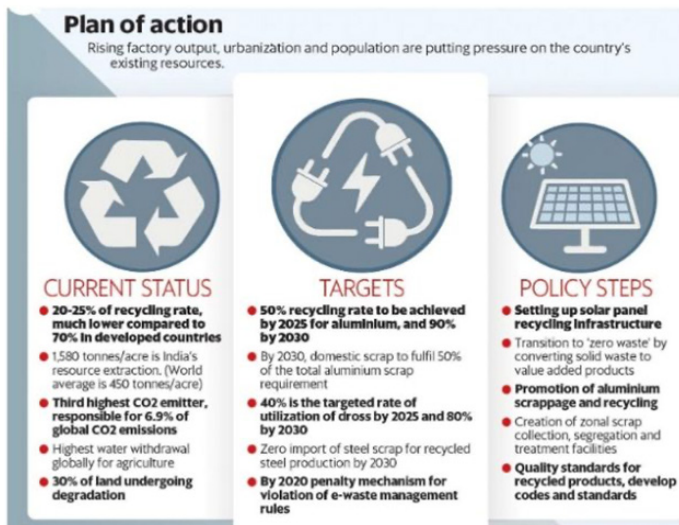
### **Need for Industrial Corridors?**

- Industrial Corridors will facilitate development of a well- planned and resource-efficient industrial base served by world-class sustainable connectivity infrastructure.
- It will bring significant benefits in terms of innovation, manufacturing, job creation and resource security to the identified areas.
- The Industrial Corridors are likely to lower the cost of logistics thereby increasing the efficiency of industrial production structure.
- Such an efficiency lowers the cost of production which makes the Indian made products more competitive in international markets. It is favourable for export promotion.
- Development of Industrial Corridors would attract investments for the development of Industries which is likely to create more jobs in the market.



## STEEL RECYCLING POLICY

**In News:** Union Steel Ministry will push primary steel producers to use 50% of their input from scrapped/recycled steel by 2047 to help achieve the government target of moving into a circular economy.



### More on the Topic:

- Currently, the level of recycled steel usage in primary steel production is only around 10% even though recycled steel contributes to 22.5% of the domestic total steel production of 140 million tonnes.
- Indian government is committed to reducing CO2 emissions in the steel sector by 5% by 2030 from the current 2.85 to 1.4 CO2/tonne of crude steel, and to achieve this recycling scrap steel is an extremely important source.

### Significance of steel recycling:

- A tonne of steel today emits 2.55 tonnes of carbon dioxide. Steel production using scrap as the primary raw material helps to conserve vital natural resources, among other advantages.
- According to the steel scrap recycling policy of Ministry of Steel, each tonne of scrap saves 1.1 tonne of iron ore, 630 kg of coking coal, and 55 kg of limestone.
- It reduces energy consumption by 16-17%.
- Additionally, it cuts water consumption and GHG emissions by 40% and 58%, respectively.

### Challenges in reuse of steel scrap:

- It is difficult to ensure that scrap steel meets the necessary quality criteria for reuse because it may have deteriorated over time or been contaminated, which is a major barrier to output quality control.
- Because of its volume and mass, moving and

storing large amounts of steel scrap can be difficult.

- Depending on its intended use, steel scrap may necessitate a variety of processing steps that can be extremely energy-intensive and potentially harmful to the environment.
- India relies heavily on imports of high-grade steel scrap to meet its demand. However, several countries, including the UAE and the EU, have restricted exports, making raw materials scarce.

### About Steel Scrap Recycling Policy:

- The Policy will work on the Principles of 6Rs: Reduce, Reuse, Recycle, Recover, Redesign and Remanufacture.
- It aims to reduce Green House Gas (GHG) emissions.
- It also aims to create a mechanism for treating waste streams and residues produced from dismantling and shredding facilities in compliance with Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016 issued by the Ministry of Environment, Forest and Climate Change (MoEF & CC).

## E20 FUEL

**In News:** Bengaluru is among the 15 cities across India that will get E20 fuel through outlets run by Indian Oil Corporation in the first phase.



### More on the Topic:

- E20 fuel is a 20 % blend of ethanol and 80 % of fossil-based fuel.
- Ethanol is a biofuel and a common by-product of biomass left by agricultural feedstock such as corn, sugarcane, hemp, potato, etc.
- It is produced mainly from molasses, a byproduct of sugar manufacture.

- Ethanol is basically alcohol of 99%-plus purity, which can be used for blending with petrol.

#### Government's Efforts towards E20 Fuel:

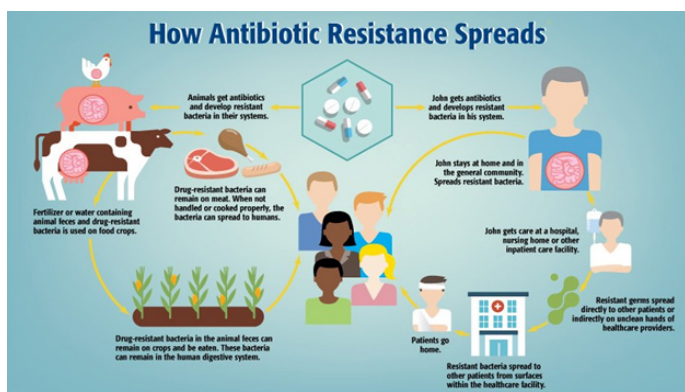
- The Government aims to achieve a complete 20% blending of ethanol by 2025, and HPCL and other oil marketing companies are setting up 2G-3G ethanol plants that will facilitate the progress.
- Ethanol blending programme has been a key focus areas of the Government to achieve Aatmanirbharta in the field of energy.
- Due to the sustained efforts of the Government, Ethanol production capacity has seen a six times increase since 2013-14.
- It has increased India's energy security and also resulted in a host of other benefits including reduction of 318 Lakh Metric Tonnes of CO2 emissions and foreign exchange savings of around Rs 54,000 crore.
- The National Policy on Bio-fuels has set a target of 20% blending of biofuels, both for bio-diesel and bio-ethanol.
- Union Budget 2022-23 announced an additional differential excise duty on unblended fuel.

#### Significance of E20 Fuel:

- It will help in reducing emissions of carbon dioxide, hydrocarbons, etc.
- It will help reduce the oil import bill, thereby saving foreign exchange and boosting energy security.
- It would extend support to the agricultural sector as well as provide additional income to farmers.

## ANTI mMICROBIAL RESISTANCE

In News: UNEP report has pointed out that it is imperative to see AMR through multi- dimensional lens.



#### More on the Topic:

- The report has called for a **multisectoral 'One Health' response** in line with the efforts of the Quadripartite Alliance, including UNEP, the Food and Agriculture Organization, the World Health Organisation (WHO) and the World Organisation for Animal Health.
- The report briefly described the environmental dimensions of AMR and presented management options for these specific dimensions, as well as the next steps to combat AMR in the environment at the national and global levels.
- AMR is inked to the **triple planetary crisis of climate change, biodiversity and nature loss**, as well as pollution and waste.
- These are exacerbated by human activity and unsustainable consumption and production patterns.
- Higher temperatures have been linked to an increase in AMR infections and extreme weather patterns can contribute to the emergence and spread of AMR.
- Biological and chemical pollution sources containing antimicrobials contribute to the development of resistance in the environment.
- Because of nature's complex interconnections, antimicrobial-resistant microorganisms can spread and be transmitted to humans, animals, plants, and wildlife within the same environment.
- Human exposure to AMR from the environment can result from consuming food and/or water contaminated by resistant microorganisms. This calls for a concerted 'One Health' response to AMR.

#### Sectors that drive AMR:

- The report highlighted three economic sector value chains that significantly impact the development and spread of AMR in the environment.
- These include pharmaceuticals and other chemicals manufacturing industries, agriculture and food production sector and healthcare facilities and pharmacies.

#### Way Ahead:

- Some of the management options for the pharmaceutical sector to address effluent and waste from the pharmaceutical manufacturing sector include:
- Developing and enforcing standards to reduce antimicrobial discharges/emissions.

- Setting discharge targets for antimicrobial manufacturing waste and wastewater.
- Monitoring antimicrobial residues, resistant microorganisms, antimicrobial resistance genes and mobile genetic elements in the environment near pharmaceutical manufacturing plants and incorporating waste management into standard operating procedures.

#### Animal Health Measures:

- It is important to improve animal health through biosafety, biosecurity, vaccination and good animal husbandry programmes to reduce antimicrobial use in animals food.
- Targeted waste pre-treatment from farm to slaughterhouse to remove AMR microorganisms and reduce antimicrobials before discharge.
- Disease prevention in aquaculture and animal husbandry.

#### Health Care Interventions:

- For healthcare facilities, it is crucial to educate and train hospital personnel on hygiene, sanitation and safe medicine disposal practices.
- Implementing high-quality hygiene and infection prevention in healthcare operations, including safe and sustainable disposal and treatment of antimicrobial medicines and hazardous waste, is critical.
- AMR-targeted, on-site treatment of hospital wastewater with vigorous treatment is also necessary to limit its spread into the environment.

#### AMR Statistics:

- AMR has been listed by the WHO among the top 10 global threats to health. In 2019, 1.27 million deaths were directly attributed to drug-resistant infections worldwide, with bacterial AMR associated with 4.95 million deaths.
- By 2050, AMR is likely to cause 10 million additional deaths annually. This is on par with the number of cancer deaths worldwide in 2020.
- The economic cost of AMR is anticipated to be at around \$3.4 trillion annually by 2030, pushing 24 million more people into extreme poverty.

#### What is AMR:

- Antimicrobial Resistance is the resistance acquired by any microorganism (bacteria, viruses, fungi, parasite, etc.) against

antimicrobial drugs that are used to treat infections.

- It occurs when a microorganism changes over time and no longer responds to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.

#### CREDIT RATING AGENCIES (CRAS)

In News: The Securities and Exchange Board of India (SEBI) tweaked its operational circular on credit rating agencies (CRAs).

Sortable Table Key	Moody's	Fitch	S&P
Highest grade credit	Aaa	AAA	AAA
Very high grade credit	Aa1, Aa2, Aa3	AA+, AA, AA-	AA+, AA, AA-
High grade credit	A1, A2, A3	A+, A, A-	A+, A, A-
Good credit grade	Baa1, Baa2, Baa3, Baa4	BBB+, BBB, BBB-	BBB+, BBB, BBB-
Speculative grade credit	Ba1, Ba2, Ba3	BB+, BB, BB-	BB+, BB, BB-
Very speculative credit	B1, B2, B3	B+, B, B-	B+, B, B-
Substantial risks - In default	Caa1, Caa2, Caa3, Ca	CCC, CC, C, RD, D	CCC+, CCC, CCC-, CC, C, D

#### More on the Topic:

- The MD or CEO of a CRA and any person within CRA who has business responsibility would not be a member of rating committees of the agency.
- CRAs should have a detailed policy by March-end in respect of non-submission of crucial information, including quarterly financial numbers, by the issuers.

#### About Credit Rating:

- Credit rating is a numerical representation of the creditworthiness of an individual or a business.
- A credit score is a 3-digit number that represents the creditworthiness of the borrower.
- Credit rating is the analysis of the possible credit risks associated with granting a financial instrument to an individual or a company. Based on the credit score, a lender determines whether the borrower can repay the loan amount or not.
- The rating is provided based on the creditworthiness and the credentials of an individual or a company.

#### About Credit Rating Agencies:

- A credit rating agency (CRA) evaluates and assesses an individual's or a company's creditworthiness.



- That is, these agencies consider a debtor's income and credit lines to analyse the debtor's ability to repay the debt or if there is any credit risk associated.
- Securities and Exchange Board of India (SEBI) reserves the right to authorise and regulate credit rating agencies according to SEBI Regulations, 1999 of the SEBI Act, 1992.
- Example: CRISIL, ICRA, CARE etc are some of CRAs operating in India.

#### **Significance of Credit Rating Agencies:**

- For the lenders CRA provides better investment decisions by calculating credit worthiness of an individual or company (who is borrowing the money) and the risk factor attached with them.
- For borrowers better credit worthiness will help to have speedy loan approval.
- It will also enable independent benchmarks for pricing debt, ushered in a culture of financial discipline, helped allocate capital efficiently by pricing risk appropriately, and supported financial innovation.

#### **E-RUPEE - CENTRAL BANK DIGITAL CURRENCY**

**In News:** Reliance Retail becomes first retailer to start accepting payments in RBI's e-Rupee.



#### **More on the Topic:**

- e-RUPI is basically a digital voucher which a beneficiary gets on his phone in the form of an SMS or QR code. It is a pre-paid voucher, which he/she can go and redeem it at any centre that accepts its.
- For example, if the Government wants to cover a particular treatment of an employee in a specified hospital, it can issue an e-RUPI voucher for the determined amount through a partner bank.

- The employee will receive an SMS or a QR Code on his feature phone / smart phone. He/she can go to the specified hospital, avail of the services and pay through the e-RUPI voucher received on his phone.
- Thus e-RUPI is a one time contactless, cashless voucher-based mode of payment that helps users redeem the voucher without a card, digital payments app, or internet banking access.
- e-RUPI should not be confused with Digital Currency which the Reserve Bank of India is contemplating. Instead e-RUPI is a person specific, even purpose specific digital voucher.

#### **How is e-RUPI advantageous to the Consumer ?**

- e-RUPI does not require the beneficiary to have a bank account, a major distinguishing feature as compared to other digital payment forms. It ensures an easy, contactless two- step redemption process that does not require sharing of personal details either.
- Another advantage is that e-RUPI is operable on basic phones also, and hence it can be used by persons who do not own smart-phones or in places that lack internet connection.

#### **What are the benefits of e-RUPI for the sponsors:**

- e-RUPI is expected to play a major role in strengthening Direct-Benefit Transfer and making it more transparent. Since, there is no need for physical issuance of vouchers, it will also lead to some cost savings as well.

#### **What benefits accrue to the Service Providers?**

- Being a prepaid voucher, e-RUPI would assure real time payments to the service provider.

#### **Who has developed the e-RUPI ?**

- The National Payments Corporation of India (NPCI), which oversees the digital payments ecosystem in India, has launched e-RUPI, a voucher-based payments system to promote cashless transactions.
- It has been developed in collaboration with the Department of Financial Services, Ministry of Health & Family Welfare and National Health Authority.

## ANGEL TAX

**In News:** During Union Budget 2023, Finance Minister Smt Nirmala Sitharaman proposed to amend the Angel tax. Now, the equity amount received by the startups will be subjected to income taxes and not angel taxes.



### More on the Topic:

- It was introduced in 2012 and is levied on the capital raised by startups from angel investors.
- Angel investors are wealthy private investors focused on financing small business ventures in exchange for equity.
- It aims to deter the generation and use of unaccounted money through the subscription of shares of a closely held company at a value that is higher than the fair market value of the firm's shares.

### Market Response:

- The new change means, the entire 50 crores of rupees, that is, the total amount the startup received by selling the shares is subjected to income tax! Earlier, only 30 crores were subjected to taxes.
- This will reduce Indian start up's opportunities towards foreign funds.
- Most of the investors of the startups that are the share buyers are from foreign countries.
- Already startup investments have been decreasing. In 2022, it fell by 33%. The new change in Angel Tax is to further affect the startup investment.

## GREEN BOND AND GREEN WASHING

**In News:** FTo prevent greenwashing by issuers of green debt securities, SEBI has set out criteria that must be strictly adhered to.



### More on the Topic:

- SEBI broadly defines a green debt security (Green bond) as one that is issued for the purpose of raising capital to be used for the cause of sustainable development or furthering energy efficiency.
- A bond is a fixed income instrument that represents a loan made by an investor to a borrower (typically corporate or governmental).
- Bonds traditionally paid a fixed interest rate (coupon) to investors.
- In 2007, green bonds were launched by few development banks such as the European Investment Bank and the World Bank.
- Subsequently, in 2013, corporates too started participating, which led to its overall growth.
- Green bonds have been crucial in increasing financing to sunrise sectors like renewable energy, thus contributing to India's sustainable growth.

### About Green Washing:

- The term 'greenwashing' refers to falsely claiming that a company's products, services, or business operations are more environmentally friendly than they actually are.
- Companies which engage in 'greenwashing', mislead the market participants who buy these securities.

### Highlights from the SEBI Guidelines:

- An issuer of green bonds shall not use misleading labels, hide trade-offs, or cherry pick data from research to highlight green practices, while obscuring others that are unfavourable.
- Issuers should ensure that they continuously monitor the transition to a more sustainable form of operation.
- Funds raised through green bonds are not used for purposes that would not fall under the definition of 'green debt security' under the non-convertible securities (NCS) regulations.

- Issuer shall not make untrue claims giving false impression of certification by a third-party entity.
- Issuer shall quantify negative externalities associated with utilization of the funds raised through green bonds.
- Purposes Listed in non-convertible securities (NCS) regulations: investment in renewable and sustainable energy, such as wind, solar, and bioenergy. Investing in public transportation, energy efficient buildings, biodiversity conservation, sustainable waste management, and climate change adaptation also fit the description.
- Other areas where green bonds can be invested include sustainable land use, sustainable forest and agriculture, aorestation, and sustainable water management.
- SEBI has also listed other new categories from time to time on its website.

## FOLLOW-ON PUBLIC OFFER (FPO)

In News: Adani Enterprises Ltd., announced the floor price for its follow-on public offer (FPO).

## What is an FPO?

It's highly unlikely that as an investor, you have not heard of an IPO. But you may not have encountered an FPO, which is another way for companies to raise money from the public.

**Let's explore what exactly is the FPO**

- ✔ It implies a follow-on public offer by a company already listed in the stock market.
- ✔ To put it simply, when a listed company issues shares to raise funds, it is known as an FPO.
- ✔ It goes without saying that FPO is a safe alternative for small investors as the firm is already known and its market potential has stood the test of time.

### More on the Topic:

- Follow on Public Offer is a process wherein a company that is already listed on a stock exchange, issues new shares to existing investors or shareholders.
- It is also known as a secondary offering. In other words, FPO allows a company to raise additional funds through the issuance of new shares.

### Types of FPOs:

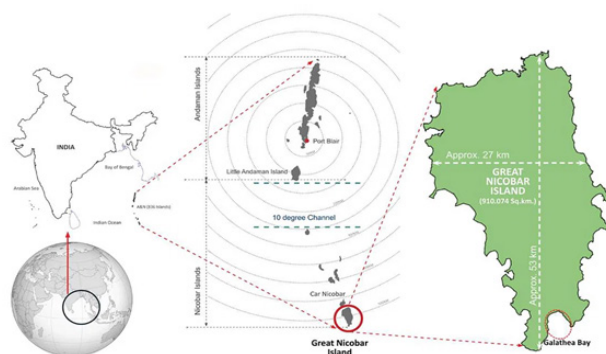
- Dilutive FPO, i.e. issuance of additional fresh

shares to the public to raise capital.

- Non-Dilutive FPO, i.e. issuance of existing private shares by largest shareholders.
- At-the-Market FPO, allowing companies to raise funds on the current market price of the shares in real-time.

## INTERNATIONAL CONTAINER TRANSHIPMENT PORT IN GREAT NICOBAR ISLAND

In News: As part of the holistic development of Great Nicobar Island, the Ministry of Ports, Shipping, and Waterways is working towards the development of the Mega International Container Transshipment Port (ICTP) at Galathea Bay.



### More on the Topic:

- The holistic development of the Great Nicobar Island aims to improve the economic opportunity for the rapid increase in the size of all types of vessels from feeders to large inter-continental carriers.
- The development also helps to bridge the infrastructural gaps of the island.
- The other development projects planned around the transshipment port include an airport, township, and power plant.
- With the development of the International Transshipment Port at Great Nicobar Island, there is a huge potential for the creation of around 1,700-4,000 jobs.

### Salient Features of the Port:

- The transshipment project is of immense importance because of its:
- (a) Strategic location in terms of proximity (40 nautical miles from Malacca Strait) to the International Trade Route with existing transshipment terminals like Singapore, Klang, and Colombo,
- (b) Availability of natural water depth of more than 20 meters, and



- (c) Potential to capture transshipment cargo from all the ports in the proximity including domestic one.

#### **Significance:**

- It becomes necessary for India to have a transshipment hub that can save revenue loss, reduce logistics inefficiencies, and can create an opportunity to become a large hub for Asia-Africa, Asia-US/Europe container traffic trade.
- At present, about 75% of the nation's transhipped cargo is handled at ports outside the country.
- The development of the Galathea Bay port project will save US dollars 200-220 million a year on transshipment cargo.
- The port is expected to handle 16 million containers per year and in the first phase will handle above 4 million Containers.

#### **About Great Nicobar Island:**

- Great Nicobar Island is the southernmost of the Andaman and Nicobar Islands.
- It is the largest of the Nicobar group of islands.
- Indira Point on the southern tip of this Island is India's southernmost point.
- The Great Nicobar Island has tropical wet evergreen forests, mountain ranges reaching almost 650 m above sea level, and coastal plains.
- It hosts a wide variety of species including endangered species.
- The leatherback sea turtle is the island's flagship species.

### **TRADE-PLUS-ONE' (T+1) STRATEGY**

**In News:** After China, India will become the second country in the world to start the 'trade-plus-one' (T+1) settlement cycle in top listed securities.



#### **More on the Topic:**

- The initiative will be bringing operational efficiency, faster fund remittances, share delivery, and ease for stock market participants.
- The T+1 settlement cycle means that trade-related settlements must be done within a day, or 24 hours, of the completion of a transaction.
- For example, under T+1, if a customer bought shares on Wednesday, they would be credited to the customer's demat account on Thursday. This is different from T+2, where they will be settled on Friday.
- As many as 256 large-cap and top mid-cap stocks, including Nifty and Sensex stocks, will come under the T+1 settlement from Friday.
- Until 2001, stock markets had a weekly settlement system. The markets then moved to a rolling settlement system of T+3, and then to T+2 in 2003.
- T+1 is being implemented despite opposition from foreign investors. The United States, United Kingdom and Euro zone markets are yet to move to the T+1 system.

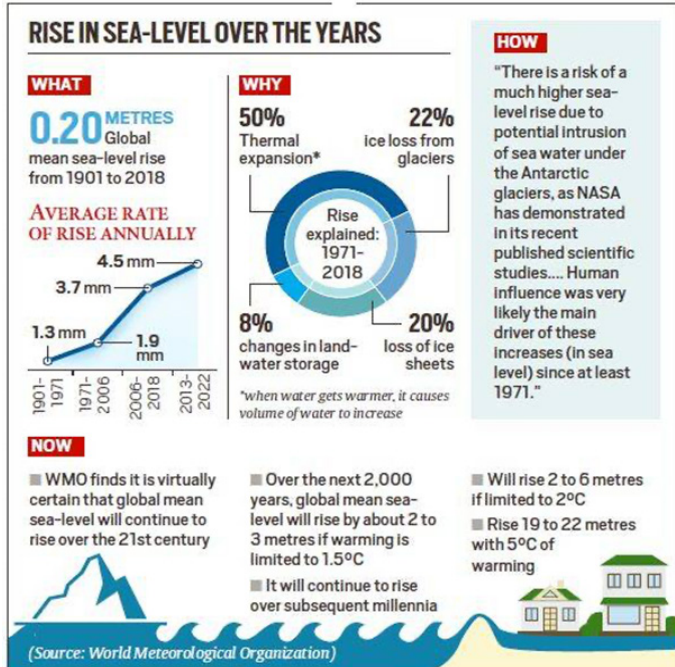
#### **What are the benefits of T+1?**

- This will also help investors in reducing the overall capital requirements with the margins getting released on T+1 day, and in getting the funds in the bank account within 24 hours of the sale of shares. The shift will boost operational efficiency as the rolling of funds and stocks will be faster.
- Reduces capital blocked to cover risk of trades etc.

# ENVIRONMENT AND ECOLOGY

## SEA LEVEL RISE

**In News:** According to World Meteorological Organization (WMO) Report on Sea Level Rise, Mumbai is among the cities that would be most affected.



### More on the Topic:

- It was mentioned in the report titled 'Global Sea Level Rise (SLR) And Implications Key facts and Figures Report.'

### Highlights of the report include:

- Sea levels rose by 4.5 millimeters a year on average between 2013 and 2022, over three times higher than the rate at which they rose between 1901 and 1971. It potentially endangering coastal populations and ecosystems.
- The average yearly rise in sea levels was 1.3 mm a year between 1901 and 1971, which increased to 1.9 mm a year between 1971 and 2006, and 3.7 mm a year between 2006 and 2018.
- Rising sea levels cause the erosion of coastal ecosystems, worsening the intensity of storm surges and flooding. It can also lead to the contamination of soil and groundwater with salt, further impacting food security.
- A reading of the report shows that the rise of 4.5 mm is the highest so far.
- The effects of sea level rise are not uniform, and India along with the Netherlands,

Bangladesh, and China is among the worst impacted because of its large coastal population.

### About Sea Level Rise?

- SLR is an increase in the level of the world's oceans.
- Sea level rise is caused primarily by two factors related to global warming: the added water from melting ice sheets and glaciers, and the expansion of seawater as it warms.
- Global mean sea level (GMSL) rose by 0.2m between 1901 and 2018.
- Sea level is primarily measured using tide stations and satellite laser altimeters.

### Consequences of Sea Level Rise:

- Globally, eight of the world's 10 largest cities are near a coast, which is threatened by coastal flooding.
- Higher sea levels are coinciding with more dangerous hurricanes and typhoons leading to loss of life and property.
- Sea level rise will lead to migration and refugee crisis.
- Rising sea level will contaminate land and ground water.
- SLR will destruct valuable coastal biodiversity.

### What are some ways of protecting against sea level rise?

- Indonesia's government launched a coastal development project called a Giant Sea Wall or "Giant Garuda" (Garuda is the name of a bird from Hindu mythology and is Indonesia's national symbol) in 2014 meant to protect the city from floods.
- Researchers have suggested a mammoth Northern European Enclosure Dam (NEED), enclosing all of the North Sea.
- The idea involved construction of two dams of a combined length of 637 km to protect Northern Europe against "unstoppable" SLR.
- They also identified other regions such as the Persian Gulf, the Mediterranean Sea, the Baltic Sea, the Irish Sea, and the Red Sea that could benefit from similar mega enclosures.

## BIO FERTILISER

**In News:** The Centre informed the parliament that there is no proposal to make bio-fertilizers compulsory.

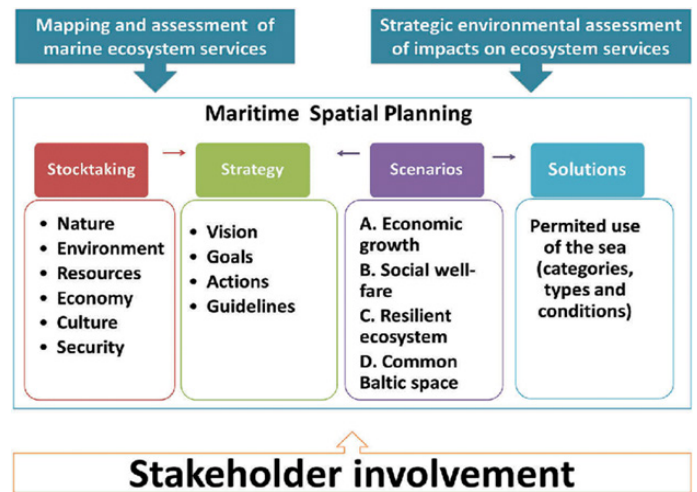


### More on the Topic:

- The use of bio-fertilizer is recommended under Integrated Nutrient Management (INM) strategies and organic farming for use in all crops.
- Bio-fertilizers are live microbial products, which don't contain any nutrients. The micro-organisms present in the bio-fertilizer ensure availability of nutrients from the elements present within soil and air to available from which plants can uptake.
- Indian Council of Agricultural Research (ICAR) has developed improved and efficient strains of bio-fertilizers specific to different crops and soil types.
- Bio-fertilizers can improve crop yields by 10-25% and supplement costly chemical fertilizers (N, P) by nearly 20-25% in most of the cases when used along with chemical fertilizers without any reduction in production.
- There are 11 bio-fertilizers notified under Fertilizer (Control) Order, 1985 viz.
- Rhizobium, Azotobacter, Azospirillum, Phosphate Solubilising Bacteria, Mycorrhizal Bio-fertilisers, Potassium Mobilizing Bio-fertilizers (KMB), Zinc Solubilizing Biofertilizers (ZSB), Acetobacter, Carrier Based Consortia, Liquid Consortia, and Phosphate Solubilising Fungus

## MARINE SPATIAL PLANNING FRAMEWORK

**In News:** Puducherry has launched the country's first Marine Spatial Planning (MSP) framework as part of a pact under the Indo-Norway Integrated Ocean Initiative.



### More on the Topic:

- Indo-Norway Integrated Ocean Initiative intends to balance growth alongside sustainable management of ocean resources and coastal environment preservation.
- Puducherry and Lakshadweep were chosen as coastlines to pilot the MSP initiative that grew out of a 2019 memorandum of understanding that envisaged India and Norway collaborating on implementing MSP in the oceanic space.
- The Puducherry initiative is a collaborative exercise involving the Norwegian Environment Agency, the Ministry of Earth Sciences, the National Centre for Coastal Research (NCCR), the National Centre for Sustainable Coastal Management, the Puducherry Coastal Zone Management Authority and Department of Science, Technology and Environment, Puducherry.

### About MSP:

- It is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas.
- It aims to achieve ecological, economic, and social objectives.
- **Elements:** Planning along with additional elements of implementation, enforcement, monitoring, evaluation, research, public participation, and financing, all of which must be present to carry out effective management over time.
- **Outcomes:** The process should result in a spatial vision and a comprehensive management plan for a marine area to achieve that vision.

### Significance of MSP:

- The MSP would serve as a vital governance tool in ensuring the emergence of a blue



economy characterised by a sustainable and equitable ocean resource management, instead of an environmentally unsustainable "brown economy."

- The MSP is an enabler of the blue economy as it helps identify sites for new and emerging uses following an ecosystem-based approach.
- It also mitigates inter-sectoral conflicts, and creates multi-use spaces for coexistence and synergies.

## GLOBAL CLIMATE FUND

**In News:** Former US Secretary of State, Hillary Clinton announced that a global Climate Resilience Fund, in partnership with Self Employed Women's Association (SEWA), will work to tackle challenges faced due to rising temperatures due to climate change.



### More on the Topic:

- Self-Employed Women's Association, meaning "service" in several Indian languages, is a trade union based in Ahmedabad, India, that promotes the rights of low-income, independently employed female workers. Nearly 2 million workers are members of the Self-Employed Women's Association across 8 states in India.

## WASTE TO WEALTH PLANTS

**In News:** As part of furthering the 'Green Growth' agenda, the Ministry of Housing and Urban Affairs signed a Memorandum of Understanding with Engineers India Limited to develop Waste to Energy and bio-methanation projects in cities with a population of million plus.

### More on the Topic:

- Waste to Energy plants use dry waste fraction of municipal solid waste and produce renewable power with maximum reduction of waste volume utilising least space in

execution in compliance with SWM Rules 2016 and fulfil all the statutory norms of environment protection.

- Waste to Energy and Bio-methanation projects will integrate the concept of circularity in waste management by producing green energy from dry and wet waste components of municipal solid waste.
- The by-products such as electricity and Bio-CNG will also help in achieving sustainability of waste management operations.
- EIL will assist and handhold the million plus cities in developing such projects for larger quantum of waste integrating circularity in waste management.
- In the first phase, 25 million plus cities will be selected for developing large-scale process plants.
- The initiative will result in an additional processing capacity of 15,000 TPD for Bio-Methanation and 10,000 TPD for Waste to Energy respectively.



### About Bio Methanation:

- Biological methanation is a conversion process to generate methane by means of highly specialized microorganisms (Archaea) within a technical system.
- Biogas contains mostly methane (~60%), and carbon dioxide (~40%).

### About GOBARDhan Scheme:

- GOBAR (Galvanizing Organic Bio-Agro Resources) - dhan scheme is being implemented as part of Swachh Bharat Mission (Gramin) under Ministry of Drinking water and Sanitation.
- It focuses on managing and converting cattle dung and solid waste on farms into compost, biogas, and bio-CNG.

- Swachh Bharat Mission-Urban 2.0 also aims at creating garbage-free cities and has provisions for bio-methanation plants linked to GOBARdhan and SATAT schemes.
- Sustainable Alternative towards Affordable Transportation (SATAT) is an effort that would benefit both vehicle-users as well as farmers and entrepreneurs.
- Compressed Bio-Gas plants are proposed to be set up mainly through independent entrepreneurs.

## BHARTIYA PRAKRITIK KHETI BIO-INPUT RESOURCE CENTRES

**In News:** To further facilitate the adoption of "natural farming," 10,000 Bio-Input Resource Centres will be set-up across the country.



### More on the Topic:

- This will be creating a national-level distributed micro-fertiliser and pesticide manufacturing network.
- This will impact over 1 crore farmers over the next three years.
- Chemical fertilisers pose multiple risks.
- They are known to be a **major source of water pollution** – impacting both groundwater and rivers, ponds and lakes.
- **Eutrophication caused by excessive use of chemical fertilisers** is a death knell for fishes and other aquatic life, often covering lakes and ponds with a thick layer of algae and reducing the oxygen content in the water.
- Over a long period of time, they can also **harm the soil, causing acidification, and hence have an impact on the land's productivity.**
- Lastly, studies have found a link between the **excessive use of chemical fertilisers and incidence of cancer among farmers.**

### Eutrophication:

- Eutrophication is the process by which an **entire body of water, or parts of it, becomes progressively enriched with minerals and nutrients**, particularly nitrogen and phosphorus.
- It has also been defined as "**nutrient-induced increase in phytoplankton productivity**".

### Effects of Eutrophication:

- Eutrophication causes several physical, chemical and biological changes, which considerably deteriorate the water quality.
- It creates algal bloom, **releases toxic chemicals that kill fish, birds and other aquatic animals.**
- **Decomposition of algal bloom leads to the depletion of oxygen in water.** Thus with a high CO<sub>2</sub> level and poor oxygen through reduction of nitrates.
- Many pathogenic microbes, viruses, protozoa and bacteria grow on sewage products under anaerobic conditions.
- It results in the spread of **fatal water-borne disease such as polio, dysentery, diarrhoea, typhoid and viral hepatitis.**

## ORGANIC FARMING CERTIFICATION

**In News:** India will adopt extra measures to check irregularities in organic farming certification.

### Types of Organic Certificates in India



### More on the Topic:

- The development follows "**various irregularities being observed in the certification activities.**"
- Irregularities in organic cotton certification have resulted in the loss of the "**Organic India**" brand overseas.

### About Organic Farming Certification in India:

- Organic foods are certified under National Programme for Organic Production (NPOP) or Participatory Guarantee System for India (PGS-India).

- The National Programme for Organic Production (NPOP) is under the Ministry of Commerce & Industry.
- The National Programme for Organic Production (NPOP) provides for Standards for organic production, systems, criteria and procedure for accreditation of Certification Bodies, the National (India Organic) Logo and the regulations governing its use.
- The standards and procedures have been formulated in harmony with other International Standards regulating import and export of organic products.
- NPOP standards have been recognized by European Commission and Switzerland for unprocessed plant products.
- PGS- India, launched under Ministry of Agriculture, is based on NPOP standards but is distinct in its certification procedure. PGS is for domestic use only.

#### About Organic Farming:

- Organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilisers, pesticides, growth regulators, genetically modified organisms and livestock food additives.
- To the maximum extent possible organic farming system rely upon crop rotations, use of crop residues, animal manures, legumes, green manures, off farm organic wastes, bio fertilisers, mechanical cultivation, mineral bearing rocks and aspects of biological control to maintain soil productivity and tilth to supply plant nutrients and to control insect, weeds and other pests.
- Organic farming has many benefits including maintaining environment health, reducing cost of agriculture, optimum use of natural resources, improves the soil's physical properties, improves the soil's chemical properties etc.

#### ISSUE OF E WASTE IN INDIA

**In News:** The health of the children who earn a living by dismantling, extracting and recycling e-waste gets affected.

#### More on the Topic:

- e-waste releases toxic elements such as Lead, Mercury, Cadmium, Chromium, Polybrominated biphenyls and Polybrominated diphenyl.

- Children suffer from serious skin diseases and chronic lung infections due to continuous exposure to chemical-laden toxins found in the metals.
- E-waste (electronic waste) is used to describe old, end-of-life or discarded electric and electronic appliances.
- This e-waste is comprised of 21 types of electrical and electronic equipment (EEE) notified Under the E-Waste (Management) Rules, 2016.

#### Statistics:

- According to the Global E-waste Monitor 2020, the world dumped 53.6 million metric tons of e-waste in 2019.
- India produced 3.2 million metric tons of e-waste, much of which is dumped for dismantling and recycling in Seelampur with no regulations.
- India has tried to tackle this unregulated industry and introduced a series of laws in 2011 and 2016 mandating the authorisation and registration of all e-waste recycling facilities, along with directives for workers to use protective equipment while dismantling the waste. But these laws are not stringently implemented.
- Only 22.7% of the e-waste generated in 2019-20 in India was collected, dismantled, and recycled or disposed off.
- India is one of the fastest-growing waste streams in the world.
- 95% of e-waste in India is recycled by the informal sector.

#### E-waste (management) rules 2022:

- Use of hazardous substances (such as lead, mercury, and cadmium) should be restricted in manufacturing electrical and electronic equipment that have an adverse impact on human health and the environment.
- More range of electronic goods covered e.g., laptops, mobile, cameras etc.
- Producers of electronic goods have to ensure at least 60% of their electronic waste is collected and recycled by 2023 with targets to increase them to 70% and 80% in 2024 and 2025, respectively.
- Companies will report this data on an online portal.
- Through Extended Producer Responsibility



**Certificates** (similar to carbon credit mechanism) e-waste responsibility could be handed over to a third party.

- 'Environmental compensation' to be provided by the companies that don't meet their target.
- They will earmark industrial space for e-waste dismantling and recycling facilities, undertaking industrial skill development and establishing measures for protecting the health and safety of workers engaged in the dismantling and recycling facilities for e-waste. Those will be ensured by the state governments.
- Central Pollution Control Board shall conduct random sampling of electrical and electronic equipment placed on the market to monitor and verify the compliance of reduction of hazardous substances provisions.

## INDIA FINALISES ACTIVITIES TO BE CONSIDERED FOR TRADING OF CARBON CREDITS)

**In News:** India has finalised activities to be considered for trading of carbon credits under Article 6.2 mechanism to facilitate transfer of emerging technologies and mobilise international finance in India.



### More on the Topic:

- Article 6 of Paris Agreement allows countries to voluntarily cooperate with each other to achieve emission reduction targets set out in their Nationally Determined Contributions (NDCs).
- Article 6.2 creates basis for trading in GHG emission reductions.
- India has notified the National designated Authority for the Implementation of the Paris Agreement (NDAIPA) in May 2022.
- Overall 13 activities have been finalised under

three heads: GHG mitigation activities, alternate materials, and removal activities.

- The final list for GHG mitigation includes areas like: renewable energy with storage (only stored component), solar thermal power, off-shore wind, green hydrogen, compressed biogas, emerging mobility solutions, high end technology for energy efficiency, sustainable aviation fuel, use of best available technologies, tidal energy, high voltage direct current transmission in conjunction with the renewable energy projects.
- **Alternative Materials:** Green ammonia received final approval as an alternative material for removal activities, carbon capture utilisation and storage.
- Removal Activities:

### Significance of the Move:

- The finalisation of activities is in the backdrop of the Paris Agreement Rulebook being finalised in respect of Article 6 which focuses on carbon trading through bilateral/cooperative approaches and international market mechanisms.
- Under this, countries will be able to transfer carbon credits earned from reduction of greenhouse gases (GHG) emissions to help countries meet climate targets.
- These activities will facilitate adoption/transfer of emerging technologies and may be used to mobilise international finance in India.
- The activities will initially be for the first three years and may be updated/revised by NDAIPA.

### About Carbon Trading:

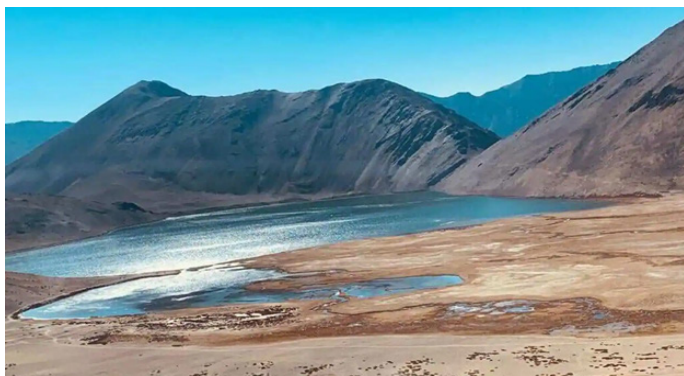
- Carbon trade is the buying and selling of credits that permit a company or other entity to emit a certain amount of carbon dioxide or other greenhouse gases.
- The carbon credits and the carbon trade are authorised by governments with the goal of gradually reducing overall carbon emissions and mitigating their contribution to climate change.
- Carbon trading is based on the cap and trade regulations that successfully reduced sulfur pollution during the 1990s.
- This regulation introduced market-based incentives to reduce pollution rather than mandating specific measures, the policy

rewarded companies that cut their emissions and imposed financial costs on those that could not.

- The idea of applying a cap-and-trade solution to carbon emissions originated with the **Kyoto Protocol**, a **United Nations treaty to mitigate climate change** that took effect in 2005.
- At the time, the measure devised was intended to reduce overall carbon dioxide emissions to roughly 5% below 1990 levels by 2012. The Kyoto Protocol achieved mixed results and an extension to its terms has not yet been ratified.

## **YAYA TSO TO BECOME LADAKH'S FIRST BIODIVERSITY HERITAGE SITE**

**In News:** Yaya Tso, known as birds' paradise for its beautiful lake located at an altitude of 4,820 metres, has been proposed as Ladakh's first biodiversity heritage site (BHS).



### **More on the Topic:**

- Yaya Tso is a nesting habitat for a large number of birds and animals, such as the **bar-headed goose, black-necked crane and brahmny duck**.
- It also has the distinction of being one of the highest breeding sites of the black-necked crane in India.
- The Biodiversity Management Committee, the panchayat of Chumathang village, along with **SECURE Himalaya Project** recently resolved to declare Yaya Tso as Ladakh's first BHS under the Biological Diversity Act.
- As per Section 37 of the Biological Diversity Act, the State Governments are empowered to notify in the official gazette, in consultation with 'local bodies', areas of biodiversity importance as Biodiversity Heritage Sites.
- Under sub section (2) of Section 37 of the BD

Act, the State Government in consultation with the Central Government may frame rules for the management and conservation of BHS.

### **Biodiversity Heritage Sites (BHS):**

- Biodiversity Heritage Sites (BHS) are **areas that are unique, ecologically fragile ecosystems having rich biodiversity** comprising of any one or more of the components such as; species richness, high endemism, presence of rare, endemic and threatened species, keystone species, species of evolutionary significance, wild ancestors of domestic/cultivated species or land races or their varieties, past pre-eminence of biological components represented by fossil beds and having cultural or aesthetic values.

### **About Secure Himalaya:**

- The **SECURE Himalaya** project is a part of "**Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development**" (Global Wildlife Program) funded by the Global Environment Facility (GEF).
- The project promotes **sustainable management of alpine pastures and forests in the high range Himalayan ecosystems** to secure conservation of globally significant wildlife, including endangered snow leopard and their habitats to ensure sustainable livelihoods and socio-economic benefits for communities in the selected high altitude landscapes in the Trans- and Greater Himalayan regions.
- It contributes to the **Global Snow Leopard Ecosystem Protection Program (GSLEP)**, a joint initiative of 12 range country governments, international agencies, civil society, and the private sector.

## **KELP FOREST**

**In News:** Kelp forests, the underwater ecosystems formed in shallow water by the dense growth of several different species known as kelps are declining because of climate change.

### **More on the Topic:**

- *Ecklonia radiata*, the dominant and most widely distributed Laminarian kelp in the southern hemisphere, rapidly succumb to warmer temperatures in spring and summer when temperatures exceed 27 degrees Celsius.
- Kelp forests provide **underwater habitats to hundreds of species of invertebrates, fishes, and other algae** and have great

ecological and economic value. Loss of kelp forests will also lead to a decline of the unique biodiversity that they support.

- Kelp forests occur worldwide throughout temperate and polar coastal oceans.
- In 2007, kelp forests were also discovered in tropical waters near Ecuador.
- In context, algal kelp forest combined with coral reefs account for less than 1% of global primary productivity.
- Physically formed by brown macroalgae, kelp forests provide a unique habitat for marine organisms and are a source for understanding many ecological processes.
- While it is unlikely that in situ protection could halt declines of rear edge kelp populations under scenarios of warming, their unique genetic diversity could be protected and studied ex situ in culture banks for use in restoration, hybridisation or assisted adaptation strategies

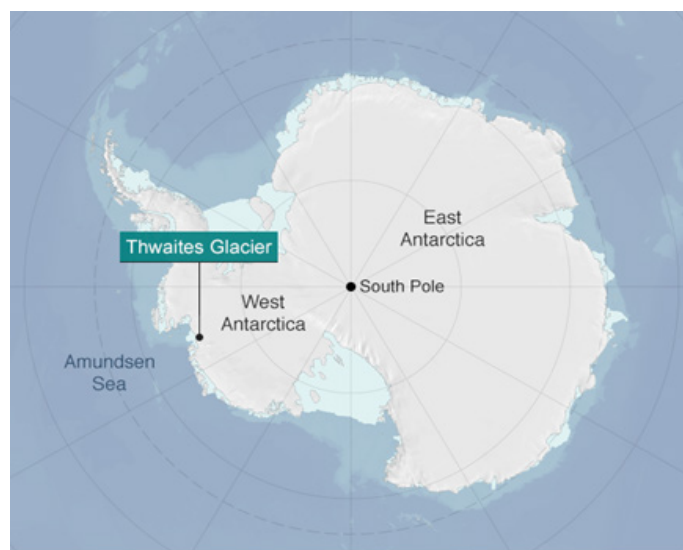
being displaced due to large-scale construction activities."

### Carrying Capacity:

- It is defined as the total number of individuals of a species that can live in an ecosystem under certain conditions.
- More recently the concept has been expanded beyond ecology by including **economic, social, and infrastructure imperatives**.
- Urban Carrying Capacity (UCC): It provides a theoretical foundation for determining the maximum potential population that could be supported without environmental degradation, based on the inherent limitations of a city.

## ANTARCTICA'S THWAITES GLACIER

**In News:** New footage has revealed Antarctica's Thwaites Glacier is shrinking from below in a way scientists hadn't expected – with melting happening rapidly along the cracks and crevasses in its base.



### More on the Topic:

- The temperature of the water at the grounding zone or grounding line of the glacier is two degrees higher than the freezing point of the water.
- The grounding line is the place below a glacier at which the ice transitions between resting fully on bedrock and floating on the ocean as an ice shelf.
- The location of the line is a pointer to the rate of retreat of a glacier.
- When glaciers melt and lose weight, they float off the land where they used to be situated. It makes a retreat of the grounding line.
- That exposes more of a glacier's underside

## CARRYING CAPACITY

**In News:** Taking suo-motu cognisance of a media report that has warned of a Joshimath-like situation in Mussoorie town, the National Green Tribunal (NGT) has issued directions to the Uttarakhand Government to conduct a study of the specific carrying capacity of the hill station.



### More on the Topic:

- The NGT observed that unplanned construction beyond carrying capacity is "a warning for Mussoorie" and "its subsurface material is



to seawater, increasing the likelihood it will melt faster.

- This results in the glacier speeding up, stretching out, and thinning, causing the grounding line to retreat ever further.

### About Thwaites Glacier:

- Thwaites Glacier is also called as the Doomsday Glacier.
- It is the widest glacier on earth and a part of West Antarctic ice sheet.
- Ice loss in the glacier currently contributes to 4% of the global sea-level rise. If it collapses, it would lead to an increase in global sea level of at least 65 cms.
- The Thwaites Ice Shelf, a floating ice shelf which braces and restrains the eastern portion of Thwaites Glacier, is likely to collapse within a decade from 2021

## EXTENDED PRODUCER RESPONSIBILITY (EPR)

In News: A total of 2.26 million tonnes of plastic packaging has been covered under Extended Producer Responsibility (EPR) for the year 2022-23.



### More on the Topic:

#### About Extended Producer Responsibility:

- EPR is strategy used to promote reuse, recycling, and eco-friendly disposal of waste by assigning the responsibility of disposal of waste to manufacturer/producer of goods.

- In India, EPR was introduced as an important feature in e-waste (Management and Handling) Rules, 2011, and Plastic Waste Management Rules, 2011.
- EPR shall be applicable to both pre-consumer and post-consumer plastic packaging waste.
- Earlier MoEFCC had brought out guidelines which stipulated **mandatory targets on EPR**, recycling of plastic packaging waste, reuse of rigid plastic packaging and use of recycled plastic content.
- The guidelines also mandated implementation of EPR on plastic packaging through a **centralized online portal developed by CPCB** in order to ensure ease of doing business while complying with statutory obligations.

### India's Efforts towards Plastic Pollution:

- The strategy adopted by the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, for tackling unmanaged and littered plastic waste has **two pillars viz. enforcement of ban on identified single use plastic items**, which cannot be collected, and **implementation extended producer responsibility on plastic packaging**.
- **National Level Task force** has been constituted for effective implementation of Plastic Waste Management Rules, 2016.
- India **banned the manufacture, import, stocking, distribution, sale and use of identified single-use plastic items**, which have low utility and high littering potential, all across the country from July, 2022.
- MoEFCC had organized an **India Plastic Challenge Hackathon, 2021**.
- Two innovative solutions for eco-alternatives were awarded under the Hackathon viz. a **rigid packaging material made from rice stubble**, which substitutes for thermocol and a **flexible packaging film made from sea weeds** to be used for wrapping and carry bag applications.

### India Plastic Pollution Statistics:

- Around **34.7 lakh tonnes per annum (TPA)** of plastic wastes was generated by India during 2019-20.
- **15.8 lakh TPA** of the plastic waste was recycled and **1.67 lakh TPA** was co-processed. Which makes it **50% of the total plastic waste produced recycled**.

## POLLUTER PAYS PRINCIPLE

**In News:** A bench headed by NGT Chairperson has imposed penalty on Delhi government based on polluter pays principle.



### More on the Topic:

- The 'polluter pays' principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment.
- First reference of the principle could be seen in the 1972 OECD Guiding Principles Concerning International Economic Aspects of Environmental Policies.
- The first explicit mentioning of polluter pays is enshrined in the Rio Earth Summit of 1992.

## PANGOLIN

**In News:** A fact sheet reported that 1,203 pangolins have been found in illegal wildlife trade in India from 2018 to 2022.



### More on the Topic:

- Pangolin is believed to be the world's most trafficked non-human mammal.
- Tens of thousands of pangolins are poached every year, killed for their scales for use in traditional Chinese medicine and for their meat, a delicacy among some ultra-wealthy in China and Vietnam.

- There are eight species of pangolins.
- Four are found in Asia—Chinese, Sunda, Indian, and Philippine pangolins—and they're listed by the IUCN as critically endangered.
- Two are found in India. Indian Pangolin (Endangered), Chinese Pangolin (Critically Endangered)
- The four African species—the ground pangolin, giant pangolin, white-bellied, and black-bellied—are listed as vulnerable.
- All species face declining populations because of illegal trade.
- In 2016, the Convention on International Trade in Endangered Species (CITES), the treaty that regulates the international wildlife trade, voted to ban the commercial trade in pangolins.

## BORTHEKERA PLANT OF ASSAM

**In News:** *Garcinia pedunculata*, a medicinal plant commonly called 'Borthekera' in the Assamese language, traditionally forbidden for raw consumption, has been found to protect from heart diseases.



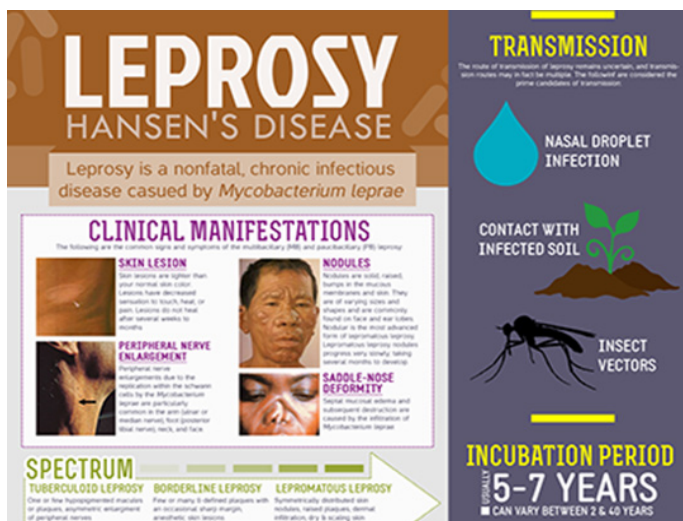
### More on the Topic:

- Administration of the dried pulp of the ripe fruit of the medicinal plant reduced cardiac hypertrophy indicators and oxidative stress and heart inflammation.
- The sun-dried slices of the ripe fruit are used for culinary and medicinal purposes and are known to have therapeutic properties like anti-inflammatory, anthelmintic, antibacterial, antifungal, antidiabetic, hypolipidemic, nephroprotective, and even neuroprotective activity.
- It is a proved source of anti oxidants.

## LEPROSY

**In News:** India accounts for over half of world's new leprosy patients.





## CLIMATE-SMART WHEAT VARIETY

**In News:** The Indian Council of Agricultural Research recently introduced a climate-smart wheat variety called the HD-3385.



### More on the Topic:

- Despite India being declared "leprosy-free" in 2005, the country still accounts for over half (almost 60%) of the world's new leprosy patients.
- According to World Health Organization (WHO), 114,451 new leprosy cases were detected in the country in 2019-20 which accounted for 80% of the cases of Southeast Asian countries.
- Experts suggests for awareness campaigns deal with stigma and discrimination associated with the disease and encourage those who are infected to come forward for treatment.
- Leprosy is an age-old disease and is described in the literature of ancient civilizations. It is a **chronic infectious disease which is caused by a type of bacteria called *Mycobacterium leprae*.**
- Leprosy is also known as Hansen's disease.
- The disease affects the skin, the peripheral nerves, mucosa of the upper respiratory tract, and the eyes.
- Leprosy can be cured with 6-12 months of multi-drug therapy. Early treatment avoids disability.

### Indian Efforts:

- India has set the target of **Leprosy Mukht Bharat by 2027, 3 years ahead of the SDG.**
- **National Strategic Plan & Roadmap for Leprosy (2023-27)** will aid in advancing the campaign against leprosy, to stop transmission, by speeding case detection efforts and maintaining a robust surveillance infrastructure.
- **Nikusth 2.0** is an integrated portal for leprosy case management under National Leprosy Eradication Programme (NLEP).

### More on the Topic:

- Wheat is a rabi (winter) crop mainly sowed before mid-November in Punjab, Haryana, Rajasthan and Madhya Pradesh and during the second half of November in Uttar Pradesh and Bihar.
- It typically takes about 140-145 days to be ready for harvest.
- Scientists suggest that if we prepone sowing to October 20, the crop won't be exposed to heat at a crucial juncture in its growth. It can, then, be comfortably harvested by the March-end instead of April.
- However, early sowing of current varieties makes the crop prone to premature flowering.
- This is because the crops cannot bloom at very low temperatures if sown early. So the solution is to reduce their blooming temperature.
- This would in turn affect crop yield, as the plants wouldn't have the time for proper growth before flowering begins.
- To solve this problem, ICAR-IARI scientists have developed three new wheat varieties using 'mild vernalisation technique,' wherein the crops need a certain minimum period of low winter temperatures before the initiation of flowering.
- The HD-3385 will come to heading within 100 days and therefore shall be sown early. Also, the new variety accumulates biomass along with grain weight.

## RHODODENDRONS

**In News:** Botanical Survey of India has revealed that Darjeeling and Sikkim Himalayas are home to more than one-third of all types of rhododendrons found in India.





#### More on the Topic:

- Rhododendron, meaning rose tree in Greek, is considered an indicator species for climate change.
- The flowering season for rhododendrons starts in March and continues till May.
- However, recently, flowering was found to begin as early as January for some species.
- This is an indication that those areas are getting warmer and the phenology of rhododendrons can be an important indicator of climate change.
- The specie has several health benefits including prevention and treatment of diseases associated with heart, dysentery, diarrhoea, etc.

### TSETSE FLY

**In News:** Biologists recently discovered the first airborne pheromone produced by tsetse flies.

#### More on the Topic:

- The finding, reported in Science, promises new control methods for the biting flies, which have a long history of spreading devastating diseases.



- The best way of controlling these horrible diseases is by controlling the flies.

- Tsetse flies are known to carry parasites called African trypanosomes. When the insects bite humans or animals, they transmit these parasites, spreading diseases such as African sleeping sickness, which can be fatal to humans, and nagana, a disease that affects livestock and other animals.

### BHARATPUR BIRD SANCTUARY

**In News:** The Rajasthan state Forest Department has proposed to construct a zoo inside Keoladeo National Park, a World Heritage Site popularly known as Bharatpur bird sanctuary.



#### More on the Topic:

- In 1982, Keoladeo was declared a national park and then later listed as a World Heritage Site by UNESCO in 1985.
- The park is home to over 370 species of birds and animals such as the basking python, painted storks, deer, nilgai and more.
- It was also known as the breeding ground for the rare and elusive to spot Siberian crane.
- It is a man-made and man-managed wetland.

### GREAT INDIAN BUSTARD

**In News:** Supreme Court appointed-committee recommendation on protection of GIB has been published.

#### More on the Topic:

- In order to protect the endangered Great Indian Bustard, close to 800 km, or about 10% of the length of proposed power lines in the Thar and Kutch deserts of Rajasthan and Gujarat should be re-routed or made to go underground.
- Committee recommended to install bird diverters which are flaps installed on power lines that work like reflectors and are visible to flying birds from about 50 metres away.



### Steps Taken:

- A total of 16 GIB chicks, artificially hatched from eggs collected from the wild, are being reared in the satellite conservation breeding facility in Jaisalmer in Rajasthan.
- The objective is to build the captive population of the GIBs and to release the chicks in the wild. The initiative is likely to take 20 to 25 years.

### DICKINSONIA FOSSI

**In News:** Two years ago, the discovery of a rare 550-million-year-old fossil of Dickinsonia, a primitive marine animal, was reported from the Bhimbetka rock shelters near Bhopal, Madhya Pradesh. However, the 'fossil', which received widespread attention turned out to be impression of a decayed beehive.



- According to the report, despite a Supreme Court order directing that low-voltage power lines go underground, no significant steps appear to have been taken by power companies and State governments to comply with them.
- The nearly 7,200 km of overhead lines are meant to transfer solar power into the grid but existing lines have been harming Great Indian Bustards, which have been dying by colliding into them or getting electrocuted.

### About GIB:

- The Great Indian bustard or GIB is the State bird of Rajasthan.
- It is also considered India's most critically endangered bird and is protected under the Wildlife Protection Act.
- Its population of about 150 in Rajasthan accounts for 95% of its total world population.
- But GIBs have been facing a threat to their survival because of intensive agricultural practices, laying of power lines and industrialisation.
- The GIBs are large birds standing about one metre tall and weighing about 15 to 18 kgs.
- They are not great fliers and have wide sideways vision to maximise predator detection. But the species' frontal vision is narrow.
- These birds cannot detect power lines from far and since they are heavy fliers, they fail to manoeuvre across power lines within close distances. This makes them vulnerable to collision with power lines. In most cases, death is due to collision rather than electrocution.

### More on the Topic:

- Dickinsonia is an extinct genus of basal animal that lived during the late Ediacaran period in what is now Australia, China, Russia and Ukraine.
- Dickinsonia is considered to be Earth's oldest animal, dating back 570 million years ago.
- Basal animals are animals which have radial symmetry in their body plans. They have very simple bodies and tend to be diploblastic (derived from only two embryonic cell layers).
- Their soft, squishy bodies resembled tubes, fronds or even thin, quilted pillows, they bore scant similarity to the anatomy of animals today.
- Its affinities are presently unknown, its mode of growth is consistent with a stem-group bilaterian affinity, though some have suggested that it belongs to the fungi or even an "extinct kingdom".
- The discovery of cholesterol molecules in



fossils of Dickinsonia lends support to the idea that Dickinsonia was an animal.

## RANN OF KUTCH

**In News:** As part of India's G20 presidency, Gujarat will host the first Tourism Working Group (TWG) meeting in the state's Rann of Kutch.



### More on the Topic:

- The Great Rann of Kutch, along with the Little Rann of Kutch and the Banni grasslands on its southern edge, is situated in the district of Kutch, between the Gulf of Kutch and the mouth of the Indus River in southern Pakistan.
- The Great Rann of Kutch is a salt marsh in the Thar Desert.
- It is about 7500 km<sup>2</sup> in area and is reputed to be one of the largest salt deserts in the world. This area has been inhabited by the Kutchi people.
- Indian Wild Ass Sanctuary, is located in the Little Rann
- Kutch Bustard Sanctuary (Lala-Parjan Sanctuary): dedicated for the conservation and preservation of India's heaviest flying bird – the Bustard.

### Important Bio Diversity Areas at Rann of Kutch:

- **Marine National Park:** It is the first marine reserve of India. Located in the Gulf of Kutch.
- **Kutch Desert Wildlife Sanctuary:** The largest wildlife sanctuary in India area-wise.

- **Location - Great Rann of Kutch Narayan Sarovar Sanctuary:** It is known as the last remaining habitat of the cheetahs in India.
- **Banni Grasslands Reserve :** It forms a belt of arid grassland ecosystem on the outer southern edge of the desert of the marshy salt flats of Rann of Kutch in Gujarat, India
- **The Chari-Dhand wetland conservation reserve:** It is located on the edge of arid Banni grasslands and the marshy salt flats of the Rann of Kutch in Kutch District, Gujarat., India

## LAKE VICTORIA

**In News:** Recently Delhi-based non-profit Centre for Science and Environment released a report on managing Lake Victoria water quality in Tanzania.



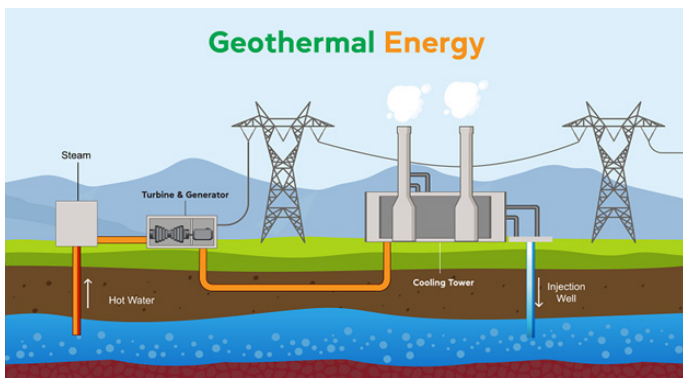
### More on the Topic:

- Lake Victoria is one of the African Great Lakes.
- With a surface area of approximately 60000 km<sup>2</sup>, Lake Victoria is Africa's largest lake by area, the world's largest tropical lake, and the world's second-largest fresh water lake by surface area after Lake Superior in North America.
- Lake Victoria is largest lake in Africa and chief reservoir of Nile.
- It is shared by three countries, Tanzania, Uganda and Kenya.

## GEO THERMAL ENERGY

**In News:** ONGC plans to map the geothermal energy sources of India in search of clean energy.





### More on the Topic:

- According to estimates, India has a potential of 10 GW of geothermal energy.
- The focus on geothermal energy comes at a time when country has set an ambitious climate target of 500 GW of installed renewable energy capacity and net zero carbon emission by 2070.
- ONGC also has accelerated its diversification efforts through its 'Energy Strategy 2040'.
- Under the strategy, ONGC targets 5 GW of renewable energy capacity by 2040, with an intermediate target of 2 GW of onshore wind energy and 1.5 GW of solar energy by 2030.
- The oil and gas producer has diversified into several sectors, including underground coal gasification, solar and wind energy and, last year, partnered with Norwegian state-owned energy company Equinor for a pilot project of carbon capture, utilization and storage (CCUS).

### About Geothermal Energy Efforts by India:

- ONGC began drilling in Ladakh in search of geothermal energy sources.
- So far, Ladakh has been identified as the most resource-rich region in terms of geothermal energy in the country.
- Efforts are also under way to utilize geothermal energy from oil and gas wells in Gandhar oil field of ONGC's Ankleshwar asset in Gujarat.
- According to ONGC Puga and Chumathang in eastern Ladakh are the most promising geothermal fields in India, with a potential to generate about 50 MW of power.

### About Geothermal Energy:

- Geothermal energy is heat that is generated within the Earth. (Geo means "earth," and thermal means "heat" in Greek.)
- It is a renewable resource that can be harvested for human use.

- About 2,900 kilometers (1,800 miles) below the Earth's crust, or surface, is the hottest part of our planet: the core.
- A small portion of the core's heat comes from the friction and gravitational pull formed when Earth was created more than 4 billion years ago.
- However, the vast majority of Earth's heat is constantly generated by the decay of radioactive isotopes, such as potassium-40 and thorium-232.
- The heat can be captured and used directly for heat, or their steam can be used to generate electricity.
- Geothermal energy can be used to heat structures such as buildings, parking lots, and sidewalks.

### M-SAND PROJECTS

In News: Coal India Ltd will be launching M-Sand Projects soon.



### More on the Topic:

- Sand Mining Framework (2018) prepared by Ministry of Mines envisages alternative sources of sand in the form of Manufactured Sand (M-Sand) from crushed rock fines (crusher dust), sand from Overburden (OB) of coal mines.
- During Opencast mining the overlying soil and rocks are removed as waste to extract coal and the fragmented rock (Overburden or OB) is heaped in dumps.
- Most of the waste is disposed off at the surface which occupies considerable land area and requires extensive planning and control to minimize the environmental impact of mining.
- Coal India Ltd (CIL) has envisaged to process the overburden rocks for sand production in mines where OB material contain about 60% sandstone by volume which is harnessed through crushing and processing of Overburden.

## Significance of M-Sand:

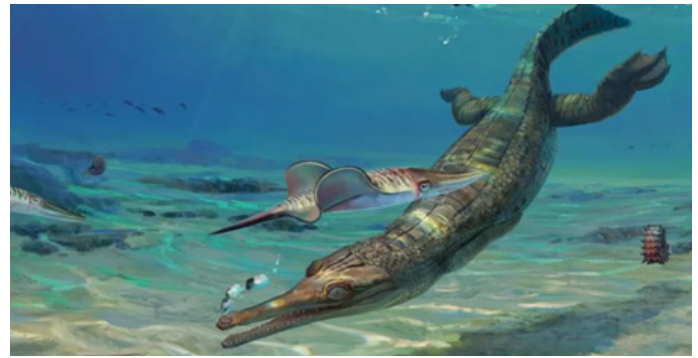
- **Cost-effectiveness:** Using manufactured sand can be more cost-effective than using natural sand, as it can be produced in large quantities at a lower cost.
- **Consistency:** Manufactured sand can have a consistent grain size and shape, which can be beneficial for construction projects that require a specific type of sand.
- **Environmental benefits:** Using manufactured sand can help to **reduce the need for mining natural sand**, which can have negative environmental impacts. Additionally, using the overburden from coal mines can help to repurpose materials that would otherwise be considered waste.
- **Reduced water consumption:** Using manufactured sand can help to reduce the amount of water required for construction projects, as it does not require washing before use.
- **Better workability :** Manufactured sand is more angular and has a rougher surface, which makes it more workable for construction projects.
- Land occupied by OB dumps can be freed for alternative useful purposes
- Recovery of sand from waste overburden is the best out of waste product
- Commercial sale of produced sand can generate **additional revenue for coal companies**
- Apart from commercial use, sand produced shall also be consumed for sand stowing in Underground Mines enhancing safety and conservation
- Lesser Sand extraction from river will reduce erosion of channel bed & banks and protect water habitat
- Help maintaining water table.

## ANCIENT MARINE CROCODILE FOSSIL

**In News:** Scientists have uncovered a new Thalattosuchian, an ancient “cousin” of modern-day crocodiles—which could be the oldest of its kind ever discovered.

### More on the Topic:

- The newly-discovered fossil could help fill a gap in the fossil record of these animals.



- The fossils uncovered on the Jurassic Coast in the United Kingdom include part of the head, backbone, and limbs of *Turnersuchus hingleyae*.
- The newly-discovered fossils of *Turnersuchus hingleyae* represent the only complete Thalattosuchian of its age and date back to the early Jurassic, Pliensbachian period, which was about 185 million years ago.
- The discovery of this new fossil helps **fill a gap in the fossil record** and suggests that Thalattosuchians and other crocodile-like animals could have originated around 15 million years farther than *Turnersuchus*.
- Due to their relatively long, slender snouts, it is likely that they would have looked similar to the currently living gharial crocodiles.
- Gharial crocodiles are usually found in the major river systems of Northern India.
- But according to the researchers, though thalattosuchians' skulls looked similar to gharial crocodiles, they were constructed differently.

## RED SANDERS

**In News:** A factsheet prepared by TRAFFIC, a global wildlife trade monitoring organisation has revealed that Red Sanders is under severe pressure from illegal logging and harvesting in India.



### More on the Topic:

- The report has recorded 28 incidents of Red Sanders confiscation, seizure, and specimen from the wild being exported from India.
- These consignments were exported to China (53.5%), Hong Kong (25.0%), Singapore (17.8%) and the United States of America (3.5%) from 2016 to 2020.
- **Red Sanders Pterocarpus santalinus**, or **red sandalwood**, is an endemic tree species with distribution restricted to the Eastern Ghats of India.
- The species found in Andhra Pradesh and growing up to a height of 10 to 15 metres, is reported to be one of India's most exploited tree species.

### The Demand for Red Sanders:

- The species, *Pterocarpus santalinus*, is an Indian endemic tree species, with a restricted geographical range in the Eastern Ghats.
- The species is endemic to a distinct tract of forests in Andhra Pradesh.
- Red Sanders usually grow in the rocky, degraded and fallow lands with Red Soil and hot and dry climate.
- Its heartwood is in demand in both domestic and international markets and is used to make furniture and handicrafts.
- The red dye obtained from the wood is used as a colouring agent in textiles and medicines.

### Important Conservation Efforts:

- Listed under Schedule IV of The Wildlife Protection Act and Endangered as per IUCN Red List.
- In 2016 the Andhra Pradesh Forest Act, was amended via A.P. Act No.15 of 2016, to give special status of protection to Red Sanders.
- Red Sanders offences were made cognisable and non-bailable, and the punishments related to it were enhanced.

## RED-HEADED VULTURE

**In News:** Red-headed vulture was seen at Delhi's Bhatti mines recently. It is first sighting since 2017.

### More on the Topic:

- The bird was spotted during an ongoing winter raptor survey, which is carried out by the Bombay Natural History Society each

year at the Asola Bhatti Wildlife Sanctuary.

- These red-headed vulture species are distributed in Southeast Asia and Indian Subcontinent.
- These red headed vulture species are distributed in India, Nepal, Bangladesh and Bhutan in Indian Subcontinent. Small populations are present in Myanmar, Laos and Cambodia. It was previously present in South China, Thailand, Vietnam, Malaysia and Singapore.
- It is mainly black except for bare reddish head, neck and legs. It has a pale grey band at the base of the flight feathers.
- The male bird has a paler, whitish iris, while the female has dark brown iris.
- The red-headed vulture prefers open country usually away from human habitation, well-wooded hills and dry deciduous forest with rivers.
- They feed on carcasses of medium sized and large mammals. They may occasionally snatch feed from other birds. They soar high on the thermals to locate dead animals.



### Protection Status:

- The Indian vulture population declined by 90% mainly due to toxicity from diclofenac present in carcasses of cattle.
- The drastic reduction in the wild ungulate population, reduced availability of feed and increased human activity in the habitat are the threats for their survival.
- The IUCN (International Union for Conservation of Nature) has categorized and evaluated these bird species and has listed them as "Critically Endangered".

## NOBLE'S HELEN BUTTERFLY

**In News:** Arunachal Pradesh has recorded India's new butterfly named Noble's Helen.





#### More on the Topic:

- The butterfly was photographed from Namdapha National Park (NNP) of Arunachal Pradesh.
- The records are significant as this rare swallowtail butterfly is disappearing in recent times from its previously known ranges in South East Asia.
- Butterflies are distributed worldwide except Antarctica.
- The earliest Lepidoptera fossils date back to Triassic-Jurassic boundary, around 200 million years ago.
- Of the 18500 specie of butterfly specie, 1,500 are reported from India.
- Loss of habitat caused by urban development has been attributed as **prime cause of extinction of butterfly species**.
- BF are being responsible for pollinating plants. The majority of plants need pollinators like bees and butterflies to reproduce.

## CHOLERA

**In News:** WHO has deployed emergency medical teams to support Malawi's cholera fight.

#### More on the Topic:

- Malawi has been battling the cholera outbreak for months now, with reports that the outbreak has spread to nearly all part of the country.
- More than 1,000 people have died from the disease since March 2022.
- Cholera is an **extremely virulent disease that can cause severe acute watery diarrhoea**.
- It is caused by infection of the intestine with the **bacterium Vibrio cholerae**.
- It takes between 12 hours and 5 days for a

person to show symptoms after ingesting contaminated food or water.

- Cholera affects both children and adults and can kill within hours if untreated.
- A person may get cholera by drinking water or eating food contaminated with the cholera bacterium.
- The disease can spread rapidly in areas with inadequate treatment of sewage and drinking water.
- Currently there are three WHO pre-qualified oral cholera vaccines (OCV), Dukoral, Shanchol, and Euvichol-Plus.
- All three vaccines require two doses for full protection.

## MARBURG DISEASE

**In News:** The World Health Organization (WHO) confirmed the first-ever outbreak of Marburg disease in Equatorial Guinea.



#### More on the Topic:

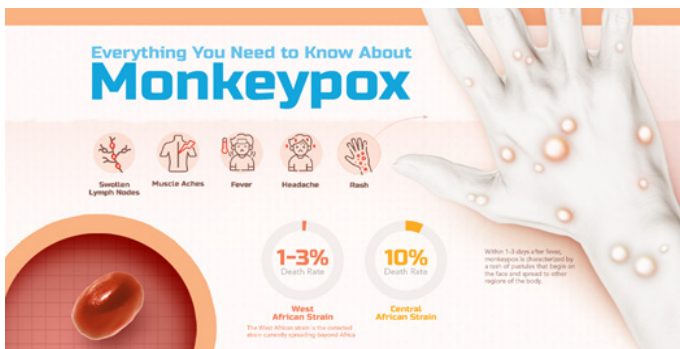
- Marburg virus disease is a **highly virulent disease that causes haemorrhagic fever, with a fatality ratio of up to 88%**. It is in the same family as the virus that causes Ebola virus disease.
- Like Ebola, the Marburg virus originates in **bats** and spreads between people via close contact with the bodily fluids of infected people, or surfaces, like contaminated bed sheets.
- Illness caused by Marburg virus **begins abruptly, with high fever, severe headache and severe malaise**. Many patients develop severe haemorrhagic symptoms within seven days.
- **There are no authorized vaccines or drugs to treat Marburg**, but rehydration treatment to alleviate symptoms can improve the chances

of survival.

- The rare virus was first identified in 1967 after it caused simultaneous outbreaks of disease in laboratories in Marburg, Germany and Belgrade, Serbia.

## MONKEY POX

In News: World Health Organization (WHO) has informed that Global mpox cases crosses 85,000.



### More on the Topic:

- **Monkeypox is a zoonotic viral disease** with symptoms similar to smallpox, but is less contagious. It was first diagnosed in humans in 1970 in the Democratic Republic of Congo in Africa. It currently has a case fatality ratio of 3-6 %.
- It spreads from one individual to the other by close contact with lesions, body fluids, respiratory droplets of infected individuals as well as contaminated materials such as bedding.
- **Vaccines used to eradicate smallpox provides protection against mpox**, since the disease is caused by a virus similar to and from the same family as the smallpox virus.
- New vaccines against the disease have also been developed and approved.
- An antiviral agent developed for the treatment of smallpox has also been licensed for the treatment of monkeypox.

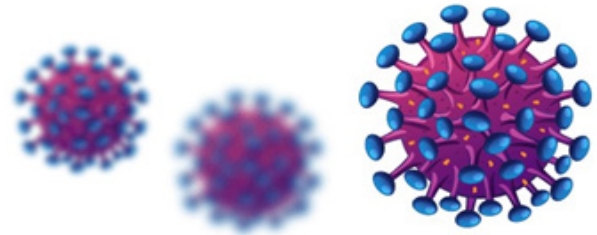
## DAR-ES-SALAAM DECLARATION FOR ACTION

In News: Through Dar-es-Salaam Declaration for Action, African nations have pledged to End AIDS in Children by 2030.

## WHAT IS HIV?

### Human Immunodeficiency Virus (HIV)

is a virus that attacks cells that help the body fight infection.



There's no cure, but it is **treatable** with medicine.



### More on the Topic:

- The declaration was adopted at the first ministerial meeting of the Global Alliance to end AIDS in Children. The Alliance was formed during the International AIDS Conference in Canada last July (2022).
- Main focus will be on ensuring that life-saving antiretroviral (ARV) medication reaches children.
- Currently, around the world, a child dies from AIDS-related causes every five minutes, (UNAIDS data)

### The work will centre on four pillars:

- Early testing and treatment; ensuring that pregnant and breastfeeding women do not pass the virus on to their babies; preventing new HIV infections among pregnant and breastfeeding adolescent girls and women; and "addressing rights, gender equality and the social and structural barriers that hinder access to services".

# GEOGRAPHY

## SHINKU-LA TUNNEL

**In News:** Ladakh and Himachal will be connected by A 4.1 km Shinku-La Tunnel to provide All-Weather Connectivity.



### More on the Topic:

- The Shinku-La pass (also known as Shingo-La) is considered the **only entry point** for Luggat Valley in Zaskar.
- It is covered in snow all year round, except for summers.
- To tackle this situation, the government has approved the proposal to build a tunnel.
- This project is important to ensure **the safety and security of the country** and to ease the movement of security forces.
- It will also help in the **economic development of the region**.
- This tunnel is a part of Project Yojak and is being implemented by the Border Road Organisation (BRO).
- Project Yojak aims to **build more tunnels like Atal Tunnel** and maintain the connecting roads.

## HEAT DOME

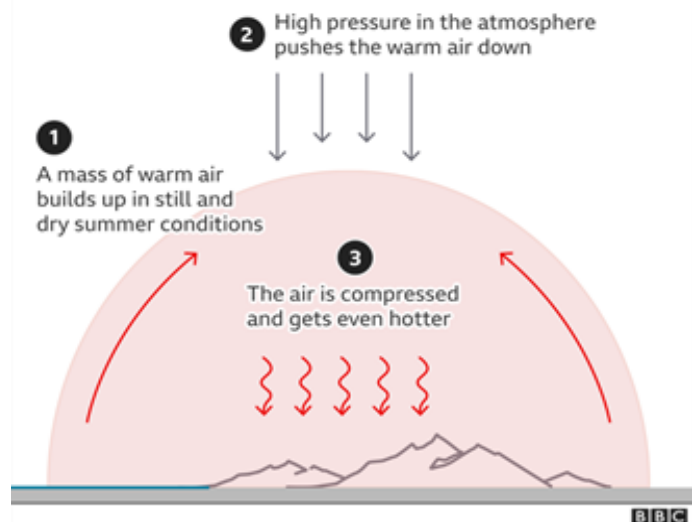
**In News:** Heat-spewing anticyclone over North-West India which led to a maximum temperatures of 5-11 degrees C higher than normal has created unusual heat in most parts of northern and western India during last few weeks.

### More on the Topic:

- IMD predicts that it is likely to recede from land and back off into Central Arabian Sea soon, making way for moisture-laden western disturbance and associated cloud cover with rain or snow in Western Himalayas and adjoining plains.

- An anticyclonic formation over south Gujarat is one of the main reasons for the warming on the west coast.
- Around Maharashtra and Goa, a weaker-than-usual sea breeze along the Konkan coast was aggravating the effects of the anticyclone.
- This year is widely expected to be a little hotter than the previous two years, mainly because of the expected end of the strongest-ever La Niña event.

### How a heat dome forms



### About Heat Dome:

- A heat dome is caused when atmosphere traps hot ocean air, as if bounded by a lid or cap. The upper air weather patterns are slow to move.
- A heat dome occurs when a **persistent region of high pressure traps heat over an area**.
- The heat dome can stretch over several states and linger for days to weeks, leaving the people, crops and animals below to suffer through stagnant, hot air that can feel like an oven.
- Typically, heat domes are tied to the **behavior of the jet stream**, a band of fast winds high in the atmosphere that generally runs west to east.
- Normally, the jet stream has a wavelike pattern, meandering north and then south and then north again. When these meanders in the **jet stream become bigger**, they move slower and can become stationary. That's when heat domes can occur.
- When the jet stream swings far to the north, **air piles up and sinks**.



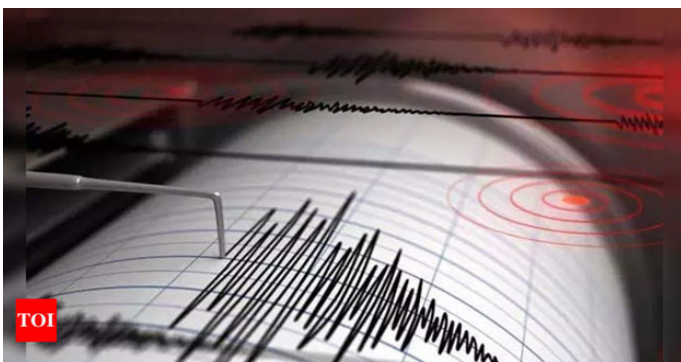
- The air warms as it sinks, and the sinking air also keeps skies clear since it lowers humidity. That allows the sun to create hotter and hotter conditions near the ground.
- If the air near the ground passes over mountains and descends, it can warm even more.

### Effects of Heat Dome:

- Heat domes often result in clear skies, as the sinking air **suppresses the development of clouds and precipitation.**
- The sinking air associated with heat domes can also lead to **drought conditions**, as it suppresses the development of clouds and precipitation.
- Prolonged exposure to extreme heat and humidity can lead to **heat exhaustion and heat stroke.**
- Extreme heat and drought conditions can **damage crops** and have other impacts on agriculture.
- It might Increase wildfires.
- There will be increased energy demand and strain on the power grid due to increased use of air conditioning.

### MICRO QUAKES

**In News:** Micro tremors have been helping release tectonic stress and protecting India from a devastating event.



### More on the Topic:

- India is located in a seismically active region but India have a lot of micro earthquakes occurring every day. So the store-up energy is being released.
- Micro Earth Quake (Microquake) is a **very low intensity earthquake with a magnitude of 2.0 or less.**
- India is divided into **four seismic zones**

based on the potential for earthquake activity in each region.

- According to the Ministry of Earth Sciences, 59% of India's land mass is prone to earthquakes. Zone V is seismically the most active region, while Zone II is the least. Around 11% of the country' area falls in Zone V, 18% in Zone IV and 30% in Zone III and the remaining in Zone II.

### Abut Triple Junction

- A triple junction is a point where three tectonic plates meet and interact.
- These are important areas of geological activity and can be sites of significant seismic and volcanic activity.
- There are two triple junctions in Turkey. One of them is where the Arabian Plate, the African Plate and the Anatolian Plate meet.
- The breaking of this junction led to the massive earthquake that devastated Turkey and Syria, leaving more than 25,000.
- Since there had been no small earthquakes in this region, a lot of stress accumulated there.
- Turkey saw several powerful earthquakes within 24 hours because the couple zone area was quite big and it took time to break away," Mishra said.
- A couple zone is a region where two tectonic plates horizontally slide past each other.

### MAMMATUS CLOUDS

**In News:** NASA has released picture of Mammatus clouds of US.



### More on the Topic:

- Mammatus clouds are some of the most unusual and distinctive clouds formations with a series of bulges or pouches emerging from the base of a cloud.

- The shape of mammatus formations can vary widely; from the classic protruding shape, to a more elongated tube hanging from the cloud above.
- They are usually formed in association with **large cumulonimbus clouds**.
- Typically, **turbulence within the cumulonimbus cloud will cause Mammatus to form**, especially on the underside of the projecting anvil as it rapidly descends to lower levels.
- Mammatus clouds **generally form in the most unstable cumulonimbus**, meaning that there is also a chance of hail, heavy rain and lightning in the vicinity, and if the air is cold enough during winter they can produce snow.

## INTERNATIONAL RELATIONS

### THE INDIA-US INITIATIVE ON CRITICAL AND EMERGING TECHNOLOGY (ICET)

**In News:** With the launch of the India-US initiative on Critical and Emerging Technology (iCET) experts believe the step will certainly break down barriers and foster ties in technology and bolster defence cooperation.



#### More on the Topic:

- iCET is the Initiative on Critical and Emerging Technologies.
- The iCET is a partnership between India and the US to work together in developing important and new technologies.
- The iCET involves collaboration in a range of areas including quantum computing, semiconductors, 5G and 6G wireless infrastructure, and civilian space projects such as lunar exploration.
- The iCET's goal is to increase the technology interaction between the US and India while also potentially adding additional strategic depth and breadth to their growing partnership.
- The Prime Minister's Office in Delhi and the White House in Washington will oversee and direct the iCET.

#### Significance of iCET:

- Lending urgency to the iCET is the growing convergence of Indian and US interests in managing the security, economic, and technological challenges presented by a rising and assertive China.
- India is also looking to reduce its over dependence on Russian weapons and military technology and to produce more weapons at

home in partnership with western countries.

- The iCET would provide India with access to cutting-edge technology and expertise in areas that are critical and emerging in nature.

## INDIA-UAE CEPA

**In News:** The Prime Minister has lauded the utilisation of India-UAE Comprehensive Economic Partnership Agreement (CEPA) by Indian Exporters.



### More on the Topic:

- The UAE-India CEPA entered into force on May 1, 2022.

### Benefits to UAE:

- Greater access for UAE exports entering the Indian market through the reduction or removal of tariffs on more than 80 % of products.
- An open and non-discriminatory environment for cross-border trade with India.
- Enhanced market access for UAE's service providers across 11 sectors and more than 100 sub-sectors.
- The removal of unnecessary technical barriers (TBT) for UAE and Indian exporters.
- Assurance that UAE products will not be subject to India's anti-dumping investigations as such products are merely transshipped.

### Benefits to India:

- Overall, India will benefit from preferential market access provided by the UAE on over 97 % of its tariff lines which account for 99% of Indian exports to the UAE in value terms .
- This includes sectors which are labour-intensive such as Gems and Jewellery, Textiles, leather, footwear, sports goods, plastics, furniture, agricultural and wood products,

engineering products, pharmaceuticals, medical devices, and Automobiles.

- As regards trade in services, Indian service providers will have enhanced access to around 111 sub-sectors from the 11 broad service sectors.
- CEPA is expected to increase the total value of bilateral trade in goods to over US\$100 billion and trade in services to over US\$ 15 billion within five years.

### About India UAE Relations:

- India and the UAE established diplomatic relations in 1972.
- India and United Arab Emirates (UAE) shares age old cultural bond based on religious ,economic ties between the two nations.
- The UAE was India's third-largest trading partner in 2021-2022, and second-largest for both exports (\$28 billion) and imports (\$45 billion)
- The UAE accounted for 6% of India's total exports and 7.3% of imports in the last financial year.
- The UAE accounts for 8% of India's oil imports and was fifth largest supplier of crude oil to India.
- Around 3 million Indians are living harmoniously in the UAE. They bring significant amount of remittance to India.

## INDIA AND QATAR DIPLOMATIC RELATIONS

**In News:** Year 2023 marks 50 years of establishment of full diplomatic relations between India and Qatar.



### More on the Topic:

- India-Qatar cooperation in diverse sectors has been steadily growing in an excellent framework led by historical close ties, regular and substantive engagement.
- Qatar's key exports to India include LNG,



LPG, chemicals and petrochemicals, fertilisers, plastics, and aluminium articles

- India's key exports to Qatar include cereals, copper articles, iron and steel articles, vegetables, fruits, spices, and processed food products, electrical and other machinery, plastic products, construction materials, textiles & garments, chemicals, precious stones and rubber.
- In 2021, India was among the top four largest export destinations for Qatar and is also among the top three sources of Qatar's imports.
- India-Qatar Start-up bridge is a joint initiative to link the start-up ecosystems of two countries as well as helping their economies mutually.
- Qatar Fund for Development (QFFD) sent Covid medical relief material to India for combating second wave of Covid-19.

#### **Defence co-operation:**

- The India-Qatar Defence Cooperation Agreement, signed in 2008 and officially described as a "pillar" of Indian-Qatar cooperation, was extended for another five years in 2018.
- The pact included training of the QENF by India, as well as mutual visits.
- Two editions of a joint naval exercise called Zair Al Bahr have been held.

#### **Cultural Relations:**

- Cultural ties between India and Qatar are deep-rooted and actively nurtured by both sides.
- The year 2019 was celebrated as India-Qatar Year of Culture.
- Indian Community: There are over 800000 Indian nationals residing in Qatar. They comprise the largest expatriate community in Qatar.

### **30 YEARS OF INDO RUSSIAN FRIENDSHIP TREATY**

In News: The 'Treaty of Peace, Friendship and Cooperation Between the Government of India and the Government of Union of Soviet Socialist Republics' was signed fifty years ago on August 9, 1971.



#### **More on the Topic:**

- 1971 agreement expired because one of the signatories – USSR- had ceased to exist (dissolved in 1991).

#### **Highlights of Indo Russian Relations:**

- Since the signing of the "Declaration on the India-Russia Strategic Partnership" in October 2000 (during the visit of President Vladimir Putin to India) India-Russia ties have acquired a qualitatively new character with enhanced levels of cooperation taking place in almost all areas of the bilateral relationship including political, security, trade and economy, defense, science and technology and culture.

#### **Political Relations:**

- The two Governments have also established two Inter-Governmental Commissions - one on Trade, Economic, Scientific, Technological and Cultural Cooperation, co-chaired by the External Affairs Minister and the Russian Deputy Prime Minister and another on Military Technical Cooperation co-chaired by the two Defence Ministers, both of which meet annually.

#### **Commercial relations:**

- Bilateral trade has been growing steadily. It was \$13.2 billion in FY 2021-22.

#### **Technology, Military and Defence Relations:**

- Russia and India are cooperating on projects such as the Moon mission Chandrayan 2, and the Human Space Flight Project. On 20th April 2011, the jointly developed Indian-Russian Student Satellite "Youthsat".
- Russia has been a long standing partner of India in nuclear energy and recognizes India as a country with advanced nuclear technology and an impeccable non-proliferation record.
- The BrahMos missile system is an example of this type of cooperation.

- Joint development of the **Fifth Generation Fighter Aircraft and the Multi Transport Aircraft**, as well as the licensed production in India of SU-30 aircraft and T-90 tanks, are other examples of flagship cooperation programs presently underway in this area.

#### **Multilateral Cooperation:**

- Russia supports India's bid for a permanent seat in UNSC.
- Active engagement at International/Multilateral Organizations and connectivity projects such as BRICS, SCO, INSTC (International North-South Transport Corridor) etc.

### **INDUS WATER TREATY**

**In News:** India has issued a notice to Pakistan seeking modification of the more than six-decade- old Indus Waters Treaty (IWT) that governs the sharing of waters of six rivers in the Indus system between the two countries.



#### **More on the Topic:**

- The notice follows Pakistan's continued "intransigence" in implementing the treaty, by raising repeated objections to the construction of hydel projects on the Indian side.
- Pakistan is creating disputes over the Kishenganga and Ratle hydropower projects, both in Jammu and Kashmir.
- Pakistan's move to push the World Bank for a Court of Arbitration ran counter to the pre-existing channel of dispute resolution through a "neutral expert" appointed by the World Bank.
- The notice has invoked Article XII (3) of the treaty which says: The provisions of this
- Treaty may from time to time be modified by a duly ratified treaty concluded for that

purpose between the two Governments.

- India was initiating the process to make changes to the 1960 treaty.

#### **What is India's notice about, and what are its implications here onward?**

- Article XII (3) of the Treaty that India has invoked is not a dispute redressal mechanism. It is in effect, a provision to amend the Treaty.
  - However, an amendment or modification can happen **only through a "duly ratified Treaty concluded for that purpose between the two governments"**. Pakistan is under no obligation to agree to India's proposal.
  - As of now, it is not clear what happens if Pakistan does not respond to India's notice within the 90-day period.
  - The next provision in the Treaty, Article XII (4), provides for the termination of the Treaty through a similar process – "a duly ratified Treaty concluded for that purpose between the two governments".
  - India has not spelled out exactly what it wants modified in the Treaty. But over the last few years, especially since the Uri attack, there has been a growing demand in India to use the Indus Waters Treaty as a strategic tool, considering that India has a natural advantage being the upper riparian state.
  - India has not fully utilized its rights over the waters of the three east-flowing rivers – Ravi, Beas and Sutlej over which India has full control under the Treaty.
  - It has also not adequately utilized the limited rights over the three west flowing rivers – Indus, Chenab and Jhelum which are meant for Pakistan.
  - Following the Uri attack, India had established a high-level task force to exploit the full potential of the Indus Waters Treaty.
  - Accordingly, India has been working to start several big and small hydroelectric projects that had either been stalled or were in the planning stages.
- #### **About Indus Water Treaty:**
- The Indus Waters Treaty is a water-distribution treaty between India and Pakistan, **brokered by the World Bank** signed in Karachi in 1960.
  - According to this agreement, control over the water flowing in three "eastern" rivers of India – the Beas, the Ravi and the Sutlej was given to India

- The control over the water flowing in three "western" rivers of India — the Indus, the Chenab and the Jhelum was given to Pakistan.

#### **The treaty is based on the following principle:**

- **Equitable water-sharing** which was a necessity due to partitioning the Indus rivers system following the inevitable Partition of India in 1947.

#### **Significance of the treaty:**

- The treaty is considered one of the **Most successful bilateral treaty**. It is internationally regarded as an example of successful conflict resolution between two otherwise hostile countries.
- The treaty has **overcome three wars** which has put the bilateral relationships in to new lows.
- The treaty is considered as an **example of peaceful coexistence** even at the time of most problematic situations.

## **FINANCIAL ACTION TASK FORCE**

**In News:** FATF has suspended Russia's membership over Ukraine war



#### **More on the Topic:**

- FATF has commented that it is deeply concerned by the reports of arms trade between Russia and United Nations sanctioned jurisdictions, and malicious cyber-activities emanating from Russia.
- Although suspended, **Russia remains a FATF member**. However, it will be barred from attending meetings and accessing documents.

#### **About FATF:**

- The Financial Action Task Force (on Money Laundering) (FATF) is an intergovernmental organisation founded in **1989** on the initiative of the G7 to develop policies to combat money laundering and to maintain certain interest.

- In 2001, its mandate was expanded to include terrorism financing.
- FATF is a "policy-making body" that works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.
- FATF monitors progress in implementing its Recommendations through "peer reviews" ("mutual evaluations") of member countries.
- **Members:** As of today, it is a **39-member body** representing most major financial centres in all parts of the globe.
- Out of 39 members, there are two regional organisations: the European Commission, and the Gulf Cooperation Council.
- **India joined with 'observer' status in 2006 and became a full member of FATF in 2010.**
- India is also a member of its regional partners, the Asia Pacific Group (APG) and the Eurasian Group (EAG).

#### **The FATF Grey List and Black List Mechanism:**

- Since 2000, FATF has maintained the FATF blacklist (formally called the "Call for action") and the FATF greylist (formally called the "Other monitored jurisdictions").
- **Grey List:** Countries that are actively working with FATF to address strategic deficiencies in their regimes to counter money laundering, terrorist financing, and proliferation financing.
- Countries in grey list may face Economic sanctions (from IMF, World Bank etc); Problem in getting loans from IMF, World Bank etc.; Reduction in international trade; International boycott etc.
- **Black List:** Countries that FATF considers non-cooperative in global effort to combat money laundering terrorist financing, and financing of proliferation.

## **UN COMMISSION FOR SOCIAL DEVELOPMENT**

**In News:** India has been elected as chair of 62nd session of UN Commission for Social Development.





### More on the Topic:

- The index calculated the 'physical climate risk' to built environments such as buildings and properties across 2,600 States and provinces globally in 2050.
- UN Commission for Social Development was established in 1946. It is Head Quartered at New York.
- It is one of the 9 functional commissions of the Economic and Social Council (ECOSOC). (ECOSOC is one of the 6 principal organs of the United Nations, established in 1945. It is responsible for coordinating the economic and social fields of the organization. It has 54 members)
- UN Commission for Social Development advises ECOSOC on social policies.
- It follows up with the implementation of the Copenhagen Declaration and Programme of Action (1995)
- At World Summit for Social Development (Copenhagen) Governments reached a new consensus on the need to put people at the centre of development.

### COMMONWEALTH PARLIAMENTARY ASSOCIATION (CPA)

**In News:** The annual conference of the 19th Commonwealth Parliamentary Association (CPA) India Region Zone III was inaugurated by Lok Sabha Speaker Om Birla.



### More on the Topic:

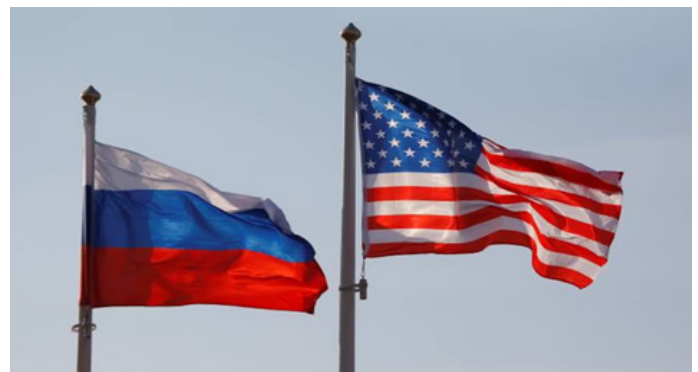
- The Commonwealth Parliamentary Association, previously known as the Empire Parliamentary Association, is an organisation which works to support good

governance, democracy and human rights.

- It was founded in 1911.
- The Association is made up of over 180 legislatures (or Branches) divided up between nine geographic regions of the Commonwealth.
- It offers a vast opportunity for Parliamentarians and parliamentary staff to collaborate on issues of mutual interest and to share good practice.
- Commonwealth is an association of 56 member states, majority of which are former territories of British Empire.
- After Africa Region, India has the largest number of member Branches of CPA. CPA India Region is divided into 4 zones.

### NEW START TREATY

**In News:** Russian President Vladimir Putin declared that Moscow was suspending its participation in the New START treaty the last remaining nuclear arms control pact with the United States.



### More on the Topic:

- New START is a nuclear arms reduction treaty between the United States and the Russian Federation with the formal name of Measures for the Further Reduction and Limitation of Strategic Offensive Arms.
- It was signed in 2010 and after ratification entered into force in 2011.
- The treaty calls for halving the number of strategic nuclear missile launchers. A new inspection and verification regime will be established.
- START-I was signed between US and erstwhile USSR in 1991. It was expired in 2009.
- 2002 Strategic Offensive Reduction Treaty (SORT, or Moscow Treaty) entered into force

in 2003, followed by 2010 New Strategic Arms Reduction Treaty (New START).

## NORD STREAM

**In News:** A report has claimed that the US blew up Nord Stream gas pipelines with Norway's help in September 2022 in a covert operation.

### Nord Stream pipelines from Russia

Leaks detected on both pipelines near Bornholm

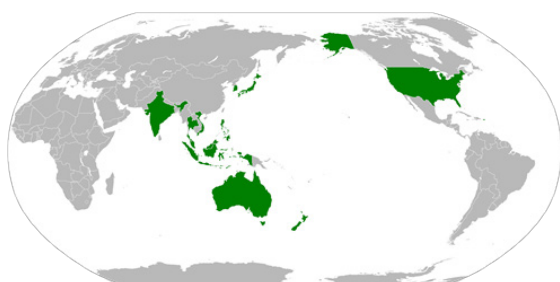


### More on the Topic:

- Nord Stream is a network of underwater gas pipelines in Europe to supply natural gas from Russia to Germany through Baltic- sea.
- It comprises the Nord Stream 1 pipeline running from Vyborg in northwestern Russia, near Finland, and the Nord Stream 2 pipeline running from Ust-Luga in northwestern Russia near Estonia.

## INDO PACIFIC ECONOMIC FRAME WORK (IPEF)

**In News:** India is hosting the second round of negotiations of the United States-led Indo-Pacific Economic Framework (IPEF).



### More on the Topic:

- There will be negotiations on three of the four pillars under IPEF – **supply chain, clean economy, and fair economy**. India has decided to stay out of the trade pillar at the moment.
- The first negotiating round took place in Australia's Brisbane, which focused on the trade pillar that covered issues, such as trade facilitation, agriculture, services, domestic regulation, transparency, and good regulatory practices.

### About IPEF:

- The Indo-Pacific Economic Framework (IPEF) was launched by United States (US) President Biden in Tokyo on May 23, 2022.
- The IPEF has four pillars: Trade; supply chains; clean energy, decarbonisation and infrastructure; tax and anti-corruption.
- It is a US-led initiative that aims to strengthen economic partnership among participating countries to enhance resilience, sustainability, inclusiveness, economic growth, fairness, and competitiveness in the Indo-Pacific region.
- The IPEF was launched in 2021 who together represent 40% of the world GDP.
- Currently, India and 13 countries located in the Pacific Ocean are its members,
- Australia, Brunei, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, United States, and Vietnam.

## INTERNATIONAL ENERGY FORUM (IEF)

**In News:** India has hosted 9th Asian Ministerial Energy Roundtable in association with the International Energy Forum (IEF).



### More on the Topic:

- Theme for this roundtable was "Mapping new pathways for energy security, inclusive growth and energy transitions."
- The roundtable took place in Bengaluru, alongside India Energy Week.

## Member States and Permanent Bodies:

- The International Energy Forum is an inter-governmental, non-profit international organisation which aims to foster greater mutual understanding and awareness of common energy interests among its members.
- EF is world's largest international organization of energy ministers from 72 countries. (including India) and includes both producing and consuming nations.
- Member countries are signatories to IEF Charter, which outlines framework of global energy dialogue through this inter-governmental organization.
- It is Head quartered at Riyadh, Saudi Arabia.

## INCLUSIVE FORUM ON CARBON MITIGATION APPROACHES

In News: India has participated in the Inaugural meeting of IFCMA.



### More on the Topic:

- The Inclusive Forum on Carbon Mitigation Approaches (IFCMA) is an initiative designed to help improve the global impact of emissions reduction efforts around the world through better data and information sharing, evidence-based mutual learning and inclusive multilateral dialogue.
- IFCMA is a new forum by Organisation for Economic Co-operation and Development (OECD).
- IFCMA aims to help improve global impact of emissions reduction efforts through better data and information sharing, evidence-based mutual learning etc.

## URBAN 20

In News: Ahmedabad has hosted Urban 20 Spas meeting recently.



### More on the Topic:

- The Urban 20 or U20 is a city diplomacy initiative, comprising of cities from G20 countries.
- It strives to establish a lasting practice of engagement among cities to develop a collective message that emphasizes the role of cities in taking forward the sustainable development agenda.
- The U20 brings together mayors from G20 cities under a common framework and co-ordinates a joint position to inform the discussions of national leaders.
- Contributions from the U20 are shared with the G20 Presidency and Heads of State, enhancing the role of cities as global economic and political leaders.
- Priority areas included in recent U20 meeting include Encouraging environmentally responsible behaviours, Ensuring water security, Accelerating climate finance, Championing 'local' identity etc.

## TRADE AND TECHNOLOGY COUNCIL

In News: India and the European Union has announced setting up of a new Trade and Technology Council (TTC).



### More on the Topic:

- It is expected to facilitate exchange of critical technologies relating to an array of domains, including artificial intelligence, quantum computing, semiconductors and cybersecurity.
- The TTC with India is the European Union's second such technology partnership after



the first one with the United States that was firmed up in June 2021.

- The TTC will be co-chaired on the Indian side by the ministers for external affairs, commerce and industry, and communications, electronics and information technology.
- Areas to be explored could be clean energy, circular economy, waste management, plastic and litter in the ocean.
- It will also foster cooperation between EU and Indian incubators, SMEs and start-ups.

## UN SECURITY COUNCIL

**In News:** United Nations General Assembly President has commented that UN Security Council does not reflect today's realities and needs to be reformed.



### More on the Topic:

- Reform of the United Nations Security Council (UNSC) encompasses five key issues:
- Categories of membership, the question of the veto held by the five permanent members, regional representation, the size of an enlarged Council and its working methods, etc.
- **The composition of the Security Council does not reflect today's realities:** Currently, the UNSC has five permanent members – China, France, Russia, the U.K. and the US. Only a permanent member has the power to veto any substantive resolution.
- In the 77-year-old history of the UN, the composition of the Security Council has been altered only once - in 1963 when the General Assembly decided to expand the Council from 11 to 15 members, with the addition of four non-permanent seats.
- Since then, the world has changed. The geopolitical relations in the world altered, the economic responsibilities in the world in

some countries, including in India and other developing countries has changed.

- **The Issue of Veto Power:** Veto power has been the exclusive domain of P5 members. There are instances of misuse of Veto power as well. Ex: Russia has vetoed UNSC resolution on Ukraine.
- Many countries have put question mark on the existence of veto, which is **contrary to democratic principles**. Others have questioned the **exclusivity of veto**, which is limited to the P5 nations.
- **Regional Representation:** Developing countries are underrepresented, and there are no permanent members from either Africa or Latin America.

### Indian Demands:

- India seeks permanent membership In UNSC and also demands for abolition of veto power.
- India advocates for permanent membership of the G4 members (Germany, Brazil, Japan and India)
- India also advocates for increased multi-lateralism within the UNSC.

## INTERNATIONAL MARITIME ORGANISATION

**In News:** The IMO has adopted a new mandatory International Code of Safety for Ships Carrying Industrial Personnel (IP Code).



HQ: London, United Kingdom

175 member states and  
three associate members.

India has been a member of the  
IMO since 1959.

Important Treaties/Conventions:

International Convention for the  
Safety of Life at Sea (SOLAS)

International Convention for the Prevention  
of Pollution from Ships (MARPOL)

FAL Convention

### More on the Topic:

- The International Maritime Organization is a specialised agency of the United Nations responsible for regulating shipping.
- The IMO was established following agreement at a UN conference held in Geneva in 1948 and the IMO came into existence ten years later, meeting for the first time in 1959.
- The IMO's primary purpose is to develop and maintain a comprehensive regulatory frame-

work for shipping and its remit today includes maritime safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping.

## UNIVERSAL PERIODIC REVIEW

**In News:** Sri Lanka's human rights record was reviewed by the UN Human Rights Council's Universal Periodic Review (UPR).



### More on the Topic:

- The Universal Periodic Review (UPR) is a **unique process which involves a review of the human rights records of all UN Member States.**
- It was established by the **General Assembly of the United Nations (UNGA) in 2006.**
- The UPR is a **State-driven process, under the auspices of the Human Rights Council, which provides the opportunity for each State to declare what actions they have taken to improve the human rights situations in their countries and to fulfil their human rights obligations.**
- As one of the main features of the Council, the UPR is **designed to ensure equal treatment for every country when their human rights situations are assessed.**
- The UPR also aims to provide **technical assistance to States and enhance their capacity to deal effectively with human rights challenges and to share best practices in the field of human rights among States and other stakeholders**
- The ultimate aim of this mechanism is to **improve the human rights situation in all countries and address human rights violations wherever they occur.**
- Currently, no other universal mechanism of this kind exists.

## SCIENCE AND TECHNOLOGY

### DWARF PLANET QUASAR

**In News:** Researchers have detected a ring encircling Quaoar akin to the one around the planet Saturn.



### More on the Topic:

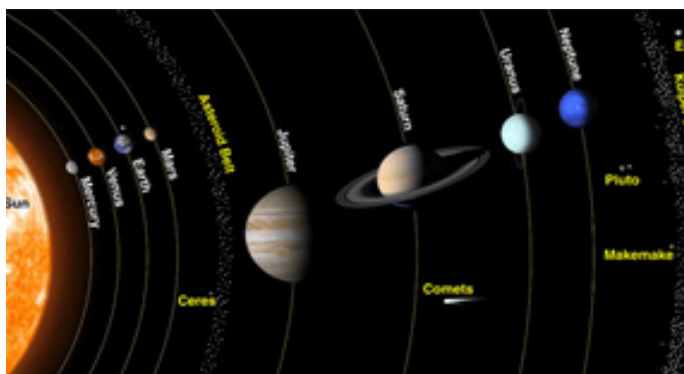
- The dwarf planet, which is **about half the size of Pluto and orbits beyond Neptune,** is too distant and the ring too narrow to be seen directly.
- The ring was outside the theoretical maximum for where a ring can survive according to classical theory.
- The ring is located at a distance of more than seven planetary radii, twice as far out as what was previously thought to be the maximum radius, **known as the Roche limit.**
- Inside the Roche limit, the planet exerts strong tidal forces that prevent debris in the ring amalgamating into a moon.

### About Dwarf Planet:

- A dwarf planet is a **small planetary-mass object that is in direct orbit of the Sun, smaller than any of the eight classical planets but still a world in its own right.** The prototypical dwarf planet is Pluto.
- Astronomers are in general agreement that at least the nine largest candidates are dwarf planets: **Pluto, Eris, Haumea, Makemake, Gonggong, Quaoar, Sedna, Ceres, and Orcus.**

### JUPITER BEATS SATURN TO BECOME THE PLANET WITH MOST MOONS

**In News:** Astronomers have discovered 12 new moons around Jupiter, putting the total count at a record-breaking 92.



### More on the Topic:

- The Jupiter moons were added recently to a list kept by the International Astronomical Union's Minor Planet Centre.
- They were discovered using telescopes in Hawaii and Chile in 2021 and 2022, and their orbits were confirmed with follow-up observations.
- Jupiter's four largest moons are called Galilean satellites: **Io, Europa, Ganymede, and Callisto.**

### Upcoming Jupiter Related Missions:

- In April, the European Space Agency is sending a **spacecraft to Jupiter** to study the planet and some of its biggest, icy moons.
- And 2024, NASA will launch the **Europa Clipper** to explore Jupiter's moon of the same name, which could harbor an ocean beneath its frozen crust.

### Other Moons of Solar System:

- Uranus has 27 confirmed moons, Neptune 14, Mars two and Earth one. Venus and Mercury come up empty.

## CHANDRAYAAN - 3

**In News:** The Indian Space Research Organisation (ISRO) has finalised the coordinates of three possible landing sites for its third lunar mission – Chandrayaan-3.

### More on the Topic:

- All the probable landing sites are on the moon's south polar region on the side facing earth.
- The prime landing site for Chandrayaan-3 lies **between Manzius U and Boguslawsky M craters** on the moon.



- The criteria for selecting the landing sites for Chandrayaan-3 – a follow-on mission to Chandrayaan-2 which is meant to demonstrate end-to-end capability in safe landing and roving on the lunar surface – included local and global slope, illumination from the sun, radio communication with earth, and crater and boulder sizes.
- The moon's southern polar region is of particular interest to scientists because there's a possibility of finding water ice.

### About Chandrayaan -3:

- Chandrayaan-3, expected to be launched at the end of 2023, will have a lander and a rover.
- Chandrayaan-3 consists of an indigenous lander module, a propulsion module, and a rover.
- The lander will have the capability to **soft land** at a specified lunar site and **deploy the rover**, which will carry out in-situ chemical analysis of the lunar surface during the course of its mobility.
- Chandrayaan-3 will be launched by **Launch Vehicle Mark-3 (LVM3) rocket** from Satish Dhawan Space Centre, Sriharikota. GSLV is a 3-stage rocket, powered by a cryogenic engine.
- The aim of the mission is to demonstrate safe and soft landing on the lunar surface, and have the rover moving around on the lunar surface to **conduct in-situ scientific experiments.**
- Its objectives include **developing and demonstrating new technologies** required for



interplanetary missions.

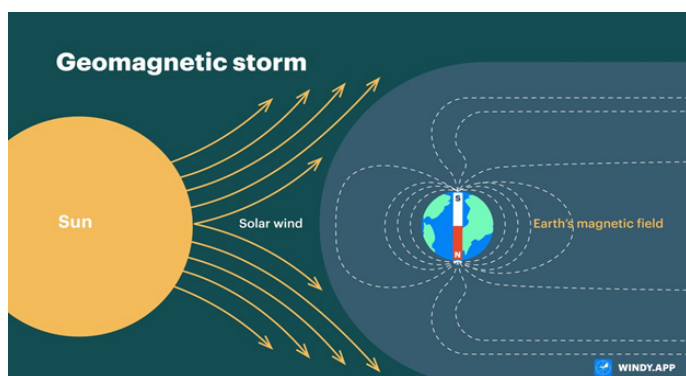
- The lander and the rover will have **scientific payloads to carry out experiments on the lunar surface.**

### The Chandrayaan Series

- The Chandrayaan programme, also known as the Indian lunar exploration programme, is an **ongoing series of outer space mission by ISRO.** The first moon rocket, Chandrayaan-1, was launched in 2008, and was successfully inserted into the lunar orbit.
- Chandrayaan-2 was successfully launched and inserted into lunar orbit in 2019, but its lander crash-landed on the moon's surface when it deviated from its trajectory while attempting to land on September 6, 2019, due to a software glitch.

### GEO MAGNETIC STORM

**In News:** In a rare and dangerous event, the magnetic fields of the Earth were broken apart as solar winds entered the protective sheath of the planet and caused a massive geomagnetic storm.



#### More on the Topic:

- Solar wind passed through a gap which occurred due to a crack in Earth's magnetic field **sparking a G1-class geomagnetic storm (GMS).**
- A geomagnetic storm, also known as a magnetic storm, is a temporary disturbance of the Earth's magnetosphere caused by a solar wind shock wave and/or cloud of magnetic field that interacts with the Earth's magnetic field.
- GMS are categorised between G1 and G5, the latter being the strongest.

#### About Earth's Magnetosphere:

- Earth's magnetic field generates an invisible

bubble around our planet, called the magnetosphere.

- The magnetosphere is a bit like a magnetic shield that surrounds the planet, protecting us from many types of radiation from the Sun.
- The Sun releases a constant stream of electromagnetic and particle radiation, called solar wind.
- This solar wind flows around Earth's magnetosphere, drawing the field out into a comet-like tail.
- Earth's magnetic field is generated from the **movement of molten iron in the Earth's outer core**, creating powerful electric currents.
- These currents orient around magnetic field lines between the poles that extend beyond Earth's atmosphere.

#### Effects of Geo Magnetic Storms (GMS):

- **The storms create a beautiful aurora.** When a solar storm comes toward earth, some of the energy and small particles can travel down the magnetic field lines at the north and south poles into Earth's atmosphere. There, the particles interact with gases in our atmosphere resulting in beautiful displays of light in the sky.
- GMS also can **disrupt navigation systems** such as the Global Navigation Satellite System (GNSS).
- GMS also could create harmful geomagnetic induced currents (GICs) in the power grid and pipelines.
- GMS could damage satellite electronics and expose astronauts and high-altitude pilots to increased levels of radiation.

### INTERNATIONAL IP INDEX

**In News:** India has been ranked 42nd out of 55 countries in the US Chamber of Commerce's latest International IP Index report.

#### More on the Topic:

- The annual International IP Index evaluates the protection of IP rights in 55 of the world's leading economies, together representing around 90% of global GDP.



- The report covers everything from patent and copyright laws to the ability to monetise IP assets and the ratification of international agreements.
- Among India's key areas of weakness is the 2021 dissolution of the IP Appellate Board, combined with the longstanding issue of an under-resourced and overstretched judiciary, which raises serious concerns about rights holders' ability to enforce their IP rights in India and to resolve IP-related disputes.
- Limited framework for the protection of biopharmaceutical IP rights and patentability requirements which are outside international standards are the other weaknesses.
- India's Strong Areas: continued strong efforts in copyright piracy through the issuing of "dynamic" injunction orders; the 2019 precedent case law on online trademark infringement and damages; and generous R&D and IP-based tax incentives.

## LORA (LONG-RANGE ARTILLERY) WEAPON SYSTEM

**In News:** Bharat Electronics Ltd will manufacture Israel's LORA Ballistic Missile for Indian Tri-Services.

### More on the Topic:

- LORA is a short-range, road-mobile, ground and sea-launched solid fuelled ballistic missile developed and operated by Israel.
- It is a sea-to-ground and ground-to-ground system which comprises a long-range ballistic missile, a unique launcher, a command and control system, and a ground/marine support system.
- It uses Inertial Navigation System/Global Positioning System and TV for terminal

guidance, with possible in-flight maneuvering capability.

## VERTIPLANE X3 DRONE

**In News:** Vertiplane X3 drone has successfully carried anti-tuberculosis drugs successfully.

### More on the Topic:

- The trial was conducted successfully for transporting anti-tuberculosis drugs by drone from AIIMS helipad to District Hospital in Tehri Garhwal.
- TechEagle Innovations Private Limited has provided the drone service for this trial and technical support has been provided by National Health Systems Resource Centre (NHSRC).
- The drone has two propulsion systems, one for vertical motion and second for forward motion.
- India reported about one-fourth of the global TB burden and its elimination remains a challenge.
- Several obstacles such as poor transportation networks, hilly terrain, traffic, natural disasters affected regions, and harsh weather conditions severely affect the timely delivery of antitubercular medications.
- In addition to this, unforeseen delays in transporting sputum samples to the laboratory causes delay in treatment.
- These challenges could be addressed through Drones deployment.

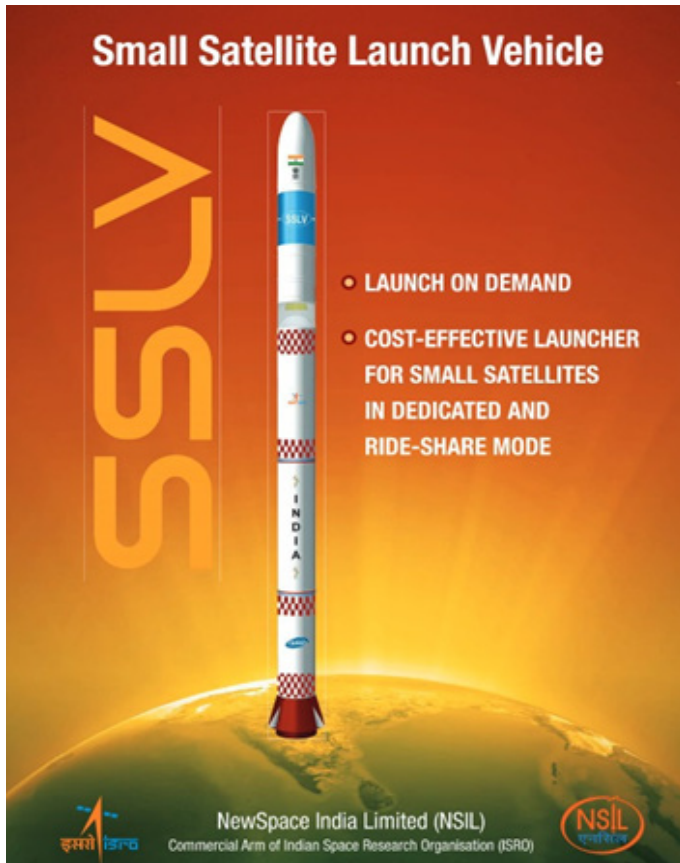
## SMALL SATELLITE LAUNCH VEHICLE

**In News:** The Indian Space Research Organisation (ISRO) has launched its Small Satellite Launch Vehicle (SSLV-D2) from Satish Dhawan Space Centre at Sriharikota recently.

### More on the Topic:

- The rocket has successfully placed the earth observation satellite EOS-07 and two co-passenger satellites-Janus-1 and AzaadiSat2 – in a 450-km circular orbit around the Earth.
- The primary EOS-2 Earth-observing satellite-EOS-02 is an earth observation satellite designed and realised by ISRO.
- This microsat series satellite offers advanced optical remote sensing operating in infra-red band with high spatial resolution.

- The secondary AzaadiSAT student satellite- It is an 8U Cubesat weighing around 8 kg.
- It carries 75 different payloads each weighing around 50 grams and conducts femto-experiments.
- It carried out tiny experiments which would have measured the ionising radiation in its orbit and also a transponder which worked in the ham radio frequency to enable amateur operators to access it.

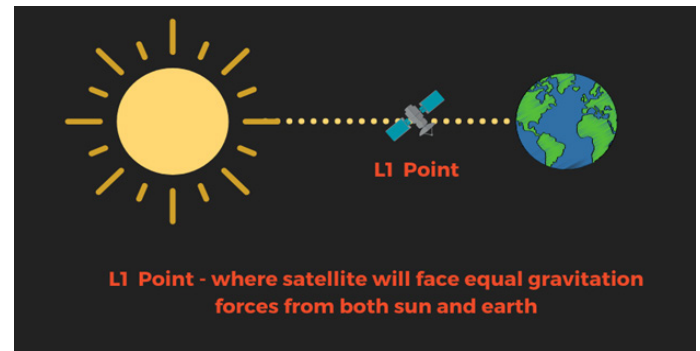


#### About SSLV:

- Small Satellite Launch Vehicle (SSLV) is a three stage Launch Vehicle configured with three Solid Propulsion Stages and a liquid propulsion-based Velocity Trimming Module (VTM) as a terminal stage.
- SSLV is 2m in diameter and 34m in length with a lift-off weight of around 120 tonnes.
- SSLV is capable of launching 500kg satellites in 500km planar orbit from Satish Dhawan Space Centre (SDSC).
- The new vehicle was developed to further ISRO's efforts towards capturing the emerging small and micro satellite commercial market.
- The rocket can be assembled by a small team in only a few days, compared to the six months and around 600 people it takes for ISRO's workhorse PSLV.

#### ADITYA-L1, INDIA'S FIRST SOLAR MISSION

**In News:** ISRO is expected to launch Aditya-L1, the country's first solar mission after several years of development.



#### More on the Topic:

- Aditya-L1 is India's first space-based Indian mission to study the Sun.
- The spacecraft will be placed in a halo orbit around the first Lagrange (L1) point of the Sun-Earth system, which is about 1.5-million-km from Earth.
- A satellite placed in the halo orbit around the L1 point has the major advantage of continuously viewing the Sun without any occultation/eclipses.
- This will provide a greater advantage of observing the solar activities and its effect on space weather in real time.

#### Mission-Objectives :

- The major science objectives of the mission are to study the solar upper atmospheric (chromosphere and corona) dynamics;
- chromospheric and coronal heating, physics of the partially ionised plasma, initiation of the coronal mass ejections, and flares;
- observe in-situ particle and plasma environment providing data for the study of particle dynamics from the Sun;
- physics of solar corona and its heating mechanism;
- diagnostics of the coronal and coronal loops plasma: Temperature, velocity and density Development, dynamics and origin of CMEs (coronal mass ejections);
- identify sequence of processes that occur at multiple layers (chromosphere, base and extended corona) which eventually leads to solar eruptive events;
- magnetic field topology and magnetic field measurements in the solar corona and drivers



for space weather (origin, composition and dynamics of solar wind).

### What Payloads Aditya-L1 Will Carry?

- The Aditya-L1 spacecraft will carry seven payloads to observe the photosphere, chromosphere and the outermost layers of the Sun (the corona) using electromagnetic and particle and magnetic field detectors.
- Using the special vantage point — L1 — four payloads directly view the Sun and the remaining three payloads carry out in-situ studies of particles and fields at L1, thus providing important scientific studies of the propagator effect of solar dynamics in the interplanetary medium.

### INDIA'S FIRST PRIVATE HYBRID SOUNDING ROCKET

**In News:** India's first hybrid sounding rocket by private players was launched from Pattipulam village, Tamil Nadu.



#### More on the Topic:

- Martin Foundation, in association with Dr. APJ Abdul Kalam International Foundation and Space Zone India, launched the Dr. APJ Abdul Kalam Satellite Launch Vehicle Mission- 2023.
- The organisations mentioned that 5,000 students were involved in the project.

#### About Hybrid Rocket:

- A hybrid rocket is a type of rocket engine that combines features of both liquid-fueled and solid-fueled rockets. In a hybrid rocket, a solid fuel is burned in combination with a liquid or gaseous oxidizer to produce thrust.
- The solid fuel in a hybrid rocket is typically made of a polymer, such as hydroxyl-terminated polybutadiene (HTPB), which is cast into a cylindrical shape and placed inside the rocket motor.
- The oxidizer, which is typically nitrous oxide (N<sub>2</sub>O), is stored in a separate tank and fed

into the combustion chamber of the rocket motor.

### About Sounding Rockets:

- Sounding rockets are one or two stage solid propellant rockets used for probing the upper atmospheric regions and for space research.
- Sounding rockets take their name from the nautical term "to sound," which means to take measurements.
- They also serve as easily affordable platforms to test or prove prototypes of new components or subsystems intended for use in launch vehicles and satellites.
- In 1975, ISRO consolidated all sounding rocket activities under Rohini Sounding Rocket (RSR) Programme.

### 3D PRINTING TECHNOLOGY

**In News:** Prime Minister has lauded the team of Central Command India army doctors for rehabilitating a young patient's skull defect using advanced 3D printing technology for titanium cranioplasty repair.

#### More on the Topic:

- 3D printing or additive manufacturing is a process of making three dimensional solid objects from a digital file.
- The creation of a 3D printed object is achieved using additive processes.
- In an additive process an object is created by laying down successive layers of material until the object is created.
- Each of these layers can be seen as a thinly sliced cross-section of the object.
- 3D printing is the opposite of subtractive manufacturing which is cutting out / hollowing out a piece of metal or plastic with for instance a milling machine.
- 3D printing enables you to produce complex shapes using less material than traditional manufacturing methods.

#### Medical 3-D Printing:

- Medical 3D printing is increasingly deployed in both clinical and research-based healthcare activities.
- It involves the creation of physical replicas of anatomical structures using 3D printing (also known as additive manufacturing) processes.

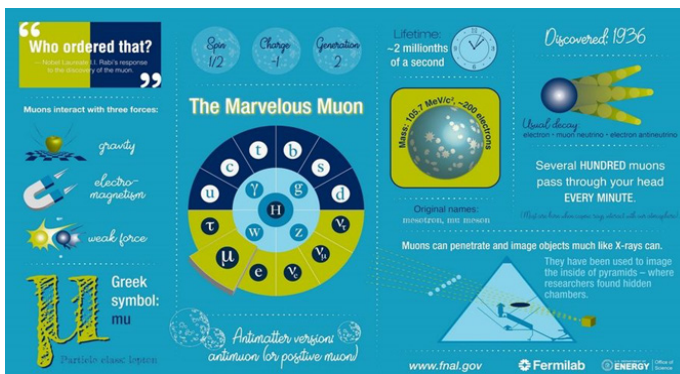
- A digital computer model is developed to describe the structures to be printed, where patient-specific models for 3D printing are derived from 3D imaging processes such as MRI and X-Ray CT.
- Small (even single unit) batches can then be manufactured due to the flexibility, speed, and relatively low-cost of the 3D printing process.

#### Examples of 3D Printing in Medical Field:

- Creating tissues and organoids to replace human organ transplants.
- Custom-made prosthetics to improve lives of those reliant on prosthetic limbs.

## MUONS

**In News:** Researchers are examining the fortress wall of Xi'an, an ancient city in China, by using Muons.



#### More on the Topic:

- Muons are subatomic particles raining from space.
- They are created when the particles in Earth's atmosphere collide with cosmic rays — clusters of high-energy particles that move through space at just below the speed of light.
- About 10,000 muons reach every square metre of the Earth's surface a minute.
- These particles resemble electrons but are 207 times as massive. Therefore, they are sometimes called "fat electrons".
- Because muons are so heavy, they can travel through hundreds of metres of rock or other matter before getting absorbed or decaying into electrons and neutrinos.
- In comparison, electrons can penetrate through only a few centimetres. Muons are highly unstable and exist for just 2.2 microseconds.

## What is muon tomography or muography?

- Muography is conceptually similar to X-ray but capable of scanning much larger and wider structures, owing to the penetration power of muons.
- As these high-energy particles are naturally produced and ubiquitous, all one needs to do is place a muon detector underneath, within or near the object of interest.
- The detector then tracks the number of muons going through the object from different directions, to form a three-dimensional image.

#### Other uses of Muon:

- Apart from archaeology, muography has found use in customs security, internal imaging of volcanoes and others.
- Around 2015, scientists used the technique to look inside the Fukushima nuclear reactors after the 2011 earthquake and tsunami in Japan.

## REAIM 2023

**In News:** World's first global summit on Responsible AI in the Military has begun in the Netherlands.



#### More on the Topic:

- The REAIM 2023 brings together governments, corporations, academia, startups, and civil societies to raise awareness, discuss issues, and possibly, agree on common principles in deploying and using AI in armed conflicts.
- The conference, co-hosted by South Korea, hosted 80 government delegations (including those from the US and China), and over 100s of researchers and defense contractors.
- India was not a participant in the summit.

### Concerns on use of AI in Military:

- An AI-powered weapon system could possibly make the army decide fast and be more efficient in a warzone.
- But such systems pose serious risks and dangers for civilians as the **same technology used to save a particular group could also be used to target it**. These so-called intelligent systems could also be biased.
- It also raises significant legal, security- related and ethical concerns in areas like transparency, reliability, predictability and accountability.

### Explainability:

- To remove bias from AI systems, researchers have resorted to 'explainability'. Explainable AI seeks to **address lack of information around how decisions are made**.
- This in turns **helps remove biases and make the algorithm fairer**.
- But, in the end, the call to make a final decision will rest with a human in the loop.

### Ethics of Artificial Intelligence:

- In 2021, the Recommendation on the Ethics of Artificial Intelligence was adopted by UNESCO's General Conference at its 41st session.
- It aims to fundamentally shift the balance of power between people, and the businesses and governments developing AI.

### Key recommendations are the following:

- AI systems should not be used for social scoring or mass surveillance purposes
- Attention must be paid to the psychological and cognitive impact that these systems can have on children.
- Member states should invest and promote not only digital, media and information literacy skills, but also socio-emotional and AI ethics skills.
- Fundamentally shift the balance of power between people, and the businesses and governments developing AI. Use affirmative action to make sure that women and minority groups are fairly represented on AI design teams.

### NORTH INDIA'S FIRST NUCLEAR POWER PLANT

**In News:** North India's first nuclear power plant is coming up in Gorakhpur, Haryana.



### More on the Topic:

- Gorakhpur Haryana Anu Vidyut Pariyojana's (GHAVP) having two units of 700 MWe capacity each of Pressurised Heavy Water Reactor (PHWR) indigenous design is under implementation near Gorakhpur village.
- The nuclear plants were earlier confined mostly to the southern states like Tamil Nadu and Andhra Pradesh or in the west in Maharashtra.

### VINYL CHLORIDE

**In News:** A train carrying toxic chemicals including Vinyl Chloride has crashed in Ohio, US.

### More on the Topic:

- Vinyl chloride is a **manmade chemical used to make plastic products**.
- Manufacturers convert vinyl chloride to polyvinyl chloride, also called PVC or just vinyl, a hard plastic resin used to make things like pipes, packaging materials, and wire coatings.
- Vinyl Chloride is a **CARCINOGEN** in humans. There may be no safe level of exposure to a carcinogen.
- Vinyl chloride is a **highly flammable colorless gas with a mild, sweet odor**, which means people who breathe in the gas won't be aware of its toxicity.
- Short-term exposure to vinyl chloride can cause dizziness, drowsiness, loss of co-ordination, nausea, and a burning sensation in the arms and legs, as per the Centers for Disease Control and Prevention.
- Long-term exposure to higher concentrations of the gas can be deadly, as the fume can



impair the central nervous system and cause depressed breathing,

## EXTENDED REALITY (XR)

**In News:** An MoU was signed between ISRO and IIT Madras to collaborate on application of XR and other technologies in Indian Human Spaceflight Program (IHSP).



### More on the Topic:

- Extended reality (XR) is a catch-all term to describe immersive, computer-generated experiences.
- It includes **virtual reality (VR)**, which is when you strap on a headset and are transported into a digital world; **augmented reality (AR)**, which is when computer-generated images are overlaid onto the real world; and **mixed reality (MR)**, which is when digital objects are placed into the real world in such a way that they interact with their environment.
- With VR, you can visit new places or revisit ones that you know well without ever leaving your home.
- You can explore an underwater world or take a trip to Mars. You can even become your favorite character in a video game.
- AR and MR offer similar opportunities for exploration and discovery, but with the added benefit of being able to see and interact with the real world around you at the same time.

### Application of XR:

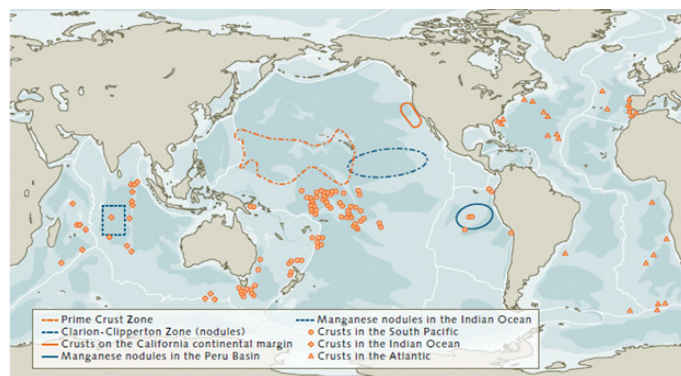
- XR has the potential to revolutionise the way we learn, work, play, and socialize.
- It can be used for training simulations, educational experiences, entertainment, and more.
- For businesses, XR can be used for marketing purposes, product demonstrations, customer

service, and more.

- And for individuals, XR can provide new ways to connect with friends and family or simply escape from the everyday grind.

## POLYMETALLIC NODULE

**In News:** International Seabed Authority (ISA) and Ministry of Earth Sciences (MoES) has signed a five-year contract extension agreement for the exploration of Polymetallic nodules in the Central Indian Ocean Basin.



### More on the Topic:

- The initial contract for exploration for 15 years was signed on 25 March 2002. It was extended with the approval of the ISA Council for a five-year period in 2017.
- The extension will allow the Government of India to advance its environmental baseline studies and environmental data collection, further develop its mining and metallurgical process technology and generate a potential exploitation scenario as a basis for moving to the exploitation stage, among other activities.

### About Poly Metallic Nodules:

- Polymetallic nodules, also called **manganese nodules**, are rock concretions formed of concentric layers of iron and manganese hydroxides around a core.
- The core may be microscopically small and is sometimes completely transformed into manganese minerals by crystallisation.
- Nodules have been found in all the oceans and even in lakes.
- Three areas have been selected by industrial explorers: the centre of the north central Pacific Ocean, the Peru Basin in the south-east Pacific Ocean and the centre of the north Indian Ocean.

### Significance of Poly Metallic Nodules:

- Polymetallic nodules contain rare earth elements.
- Rare-earth elements (REE) are necessary components of more than 200 products across a wide range of applications, especially high-tech consumer products, such as cellular telephones, computer hard drives, electric and hybrid vehicles, and flat-screen monitors and televisions.
- Significant defense applications include electronic displays, guidance systems, lasers, and radar and sonar systems.
- Although the amount of REE used in a product may not be a significant part of that product by weight, value, or volume, the REE can be necessary for the device to function.
- For example, magnets made of REE often represent only a small fraction of the total weight, but without them, the spindle motors and voice coils of desktops and laptops would not be possible.
- The rare earth elements (REE) are a set of seventeen metallic elements. These include the fifteen lanthanides on the periodic table plus scandium and yttrium.

### India and Poly Metallic Nodules:

- India's Polymetallic Nodules programme is oriented towards exploration and development of technologies for harnessing of nodules from the Central Indian Ocean Basin (CIOB) allocated to India.
- It has 4 components viz. Survey & Exploration, Environmental Impact Assessment, Technology Development (Mining), and Technology Development (Metallurgy).
- India had signed a 15 year contract for exploration of Polymetallic Nodules in CIOB with the International Seabed Authority in 2002.
- In 2016, India got extension of this contract upto 2022.
- India is implementing a long-term programme on exploration and utilization of Polymetallic Nodules (Polymetallic Nodules programme) through Ministry of Earth Sciences.
- India is entirely dependent on imports to meet its requirements of cobalt, which is the most strategic of the three metals (cobalt, copper and nickel).

- As for copper and nickel, India is in a precarious position.
- Presently, China is controlling more than 95% of rare earth metals.
- The exploration by India will nullify the increasing influence of China.

### JAMMU AND KASHMIR- LITHIUM DEPOSITS

**In News:** The Geological Survey of India (GSI) has established "inferred" lithium resources of 5.9 million tonnes in Salal-Haimana area of Reasi District of Jammu and Kashmir.



### More on the Topic:

- These resources have been established as part of the "Reasi Sersandu-Kherikot-Rahotkot-Darabi" mineral block, where prospecting has been ongoing since 2021-22.
- Under the United Nations Framework for Classification for Reserves and Resources of Solid Fuels and Mineral Commodities (UNFC 1997), the stage of prospecting is categorised as 'G4' when it entails reconnaissance surveys – a fairly advanced stage of prospecting.
- The finds in this case are learnt to include bauxite (the ore for aluminium) and rare earth elements, alongside lithium.
- Needs more surveys before confirming the actual mining potential.

### Significance of the Discovery:

- The country currently imports all its lithium needs.
- China is the major source for Lithium. With present dynamics Indo China security and economic issues it is important to be self dependent on Lithium needs.
- India is seen as a late mover as it attempts to enter the lithium value chain, coming at a time when Electronic Vehicles are predicted

to be important economic sector.

- And 2023 is likely to be an inflection point for battery technology, with several potential improvements to the Li-ion technology.
- It will Improve **employment** opportunities
- Boost to the **manufacture** of rechargeable batteries
- It will also provide a **Push for India's Clean Energy targets**. Lithium is a key component in batteries for electric vehicles and renewable energy storage systems

### How is Lithium Extracted ?

- Indonesia **reduced deforestation** after implementing the forest moratorium and improved enforcement measures.
- Lithium can be extracted in different ways, depending on the type of the deposit – generally either through **solar evaporation of large brine pools**, or from **hard-rock extraction of the ore**.
- In India, there is some potential to recover lithium from brines of Sambhar and Pachpadra areas in Rajasthan, and Rann of Kutch, Gujarat.
- The major mica belts located in Rajasthan, Bihar and Andhra Pradesh and the pegmatite belts in Odisha, Chhattisgarh, alongside rock mining being undertaken at Mandya, Karnataka, are other potential geological domains of the country.

### About Lithium:

- Lithium is a **soft, silvery metal**. It has the lowest density of all metals. It reacts vigorously with water.
- Countries with Largest Reserves: Chile> Australia> Argentina.
- As with all alkali metals, Li must be stored under a vacuum, in an inert atmosphere, or an inert liquid such as mineral oil or pure kerosene.
- It never occurs freely in nature, but only in (usually ionic) compounds, such as pegmatitic minerals, which were once the main source of Li.
- Due to its solubility as an ion, it is present in ocean water and is commonly obtained from brines.
- Li metal is **isolated electrolytically from a mixture of lithium chloride and potassium chloride**.

## FORMULA E RACE

**In News:** India will host Formula E race at Hyderabad.



### More on the Topic:

- Formula E stands for electric - with the entirety of racing car powered by a battery.
- It will provide a big boost to Indian motor-sports.
- It is the first global sport to be certified with a net zero carbon footprint.
- It is powered by a 250kW battery. They can reach speeds of up to 280km/h.
- They promote sustainability and a greener world.

## INDIA BROADBAND DEFINITION UPDATE

**In News:** The government has changed the definition of broadband connectivity to include a higher minimum download speed of 2 Mbps (megabits per second).



### More on the Topic:

- Now broad band is defined as a data connection that is able to support interactive services including Internet access.
- Earlier, the definition notified by the Telecom Department in July 2013 had benchmarked it to 512 kbps (kilobits per second) as minimum download speed.



## What is broadband?

- In telecommunications, broadband is the wide-bandwidth data transmission that transports multiple signals at a wide range of frequencies and Internet traffic types, which enables messages to be sent simultaneously and is used in fast internet connections.

## A NEW KIND OF ICE: AMORPHOUS' ICE

**In News:** Scientists have created a new type of ice that matches the density and structure of water, perhaps opening a door to studying water's mysterious properties.



### More on the Topic:

- The ice is called medium-density amorphous ice.
- Normally, when water freezes, it crystallises and its molecules are arranged into the familiar hexagonal, solid structure that we call ice.
- Ice is less dense than its liquid form is an unusual property for a crystal.
- Depending on conditions such as pressure and the speed of freezing, water can also solidify in any of two dozen other regular arrangements. Amorphous ice is different: it has no such order.
- If confirmed, the new form of ice could enable studies of water in a manner that was not possible before.

## BIOTIN

**In News:** Dermatologists have cautioned the indiscriminate usage biotin (vitamin B7) which is being promoted by several companies as a sure shot remedy for healthy hair and nail growth.



### More on the Topic:

- The presence of biotin at high levels in serum may cause falsely low or high values of parameters assayed depending upon the type of the test. Some tests include troponin (a critical test for diagnosis of heart attacks), thyroid and viral antibody tests.
- 20-30 micrograms of biotin are required for healthy adults.
- Biotin is a **water-soluble B vitamin** found **naturally in some foods**.
- Biotin plays a vital role in assisting enzymes to break down fats, carbohydrates, and proteins in food. It also helps to regulate signals sent by cells and the activity of genes.
- No evidence in humans has shown a **toxicity of biotin even with high intakes**.
- Because it is water-soluble, any excess amount will leave through the urine. There is no established upper limit or toxic level for biotin.

### About Vitamins:

- Vitamins are **organic substances** that are **generally classified as either fat soluble or water soluble**.
- **Fat-soluble vitamins** (vitamin A, vitamin D, vitamin E, and vitamin K) dissolve in fat and tend to accumulate in the body.
- **Water-soluble vitamins** (vitamin C and the B-complex vitamins, such as vitamin B6, vitamin B12, and folate) must dissolve in water before they can be absorbed by the body, and therefore cannot be stored.
- Any water-soluble vitamins unused by the

body are primarily lost through urine.

## BIOLOGICALS

**In News:** Health Minister has inaugurated National Summit on Quality of Biologicals.

**Table 1: Overview of the main differences between chemical and biological drugs**

Chemical	Biological
Produced by chemical synthesis	Produced by living cell cultures
Low molecular weight	High molecular weight
Well-defined structure	Complex, heterogeneous structure
Mostly process-independent	Strongly process-dependent
Completely characterised	Impossible to fully characterise the molecular composition and heterogeneity
Stable	Unstable, sensitive to external conditions
Mostly non-immunogenic	Immunogenic

### More on the Topic:

- Biological therapeutics, also referred to as Biologicals, are those class of medicines which are grown and then purified from large-scale cell cultures of bacteria or yeast, or plant or animal cells.
- Biologicals are a diverse group of medicines which includes vaccines, growth factors, immune modulators, monoclonal antibodies, as well as products derived from human blood and plasma.
- What distinguishes biologicals from other medicines is that these are generally proteins purified from living culture systems or from blood, whereas other medicines are considered as 'small molecules' and are either made synthetically or purified from plants.
- Due to the differences in their nature and how they are produced, biological therapeutics are regulated, tested, and controlled differently than other medicines.
- To help ensure their quality, safety, and efficacy, each batch of a biological therapeutic product must be tested extensively at each stage of production in order to ensure consistency with prior batches.

## BHAROS OPERATING SYSTEM

**In News:** BharOS, a Linux kernel based operating system for Android phones from an IIT incubated startup is currently considered as India's own Android and iOS rival.



### More on the Topic:

- It is an indigenous, or homegrown, mobile operating system (OS), like Android or iOS.
- These systems help smartphone users interact with their device and access its features, while ensuring safety. BharOS, in particular, is meant to be a contribution towards the idea of a self-reliant India or 'Atmanirbhar Bharat' by creating a secure OS environment for India-based users.
- The OS can be installed on commercial off-the-shelf handsets.
- BharOS comes with the **No Default Apps (NDA) setting**, meaning that users do not have to keep or use pre-installed apps in this mobile operating system.
- BharOS will use a system known as **Private App Store Services (PASS)**, which will examine and curate the apps that are safe for the users. This means that users should be able to use other apps, as long as they meet BharOS' PASS standards.

## LAB GROWN DIAMONDS (LGD)

**In News:** Indian Institute of Technology Madras (IIT Madras) will be provided a grant of Rs 242 Crore over a period of five years to undertake research on Lab Grown Diamonds (LGD).

### More on the Topic:

- This research will be focused on driving indigenisation of the LGD manufacturing process.
- Lab-grown diamonds are diamonds that are produced using specific technology which mimics the geological processes that grow



natural diamonds.

- They are not the same as “diamond simulants” – LGDs are chemically, physically and optically diamond and thus are difficult to identify as “lab-grown.”
- While materials such as Moissanite, Cubic Zirconia (CZ), White Sapphire, YAG, etc. are “diamond simulants” that simply attempt to “look” like a diamond, they lack the sparkle and durability of a diamond and are thus easily identifiable.
- However, differentiating between an LGD and an Earth Mined Diamond is hard, with advanced equipment required for the purpose.



### How are LGDs produced?

- There are multiple ways in which LGDs can be produced. The most common (and cheapest) is the “High pressure, high temperature” (HPHT) method.
- As the name suggests, this method requires extremely heavy presses that can produce up to 730,000 psi of pressure under extremely high temperatures (at least 1500 celsius).
- Usually graphite is used as the “diamond seed” and when subjected to these extreme conditions, the relatively inexpensive form of carbon turns into one of the most expensive carbon forms.
- Other processes include “Chemical Vapor Deposition” (CVD) and explosive formation that creates what are known as “detonation nanodiamonds”.

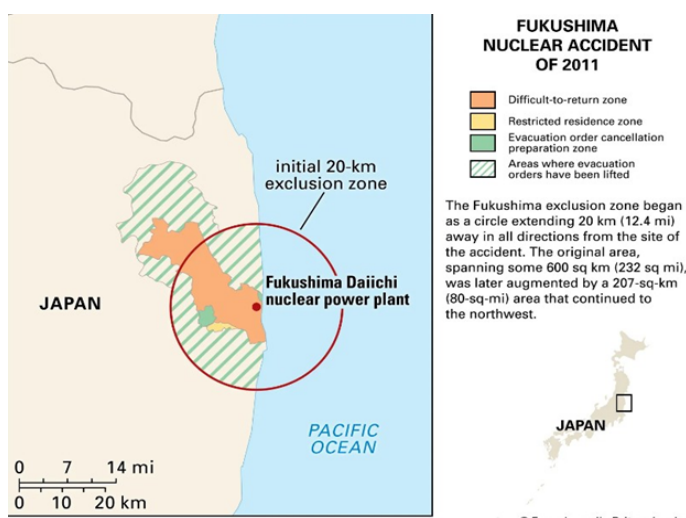
### Uses of LGDs?

- LGDs are most often used for industrial purposes, in machines and tools. Their hardness and extra strength make them ideal for use as cutters.
- Furthermore, pure synthetic diamonds have high thermal conductivity, but negligible electrical conductivity.

- This combination is invaluable for electronics where such diamonds can be used as a heat spreader for high-power laser diodes, laser arrays and high-power transistors.
- As the Earth's reserves of natural diamonds are depleted, LGDs are slowly replacing the prized gemstone in the jewelry industry.

## FUKUSHIMA NUCLEAR REACTOR

**In News:** Japan is expected to start flushing 1.25 million tonnes of wastewater from the embattled Fukushima nuclear power plant into the Pacific Ocean this year, as part of a \$76-billion project to decommission the facility.



### More on the Topic:

- In March 2011, after a magnitude 9 earthquake, a tsunami flooded the Fukushima Daiichi nuclear power plant in Okuma and damaged its diesel generators.
- The loss of power suspended coolant supply to reactors at the facility; the tsunami also disabled backup systems.
- Soon, radioactive materials leaked from reactor pressure vessels, exploded in the facility's upper levels, and exposed themselves to the ambient air, water, soil, and local population. Winds also carried radioactive material thrown up into the air into the Pacific. Since then, the power plant and its surrounding land have been uninhabitable.
- The water that the Japanese government wants to flush from the plant was used to cool the reactors, plus rainwater and groundwater.
- It contains radioactive isotopes from the damaged reactors and is thus itself radioactive.



Japan has said that it will release this water into the Pacific Ocean over the next 30 years.

### Can't the water be treated?

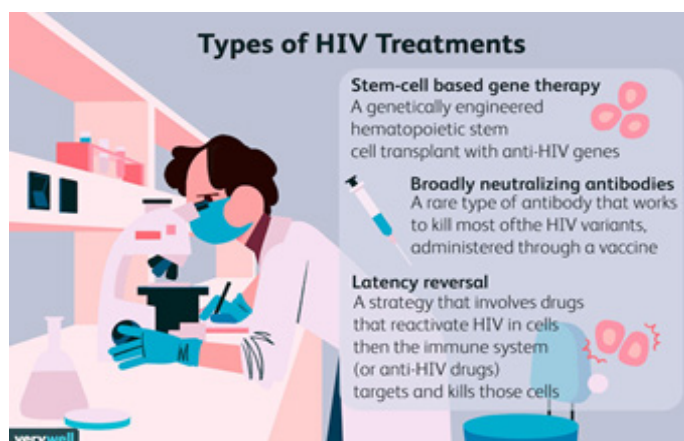
- The Tokyo Electric Power Company (TEPCO), which operates the Fukushima facility, has treated the water to remove most radioactive isotopes;
- The government claims the water will be "far above safety standards".
- Officials have defended the plan saying TEPCO is running out of room for the water-tanks and that nuclear plants around the world regularly release water containing trace amounts of radionuclides into large waterbodies.

### Concerns:

- Experts expect the affected water to poison the fish; It's a precaution to avoid eating fish caught in the vicinity of the discharge point. South Korea banned seafood imported from around Fukushima, to Japan's displeasure, from 2013.
- Another problem is that TEPCO hasn't removed tritium from the water because this is very difficult to do. Tritium is easily absorbed by the bodies of living creatures and rapidly distributed via blood.
- There are other radio active elements which may TEPCO's treatment procedure couldn't entirely remove. This include isotopes of ruthenium and plutonium, which could persist for longer in the bodies of marine creatures and on the seafloor.

## STEM CELL CURE OF HIV

In News: A 53-year-old from Germany has become the third person in the world to be completely cured of HIV following a stem cell transplant.



### More on the Topic:

- The stem cell transplant used donor cells with a particular genetic mutation.
- The transplanted stem cells were chosen for a particular mutation found on the **CCR5 gene**.
- HIV mainly attacks **CD4 immune cells** (type of white blood cell) in human body, thereby reducing a person's ability to fight off secondary infections.
- **CCR5 receptors on surface of CD4 immune cells act as a doorway for HIV virus.**
- A homozygous mutation of the CCR5 gene, the CR5 Delta mutation, removes the docking site in both copies of the gene (maternal and paternal), preventing the virus' entry into the cell and leading to widespread HIV resistance.

### About how the Bone Marrow Transplant Reduces Viral Load:

- The patient received treatment for an acute blood disease and, in the process, was cured of infection with the human immunodeficiency virus type 1 (HIV-1).
- HIV can remain in the body even when people are administered antiretroviral therapy (ART), which is a treatment and not a cure.
- But **allogeneic hematopoietic stem cell transplantation (HSCT)** – the scientific term for a bone marrow transplant – has been shown to substantially reduce the viral reservoir, the dormant HIV inside cells that can be reactivated if ART is stopped.
- A bone marrow transplant is a procedure that infuses healthy blood-forming stem cells into body to replace bone marrow that's not producing enough healthy blood cells.
- The term "**allogeneic**" means the transplanted stem cells are genetically different; they are from a person other than the recipient.

### About AIDS:

- AIDS is a chronic immune system disease caused by the human immunodeficiency virus (HIV).
- HIV damages the immune system and interferes with the body's ability to fight infection and disease.
- HIV can be spread through contact with infected blood, semen, or vaginal fluids.
- Generally there's no cure for HIV/AIDS, but medications can control the infection and

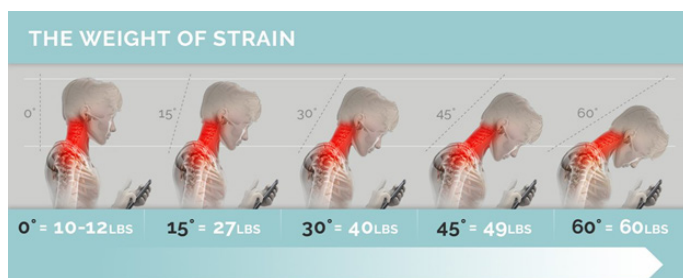
prevent disease progression.

### About Anti Retro Viral Therapy:

- It is a combination of daily medications that stop the virus from reproducing.
- The therapy helps in protecting CD4 cells thus keeping the immune system strong enough to fight off the disease.
- It, besides reducing the risk of transmission of HIV, also helps in stopping its progression to AIDS (a spectrum of conditions caused by infection due to HIV).

### TECH NECK SYNDROME

In News: New tech tools have given rise to a new physical condition called Tech neck syndrome.



### More on the Topic:

- "Text neck syndrome" (or, "tech neck") occurs when your neck muscles strain to hold your head up as you look down at your phone or digital device.
- Your muscles can become tired and sore the longer you hold your head in this position.
- Depending on the angle, your head can weigh 27 to 60 pounds, so your neck muscles will get a real workout if you angle your face down for multiple hours daily to look at phone or computer. If you feel tension or soreness in your neck, you may have text neck syndrome.
- It can even cause spinal problems over time, such as pinched nerves and spinal deterioration.
- In precise terms, it refers to the onset of cervical spinal degeneration that results from repeated stress of frequent forward head flexion while we look down at mobile devices and text for longer periods of time.
- Symptoms-Neck pain, headaches, Back pain.

## INDIAN SOCIETY/SOCIAL ISSUES/SOCIAL JUSTICE

### CUSTODIAL DEATH

In News: Ministry of Home Affairs (MHA) Shared information on Custodial Deaths in last five years (2018-2022).



### More on the Topic:

- Highlights from the Shared Details:
- In the last five years, the highest number of custodial deaths has been reported in Gujarat at 80.
- This is followed by Maharashtra (76), Uttar Pradesh (41), Tamil Nadu (40) and Bihar (38).
- Among the nine Union Territories, the highest incidents of custodial deaths were reported from Delhi at 29 in the last five years. This is followed by Jammu and Kashmir at four.
- States like Sikkim and Goa reported no incident from 2017 to 2020, but recorded one incident of custodial death each in 2021-2022.

### About Custodial Death:

- Custodial death refers to the death of an accused during pre-trial or after conviction. The death is caused by the direct or indirect act of police during their custody.
- It includes death occurring not only in jail but also on medical or private premises, or in police or another vehicle.
- Custodial violence is recognized as one of the most brutal forms of human rights abuse.
- The Constitution of India guarantees the right to life and liberty to individuals (Article 21) and prohibits any sort of custodial torture to take out confessions from the accused.
- Article 20 (Right to protection against conviction of offenses)

- **Article 22** (Right to protection against arrest and detention in certain circumstance).
- The Constitution of India calls for the safety of convicts and accused in the police and judicial lock-ups, but the authorities such as the police undermine such constitutional structures and carry out custodial violence and torture.
- India should ratify the UN Convention against Torture.

### Statutory Provisions to Safeguard Custodial Deaths:

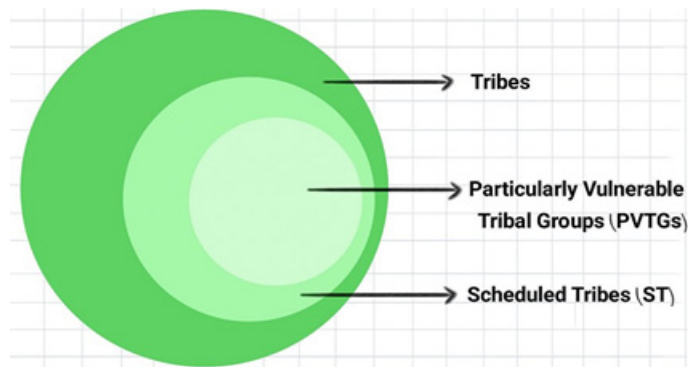
- **Section 49 of the Code of Criminal Procedure, 1973** is also a safeguard against custodial excesses. It states that an arrested person shall not be subjected to more restraint than is necessary to prevent his escape.
- **Section 55A of the Code of Criminal Procedure, 1973** makes it mandatory for the person under whose custody; the accused is detained to care of the health and safety.
- **Section 300 of Indian Penal Code** states that if a public servant exceeds his right of using force and causes death of any person he is liable for an offence of culpable homicide not amounting to murder.
- **Section 330 of Indian Penal Code** states that if any public servant causes injury to any person to extort confession he will be liable for punishment with imprisonment upto seven years.
- **Section 376 of Indian Penal Code** has been amended to specifically address rape in custody by insertion of Section 376(2) in the Criminal Law (Amendment) Act, 1983.

### Way Ahead:

- There is a need for **stringent legal action** which will be solely dedicated to punishing the personnel who misused their power and whose brutal force led to a loss of life.
- For ensuring the reduction of instances of custodial death, the guidelines laid down in the landmark cases of *D.K. Basu v. State of Bengal* and *Prakash Singh v. Union of India* need to be strictly implemented.
- The Law Commission of India's proposition in 2003 to **change the Evidence Act to place the onus of proof on the police for not having tortured suspects** needs to be considered.
- The draft **bill on the Prevention of Torture, 2017**, which has not seen the day, needs to be revived.

### PARTICULARLY VULNERABLE TRIBAL GROUPS

**In News:** Finance Minister Nirmala Sitharaman announced the launch of a new scheme called the Pradhan Mantri PVTG (Particularly Vulnerable Tribal Groups) Development Mission as part of the Union Budget 2023-24.



### More on the Topic:

- This mission aims to provide basic necessities such as housing, water, roads, telecom, education, and health in areas inhabited by PVTGs, who are the most vulnerable and backward tribes among the Scheduled Tribes.

### About PVTGs:

- Tribal communities are often identified by some specific signs such as primitive traits, distinctive culture, geographical isolation, shyness to contact with the community at large and backwardness.
- Along with these, some tribal groups have some specific features such as **dependency on hunting, gathering of food, having pre-agriculture level of technology, zero or negative growth of population and extremely low level of literacy.**
- These groups are called **Particularly Vulnerable Tribal Groups.**

### Government of India follows the following criteria for identification of PVTGs.

- Pre-agricultural level of technology
- Low level of literacy
- Economic backwardness
- A declining or stagnant population.
- Accordingly 75 PTVGs have been identified in the country.



### The need for identification:

- PVTGs are more vulnerable among the tribal groups. Due to this factor, more developed and assertive tribal groups take a major chunk of the tribal development funds, because of which PVTGs need more funds directed for their development.
- In this context, in 1975, the Government of India initiated to identify the most vulnerable tribal groups as a separate category called PVTGs.
- Out of 705 Scheduled Tribes, PVTG is spread over 17 states and one Union Territory (UT), in the country (2011 census).

### INTERNAL MIGRATION OF INDIA

In News: Jharkhand is conducting Migrant Survey (JMS). The survey is being inspired from the Jharkhand's biggest challenge during the Covid crisis: the journey back home of about 8.5 lakh of the state's migrant workers.



#### More on the Topic:

- The initiative is part of the state's Safe and Responsible Migration Initiative (SRMI), which was launched in 2021-end and includes the preparation of a database of migrant workers.
- Through JMS the state would like to bring out the first ever state-level estimates of migration and conditions, and factors influencing migration.
- The evidence is expected to be used to draft a state-level policy framework on migration and welfare of migrant workers in Jharkhand in the upcoming fiscal year 2023-24.
- Jharkhand is not the only state to conduct migrant labour surveys. Kerala has been a pioneer in this field, with several such surveys, followed by states like Tamil Nadu and Punjab.

### Internal Migration Patterns of India:

- Migration patterns in India are increasingly reflecting the economic divide in the country, with more migrants over the last decade heading to the southern states, which have grown at a faster pace during this period.
- According to Census data southern states, especially Tamil Nadu and Kerala, have shown the highest increase in migrant population.
- With 45.36 crore migrants in India, every third citizen of the country is a migrant. Of these, 69% are women, majority of whom have cited marriage or having migrated with their husbands as the reason for their translocation.
- Migrants constitute 37.8% of India's 121.03 crore population.
- Over the last decade, the total number of migrants in India rose by 44.35% from 31.45 crore in 2001. During the same period, India's population grew 17.64%.
- While globally, migration an attempt by people to survive and prosper, in India, marriage appears to be the biggest reason why people migrate.
- Of the total 45.36 crore migrants, 22.39 crore or 69% people referred to marriage being the reason for their migration.

#### Women Migrants:

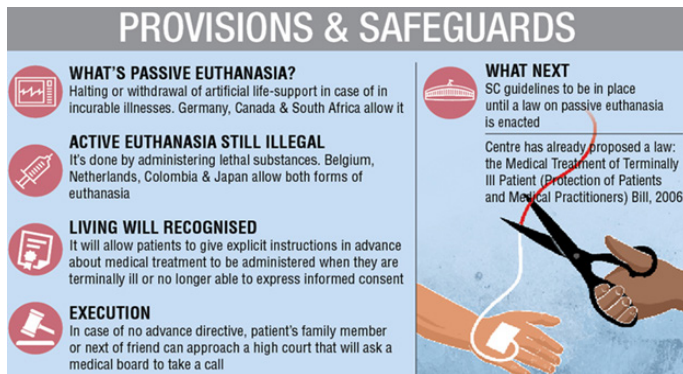
- The Census data shows that Indian women are also migrating for work and education. The number of Indian women who are economic migrants moving for the sake of work, business or education has grown by 129%: from 0.51 crore in 2001 to 1.17 crore in 2011.
- During the same period, the number of male economic migrants grew by 51% from 3.09 crore to 4.7 crore.

#### Why More Migrants Choose Southern States:

- The socio-economic development of the southern states is considerably higher and that attracts people.
- Another factor is that because of better education levels and awareness, local residents of these areas get drawn towards better economic opportunities.
- This vacuum that gets created gets filled up by people from outside. These developed areas face a crisis of manpower, especially for low-skilled jobs, which leads to migration.

## PASSIVE EUTHANASIA

**In News:** A five-judge Bench of the Supreme Court headed by Justice K M Joseph agreed to significantly ease the procedure for passive euthanasia in the country by altering the existing guidelines for 'living wills', as laid down in its 2018 judgment in *Common Cause vs. Union of India & Anr*, which allowed passive euthanasia.



### More on the Topic:

- Euthanasia refers to the practice of an individual deliberately ending their life, oftentimes to get relief from an incurable condition, or intolerable pain and suffering.
- Euthanasia, which can be administered only by a physician, can be either 'active' or 'passive'.
- Active euthanasia involves an active intervention to end a person's life with substances or external force, such as administering a lethal injection.
- Passive euthanasia refers to withdrawing life support or treatment that is essential to keep a terminally ill person alive.
- Passive euthanasia was legalised in India by the Supreme Court in 2018, contingent upon the person having a 'living will' or a written document that specifies what actions should be taken if the person is unable to make their own medical decisions in the future.
- In case a person does not have a living will, members of their family can make a plea before the High Court to seek permission for passive euthanasia.

### What did the SC rule in 2018?

- The Supreme Court allowed passive euthanasia while recognising the living wills of terminally-ill patients who could go into a permanent vegetative state, and issued guidelines regulating this procedure.

- A five-judge Constitution Bench headed by then Chief Justice of India (CJI) Dipak Misra said that the guidelines would be in force until Parliament passed a legislation on this.
- However, this has not happened, and the absence of a law on this subject has rendered the 2018 judgment the last conclusive set of directions on euthanasia.
- The guidelines pertained to questions such as who would execute the living will, and the process by which approval could be granted by the medical board.
- According to the SC ruling, an adult human being having mental capacity to take an informed decision has right to refuse medical treatment including withdrawal from life-saving devices.

### What changes after the SC's order this week?

- The petition was filed by a nonprofit association that submitted that the 2018 guidelines on living wills were "unworkable". Though the detailed judgement is yet to be released, the Court dictated a part of their order in open court.
- As per 2018 guidelines, a living will was required to be signed by an executor (the individual seeking euthanasia) in the presence of two attesting witnesses, preferably independent, and to be further countersigned by a Judicial Magistrate of First Class (JMFC).
- Also, the treating physician was required to constitute a board comprising three expert medical practitioners from specific but varied fields of medicine, with at least 20 years of experience, who would decide whether to carry out the living will or not. If the medical board granted permission, the will had to be forwarded to the District Collector for his approval.
- The Collector was to then form another medical board of three expert doctors, including the Chief District Medical Officer. Only if this second board agreed with the hospital board's findings would the decision be forwarded to the JMFC, who would then visit the patient and examine whether to accord approval.
- This cumbersome process will now become easier.
- Instead of the hospital and Collector forming the two medical boards, both boards

will now be formed by the hospital.

- The requirement of 20 years of experience for the doctors has been relaxed to five years.
- The requirement for the Magistrate's approval has been replaced by an intimation to the Magistrate.
- The medical board must communicate its decision within 48 hours; the earlier guidelines specified no time limit.
- The 2018 guidelines required two witnesses and a signature by the Magistrate; now a notary or gazetted officer can sign the living will in the presence of two witnesses instead of the Magistrate's countersign.
- In case the medical boards set up by the hospital refuses permission, it will now be open to the kin to approach the High Court which will form a fresh medical team.

## REPORTS AND INDICES

### CLIMATE INEQUALITY REPORT 2023

In News: Climate Inequality Report 2023 was released by World Inequality Lab recently.



#### More on the Topic:

- The report found that carbon inequalities within countries now appear to be greater than carbon inequalities between countries.
- The consumption and investment patterns of a relatively small group of the population directly or indirectly contribute disproportionately to greenhouse gases.
- While cross-country emission inequalities remain sizeable, overall inequality in global emissions is now mostly explained by within-country inequalities by some indicators.

#### Suggested Way Ahead:

- Although overseas climate aid – a key focus of the recent Cop27 climate negotiations – would be needed to help developing countries reduce their emissions, it would not be enough and developing countries also needed to reform their domestic tax systems to redistribute more from the wealthy.
- Windfall taxes on excess profits could help to fund low-carbon investment, as well as progressive taxation in countries, including developing countries, which often under-tax rich citizens and companies.
- Large emerging economies – such as China



now bear an increasing responsibility for the stock of carbon dioxide in the atmosphere and should produce clear plans on reaching net zero emissions.

- **Combinations of progressive taxation, including on highly polluting activities, and the redeployment of subsidies for fossil fuels can help strengthen the welfare state and provide social protection to help bridge some of these gaps.**

## **ALL INDIA SURVEY ON HIGHER EDUCATION (AISHE) 2020-2021**

**In News:** The Ministry of Education, Government of India has released All India Survey on Higher Education (AISHE) 2020-2021.



### **More on the Topic:**

- The Ministry has been conducting All India Survey on Higher Education (AISHE) since 2011, covering all higher educational institutions located in Indian Territory and imparting higher education in the country.
- The survey collects detailed information on different parameters such as student enrollment, teacher's data, infrastructural information, financial information etc.
- For the first time, in AISHE 2020-21, HEIs have filled data using entirely online data collection platform through the Web Data Capture Format (DCF) developed by Department of Higher Education through the National Informatics Centre (NIC).

### **Following are the Highlights of the Survey:**

#### **Student Enrollment:**

- The total enrollment in higher education has increased to nearly 4.14 crore in 2020-21 from 3.85 crore in 2019-20. Since 2014-15, there has been an increase of around 72 Lakh in the enrolment (21%).
- The Female enrolment has increased to 2.01 crore from 1.88 crore in 2019-20. There has

been an increase of around 44 Lakh (28%) since 2014-15.

- As per 2011 population projections for 18-23 years age group, GER has increased to 27.3 from 25.6 in 2019-20.
- (GER: percentage of students belonging to eligible age group (18-23 years) enrolled in Higher Education)
- Among Disciplines at undergraduate level, enrolment is highest in Arts (33.5%), followed by Science (15.5%), Commerce (13.9%) and Engineering & Technology (11.9%).
- Among streams at postgraduate level, maximum students are enrolled in Social Science (20.56%) followed by science (14.83%).

#### **Number of Institutions:**

- During 2020-21, the number of Universities has increased by 70, and the number of Colleges has increased by 1,453.
- Since 2014-15, there has been increase of 353 Universities (46.4%).
- The Institutes of National Importance (INIs) have almost doubled from 75 in 2014-15 to 149 in 2020-21.
- 191 new Higher Education Institutions have been established in North Eastern States since 2014-15.
- Highest number of Universities is in Rajasthan (92), Uttar Pradesh (84) and Gujarat (83).
- The College Density, the number of colleges per lakh eligible population (population in the age-group 18-23 years) has been 31. This was 27 in 2014-15.
- States with Highest college density: Karnataka (62), Telangana (53), Kerala (50), Himachal Pradesh (50), Andhra Pradesh (49), Uttarakhand (40), Rajasthan (40), Tamilnadu (40).
- Top 8 Districts with Highest number of Colleges: Bangalore Urban (1058), Jaipur (671), Hyderabad (488), Pune (466), Prayagraj (374), Rangareddy (345), Bhopal (327) and Nagpur (318).
- 43% universities and 61.4% colleges are located in Rural Areas.

#### **Faculty:**

- The total number of faculty/teachers are 15,51,070 of which about 57.1% are male and 42.9% are female.
- The female per 100 male faculty has improved

to 75 in 2020-21 from 74 in 2019-20 and 63 in 2014-15.

## WORLD ECONOMIC SITUATION AND PROSPECTS 2023 REPORT

In News: United Nations Department of Economic and Social Affairs launched the "World Economic Situation and Prospects" report or simply the World Economy Report.



### More on the Topic:

- The increasing inflation will affect the private-sector investments. Global Inflation will remain at 6.5% in 2023.
- Banks will be raising the interest rates and the overall economic growth of countries will be at stake due to this.
- As we enter 2024, countries will face recession. Poverty levels are predicted to be increasing in the coming years. People will be facing unemployment. Those who are already in the job will encounter job insecurity.
- More than 350 million people are expected to face food insecurity in the coming years.
- Employment of women in the formal sector will also be challenging.
- In achieving the Sustainable Development Goals, countries are facing challenges and there are chances that countries will miss these targets.

### Recommendations:

- Reallocate and reprioritise public expenditures which should target public investments in education, health, digital infrastructure etc.
- Social protection systems have to be strengthened.

## INTERNAL SECURITY

### EXERCISE TOPCHI-2023

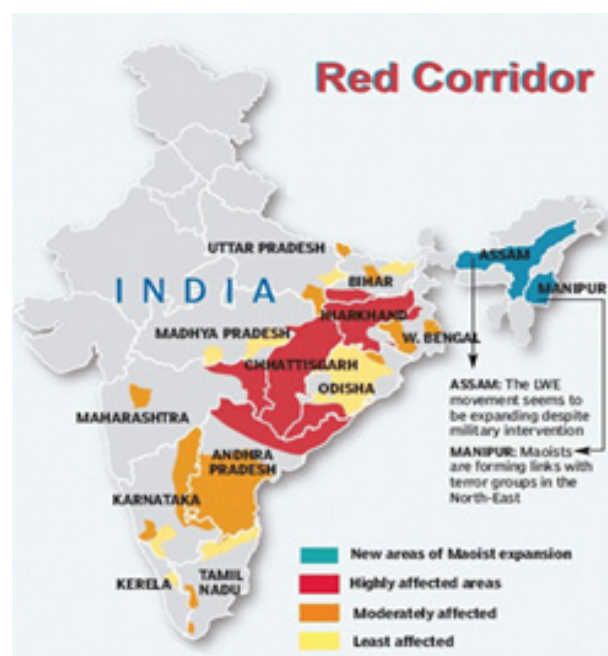
In News: Indian Army's 'Exercise Topchi', the annual firepower demonstration and training exercise was conducted recently.

### More on the Topic:

- During the annual firepower demonstration exercise, the Army showcased the indigenously developed guns including the Dhanush System, K-9 Vajra and M777 guns.
- All of the guns and other systems have been assembled in India. The training exercise also involved the SWATHI radar system and remotely-piloted vehicles.
- The major highlight of the mega event was firing by indigenously manufactured artillery equipment such as Indian Field Gun (IFG), Light Field Gun (LFG) system and Pinaka multi-barrel rocket launchers.

### LEFT WING EXTREMISM

In News: The Home Minister has chaired the meeting of the Parliamentary Consultative Committee on LWE.



### More on the Topic:

- The committee has informed that for the first time in four decades, the number of deaths of civilians and security forces was fewer than 100 last year.
- The number of districts affected dropped from 90 to 45.

## **The measures taken by the Ministry of Home Affairs:**

- The armed forces had established 175 new camps to plug the security vacuum in the LWE-infested zones.
- The Border Security Force's air wing has been strengthened with the induction of new pilots and engineers in the past one year to aid the anti-LWE operations.
- The MHA has also taken initiatives to eliminate the funding to banned outfits.
- Funds were provided to the State police forces for modernisation and assistance related to construction of fortified police stations.
- For better mobile connectivity around 5000 mobile towers had been installed.
- Construction of 17,462 km of roadways had been sanctioned to improve road connectivity, of which work on about 11,811 km had been completed.
- So far, 245 Eklavya schools had been sanctioned in 90 LWE-affected districts and 121 of them were now functional.
- The government also facilitated the opening of 1200 bank branches and 1,350 ATMs in the worst hit districts, besides 4,903 post offices.
- The skill development scheme's scope was increased from 34 to 47 districts.

## **About Left Wing Extremism:**

- The left-wing extremism (LWE) or Naxal insurgency in India originated in a 1967 uprising in Naxalbari, West Bengal by the Communist Party of India (Marxist).
- They are the group of people who believe in the political theory derived from the teachings of the Chinese political leader Mao Zedong.
- The Naxals strongly believe that the solution to social and economic discrimination is to overthrow the existing political system.
- LWE organizations are the groups that try to bring change through violent revolution. They are against democratic institutions and use violence to subvert the democratic processes at ground level.
- The movement has spread across the Eastern India in less developed areas of states such as Chhattisgarh, Odisha and Andhra Pradesh.

# **ANCIENT, MODERN INDIA AND ART & CULTURE**

## **KEELADI ARTEFACTS**

**In News:** The excavations at Keeladi from 2015 prove that an urban civilisation existed in Tamil Nadu in the Sangam age on the banks of the Vaigai River.

## **More on the Topic:**

- The Sangam age is a period of history in ancient Tamil Nadu which was believed to be from the third century BCE to the third century CE.
- The name is derived from the renowned Sangam poets of Madurai from that time.
- Excavations by the Archaeological Survey of India (ASI) and Tamil Nadu State Archaeology Department (TNSDA) at Keeladi has pushed the Sangam age further back.
- The Superintendent Archaeologist who discovered Keeladi in 2015, has pushed the Sangam age to 800 BCE based on these archaeological findings.
- Keeladi could also provide crucial evidence for understanding the missing links of the Iron Age (12th century BCE to sixth century BCE) to the Early Historic Period (sixth century BCE to fourth century BCE) and subsequent cultural developments.

## **The Important Excavations from Keeladi:**

- Unearthing of heaps of pottery suggest the existence of a pottery making industry, mostly made of locally available raw materials.
- Over 120 potsherds containing Tamil Brahmi inscriptions have been found.
- Spindle whorls, copper needles, terracotta seal, hanging stones of the yarn, terracotta spheres and earthen vessels to hold liquid suggest various stages of a weaving industry. There also existed a dyeing industry and a glass bead industry.
- Gold ornaments, copper articles, semi-precious stones, shell bangles, ivory bangles and ivory combs reflect the artistic, culturally rich and prosperous lifestyle of the Keeladi people.
- Agate and carnelian beads suggest import through commercial networks while terracotta and ivory dice, gamesmen and evidence of hopscotch have been unearthed revealing their pastime hobbies.



## SHUMANG LEELA

**In News:** Shumang Leela Festival was started at Manipur.



### More on the Topic:

- Shumang Leela is a traditional form of theatre in Manipur where the roles of women are all played by men, called Nupi Shabis. In the case of women's theatre groups, the roles of men are played by women.
- Shumang Leela translates to "courtyard performance". It is performed in an open courtyard surrounded by spectators on all four sides.
- Often, the female roles are taken up by transgender actors.
- The tradition is believed to be descended from Lai Haraoba, a ritual of the Meitei community of Manipur.
- The plays serve as a medium to spread awareness among people on social, political and economic issues.

## MEHRAULI ARCHAEOLOGICAL PARK

**In News:** The Delhi High Court has refrained from entertaining a public interest litigation plea seeking bar on the Delhi Development Authority's demolition action in Mehrauli Archaeological Park.



### More on the Topic:

- First founded as Lalkot in the 11th century by Anangpal II, a ruler of the Rajput Tomar

dynasty, remains of the earliest version of the city can be found around Sanjay Van and the Qutab Golf Course.

- This was later christened 'Quilt Rai Pithora' by Mughal court historian Abu'l Fazl in his epic hagiography, 'Ain-i-Akbari'.
- This city passed hands from the Tomars to the Chauhans, who are credited to have further fortified the complex.
- The city fell into the hands of the Mamluk dynasty (Slave dynasty) in 1192.
- Under ruler Qutubudin Aibak, the first ruler of the Slave dynasty, the next round of construction began in the area.
- Notably, he began the building of the Qutub Minar to commemorate his victory (though other explanations also exist to his motivations) as well as the Quwwat-al-Islam (Might of Islam) mosque, the oldest known mosque in north India (India's oldest mosque – Cheraman Juma – was built by Arab merchants in Kerala).
- In the next century, a slew of building activities took place in the region with tombs, baolis (step wells), palaces and other fortifications built in the reigns of Iltutmish, Razia Sultan and Alauddin Khilji.
- Two Mughal summer palaces (Zafar Mahal and Jahaz Mahal) and a summer abode of Sir Thomas Metcalfe (Dilkhusha) are situated here.
- Mehrauli lay on a historic trade route, as the number of sarais (Ladho Sarai, Ber Sarai, Neb Sarai) around the area would suggest.
- A sarai was a rest house for weary travellers.
- Mehrauli is also a spiritual centre, home to both Hindu and Muslim shrines.
- The annual community celebration of 'Phool Walon ki Sair' or Sair-e-Gulfaroshan (walk of the flowers) is a witness to Mehrauli's cosmopolitanism.
- This 19th-century Mughal-era festival has become the symbol of the city's communal harmony since 1962.

## DRAFT GEO-HERITAGE SITES AND GEO-RELICS BILL RISKS

**In News:** Ministry of Mines has sought comments on Geo-heritage Sites and Geo-relics (Preservation and Maintenance) Bill.



### More on the Topic:

- The Bill is aimed at providing for the declaration, preservation, protection and maintenance of geo-heritage sites and geo-relics of national importance, for geological studies, education, research and awareness purposes.

### Highlights from the Bill:

- The draft bill defines Geoheritage sites as "sites containing geo-relics and phenomena, stratigraphic type sections, geological structures and geomorphic landforms including caves, natural rock-sculptures of national and international interest; and includes such portion of land adjoining the site," that may be required for their conservation or to access to such sites.
- A Geo-relic is defined as "any relic or material of a geological significance or interest like sediments, rocks, minerals, meteorite or fossils". The GSI will have the power to acquire geo-relics "for its preservation and maintenance".
- The bill authorises the Central Government to declare a geoheritage site to be of national importance.
- This would be under the provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCTLARR Act).
- Through a public notification in the Official Gazette, the government would spell out what areas were to be acquired by it, and objections to this can be raised within two months.
- Provision is made for compensation to the owner or occupier of land who incurs loss or damage from the land due to the exercise of any power under this Act.

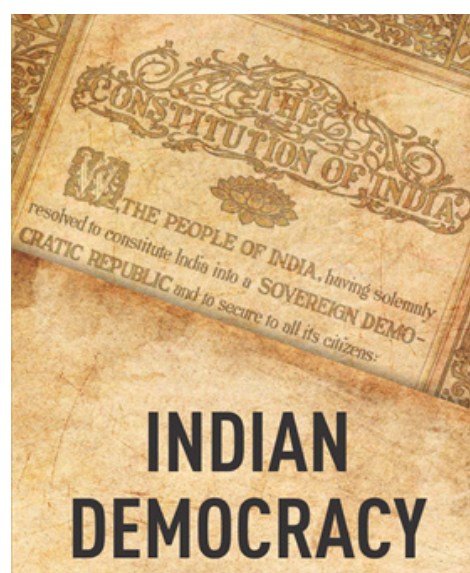
- The Bill imposes a prohibition on construction, reconstruction, repair or renovation of any building within the geoheritage site area or utilisation of such area in any other manner, except for construction for preservation and maintenance of geoheritage site or any public work essential to the public.
- Penalties for destruction, removal, defacement or contravention of any direction issued by the Director General, GSI in the geo-heritage site are mentioned.
- There is a penalty of imprisonment which may extend to six months or fine which may extend to Rs.5 lakh, or both. In the case of a continuing contravention, additional fine of upto Rs.50,000 for every day of continuing contravention may be imposed.

### Concerns about the Bill:

- There are concerns over the distribution of power as mentioned in the Bill.
- The issue of land acquisition for the purpose of safeguarding these sites could also lead to issues with local communities.

## DEMOCRACY IN THE INDIAN HISTORY

In News: Observing that India is a democratic society by nature, Prime Minister Narendra Modi has cited examples from Indian culture and heritage.



### More on the Topic:

### Following are the important Highlights:

- Dr B R Ambedkar had compared the Buddhist Bhikshu Sangha to the Indian Parliament.
- He described it as an institution which had several rules guiding the motions, resolution,



quorum, voting and counting of votes.

- Baba Saheb was of the opinion that lord Buddha must have got the inspiration for this from the prevailing political system at that time.

#### **Uthiramerur Inscription:**

- It is an inscription on a rock. This inscription is dated around 920 A.D. in the reign of Parantaka Chola [907-955 A.D.].
- This rock inscription is like a mini-Constitution.
- It is a veritable written constitution of the village assembly that functioned 1,000 years ago.
- It explains in detail how the gram sabha should be conducted and what should be the process of selection of its members.
- It gives astonishing details about the constitution of wards, the qualification of candidates standing for elections, the disqualification norms, the mode of election, the constitution of committees with elected members, the functions of those committees, the power to remove the wrongdoer, etc..."
- The villagers even had the right to recall the elected representatives if they failed in their duty.

#### **The 12th-century Anubhav Mandapam of Bhagwan Basaveshwara:**

- Anubhava Mantapa, established by Basavanna in the 12th Century C.E. is located in Basavakalyan in Bidar district of Karnataka.
- It is the first religious parliament in the world, whose literal meaning is "experience pavilion", and was an academy of mystics, saints and philosophers of the lingayat faith in the 12th century.
- It was the fountainhead of all religious and philosophical thought pertaining to the lingayat.
- It was presided over by the mystic Allama Prabhu and numerous Sharanas from all over Karnataka and other parts of India were participants.
- This institution was also the fountainhead of the Vachana literature which was used as the vector to propagate Veerashaiva religious and philosophical thought.
- Other giants of veerashaiva theosophy like Akka Mahadevi, Channabasavanna and Basavanna himself were participants in the Anubhava Mantapa.

- The Anubhava Mantapa is also called the Mahaamane. It is a place where the philosophers and social reformers used to hold debates.

#### **Democratic traditions laid by the emperors of the Kakatiya Dynasty of Warangal:**

- The Kakatiya dynasty was a Telugu dynasty that ruled most of eastern Deccan region in present-day India between 12th and 14th centuries.
- Their territory comprised much of the present day Telangana and Andhra Pradesh, and parts of eastern Karnataka and southern Odisha.
- Their capital was Orugallu, now known as Warangal.
- They constructed many tanks for irrigation facility. The tanks were looked after by elected committees of the villages.

#### **GRISHNESHWAR TEMPLE**

**In News:** Hillary Clinton has visited Grishneshwar temple in Aurangabad.



#### **More on the Topic:**

- Grishneshwar Jyotirlinga Temple, sometimes referred to as the Ghmreshwar or Ghushmeshwar Temple, is one of the shrines dedicated to Lord Shiva that is referenced in the Shiva Purana.
- The word Ghrneshwara means "lord of compassion".
- The temple is an important pilgrimage site in the Shaiva tradition of Hinduism, which considers it as the twelfth Jyotirlinga (linga of light).
- This pilgrimage site is located in Ellora (also called Verul), less than a kilometer from Ellora Caves – a UNESCO World Heritage Site.



- Maharashtra has four Jyotirlingas, Bhimashankar, Trimbakeshwar, Aundha Nagnath Temple and Grishneshwar.
- The current structure was built by Queen Ahilyabai Holkar of Indore in 18th century AD.
- Thye temple is constructed using red stones in an interlocking pattern and is composed of a five-tier spire or shikara.

## KASHMIR PASHMINA

In News: Kashmir Pashmina Shawl was used as canvas for contemporary art at a French exhibition.



### More on the Topic:

- Pashmina is Geographical Indication (GI) labelled wool that originates in Kashmir.
- The word "Pashmina" is derives from the Persian word "Pashm," which refers to a weaveable fibre, specifically wool.
- Due to the high quality of the wool and the labour-intensive process to make each individual pashmina piece, the shawls are quite expensive.
- Depending on the sort of work required, weaving a single Pashmina shawl takes a long time. One shawl typically takes up to 72 hours to finish.
- Pashmina Shawl is known for their signature intricate buta or paisley patterns.
- The Changthangi goats (Capra Hircus), domesticated in Ladakh, are the source of the wool needed to weave Pashmina shawls.
- The Changpa tribes of Ladakh rears Changthangi goats.
- The Changpa are a semi-nomadic group that live in Changthang, which is located in the Ladakh and Tibet Autonomous Region.

## AWARDS AND HONOURS

### PADMA AWARDS

In News: Ministry of Home Affairs has announced winners of Padma Awards recently.



### More on the Topic:

- The Padma Awards are one of the highest civilian honours of India.
- The Awards are given in three categories: Padma Vibhushan (for exceptional and distinguished service), Padma Bhushan (distinguished service of higher order) and Padma Shri (distinguished service).
- The award seeks to recognize achievements in all fields of activities or disciplines where an element of public service is involved.
- The Padma Awards are conferred on the recommendations made by the Padma Awards Committee, which is constituted by the Prime Minister every year.
- The nomination process is open to the public. Even self-nomination can be made.
- Padma Awards, which were instituted in the year 1954, is announced every year on the occasion of Republic Day except for brief interruption(s) during the years 1978 and 1979 and 1993 to 1997.

### Related News - Bharat Ratna:

- Bharat Ratna is the highest civilian award of the country. It is awarded in recognition of exceptional service/performance of the highest order in any field of human endeavour.
- It is treated on a different footing from Padma Award. The recommendations for Bharat Ratna are made by the Prime Minister to the President of India.
- No formal recommendations for Bharat Ratna are necessary. The number of Bharat Ratna Awards is restricted to a maximum of three in a particular year.

# PERSONALITIES IN NEWS

## VEER NARAYAN SINGH

**In News:** The Shaheed Veer Narayan Singh Stadium in Raipur is all set to host its first ever international match when India take on New Zealand in the second ODI.



### More on the Topic:

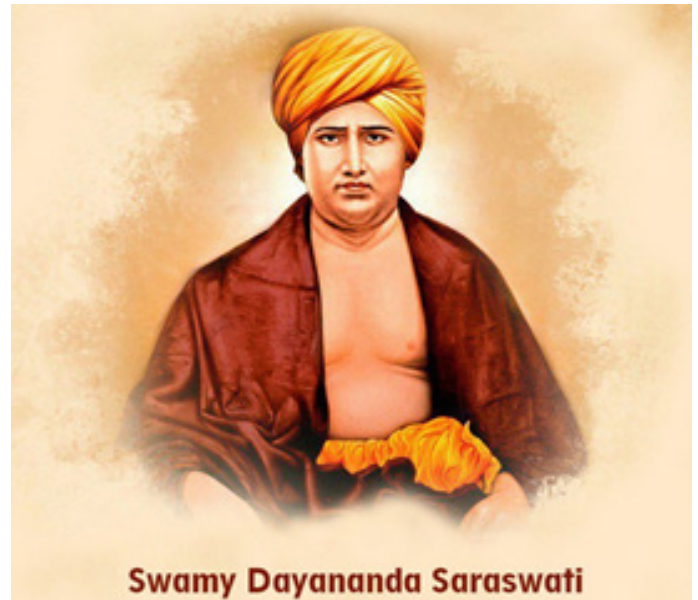
- Veer Narayan Singh was a landlord from Sonakhan, Chhattisgarh.
- He spearheaded the 1857 war of Indian independence in Chhattisgarh.
- He was hanged at Jaistambh Chowk of Raipur, Chhattisgarh.
- He is also known and considered as "The 1st Chhattisgarhi freedom fighter".

## DAYANANDA SARASWATI

**In News:** A year-long world-wide celebrations will be held to mark the 200th birth anniversary of social reformer and founder of Arya Samaj, Dayanand Saraswati.

### More on the Topic:

- Maharishi Dayanand Saraswati, born on 12th February, 1824, was a social reformer who founded Arya Samaj in 1875 to counter then prevalent social inequities.



- The Samaj's motto was "Krinvan to Vishvam Aryam," which translates to "Make this world honorable. Arya Samaj has played a key role in cultural and social awakening of the country by its emphasis on social reforms and education.
- He has worked against against idolatry, meaningless ritualism, and rules hampering women from reading the Vedas.
- He has established Anglo-Vedic schools to provide Indian students with both the knowledge of the Vedas and contemporary English education.

## Practice Questions



1) Which of the following statement/s are true?

1. High-Pressure High Temperature (HPHT) and Chemical Vapour Deposition (CVD) technologies are associated with Lab grown diamonds.
  2. Lab Grown diamonds can be processed in weeks time.
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

2) Which of the following statement/s are true?

1. Eutrophication is the process by which an entire body of water, or parts of it, becomes progressively enriched with minerals and nutrients.
  2. Main nutrients associated with eutrophication is nitrogen and phosphorus.
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2



3) Keeladi which is in news related to archeological excavation is situated at?

- (a) Kerala (b) Karnataka  
(c) Tamil Nadu (d) Andhra Pradesh

4) Thwaites Glacier is located at?

- (a) Antarctic (b) Arctic  
(c) Australia (d) Asia



5) Which of the following is not a neighbouring country of Syria?

- (a) Turkey (b) Jordan  
(c) Israel (d) Saudi Arabia

6) Vertiplane X3 Drone is associated with?

- (a) Defence Sector (b) Health Sector  
(c) Mining Sector (d) Environment Sector







- 7) Which of the following statement/s are true?
1. Pangolin is believed to be the world's most trafficked non-human mammal.
  2. There are eight species of pangolins.
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

8) Dickinsonia is sometimes seen in news is ?

- (a) An extinct genus of basal animal  
(b) An Earlier Dinosaurs specie  
(c) A specimen of Bactria from moon  
(d) A micro organism which could survive in international Space Station



9) Prakash Singh vs Union of India case is associated with?

- (a) Police Reforms (b) Sexual Harassment at Work Place  
(c) LGBTQ+ Rights (d) Governors Appointment

10) Which of the following statement/s are true?

1. Grishneshwar Jyotirlinga Temple is constructed using red stones in an interlocking pattern.
  2. The temple is an important pilgrimage site in the Shaiva tradition of Hinduism.
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2



## Mains Questions

1. How far do you think the steel recycling policy of India would help us achieve the target of moving into a circular economy?
2. India fared poorly in the recently released International IP Index. Elaborate on some of the reasons for such a poor performance. Suggest a few measures to improve India's IP regime.

1. c 2. c 3. c 4. a 5. d

6. b 7. c 8. a 9. a 10. c

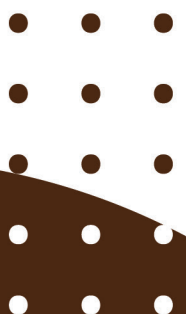


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