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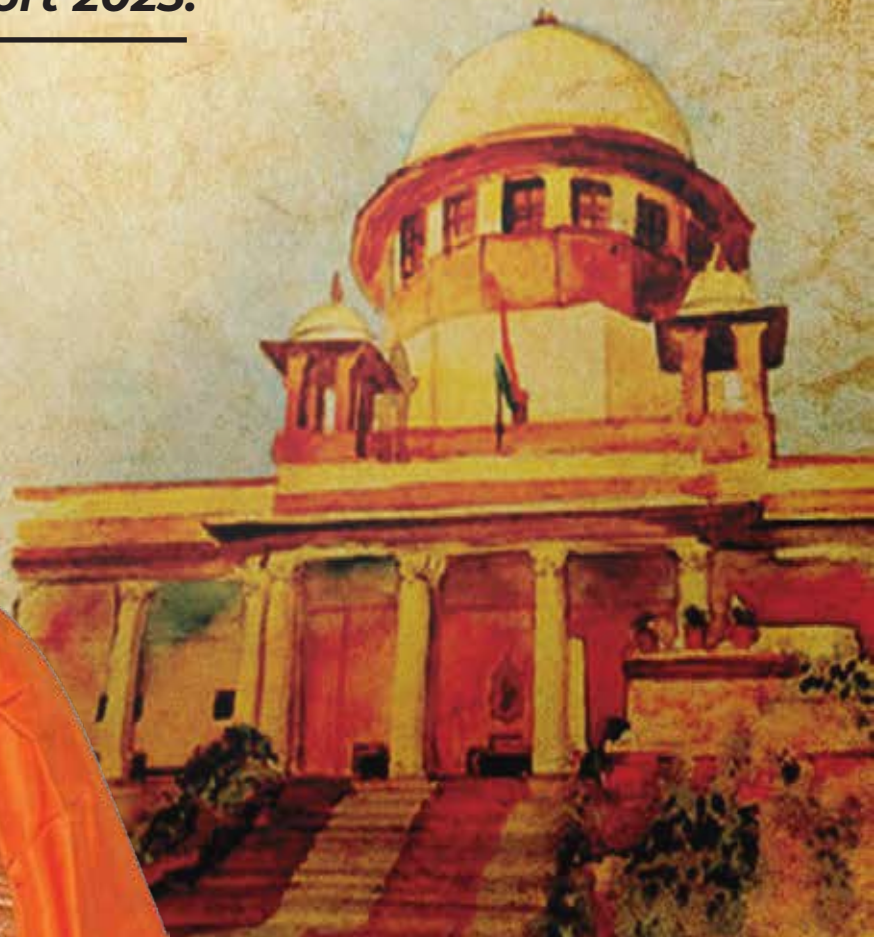
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## PRELIMS



### POLITY & GOVERNANCE



#### National Mission on Natural Farming (NMNF)

**Context:** Recently, the Government has formulated National Mission on Natural Farming (NMNF) as a separate and independent scheme to motivate farmers to **adopt chemical-free farming** and **enhance the reach of natural farming**.

**About National Mission on Natural Farming (NMNF):-**

- Formulated as a separate and independent scheme from 2023-24 by upscaling the **Bhartiya Prakritik Krishi Paddati (BPKP)**.
- The scheme will be implemented from 2023 to 2026.

**Benefits to farmers:-**

- **Incentive to farmers for one-time on-farm manure production infrastructure:-**
  - A financial assistance of Rs. 15000/- per ha @ Rs. 5000/- per ha/year for three years
- **Training of Farmers by Champion farmers and CRP**
- **Farmer Producer Organisations (FPO) formation for farmers practicing Natural Farming:**
  - 100 FPOs in the Gangetic belt
  - Another 400 FPOs across the country
- **Farmer Field School:-**
  - It will involve activities to create awareness.

**About Bhartiya Prakritik Krishi Paddati (BPKP):-**

- It is a **Centrally Sponsored Scheme (CSS)**.
- It is a sub-mission under the **Paramparagat Krishi Vikas Yojana (PKVY)**, which falls within the umbrella of the **National Mission on Sustainable Agriculture (NMSA)**.
- It focuses on **on-farm biomass recycling** with major stress on biomass mulching
  - Use of cow dung–urine formulations and
  - **Exclusion of all synthetic chemical inputs** either directly or indirectly.
- Under BPKP, **financial assistance of Rs 12200/ha for 3 years is provided** for cluster formation, capacity building and continuous handholding by trained personnel, certification and residue analysis with a vision of covering 12 lakh ha in 600 major blocks of 2000 hectares in different states.
- The scheme is compliant with **PGS-India certification under the PGS India programme**.
- 8 States opted: **Andhra Pradesh, Chhattisgarh, Kerala, Himachal Pradesh, Madhya Pradesh, Odisha, Tamil Nadu and Jharkhand**

**MUST READ:** [Natural Farming](#)

#### Mahila Samman Savings Certificate (MSSC) 2023

**Context:** Recently, Mahila Samman Savings Certificate (MSSC) 2023 has been notified.

**About Mahila Samman Savings Certificate (MSSC) 2023:-**

**IMAGE SOURCE:** [Mahila Samman Saving Certificate Apply Post Office and Bank – Sarkari Yojana – TheHowPedia](#)

- It is a **one-time small savings scheme for women** to commemorate celebrations of 75 years of Independence.
- It will be made available for a **two-year period up to March 2025**.



- It will be under **the Ministry of Women and Child Development.**
- The small saving certificate will have a **fixed interest rate of 7.5% for two years.**
- The deposit can be made in the name of a **woman or a girl child.**
- The **maximum deposit amount has been kept at ₹2 lakhs** and the scheme will have a **partial withdrawal** facility as well.

**Eligibility:-**

- Application for opening an account under the scheme can be made by a **woman for herself or by the guardian on behalf of a minor girl.**

**Deposit limit:-**

- **Any number of MSSC accounts can be opened** by a woman, or in the name of a minor girl by the guardian, subject to the **maximum limit of Rs 2 lakh.**

**Interest Rate:-7.5%** interest on deposits in an MSSC account.

**Maturity and Payment:-**The deposit shall **mature on completion of two years from the date of the**

**deposit.**

**Partial Withdrawal:-**

- An MSSC accountholder will be **allowed to withdraw a maximum of up to 40% of the eligible balance** once **after the expiry of one year from the date of opening of the account but before the maturity** of the account.

**MUST READ:** [SAMARTH initiative for women](#)

**Gig Workers**

**Context:** The Rajasthan Government is about to bring the Rajasthan Platform-based Gig Workers (Registration and Welfare) Bill, 2023, which has stringent provisions against errant aggregators, including barring them from operating in the State.

**About Gig Economy:**

- A gig economy is a **free market system** in which organisations **hire or contract workers for a short span of time.**
- Simply put, the positions are temporary to meet the company's requirements by having short-term engagements.
- Startups like **Ola, Uber, Zomato, and Swiggy** have established themselves as the main source of the gig economy in India.

**India and Gig Economy:**

- **In 2020, 7.7 million workers** were engaged in the gig economy.
- The gig workforce is expected to expand to **5 million workers by 2029-30.**
- At present about **47% of the gig work** is in medium skilled jobs, **about 22% in high skilled, and about 31% in low skilled jobs.**

**Ninth Schedule**

**Context:** Recently, Chhattisgarh Chief Minister wrote to Prime Minister seeking the inclusion of two amendment Bills in the **Ninth Schedule** of the Constitution.

**About Ninth Schedule:-**

- The Ninth Schedule contains a list of **central and state laws which cannot be challenged in courts.**
- They are **shielded from judicial review.**
- The Schedule became a part of the Constitution in **1951** when the document was amended for the first time.

- It was created by the **new Article 31B**, which along with **31A** was brought in by the government to protect laws related to agrarian reform and for abolishing the Zamindari system.

#### Article 31A

- It extends protection to **'classes' of laws**,

#### Article 31B

- It **shields specific laws** or enactments.
- Article 31B also **has a retrospective operation**
  - It means if laws are inserted in the Ninth Schedule after they are declared unconstitutional, they are considered to have been in the Schedule since their commencement, and thus valid.
  - Although Article 31B excludes judicial review, the apex court has said in the past that even laws under the Ninth Schedule would be **open to scrutiny if they violated fundamental rights or the basic structure of the Constitution**.

#### Supreme Court and I R Coelho v. State of Tamil Nadu (2007):

- It was held that every **law must be tested under Article 14, 19 and 21** if it **came into force after 24th April 1973**.
- In addition, the court upheld its previous rulings and declared that **any act can be challenged and is open to scrutiny by the judiciary if it is not in consonance with the basic structure of the constitution**.
- In addition, it was held that if the **constitutional validity of any law under the ninth schedule has been upheld before**, in future it **cannot be challenged again**.

#### Chhattisgarh legislative assembly bills:-

- Two amendment Bills that pave the way for a **76% quota for Scheduled Caste, Scheduled Tribes and Other Backward Classes** were passed unanimously by the State Assembly last December.
- This increased reservation **for OBCs to 27% from the existing 14%, while for the SC community to 13% from 12%** in the public employment and admissions.
- The **32% reservation for the ST category was kept unchanged**.
- Besides, a provision of **4% reservation was also provided to the Economic Weaker Section (EWS)**, taking the total extent of the reservation to 76%.
  - However, the **bills are pending with the Governor for assent**.

**MUST READ:** [Constitutional \(127th\) Amendment Bill, 2021](#)

#### Natural Justice

**Context:** A recent ruling of the Supreme Court has highlighted the issues of **Natural Justice** and Proportionality.

#### About Natural Justice:-

- **Natural justice** is also known as universal justice, substantial justice, or fair play in action.
- It is an essential concept of divine law, which is **based on the law of equity**.

#### Principles of Natural Justice:-

The main principles of natural justice are based on these two legal maxims:

- **Nemo judex in causa sua** – It means no one shall be a judge in his own case.
- **Audi alteram partem** – It means both parties/sides must be heard. No man should be condemned unheard.

#### Prerequisites of Natural Justice:-

- **Absence of bias, interest, or prejudice:** the judge should be neutral, impartial, and free from bias is the first and foremost prerequisite of natural justice.
- Types of Bias:



- **Pecuniary bias** – It concerns a financial interest in the subject matter.
- **Personal bias** – A judge may be a relative, friend, or associate of a party.
- **Official bias** – When a judge has a general interest in the subject matter.

#### Maneka Gandhi vs Union of India, 1978

- It is well established in the case that **even when there is no specific law or provision in a statute or rules** made for showing cause against the action made, which affects the right of any individual, the **duty to give a reasonable opportunity to be heard will be implied from nature**.
- The principles of natural justice are not only **binding on all courts but also on judicial bodies and quasi-judicial authorities**.

#### Exceptions to the Principle of Natural Justice:-

- Where a **statute or act expressly excludes** or a particular provision of it excludes the applicability of the rule.
- Where the **action is legislative in nature**.
- Where the **doctrine of necessity applies**.
  - **Doctrine of necessity applies:** If a **decision is to be made urgently** on shorter notice, then the rule may be excluded.
- Where **facts are admitted or undisputed**, then there is no need to call the party again for readmitting the admitted facts. The court can proceed further with admissions made.
- Where an **enquiry is confidential**, then there can be ignorance of the principles of natural justice.
- Where **preventive action is to be taken**.
  - For example **section 144 CrPC**, where immediate action is required, and no reasonable or due time can be given to the other party.
- Where **urgent action is necessary** for a government policy decision.

#### Principals of Proportionality:-

- The principle requires that **the decision or action must be proportionate to the objective** it seeks to achieve.
- It means employed to achieve the **objective must be no more than necessary to achieve it**, and the harm caused by the decision or action must not be excessive in relation to the benefit gained.
- The **validity of the claim of involvement of national security considerations must be assessed** on the test of whether there is material to conclude that the non-disclosure of information is in the interest of national security.
- Courts can assess the validity of public interest immunity claims based on the “structured proportionality standard”, said the SC.

**MUST READ:** [Right to climate justice](#)

#### Mercy petitions

**Context:** Recently, the Supreme Court told the authorities to not delay decisions on **mercy petitions** of death row convicts.

#### About Mercy petitions:-

- A mercy petition is **filed by a convict to change his/her punishment** (especially capital) **into a lesser form of punishment**.
- It is also called **clemency petition/plea or executive clemency**.
- It is the **convict's basic right to ask mercy from the Republican head of the State**.
  - In India, that is the [President](#).
- It can be exercised **after all the legal remedies were exhausted**.

- A petition can be filed with the President (under [Article 72 of the Indian Constitution](#)) or the governor (under [Article 161](#) of the Constitution).
- A convict under a death sentence is eligible to make the mercy petition.
- But it should be filed **within seven days**, after the dismissal of her/his appeal by the Supreme Court and intimation of the same to the convict by the Superintendent of the Police (SP).

#### The procedure of Mercy Petition:-

- A convict under the sentence of death is allowed to **file a mercy petition within a period of seven days after the date on which the Superintendent of Jail informs** him about the dismissal of the appeal or special leave to appeal by the Supreme Court.
- The petitions are to be presented **to the President of India**.
  - The President office **seeks cabinet advice**.
  - The appeal is **examined by the Ministry of Home Affairs** and the Ministry before giving recommendations to the President, **takes the view of the State concerned**.
- There is **no written procedure** to deal with mercy petition.
- President's pardon/rejection/delay is also **subjected to judicial review**.
- However, if a court finds that the process of the decision taken by the President under Article 72 was **not arbitrary or unreasonable**, the decision then cannot be interfered with.

**MUST READ:** [Death Penalty in India](#)

#### First Ever Census of Water Bodies in India

**Context:** Recently, the first-ever Census of Water Bodies in India took place.

**About First Ever Census on Water Bodies in India:-**

##### MAIN FINDINGS

**24,24,540**  
water bodies in India

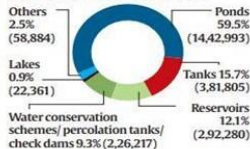
**7.47 lakh**  
West Bengal has largest number

**3.55 lakh**  
South 24-Parganas in West Bengal is the district with the most water bodies

##### MOST IN THE COUNTRY

Ponds, reservoirs	West Bengal
Tanks	Andhra Pradesh
Lakes	Tamil Nadu
Conservation Schemes	M'rashtira

##### TYPES OF WATER BODIES



##### 1 LAKH+ (BESIDES BENGAL)

Uttar Pradesh	2.45 lakh	Assam	1.72 lakh
Andhra Pradesh	1.90 lakh	Jharkhand	1.07 lakh
Odisha	1.81 lakh	Tamil Nadu	1.06 lakh

**IMAGE SOURCE:** [India's first water body census: How was it done, what does the report say | Explained News, The Indian Express](#)

- The first-ever census of water bodies across the nation was conducted by the **Ministry of Jal Shakti**.

- The census provides a **comprehensive inventory of India's water resources**, including natural and man-made water bodies like ponds,

tanks, lakes, and more, and collects data on the encroachment of [water bodies](#).

- The Census also highlighted **disparities between rural and urban areas** and varying levels of encroachment and revealed crucial insights into the country's water resources.
- The census was launched under the **centrally sponsored scheme**, "Irrigation Census" in convergence with the 6th Minor Irrigation Census in order to have a comprehensive national database of all [water bodies](#).
- The census also took into account **all types of uses of water bodies** like irrigation, industry, pisciculture, domestic/ drinking, recreation, religious, groundwater recharge etc.

#### Key Findings:-

- 24,24,540 water bodies have been enumerated in the country, out of which **97.1% are in rural areas and only 2.9% are in urban areas**.



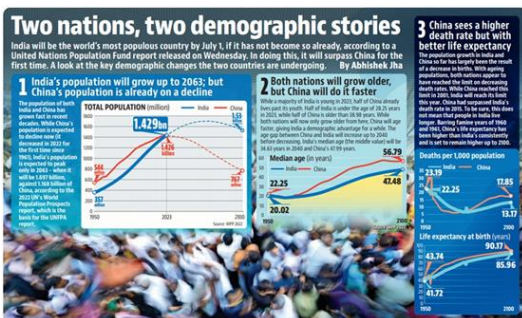
- **Top 5 States** in terms of the number of water bodies are **West Bengal, Uttar Pradesh, Andhra Pradesh, Odisha and Assam** which constitute around **63% of the total water bodies** in the country.
- **Top 5 States** in terms of the number of water bodies in urban areas are **West Bengal, Tamil Nadu, Kerala, Uttar Pradesh and Tripura**.
- The top 5 States in rural areas, are **West Bengal, Uttar Pradesh, Andhra Pradesh, Odisha and Assam**.
- **Top 5 States** wherein major use of water bodies is in irrigation are **Jharkhand, Andhra Pradesh, Telangana, West Bengal and Gujarat**.
- **78% of water bodies are man-made** water bodies whereas 22% are natural water bodies.
- 1.6% (38,496) water bodies out of all the enumerated water bodies are reported to have encroached out of which 95.4% are in rural areas and the remaining 4.6% in urban areas.
- The information on the **water spread area was reported** in respect of 23,37,638 water bodies.
- Out of these water bodies, **72.4% have a water spread area of fewer than 0.5 hectares**, 13.4% have a water spread area between 0.5-1 hectare, 11.1% have a water spread area between 1-5 hectares and the remaining 3.1% of water bodies have water spread area more than 5 hectares.

**MUST READ:** [Water Crisis in India](#)

## State of World Population (SOWP)

**Context:** The United Nations Population Fund (UNFPA) has recently released its report- State of World Population (SOWP).

**Key highlights of the report:**



**Source:** Hindustan Times

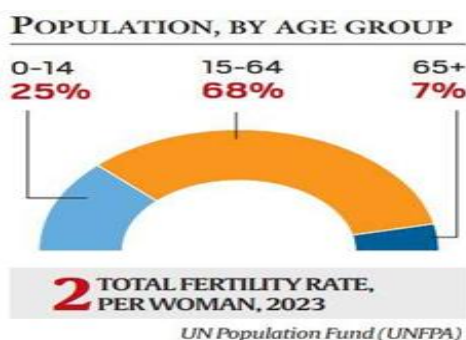
- The population of the world is **8,045 million**.
- The **largest share in population** has age between **15- 64 years (65%)**, followed by the 10-24 years (24%) and above 65 years of age (10 %).
- **China and India accounts for the largest populations** in Asia, with more than 1.4 billion

each in 2022.

- India is now the most populous country in the world, outstripping China's population.
- The rate of global population growth has fallen and is less than 1 % since 2020.

**India's demography:**

**Age group:**



**Source:** Indian Express

- **68% belongs to the 15-64 years and 26% belongs to the 10-24 years.**
- Result: India is **one of the youngest countries** in the world with **50% of its population below the age of 25**.
- The **fertility rate in India** has been **steadily dropping** and is **lower than 2.1 children per woman**.

- **Reason of decline:** use of contraceptive methods, spacing of pregnancies, access to health care, impetus to family planning, increasing wealth and education.
- **Life expectancy for men is 71 years, while it is lower for women at 74 years.**

#### Key projections:

- The global population could grow to around 8.5 billion in 2030, 9.7 billion in 2050 and 10.4 billion in 2100.
- Maximum increase till 2050 will be concentrated in: the **Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania.**
- If India's population continues to grow at the current pace, it would **double from the present value in the next 75 years.**

#### Outlook for population growth

- Latest projections suggest that the **rate of global population** growth has fallen, and has been at less than 1 per cent since 2020.
- This is largely due to declining fertility.
- Around two thirds of people live in a country or area with a total fertility rate at or below 2.1 children per woman (also called "replacement fertility" rate or "zero-growth fertility" rate).
- In 1950 the global fertility rate stood at 5.
- Already 60% of the world's population lives in a region where the fertility rate is below replacement level, up from 40% in 1990.

#### Migration as driver of growth:

- It is international migration that is now the driver of growth in many countries, with 281 million people living outside their country of birth in 2020.
- Migration has also occurred due to war, **famines, and other catastrophes.**
- South Asia clocks some of the highest emigration trends, with India seeing an estimated net outflow of 3.5 million between 2010 and 2021.
- **Pakistan has the highest net flow of migrants of 16.5 million** during the same period.

#### Birth rate:

- Despite the continuing decline in the **average number of births per woman**, the total annual number of births has remained stable at around 140 million since the late 1980s.
- It is due to the youthful age distribution of the global population.
- In 2021, 134 million babies were born worldwide.
- In the future, the number of new-borns is expected to slightly increase to reach 138 million annually between 2040 and 2045, despite the continuous decline in the average number of births per woman.
- In 2021, most births worldwide occurred in the two most populous regions—Asia and sub-Saharan Africa.

#### Life Expectancy:

- One of the reasons for population growth globally flagged by the UNFPA has been that of increasing life expectancy.
- **Fertility rates and mortality rates** have been dropping in various parts of the world with better access to health care and improving standards of living.
- Life expectancy among men now stands at **71 years while among women it stands at 76 years.**
- Globally, **life expectancy reached 72.8 years in 2019, an increase of almost 9 years since 1990.**



<b>Justice Ranganath Mishra Commission</b>	<p><b>Context:</b> Recently, the Supreme Court stated that the government may need to “re-check” report of the <b>Justice Ranganath Mishra Commission</b>.</p> <p><b>About Justice Ranganath Mishra Commission:-</b></p> <ul style="list-style-type: none"> <li>• Ranganath Misra Commission is also called <b>National Commission for Religious and Linguistic Minorities</b>.</li> <li>• It was constituted by the Government of India in 2004.</li> <li>• <b>Objective:</b> to look into various issues related to Linguistic and Religious minorities in India.</li> <li>• <b>Important recommendations:-</b> <ul style="list-style-type: none"> <li>◦ To permit Dalits who convert to Islam or Christianity to avail of reservation benefits under the <a href="#">Scheduled Caste reservation quota</a>.</li> </ul> </li> <li>• <b>Current status:-</b> <ul style="list-style-type: none"> <li>◦ Rejecting the Mishra report, the government had recently constituted a new Commission headed by a former Chief Justice of India K.G. Balakrishnan.</li> <li>◦ It is given <b>two years</b> to prepare a report on the question of granting SC status to “new persons who have historically belonged to the <a href="#">Scheduled Castes</a> but have converted to religions other than Hinduism, Buddhism and Sikhism”.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">National Commission for Minorities</a></p>
<b>Doctrine of promissory estoppel</b>	<p><b>Context:</b> Recently, Advocate Prashant Bhushan argued that instead of implementing the Agnipath scheme, the government should complete the old process and cited the <b>doctrine of promissory estoppel</b>.</p> <p><b>About Doctrine of promissory estoppel:-</b></p> <ul style="list-style-type: none"> <li>• The Doctrine of Promissory Estoppel works on the <b>principle of equity, fairness and moral conscience</b>.</li> <li>• The doctrine of Promissory Estoppel means <b>when an individual with an intention of forming a relationship which is lawful makes a clear promise to another individual and the latter individual acts on it, that promise becomes an obligation</b> for the individual who made the promise. <ul style="list-style-type: none"> <li>◦ Hence, then <b>going back from its words is not permissible</b>.</li> </ul> </li> <li>• The <a href="#">law commission</a> recommended suggestions to form a new section as <b>Section 25A in the Indian Contract Act</b> in the <b>108th report</b> for this doctrine.</li> <li>• <b>No provisions as such are there which ensures availability of relief under this doctrine.</b></li> <li>• At the same time, it <b>can be implemented on the basis of equity</b>, to defend the aggrieved party.</li> <li>• The doctrine of estoppel in India is a <b>rule of evidence included into Section 115 of <a href="#">The Indian Evidence Act, 1872</a></b>.</li> <li>• Promissory Estoppel’s application <b>can invalidate the constitutional provision provided under Article 299</b>, which talks about immunity granted against the personal accountability of an individual making the promise.</li> </ul> <p><b>MUST READ:</b> <a href="#">Doctrine of necessity</a></p>
<b>State Energy Efficiency Index (SEEI) 2021-22</b>	<p><b>Context:</b> Union Minister of Power and New &amp; Renewable Energy, released the report of the State Energy Efficiency Index (SEEI) 2021-22 recently.</p> <p><b>About State Energy Efficiency Index (SEEI) 2021-22:-</b></p>

- The [State Energy Efficiency Index \(SEEI\)](#) 2021-22 is developed by the [Bureau of Energy Efficiency \(BEE\)](#) in association with **Alliance for an Energy-Efficient Economy (AEEE)**.
- It consists of 50 indicators (common and programme-specific) spanning 7 sectors: buildings, industry, municipal services, transport, agriculture, DISCOMs, and cross-sector.
- It is a tool designed to track Energy Efficiency initiatives in the states and UTs.
- **It is released by the Ministry of Power.**
- There are four categories in the index i.e. Front Runner, Achiever, Contender and Aspirant.
- Front Runner category (>60 points) -it has 5 states: Andhra Pradesh, Karnataka, Kerala, Rajasthan and Telangana.
- Achiever Category (50-60 points): Assam, Haryana, Maharashtra, Punjab.

**Alliance for an Energy-Efficient Economy (AEEE):-**

- It was **formed in 2008** as a not-for-profit society.
- It is **one of the leading organisations in India** that works on **creating awareness about energy efficiency as a resource.**
- **USAID/ECO-III project partners**, International Resources Group, with support from Alliance to Save Energy provided strategic guidance and support to develop and implement AEEE's Vision and Mission.
- It supports **policy implementation and is an energy efficiency market enabler** with a not-for-profit motive.
- It **promotes data-driven and evidence-based energy efficiency policies** and research.
- **Reports:** State Energy Efficiency Index 2020, Cold Chain Energy Efficiency in India, and Enabling cold chain infrastructure development in India.

**MUST READ:** [Renewable Energy Transition](#)

**Section 5(4) of the Maternity Benefit Act**

Context: Recently, a bench led by CJI Chandrachud has agreed to hear the PIL challenging **Section 5(4) of the Maternity Benefit Act (provisions for adoptive mothers).**

**About Section 5(4) of the Maternity Benefit Act:-**

- The **2017 amendment** introduced **Section 5(4).**
- The **original 1961 Maternity Benefit Act did not have** these provisions for adoptive mothers.
- These provisions are for **maternity benefits for women who [adopt](#) or act as commissioning mothers.**
- **Adoptive mothers of children below three months** are entitled to **12 weeks of maternity leave.**
- A woman **adopting a child older than three months is not eligible** for maternity benefits.

**Maternity Benefit Act, 1961:-**

- It was passed in, 1961, to **regulate the employment of women in "certain establishments" for the period before and after childbirth.**
- It originally applied to factories, mines, plantations and extended **later in 1973 to government-owned establishments and establishments for exhibitions.**
- **Section 4** of the Act prohibited the employment of or work by women during the six weeks immediately following delivery or miscarriage.
- **Section 5** granted **paid maternity leave for up to 12 weeks** if the woman had worked for at least 160 days in the preceding 12 months.



	<ul style="list-style-type: none"> <li>Violations could result in <b>three months' punishment, with or without a fine.</b></li> </ul> <p><b>Key Changes in the 2017 Amendment:-</b></p> <ul style="list-style-type: none"> <li>It amended <b>Section 5</b> to <b>allow for 26 weeks of paid leave after childbirth for biological mothers.</b></li> <li>It <b>inserted Section 5(4)</b> to allow <b>adoptive or surrogate mothers</b> to have a 12-week maternity benefit period from the date the child is handed over.</li> <li>It <b>inserted Section 5(5)</b> to allow for <b>working from home</b> if mutually agreed upon after availing of maternity benefits.</li> <li>It <b>inserted Section 11</b> to mandate the availability of a creche facility for establishments with 50 or more employees, with four visits a day allowed for the mother and rest intervals provided.</li> <li>It does not apply to the unorganised sector, which has been a criticized aspect of the amendment.</li> </ul> <p><b>MUST READ:</b> <a href="#">Union Budget: Umbrella Schemes of Ministry of Women &amp; Child Development</a></p>
<b>Interoperable Criminal Justice System (ICJS)</b>	<p><b>Context:</b> Recently, the Home Ministry developed an online module for timely disposal of criminal cases called <b>Interoperable Criminal Justice System (ICJS).</b></p> <p><b>About Interoperable Criminal Justice System (ICJS):-</b></p> <ul style="list-style-type: none"> <li>Inter-Operable Criminal Justice System (ICJS) is a <b>national platform for enabling integration of the main IT system used for delivery of Criminal Justice.</b></li> <li>It operates in the country by <b>five pillars</b> namely:-                         <ul style="list-style-type: none"> <li>Police (Crime and Criminal Tracking and Network Systems),</li> <li>e-Forensics for Forensic Labs,</li> <li>e-Courts for Courts,</li> <li>e-Prosecution for Public Prosecutors</li> <li>e-Prisons for Prisons.</li> </ul> </li> <li>It is invested under the <b>CCTNS (Crime and Criminal Tracking Network and Systems) project</b> of the MHA (Ministry of Home Affairs).                         <ul style="list-style-type: none"> <li><b>ICJS enables a nationwide search</b> on police, prisons &amp; courts databases across all States/ UTs in the country.</li> <li>It also <b>provides for data Analytics for Forecasting/ Predictive Trends in Crimes</b> reported region-wise, category-wise, and basis other parameters for effective management &amp; control of crimes in future.</li> </ul> </li> <li>The <b>National Crime Records Bureau (NCRB)</b> will be responsible for the implementation of the project in association with <b>National Informatics Centre (NIC).</b></li> <li>The project will be implemented in collaboration with the <b>States and Union Territories.</b></li> <li><b>In Phase-I (2018-2022)</b> of the ICJS project, individual IT systems have been implemented and stabilized; also search of records have been enabled on these systems.</li> <li><b>Under Phase-II (2022-26),</b> the system is being built on the principle of 'one data one entry' whereby data is entered only once in one pillar and the same is then available in all other pillars without the need to re-enter the data in each pillar.</li> <li>The ministry also tracks investigations into sexual assault cases across the country, every two months through its analytics tool, the Investigation Tracking System for Sexual Offences.</li> <li>This system was <b>launched in February 2018.</b></li> </ul>

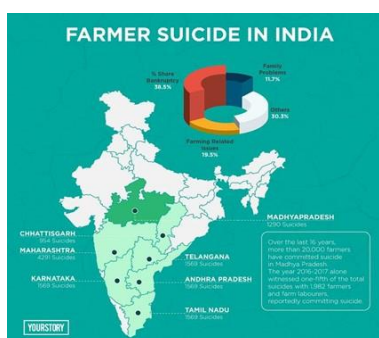
- The **compliance rate increased from 43% in 2018 to 60% in 2023.**
- The **Criminal Law (Amendment) Act, 2018** amended **Section 173** of the **Code of Criminal Procedure** to provide for completion of investigation in rape cases within two months.

**MUST READ:** [Forensic Labs & Criminal Justice System](#)

## Farm Distress Index 2022

**Context:** Recently, **Farm Distress Index 2022** reported farm distress in different parts of the country.

**About Farm Distress Index:-**



**IMAGE SOURCE:** [farmer-suicide-info.jpg \(800×729\)](#) ([yourstory.com](#))

- Farm Distress Index is developed by **Central Research Institute for Dryland Agriculture (CRIDA).**
- Farm Distress Index is an early warning system based on a 21-question survey that captures the financial, economic, and emotional health status of farmers in vulnerable areas.
- The index can sense imminent distress at least 3-4 months ahead of its actual occurrence.
- Significance: This index can be used by policymakers and the government to plan and design a timely and targeted method of supporting distressed farmers.
- Farm distress continues to be reported from different parts of the country.
- Left unattended, the distress can lead to suicides by farmers.

**CRIDA:-**

- It is an institute under the Indian Council of Agricultural Research.
- It was established in 1985.
- HQ: **Hyderabad**
- It is a constituent organisation of the **Indian Council of Agricultural Research (ICAR)**, an autonomous body of the Ministry of Agriculture, Government of India.
- It is part of the **National Bank for Agriculture and Rural Development (NABARD)** funded project on 'Farmers Distress and Pradhan Mantri Fasal Bima Yojna (PMFBY)'.

**MUST READ:** [Farm reforms](#)

## Nuclear liability law

**Context:** The issues regarding India's **nuclear liability law** continue to hold up the plan to build six nuclear power reactors in Maharashtra's Jaitapur.

**About Nuclear liability law:-**

The laws on civil nuclear liability **ensure that compensation is available to the victims for nuclear damage** caused by a nuclear incident or disaster and set out who will be liable for those damages.

- The international nuclear liability regime consists of multiple treaties and was strengthened after the **1986 Chernobyl nuclear accident** ([UPSC Prelims: Place in news-Chernobyl](#)).
- **Convention on Supplementary Compensation (CSC):** it is an umbrella convention adopted in 1997.
  - **Objective:** Establish a minimum national compensation amount.
  - **India was a signatory** to the CSC, Parliament ratified the convention in 2016.

- To keep in line with the international convention, India enacted the **Civil Liability for Nuclear Damage Act (CLNDA) in 2010**, to put in place a speedy compensation mechanism for victims of a nuclear accident. ([UPSC CSE: Understanding India's Nuclear Doctrine](#)).
  - The CLNDA **provides for strict and no-fault liability on the operator of the nuclear plant**, where it will be held liable for damage regardless of any fault on its part.
  - It **establishes legal liability for nuclear harm as well as rapid compensation for victims** of nuclear disasters.
  - It **specifies the experts who will assess claims** of nuclear injury, sanction compensation, and provide financial assurance.
  - It also specifies **the amount the operator will have to shell out in case of damage** caused by an accident and requires the operator to **cover liability through insurance or other financial security**.
  - The **operator's maximum liability under Section 6(2) of the Act is Rs. 1500 crore**.
  - In case the **damage claims exceed ₹1,500 crore**, the CLNDA **expects the government to step in**, in accordance with **Section 7(1)(a)** of the CLND Act.
    - However, it has limited the government liability amount to the rupee equivalent of 300 million Special Drawing Rights (SDRs) or about ₹2,100 to ₹2,300 crores.
  - It **specifies the limitations on the amount and time when an action for compensation** can be brought against the operator.
  - **Section 7 (2)** of the CLND Act provides that the **Central Government may establish a "Nuclear Liability Fund"** by charging such amount of levy from the operators, in such manner, as may be prescribed.
  - Any **violations** of the terms of the act **could result in fines**.
- India currently has **22 nuclear reactors** ([UPSC CSE: Understanding India's Nuclear Energy](#)).
- All the existing reactors are operated by the state-owned **Nuclear Power Corporation of India Limited (NPCIL)**.
  - Nuclear Power Corporation of India Limited (NPCIL) is a **Public Sector Enterprise**.
  - It is under the administrative control of the **Department of Atomic Energy (DAE), Government of India**.
  - The Company was registered as a **Public Limited Company under the Companies Act, 1956**.
  - Objective: operating atomic power plants and implementing atomic power projects for generation of electricity in pursuance of the schemes and programmes of the Government of India under the Atomic Energy Act, 1962.
  - NPCIL is responsible for **design, construction, commissioning and operation of nuclear power reactors**.

**MUST READ:** [Zaporizhzhia nuclear plant](#)

**CGTMSE (Credit Guarantee Fund Trust for Micro and Small Enterprises)**

**Context:** Recently, the Union Minister for MSME launched the **revamped CGTMSE Scheme**.

**About revamped CGTMSE Scheme:-**

- CGTMSE was **established in 2000**.



- It is jointly set up by the **Ministry of Micro, Small & Medium Enterprises (MSME)**, the Government of India and the **Small Industries Development Bank of India (SIDBI)**.
- **Objective:** to catalyse flow of institutional credit to Micro & Small Enterprises (MSEs). [\(UPSC CSE: Understanding Finance Related Problems of MSME Sector \)](#)
- CGTMSE extends a helping hand by **providing a guarantee to enable access credit** leading to setting up viable micro and small enterprises.
- It helps in **transforming them from job seekers to job providers** and meaningfully contributes to nation-building. [\(UPSC CSE: Empowering MSMEs digitally \)](#)
- CGTMSE has been instrumental in providing:
  - **Guarantee cover** to collateral and/or third-party guarantee free credit facilities.
- The **lender should cover the eligible credit facilities** as soon as they are sanctioned.
- **Guarantee will commence from the date of payment of guarantee fee** and shall run through the agreed tenure of the term credit in case of term loans / composite loans and **for a period of 5 years**.
  - The **working capital facilities alone are extended to borrowers**, or for such period as may be specified by the Guarantee Trust on this behalf.
- CGTMSE has created a new landmark by touching the **milestone figure of approving guarantees worth `1 lakh crore during FY 2022 – 23**.

**A revamped measure introduced to the scheme:-**

- CGTMSE has been provided with **an additional corpus support of ₹9,000 crore** in the **Union Budget for FY 2023-24** to revamp its Scheme to provide a guarantee for an additional ₹2 lakh crore to Micro & Small Enterprises. ( )
- Other modifications included a **reduction in guarantee fees for loans up to ₹1 crore by 50%** bringing the minimum guarantee fee to the level of 0.37% pa only.
- Another major change announced was **raising of ceiling for a guarantee from ₹2 crores to ₹ 5 crores** and **enhancing the threshold limit for claim settlement without initiation of legal action to ₹10 lakh**.

**MUST READ:** [MSME Sustainable \(ZED\) Certification Scheme](#)



## ECONOMY



### Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

**Context:** Recently, Britain agreed to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

**About the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP):-**



**IMAGE SOURCE:** [The Trade File – Cosmetics Alliance Canada](#)

- CPTPP is a **free trade agreement (FTA)** that was agreed upon in **2018** between **11 countries**.
  - These include **Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam**.
- It **does not have a single market for goods or services**, like the European Union.
- The CPTPP incorporates the provisions of the **Trans-Pacific Partnership (TPP) agreement**, with the **exception** of a number of provisions pertaining mainly to **intellectual property and investor-state dispute settlement**, whose application will be suspended once the CPTPP comes into force.
- **Trans-Pacific Partnership (TPP) agreement** :
  - It was originally concluded by **12 countries**.
  - These include **Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam**.
  - It was **signed in 2016**, by all 12 parties.
  - In **January 2017**, the **United States notified** TPP signatories of its intention to not ratify the TPP, effectively **withdrawing from the TPP**.

**MUST READ:** [Regional Comprehensive Economic Partnership \(RCEP\)](#)

### Application Supported by Blocked Amount (ASBA)

**Context:** Recently SEBI approved a framework for an **Application Supported by a Blocked Amount (ASBA)** like facility for trading in the secondary market.

**About Application Supported by Blocked Amount (ASBA):-**

- Application Supported by Blocked Amount, or ASBA, is a **SEBI-developed IPO (Initial Public Offering) application process**.
- It aims to **facilitate a smooth transition** in the market, the framework will be implemented in a phased manner.
- It is a process **providing authorization to block money** in a bank account to subscribe to an IPO issue.
- Applying through ASBA as an investor enables the **money to be deducted** from the bank account **only if your application is chosen for allotment**.
- This blocking is carried out by **Self-Certified Syndicate Banks (SCSBs)**.
  - **Self-Certified Syndicate Banks (SCSBs):** are SEBI-authorized banks that conform to the conditions laid by SEBI to accept the applications, verify and block the amount to the extent of what the application requires, upload the details to the web and stay updated with the process until the shares are allotted.

	<ul style="list-style-type: none"> <li>• <b>Eligibility:</b> The investor needs to be an <b>Indian resident to avail of ASBA.</b></li> <li>• If the money has been blocked in an interest-bearing ASBA account then the <b>amount will continue to earn interest</b> during the time it takes to get the allotment of the share.</li> <li>• The facility will be <b>optional</b> for investors and stock brokers.</li> </ul> <p><b>MUST READ:</b> <a href="#">SEBI</a></p>
<b>Farmer producer Organizations (FPO).</b>	<p><b>Context:</b> Recent reports show that big corporations with power over <b>farmer producer companies</b> are diluting their purpose.</p> <p><b>About Farmer producer Organizations:-</b></p> <ul style="list-style-type: none"> <li>• Farmer Producer Organisation (FPO) is a generic name, which refers to the farmer producers organization incorporated/ registered either under <b>Part IXA of Companies Act</b> or under <b>Co-operative Societies Act</b> of the concerned States.</li> <li>• The concept behind Farmer Producer Organizations is that <b>farmers, who are the producers of agricultural products, can form groups.</b></li> <li>• To facilitate this process, the <b>Small Farmers' Agribusiness Consortium (SFAC)</b> was mandated by the <b>Department of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India</b>, to support the State Governments in the formation of the <a href="#">Farmer Producer Organizations (FPOs)</a>.</li> </ul> <p><b>Benefits Emanating From FPO:-</b></p> <ul style="list-style-type: none"> <li>• FPOs can engage <a href="#">farmers</a> in <b>collective farming</b> and <b>address productivity issues</b> emanating from small farm sizes.</li> <li>• Provide <b>additional employment generation</b> due to the increased intensity of farming.</li> <li>• <b>Negotiating With Corporates:</b> FPO can help farmers compete with large corporate enterprises in bargaining, as it allows members to negotiate as a group and can help small farmers in both input and output markets.</li> <li>• <b>Economics of Aggregation:</b> The FPO can provide <b>low-cost and quality inputs</b> to member farmers.</li> <li>• <b>Social Impact:</b> Social capital will develop in the form of FPOs, as it may <b>lead to improved gender relations and decision-making of women farmers in FPOs.</b></li> </ul> <p><b>Formation and Promotion of 10,000 Farmer Producer Organisations :-</b></p> <ul style="list-style-type: none"> <li>• It was launched by the <b>Ministry of Agriculture and Farmers Welfare in 2020.</b></li> <li>• It is a <b>Central sector scheme</b>.</li> <li>• <b>Objective:</b> to provide <b>hand-holding support to FPCs</b> and to meet the <b>target of creating 10,000 FPOs by 2024.</b> More than 2200 FPOs produce clusters have been <b>allocated for the formation of FPOs in 2020-21.</b></li> <li>• Implementing Agencies (IAs) engaged <b>Cluster-Based Business Organizations (CBBOs)</b> to aggregate, register &amp; provide professional handholding support to each FPO <b>for a period of 5 years.</b> <ul style="list-style-type: none"> <li>◦ <b>CBBOs:</b> the platform for an end to end knowledge for all issues related to FPO promotion.</li> </ul> </li> <li>• <b>Financial Assistance under the scheme:</b> <ul style="list-style-type: none"> <li>◦ Up to Rs. 18.00 lakh per FPO <b>for a period of 3 years.</b></li> <li>◦ Provision were also made for matching <b>equity grant up to Rs. 2,000 per farmer member of FPO</b> with a limit of Rs. 15.00 lakh per FPO.</li> <li>◦ Provision of a <b>credit guarantee facility up to Rs. 2 crores</b> of project loan per FPO from the eligible lending institution to ensure institutional credit accessibility to FPOs.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">Doubling the Farmers' Income – a myth or reality</a></p>



## REITs and InvITs index

**Context:** Recently, NSE launched India's first-ever REITs and InvITs index.

**About REITs and InvITs index:-**

- The REITs and InvITs Indices **track the performance of publicly listed and traded REITs and InvITs** on the [NSE](#).
- The **base year for the indices is kept as '1 July 2019.'**
  - This is to be **reviewed and rebalanced every quarter.**

**Real Estate Investment Trusts (REIT):-**

- REIT is roughly **like a mutual fund that invests in real estate.**
- The basic deal on REITs is that when one owns a share of property, and an appropriate share of the income from it will come to them, after deducting an appropriate share of expenses.
- Essentially, **it's like a group of people pooling their money together and buying real estate** except that it's on a **large scale and is regulated.**
- REITs companies **own, operate, or finance income-generating [real estate](#).**
- Publicly traded like stocks, make them **highly liquid.**

**Infrastructure Investment Trusts (InvIT):-**

- InvITs can be treated as the **modified version of REITs designed to suit the specific circumstances of the infrastructure sector.**
- They are similar to REIT but **invest in infrastructure projects** such as roads or highways which take some time to generate steady cash flows.
- They are **set up as a trust and registered with [SEBI](#).**

**MUST READ: [FPI and InvITs](#)**

## Dabba trading

**Context:** Recently, the National Stock Exchange (NSE) issued a string of notices naming entities involved in '**dabba trading**'.

**About Dabba trading:-**

- Dabba (box) trading refers to **informal trading that takes place outside the purview of the [stock exchanges](#).**
- **Traders bet on stock price movements without incurring a real transaction to take physical ownership of a particular stock** as is done in an exchange.
- In simple words, **it is gambling centred around stock price movements.**
  - For example, an investor places a bet on a stock at a price point, say ₹1,000.
  - If the price point rose to ₹1,500, he/she would make a gain of ₹500.
  - However, if the price point falls to ₹900, the investor would have to pay the difference to the dabba broker.
  - Thus, it could be concluded that the broker's profit equates the investor's loss and vice-versa.
- The primary purpose of such trades is to **stay outside the purview of the regulatory mechanism.**
- The **transactions therefore are facilitated using cash** and the mechanism is operated using **unrecognised software terminals.**
  - It could **also be facilitated using informal or kaccha (rough) records, sauda (transaction) books, challans, DD receipts, cash receipts alongside bills/contract notes** as proof of trading.

**Issues:-**

- Since there are **no proper records of income or gain**, it helps **dabba traders escape taxation.**
- They would **not have to pay the Commodity Transaction Tax (CTT) or the Securities Transaction Tax (STT)** on their transactions.

- The use of cash also means that they are **outside the purview of the formal banking system**.
- It results in a **loss to the government exchequer**.
- In 'dabba trading', the primary risk entails the **possibility that the broker defaults** in paying the investor or the entity becomes insolvent or bankrupt.
- Being outside the regulatory purview implies that **investors are without formal provisions for investor protection, dispute resolution mechanisms and grievance redressal mechanisms** that are available within an exchange.
- Since all activities are facilitated using cash, and without any auditable records, it could potentially encourage the **growth of 'black money'** alongside **perpetuating a parallel economy**.
- This could potentially translate to risks entailing **money laundering and criminal activities**.

**MUST READ:** [Social Stock Exchange](#)

#### Mission50K-EV4ECO

**Context:** Recently, SIDBI launched a new financing solution for electric vehicle space under the scheme 'Mission 50K-EV4ECO'.

**About Mission 50K-EV4ECO:-**

- Objective: to promote the growth and development of the value chain of India's [electric vehicle](#) industry.
- It is expected to **promote EV adoption and strengthen associated infrastructure** in the country.
- The project **prioritizes the uptake of 2-wheeler, 3-wheeler, and 4-wheeler EVs** through direct and indirect lending.
- The objective of this scheme is **to provide access to affordable financing for electric vehicles** and to develop charging infrastructure, including [battery swapping](#).
- The scheme is the precursor to **the EVOLVE scheme** by SIDBI-World Bank.
- It provides better financing terms and other solutions to address the [issues faced in the EV](#) ecosystem in India.

**Small Industries Development Bank of India (SIDBI):-**

- SIDBI was set up in 1990, under an Act of the Indian Parliament.
- **Headquarters:** Lucknow, Uttar Pradesh, India
- **Chairman & Managing Director:** Shri Sivasubramanian Raman.
- It acts as the **Principal Financial Institution** for the **Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector** as well as for the coordination of functions of institutions engaged in similar activities.
- The Shares of SIDBI are held by the Government of India and twenty-two other institutions / public sector banks/insurance companies owned or controlled by the Central Government
- **MISSION:** To facilitate and strengthen credit flow to MSMEs and address both financial and developmental gaps in the MSME eco-system.
- **SIDBI is implementing the PSIG programme funded by UK Aid through Department for International Development (DFID), UK.**
- SIDBI has been implementing the **"Poorest States Inclusive Growth (PSIG) Program"**.
- It is funded by **UK Government** through the Department for International Development (DFID), UK since April 2012.
- The program aimed at **enhancing income and employment opportunities of the poor, especially women**, in the four poorest States of Bihar, MP, Odisha and

	<p>UP by enabling the target group to participate and benefit from wider economic opportunities and growth.</p> <p><b>MUST READ:</b> <a href="#">Deep-sea Mining for Building EV Batteries</a></p>
Markets in Crypto-Assets (MiCA) law	<p><b>Context:</b> Recently, the European Union, approved the world's first set of comprehensive rules 'the <b>Markets in Crypto-Assets (MiCA) law</b>' for cryptocurrency markets.</p> <p><b>About Markets in Crypto-Assets (MiCA) law:-</b></p> <ul style="list-style-type: none"> <li>• The Markets in Crypto-Assets (MiCA) law, will regulates cryptocurrencies for the first time in its entirety.</li> <li>• It is anticipated to <b>set new standards for regulation of <a href="#">cryptocurrencies</a> globally.</b></li> <li>• MiCA will impose <b>compliance on the issuers of crypto assets</b>, who are defined as the "legal person who offers to the public any type of crypto-assets".</li> <li>• It will <b>apply to crypto-asset service providers (CASPs)</b> providing one or more of these services the operation of a trading platform like Coinbase, custody, and administration of crypto assets on behalf of third parties (customers), the exchange of crypto assets for funds/other crypto-assets, the execution of orders for crypto assets, the placing of crypto assets, providing transfer services for crypto assets to third parties, providing advice on crypto assets and crypto-portfolio management.</li> </ul> <p><b>MUST READ:</b> <a href="#">Cryptocurrencies Regulation</a></p>
Limited Purpose Clearing Corporation (LPCC)	<p><b>Context:</b> Recently, SEBI released guidelines for <b>LPCC's Settlement Guarantee Fund</b>.</p> <p><b>About Limited Purpose Clearing Corporation (LPCC):-</b></p> <ul style="list-style-type: none"> <li>• LPCC is an entity established by <b>SEBI</b>.</li> <li>• It will undertake the activity of <b>clearing and settlement of <a href="#">repo rate</a> transactions.</b></li> <li>• The new framework <b>will come into force from May 1.</b></li> <li>• Under the framework, <b>an amount of 0.5 basis points</b> of the issuance value of debt securities per annum based on the maturity of debt securities <b>will be collected by the stock exchanges and placed in an escrow account</b> before the allotment of the debt securities. <ul style="list-style-type: none"> <li>◦ This <b>amount is applicable on a public issue or private placement</b> of debt securities.</li> </ul> </li> <li>• The stock exchanges would transfer the amounts so collected to the bank account of the <b>LPCC within one working day of the receipt of the amount</b> and inform the details of the same to the LPCC.</li> <li>• The <b>details of the amounts so collected would also be disclosed</b> by the stock exchanges <b>on their website.</b></li> <li>• LPCC would <b>provide an illustration of the calculation of the amounts to be contributed</b> by the eligible issuers.</li> <li>• <b>AMC Repo Clearing Limited (ARCL)</b> has been granted recognition as LPCC by SEBI.</li> </ul> <p><b>ARCL:-</b></p> <ul style="list-style-type: none"> <li>◦ It was incorporated in <b>April 2021.</b></li> <li>◦ It is recognized in principle by the <a href="#">Securities and Exchange Board of India (SEBI)</a> under <a href="#">Stock Exchanges</a> and Clearing Corporations (SECC) Regulations, 2018.</li> <li>◦ ARCL is a Central Counter Party (CCP) <b>offering clearing and settlement services</b> to all trades executed on NSE and BSE under triparty repo in corporate debt securities with robust risk management along with a guarantee mechanism.</li> </ul> <ul style="list-style-type: none"> <li>• <b>The mechanism will be used to settle:-</b> <ul style="list-style-type: none"> <li>◦ disputes between <b>clearing members</b></li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>○ contention between the <b>clearing members and their clients</b></li> <li>○ differences between the <b>LPCC and its vendors</b></li> <li>○ Disputes between <b>clearing members or its clients and the LPCC.</b></li> <li>○ The disputes arising between clearing members of the LPCC will be settled by <b>conciliation and/or by an arbitration panel</b> consisting of three clearing members, other than the clearing members who are party to the dispute.</li> <li>• The <b>decision of the arbitration panel would be final and binding</b> on the parties.</li> <li>• In case a clearing member or the LPCC is not satisfied then the disputes would be resolved under the procedure laid down in the <b>Payment and Settlement Systems Act, 2007.</b></li> </ul> <p><b>Significance:</b></p> <ul style="list-style-type: none"> <li>• A well-functioning <a href="#">repo market</a> contributes to the development of the debt securities market by way of boosting the liquidity of the underlying debt securities and allowing market participants to monetize their debt holdings without selling the underlying, thus meeting their temporary need for funds.</li> </ul> <p><b>MUST READ:</b> <a href="#">Long-Term</a></p>
<b>Automatic Exchange of Information (AEOI) framework</b>	<p><b>Context:</b> Recently, India pushed to widen the scope of the common reporting standard (CRS) in the existing OECD's <b>Automatic Exchange of Information (AEOI) framework.</b></p> <p><b>About the Automatic Exchange of Information (AEOI) framework:-</b></p> <ul style="list-style-type: none"> <li>• It provides for the <b>automatic exchange of a predefined set of information between tax authorities.</b></li> <li>• The AEOI Standard <b>requires the annual exchange of information</b> on financial accounts held by non-resident individuals and entities in a pre-defined format.</li> <li>• The information exchanged includes <b>details about the financial account and details about the account holder.</b></li> <li>• Under the AEOI framework, <b>signatory countries follow a CRS and obtain information from their financial institutions and automatically exchange that information</b> with other jurisdictions on an annual basis.</li> <li>• The AEOI Standard provides a powerful tool to help <b>deter and identify offshore tax evasion</b> through holding financial assets abroad.</li> <li>• Indian Scenario: <b>India currently has AEOI with 108 jurisdictions</b> for receiving financial information and with 79 jurisdictions for sending information automatically.</li> <li>• In August 2022, the OECD also approved the <b>Crypto-Asset Reporting Framework (CARF).</b></li> </ul> <p><b>About Crypto-Asset Reporting Framework (CARF):-</b></p> <ul style="list-style-type: none"> <li>• It provides for the <b>reporting of tax information on transactions in crypto assets</b> (<a href="#">UPSC Prelims: Understanding Cryptocurrency</a>) in a standardised manner, with a view to automatically exchanging such information.</li> <li>• The CARF <b>aims to ensure the collection and automated exchange</b> of information on crypto assets with jurisdictions of taxpayers' residences every year in a standardized manner.</li> <li>• The framework <b>defines crypto assets</b> as any assets that are held and transferred in a decentralized manner, without the involvement of traditional financial intermediaries. <ul style="list-style-type: none"> <li>○ These assets are issued in the form of <b>crypto derivatives, stablecoins, or certain non-fungible tokens.</b></li> <li>○ This definition <b>does not include entities that use cryptography only to keep records and does not have ownership rights.</b></li> </ul> </li> </ul>

- It also **does not include Central Bank Digital Currency**, which has separate reporting requirements.

- **Intermediaries and other service providers enabling the exchange and transfer of crypto-assets**([UPSC CSE: Crypto Asset Regulation](#) ) like brokers and ATM operators are included within the scope of this framework.
- CARF also **outlines the data that needs to be reported** and the due diligence to be conducted by crypto-asset users.
- The framework **mandates that the crypto asset firms must report to the country in which they operate.**
- They **must report about exchanges between relevant crypto assets and fiat currencies**, and the **exchanges between one or more types of crypto assets as well as other transfers of crypto**, including retail payment transactions.
- The framework **requires individual and entity customers and persons to identify themselves.**

**MUST READ:** [Cryptojacking](#)



## INTERNATIONAL RELATIONS

**UN Democracy Fund**

**Context:** Recently, the **UN Democracy Fund** extended support for NGOs funded by George Soros, who is on a watchlist in India.

**About the UN Democracy Fund:-**

- The UNDEF was established in **2005** with an **initial contribution of \$10 million each** from the [United States and India](#).
- **Background:** In 2005, India's then PM, Manmohan Singh, and US President George W. Bush announced the **US-India Global Democracy Initiative**, which included support for the UNDEF.
- It was created by UN Secretary-General Kofi A. Annan in 2005 as a **United Nations General Trust Fund** to support democratization efforts around the world.

**Objectives:** to support projects that strengthen the voice and participation of **civil society**, promote [human rights](#), and encourage the development of democratic institutions and processes.

**Funding:** It is funded entirely by **voluntary contributions from member states** and is governed by an advisory board composed of 16 members representing different regions of the world.

**Composition:-**

- The Advisory Board, constituted by the **Secretary-General**, includes the **eight largest Member State** contributors and six other states to reflect diverse geographical representation.
- India has been a member of the Board since the beginning.

**MUST READ:** [UN Fund for 'People's Economy' in Afghanistan](#)

**Good Friday Agreement**

**Context:** Recently, American President, Joe Biden visited Belfast to mark 25 years of **Good Friday Agreement**.

**About Good Friday Agreement:-**

- The Good Friday Agreement, also known as **the Belfast Agreement**.
- It is a historic peace agreement that **ended the sectarian violence in Northern Ireland**.
- It was **signed on April 10, 1998**.
- It was signed between factions of **Northern Ireland**, and **the governments of Britain and Ireland**.
- **Objective:** to end decades of violence in Northern Ireland among those who wished to remain with the [United Kingdom \(UK\)](#) and those who wanted to join Ireland.
- **The negotiators included** then-British Prime Minister Tony Blair, then-Irish Prime Minister Bertie Ahern, George Mitchell, a former Democratic senator who acted as the envoy of then-US President Bill Clinton, and eight parties from Northern Ireland.
- The aim of the agreement was to **establish a power-sharing government**.
- **Approval:-**
  - The Good Friday Agreement was put to a **referendum on May 22, 1998**.



	<ul style="list-style-type: none"> <li>It gained the approval of <b>94% of voters in Ireland</b> and <b>71% in Northern Ireland</b>.</li> </ul> <p><b>Current Statues of the agreement:-</b></p> <ul style="list-style-type: none"> <li>The Good Friday Agreement <b>continues to be in place</b>, but issues have emerged due to Brexit and the <a href="#">Northern Ireland Protocol</a>.</li> <li><b>Northern Ireland Protocol:</b> a plan agreed upon by the UK and the EU to check goods arriving in Northern Ireland from the rest of the UK to ensure they follow EU rules.</li> </ul> <p><b>MUST READ:</b> <a href="#">India and UK – Free Trade Agreement Negotiations</a></p>
Chicago Convention	<p><b>Context:</b> Recently, The Federal Aviation Administration (FAA) informed the DGCA that India meets the international standards for aviation safety oversight of the <b>Chicago Convention</b> and continues to retain FAA International Aviation Safety Assessment (IASA) Category 1 status.</p> <p><b>About Chicago Convention:-</b></p> <ul style="list-style-type: none"> <li>The Convention on International Civil Aviation, more commonly known as the '<b>Chicago Convention</b>' was drafted in <b>1944</b>.</li> <li>The convention <b>established the core principles permitting international transport by air</b>.</li> <li>It also led to the <b>creation of the specialized agency</b> which has overseen the convention ever since – the <b>International Civil Aviation Organization(ICAO)</b>.</li> <li>The convention <b>provides Nine freedoms of air</b>, but only the first five freedoms have been officially recognized by the International Civil Aviation Organisation (ICAO).</li> </ul> <p><b>International Civil Aviation Organisation (ICAO):-</b></p> <ul style="list-style-type: none"> <li>ICAO is a <a href="#">United Nations (UN)</a> specialized agency, established in 1944.</li> <li>It laid the foundation for the <b>standards and procedures for peaceful global air navigation</b>.</li> <li>The Convention on International Civil Aviation <b>was signed on 7th December 1944 in Chicago</b>.</li> <li><b>India is among its 193 members</b>.</li> <li>Headquarters: <b>Montreal, Canada</b></li> <li>It established the <b>core principles permitting international transport by air</b>, and also led to the creation of the ICAO.</li> <li>It's one of the objectives is to foster the planning and development of international air transport so as to <b>ensure the safe and orderly growth of international civil aviation</b> throughout the world.</li> </ul> <p><b>MUST READ:</b> <a href="#">UN High Seas Treaty</a></p>
Global Food Policy Report 2023	<p><b>Context:</b> Recently, the International Food Policy Research Institute (IFPRI) published Global Food Policy Report, 2023 which said that investing in early warning systems is essential to save lives, livelihoods and money.</p> <p><b>Key highlights of the report:</b></p> <ul style="list-style-type: none"> <li>The report called for a more proactive response to food system shocks with a focus on three key areas: <ul style="list-style-type: none"> <li>Crisis prediction and preparation</li> <li>Building resilience before and during crises</li> <li>Making crisis response supportive and inclusive of women, forced migrants and other vulnerable groups.</li> </ul> </li> <li>It advocated for <b>strengthening agrifood value chains</b> to support livelihoods and food security during crises.</li> </ul>

- It advised governments to maintain a **business environment that fosters flexibility, and technical and financial innovation.**
- In 2021, some **768 million people** across the world were undernourished, according to the **Food and Agriculture Organization's State of Food Security and Nutrition Report.**
  - This was well above the **572 million reported in 2014.**
- In **2022**, the food insecurity was **exacerbated by the Russia-Ukraine war** and related spikes in food and fertiliser prices.
- In fact, the **fertiliser prices rose by 199 per cent** between May 2020 and the end of 2022, stated the **World Economic Forum recently.**
  - As a result, there has been an increase in the number of people at risk due to **food insecurity, hunger, and malnutrition.**
- In **2022**, as many as 205 million people in 45 countries experienced crisis-level acute food insecurity or worse, nearly double the number in 2016, the IFPRI report highlighted.

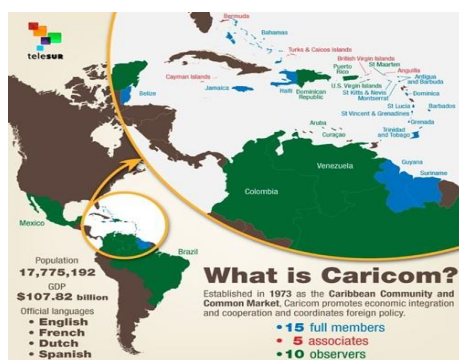
#### International Food Policy Research Institute (IFPRI):

- It was established in 1975 and provides research-based policy solutions to sustainably reduce poverty and end hunger and malnutrition in **developing countries.**
- Headquarters: **Washington, D.C**
- It is a research centre of CGIAR, which is the world's largest agricultural innovation network.
- Its research focuses on five strategic research areas:
  - Fostering Climate-Resilient and Sustainable Food Supply
  - Promoting Healthy Diets and Nutrition for AI
  - Building Inclusive and Efficient Markets, Trade Systems, and Food Industry
  - Transforming Agricultural and Rural Economies
  - Strengthening Institutions and Governance

#### Caribbean Community and common market (CARICOM)

**Context:** Recently, External Affairs Minister S Jaishankar, co-chaired the 4th India-CARICOM ministerial meeting with his Jamaican counterpart.

#### About CARICOM:-



**IMAGE SOURCE:** [What is Caricom? | Multimedia | teleSUR English](#)

- The Caribbean Community and common market (CARICOM or CC) is an intergovernmental organisation that is a **political and economic union** of 15 member states (14 nation-states and one dependency) throughout the **Americas and the Atlantic Ocean.**
- It was established in **1973.**
- CARICOM is the oldest surviving integration movement in the developing world.
- **Objective:** promote economic integration and cooperation among its members, to ensure that the benefits of integration are equitably shared, and to coordinate foreign policy.
- CARICOM has **15 members** including **Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad & Tobago.**

- The **Chairmanship** of the Community is rotated every six months among the member countries.
- The CARICOM **Single Market and Economy** are intended to benefit the people of the region by providing more and better opportunities to produce and sell goods and services and to attract investment.

**India-CARICOM :-**

- **Prime Minister of India had a meeting** with 14 leaders of the CARICOM group of countries on the sidelines of the United Nations General Assembly in New York **in 2019**.
  - The meeting deliberated on the steadily intensifying and deepening relations
  - India provided immediate financial assistance of **USD 1 million** to recover from the destruction caused by Hurricane Dorian in the region and the worst-hit island of the Bahamas.
  - India announced a **USD 14 million grant for community development projects** in the CARICOM and another 150 million Line of Credit for solar, renewable energy climate-change-related projects.
- The Government of India funded the US\$ 1.166 million information technology and communication infrastructure, computer software and community studio at the **CARICOM Secretariat in 2005-2006**.
- India's External Affairs Minister S Jaishankar co-chaired the **4th India-CARICOM ministerial meeting** and discussed a range of issues, including **trade**, climate change and **counterterrorism**.

**MUST READ:** [Regional Comprehensive Economic Partnership \(RCEP\)](#)



## HISTORY AND ART &amp; CULTURE

Babu Jagjivan Ram

**Context:** Recently, the 116th birth anniversary of Babu Jagjivan Ram was celebrated.**About Babu Jagjivan Ram:-**

- He was a **national leader, a freedom fighter, a social justice crusader**, a champion of the depressed classes, and an outstanding Parliamentarian.
- In **1925**, Jagjivan Ram met scholar **Pandit Madan Mohan Malaviya** and was greatly inspired by him.
- On Malaviya's invitation, he joined the **Banaras Hindu University**.
- He organized a number of **Ravidas Sammelans** and celebrated **Guru Ravidas Jayanti** in different areas of Calcutta (Kolkata).
- In **1931**, he became a member of the **Indian National Congress (Congress Party)**.
- He was instrumental in the foundation of the **All India Depressed Classes League**.
  - **All India Depressed Classes League:** an organisation dedicated to attaining equality for untouchables, in 1934-35.
- He was a champion of social equality and **equal rights for the Depressed Classes**.
- In 1935, he proposed at a session of the **Hindu Mahasabha** that drinking water wells and temples be open to untouchables.
- In 1935, Babuji also appeared before the **Hammond Commission** at Ranchi and demanded, for the first time, voting rights for the Dalits.
- He was **jailed twice in the early 1940s** for his political activities associated with the Quit India movement against British rule.
- When Jawaharlal Nehru formed the provisional government, Jagjivan Ram became its **youngest minister**.
- After independence he held the **labour portfolio** until 1952.
- He served in Nehru's cabinet in the posts of **minister for communications** (1952–56), **transport and railways** (1956–62), and **transport and communications** (1962–63).
- He served as minister for **food and agriculture** (1967–70).
- In 1970 he was made **minister of defence**.
- He later served as the **Deputy Prime Minister of India** (1977–79).
- Jagjivan Ram was a **member of the Parliament uninterrupted from 1936 to 1986** (40 years) and this is a world record.
- He also holds another **record for being the longest-serving cabinet minister** in India (30 years).
- His memorial at his cremation place is named **Samta Sthal (Place of Equality)**.

**MUST READ:** [Mahatma Gandhi](#)

Kaushambi Mahotsav-2023

**Context:** Recently, the Union Home Minister inaugurated the **Kaushambi Mahotsav-2023** and paid tribute to **Durga Bhabhi**.**About Kaushambi Mahotsav-2023:-**

- Kaushambi Mahotsav-2023 is a **sports festival**.
- It is organized by the **Member of Parliament**.
- These Khel Mahotsavs give **platforms to young players** to showcase their talent
- About 16000 youths online applied to participate in the '**Sansad Khelkood Spardha**'
  - **Sansad Khelkood Spardha:** started by the Members of Parliament.



### About Durga Bhabhi:-

- **Durga Devi was a freedom fighter from Kaushambi.**
- She was fondly called '**Durga Bhabhi**'.
- She **was married to Bhagwati Charan Vohra.**
- She had spent her savings ₹5,000 given by her husband on revolutionary works and in support of Indian revolutionaries fighting against British imperialism.
- She was a woman revolutionary and spy.
- She gave **shelter to Bhagat Singh, Sukhdev and Rajguru** after the assassination of Assistant Superintendent of Police John Saunders and later rescued them out of Lahore by agreeing to introduce herself as Bhagat Singh's wife to save him from the British police.
- She met several Bengali revolutionaries and even **learned bomb-making.**
- She was an active member of the **Naujawan Bharat Sabha.**
- On 8 October 1930, she **fired on a British sergeant and his wife** near the police station in South Bombay's Lamington Road, before escaping.
  - The shooting was **to avenge the death sentence awarded to Bhagat Singh, Sukhdev and Rajguru.**
- She was finally arrested in September 1932.
- In 1935, she moved to Ghaziabad and **started teaching in a school.**
- Later, she opened a **school in Lucknow for poor children.**
  - **Pandit Jawaharlal Nehru** even visited the school once,

**MUST READ:** [SVAMITVA Scheme](#) and [PM SVANidhi scheme](#)

### Bidri Crafts

**Context:** Recently, Karnataka's veteran **Bidri Crafts** artist, Shah Rasheed Ahmed Quadri personally thanked the Prime Minister after being conferred the Padma Shri.

### About Bidri Crafts:-

4. Zar bidri or Zar nabin

When a Bidri ware is made in the form of a bidri or nabin, it is called Zar bidri or Zar nabin. It is a small, round, shallow vessel, usually made of brass or copper, and is decorated with intricate designs in silver or gold. It is used for storing water or oil, and is also used as a decorative object.



Zar bidri or Zar nabin

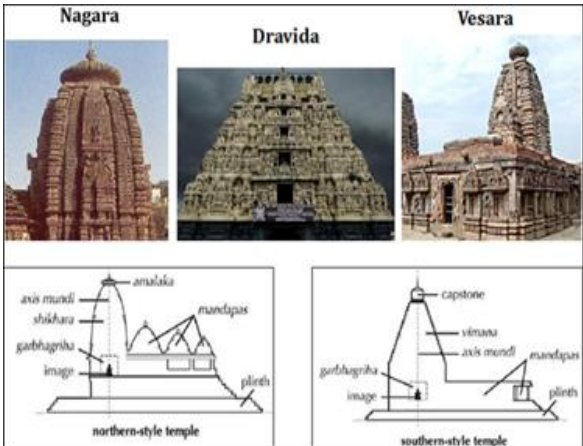
Bidri ware is a traditional form of handicraft that originated in Bidar, Karnataka. It involves the crafting of metal wares using a unique technique that incorporates intricate designs and motifs, which are often inspired by nature, Islamic art, and Persian calligraphy. It also includes common motifs including flowers, leaves, and geometric patterns. Many pieces also feature verses from the Quran or other Islamic texts. Bidri ware has received several awards and recognition for its craftsmanship and cultural significance. In 2006, it was awarded the Geographical Indication status by the Indian government, which recognizes its unique origin and traditional crafting techniques. Bidriware has also been recognized by UNESCO as an Intangible Cultural Heritage of Humanity.



Decorative design

**IMAGE SOURCE:** [Bidri Art Research Work on Behance](#)

- Bidri ware is a **traditional form of handicraft** that originated in **Bidar, Karnataka.**
- It involves the **crafting of metal wares** using a unique technique that incorporates.
- It is known for its **intricate designs and motifs**, which are often inspired by **nature, Islamic art, and Persian calligraphy.**
- It also includes common motifs including **flowers, leaves, and geometric patterns.**
- Many pieces also feature verses from the **Quran or other Islamic texts.**
- Bidri ware has received **several awards and recognition** for its craftsmanship and cultural significance.
- In **2006**, it was awarded the **Geographical Indication** status by the Indian government, which recognizes its unique origin and traditional crafting techniques.
- Bidriware has also been **recognized by UNESCO as an Intangible Cultural Heritage of Humanity.**

<p><b>Hakki Pikkis</b></p>	<p><b>MUST READ:</b> <a href="#">Etikoppaka Wooden Toy Craft</a></p> <p><b>Context:</b> Members of the Hakki Pikki tribal community from Karnataka are stuck in violence-hit Sudan.</p> <p><b>About Hakki Pikkis:</b></p> <ul style="list-style-type: none"> <li>Hakki in Kannada means ‘bird’ and Pikki means ‘catchers’.</li> <li>They are a <b>semi-nomadic tribe</b>, traditionally of bird catchers and hunters.</li> <li>They are divided into four clans, called <b>Gujaratia, Panwar, Kaliwala, and Mewaras</b>.</li> <li>There was a hierarchy among the clans, with the <b>Gujaratia at the top and the Mewaras at the bottom</b>.</li> <li>They move in groups from place to place in search of livelihood.</li> <li>Hakki Pikki people are believed to hail <b>originally from the bordering districts of Gujarat and Rajasthan</b>.</li> <li>They arrived in <b>Karnataka via Andhra Pradesh</b>, as they still remember a place called “Jalapally” near Hyderabad as their ancestral home, where their forefathers lived for a considerable period.</li> <li>They are now spread across south India.</li> <li>Their <b>population in Karnataka is 11,892</b>, and they live majorly in <b>Davangere, Mysuru, Kolar, Hassan, and Shimoga districts</b>.</li> </ul>
<p><b>Thirunelly temple</b></p>	<p><b>Context:</b> Recently, the Indian National Trust for Art and Cultural Heritage (INTACH) has urged the government to conserve the <b>Thirunelly temple</b>.</p> <p><b>About Thirunelly temple:-</b></p> <div data-bbox="339 1059 924 1503">  </div> <p><b>IMAGE SOURCE:</b> <a href="#">temple architecture types – Bing images</a></p> <ul style="list-style-type: none"> <li>The Thirunelly Maha Vishnu temple is an iconic temple in <b>Wayanad, Kerala near Brahmagiri hills</b>.</li> <li>It is also known as “<b>Sahyamala Kshetram</b>” and “<b>Kashi of the South</b>”.</li> </ul> <ul style="list-style-type: none"> <li>Thirunelly <a href="#">Temple</a> embodies <b>classical, traditional Kerala architecture</b>.</li> <li>A famous pilgrim centre, this temple, which is <b>dedicated to Lord Vishnu</b>.</li> <li>It is considered an <b>important pilgrimage centre for Hindus</b>.</li> <li>It is located at the <b>confluence of three rivers – Papanasini</b>, the holy river, which is believed to have the power to wash away sins, <b>Kudamurutti, and Koothappuzha</b>.</li> <li>The <a href="#">temple</a> has a unique circular structure made of granite stones, which is <b>believed to have been constructed by Lord Brahma himself</b>. <ul style="list-style-type: none"> <li>The shrine is shielded with <b>30 granite columns</b> and the ground is paved with <b>huge square pieces of granite</b>.</li> </ul> </li> <li>It has beautiful architecture and features <b>intricate carvings, mural paintings, and sculptures</b>.</li> <li>Thirunelli Temple is the <b>only temple in the world where the devotees can perform all the rituals related to one’s life, starting from birth to death and life after death</b>.</li> </ul>

	<ul style="list-style-type: none"> <li>On the western side of the temple is the <b>cave temple Gunnika, dedicated to Lord Shiva.</b></li> </ul> <p><b>MUST READ:</b> <a href="#">Srisailem Temple</a></p>
<b>Tughlaqabad Fort</b>	<p><b>Context:</b> Recently, the Delhi HC asked the ASI to remove encroachments around the <b>Tughlaqabad Fort.</b></p> <p><b>About Tughlaqabad Fort:-</b></p> <ul style="list-style-type: none"> <li>The Tughlaqabad Fort in Delhi which is in complete ruins now, was built by <b>Ghiyasuddin Tughlaq.</b> <ul style="list-style-type: none"> <li><b>Ghiyasuddin Tughlaq:</b> The first Sultan of the Tughlaq Dynasty in <b>1321.</b></li> </ul> </li> <li><b>Curse of the Tomb:</b> The legend has it that Ghiyasuddin Tughlaq wanted a powerful fortress which could stand up to a Mongol assault. Hence, soon after he ascended the throne, he began to work on the township and made it mandatory for all the workers of Delhi to work on the fort.</li> <li>The fortified city was built in four years on the rocky terrain, as a <b>defence mechanism.</b></li> <li>It is in <b>two parts, the citadel and palaces</b> along the southern walls forming one unit and the city to the north the other.</li> <li>Across the main entrance from the south is <b>Ghiyathu'd-Din's tomb is located.</b></li> <li>It is faced with <a href="#">red sandstone</a> <b>relieved by marble</b>, and with batter on the exterior.</li> <li>It is enclosed within high walls forming an <b>irregular pentagon.</b></li> <li>Ghiyathu'd-Din's successor, <b>Muhammad Tughluq (1325-51), added the small fortress of 'Adilabad'</b> on the hill south of Tughluqabad, with which it shares the main characteristics of construction.</li> </ul> <p><b>MUST READ:</b> <a href="#">Raigad fort</a></p>
<b>Uttaramerur inscription</b>	<p><b>Context:</b> Recently, Prime Minister Narendra Modi referred to the <b>Uttaramerur inscription</b> in Kanchipuram, Tamil Nadu, while discussing India's democratic history.</p> <p><b>About Uttaramerur inscription:-</b></p> <p><b>IMAGE SOURCE:</b> <a href="#">What are the less known facts about Tamil Nadu? – Quora</a></p> <ul style="list-style-type: none"> <li>The Uttaramerur inscription, dated around 920 A.D. in the reign of <b>Parantaka Chola</b> [907-955 A.D.].</li> </ul> <div data-bbox="497 1417 1228 1852" data-label="Image"> </div> <ul style="list-style-type: none"> <li><b>Uttaramerur:</b> it is situated in the <b>Kancheepuram district</b>, about 90 km from Chennai.</li> <li>The <b>Pallava king Nandivarman II</b> established it around 750 A.D.</li> <li>The Uttaramerur inscription testifies to the historical fact that nearly 1,100 years ago, a <b>village had an elaborate and highly refined electoral system and even a written constitution</b> prescribing the mode of elections.</li> </ul>

	<ul style="list-style-type: none"> <li>The details of this system of elective village <b>democracy</b> are inscribed on the walls of the village assembly (grama sabha mandapa), a rectangular structure made of granite slabs.</li> <li>The inscription gives astonishing details about the constitution of wards, the qualification of candidates standing for elections, the <b>disqualification</b> norms, the mode of <b>election</b>, the constitution of committees with elected members, the functions of those committees, the power to remove the wrongdoer, etc.</li> <li>The villagers even <b>had the right to recall the elected representatives</b> if they failed in their duty.</li> <li>In fact, inscriptions on temple walls in several parts of Tamil Nadu refer to village assemblies.</li> </ul> <p><b>MUST READ:</b> <a href="#">Sittanavasal Jain Heritage Site</a></p>
Ramakrishna Mission	<p><b>Context:</b> Recently, the Prime Minister praised the <b>Ramakrishna Mission</b> for its philanthropic activities.</p> <p><b>About Ramakrishna Mission:-</b></p> <ul style="list-style-type: none"> <li>The Ramakrishna Mission was established in <b>1897</b> by <a href="#">Swami Vivekananda</a>.</li> </ul> <p><b>Swami Vivekananda:-</b></p> <ul style="list-style-type: none"> <li>He was the chief disciple of <b>Ramakrishna Paramahansa</b>. <ul style="list-style-type: none"> <li><b>Ramakrishna Paramahansa</b> is regarded as one of the greatest spiritual leaders of India. <ul style="list-style-type: none"> <li>He was the devotee of <b>Goddess Kali</b> and lived and worshipped at the <b>Dakshineswar temple</b>.</li> </ul> </li> </ul> </li> <li>His message of spiritualism contributed remarkably towards strengthening not only <b>Hindu religion</b> and <b>society</b> but also <b>Indian nationalism</b>.</li> <li>He believed in the fundamental <b>unity of all religions</b>.</li> <li>The first Math was established at <b>Baranagar</b>.</li> <li>In 1899, another 'math' was started at <b>Belur</b>, which became the central 'math'. <ul style="list-style-type: none"> <li>It looks after the organization and working of all 'maths' spread all over India and even outside it. It is also the <b>educational centre of the saints</b> of the Ramakrishna Mission.</li> </ul> </li> </ul> <p><b>Contributions of Ramakrishna Mission:-</b></p> <ul style="list-style-type: none"> <li>The mission worked to <b>help the poor, improve the conditions of women, fight against untouchability and superstition</b> and overhaul the <b>education system</b>.</li> <li>It stressed the <b>supremacy of the Hindu religion and culture</b>.</li> <li>It believed in the <b>unity and equality of all religions</b>.</li> <li>Economically, he was <b>in favour of agro-based small-scale industries</b>.</li> <li>It contributed to Indian Nationalism and the awakening of the countrymen.</li> <li>It led to the development of <b>moral and physical strength and Unity</b> based on common spiritual ideas.</li> <li>It awakened Indian youth to rise and work to <b>eradicate hunger and ignorance among the masses</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">Dayanand Saraswati</a></p>
Teja Singh Sutantar	<p><b>Context:</b> Recently, Punjab CM unveiled the statue of <b>Teja Singh Sutantar</b>.</p> <p><b>About Teja Singh Sutantar:-</b></p> <ul style="list-style-type: none"> <li>Teja Singh Sutantar was a former MP and <b>revolutionary leader</b> at Nihalgarh village in Sangrur district, Punjab.</li> <li>Following the Jallianwala Bagh massacre in 1919, he joined the <b>Akali Dal</b> to participate in the movement to liberate gurdwaras from degenerate mahants.</li> </ul>



- However, in September 1921, he **formed his own squad called the Sutantar Jatha**, which successfully liberated a gurdwara in a village called Teja in the Gurdaspur district from the mahants.

#### Contributions:-

- In early 1923, Teja Singh **went to Kabul as a [Sikh missionary](#)**.
- There he came in contact with a few leaders of the **Ghadar Party**.
  - **The Ghadar Movement:** it was an early 20<sup>th</sup>-century international political movement founded by expatriate Indians to overthrow British rule in India.
- In 1925, he **joined the Turkish military academy** under the pseudonym Azad Beg.
- He **saved the life of Dr Saifuddin Kitchlew**, the hero of Jallianwala Bagh, Kitchlew always referred to Sutantar as a 'Khuda' who saved his life,".
- He **contributed revolutionary articles to the party journal, the Kirti**, frequently writing about issues that plagued peasants.
- He edited **Lal Jhanda**, a monthly magazine in Urdu, and Lal Savera, a Punjabi weekly and contributed to various newspapers.
- He **saved hundreds of Muslims from [communal riots](#)** during the Partition.
- **Post-independence:** Being a prominent **leader of the Kisan Sabha**, led a number of peasant agitations against the government and landlords.
- He **formed his Lal (Red) Party** with the Kirti group of the Punjab Communist Party as its nucleus
- He was a revolutionary leader who **led the PEPSU Muzara movement**.
  - **PEPSU Muzara movement:-**
    - it started in the 1930s and went on till 1952 against the Biswedari system.
    - It was by landless peasants (muqarnas) in PEPSU (**Patiala and East Punjab States Union**).
    - It was **to obtain ownership rights of the land** they had been tilling for generations.

**MUST READ:** [Lala Lajpat Rai](#)

#### Mahad Satyagraha

**Context:** Recently, Mahad Satyagraha started by Ambedkar and the foundation event of the Dalit movement were recalled.

#### About Mahad Satyagraha :-

- Mahad Satyagraha was **first collective protest of untouchables under the leadership of [Dr. Bhim Rao Ambedkar](#)**.
- Every year, **March 20<sup>th</sup>** is observed as **[Social Empowerment](#) day in India** to commemorate the Mahad Satyagraha.

#### Background:-

- The **untouchables were not allowed to use water from Mahad tank**.
- **In 1926, Municipal Board of Mahad, Maharashtra** passed orders to throw **open the famous tank of Mahad city to all communities**.
- **High caste Hindus opposed this order** of Municipal Board.
- In response, **Ambedkar organised a conference** to support the decision of Municipal Board.
- Ambedkar, in his presidential address, **stressed the necessity of rooting out ideas of highness or lowness** and inculcating self-elevation through self-help, self-respect and self-knowledge.

	<ul style="list-style-type: none"> <li>• <b>A Satyagraha Conference</b> was organised at Mahad in 1925 which demanded that Hindu society should be organised on the basis of equality and absence of <a href="#">casteism</a>.</li> <li>• It was also resolved to <b>burn <a href="#">Manusmriti</a></b>, as according to Ambedkar, it perpetuated the social, economic, religious and political slavery of the untouchables.</li> </ul> <p><b>MUST READ: <a href="#">B R Ambedkar and Women Empowerment</a></b></p>
Ambedkar circuit	<p><b>Context:</b> Recently, Indian government launched <b>Ambedkar circuit</b> tourist train.</p> <p><b>About Ambedkar circuit:-</b></p> <ul style="list-style-type: none"> <li>• The Ambedkar Circuit was proposed in <b>2016</b>.</li> <li>• It covers Five Key Sites or The “Panchateerths ”as follow:- <ul style="list-style-type: none"> <li>○ Mhow: His Birthplace</li> <li>○ Nagpur: Where he studied</li> <li>○ London: Where he resided and studied</li> <li>○ Delhi: Where he breathed his last</li> <li>○ Mumbai: Where he was cremated</li> </ul> </li> </ul> <p><b>Other sites of relevance:-</b></p> <ul style="list-style-type: none"> <li>• <b>Raigarh, Maharashtra:-</b> <ul style="list-style-type: none"> <li>○ Dr. Ambedkar led the Mahad Satyagraha, one of the greatest incidents of expression of freedom for Dalits in 1927, the Mahad Satyagraha.</li> </ul> </li> <li>• <b>Pune, Maharashtra:</b> <ul style="list-style-type: none"> <li>○ Where he held the <b>first negotiations with <a href="#">Mahatma Gandhi</a></b> in Yerwada jail</li> <li>○ The result was the <b>Poona Pact</b> signed by <a href="#">Dr. Ambedkar</a> on behalf of the depressed classes and by <a href="#">Madan Mohan Malviya</a> on behalf of upper caste Hindus.</li> </ul> </li> <li>• <b>Kolhapur, Maharashtra:</b> <ul style="list-style-type: none"> <li>○ In March 1920, another legendary social reformer, Chatrapati Shahuji Maharaj, declared Dr. Ambedkar as the true leader of the oppressed classes in India.</li> </ul> </li> <li>• <b>Sri Lanka:</b> Where he <b>attended a Buddhist conclave</b> that is said to have influenced him to convert to Buddhism.</li> </ul> <p><b>MUST READ: <a href="#">Dr B R Ambedkar’s views on moral democracy</a></b></p>
Kamakhya Temple Corridor	<p><b>Context:</b> The government in Assam is planning to construct a corridor at the Kamakhya Temple in Guwahati on the lines of the Kashi-Vishwanath Temple Corridor in Varanasi.</p> <p><b>About Kamakhya Temple:</b></p> <ul style="list-style-type: none"> <li>• Located on Nilachal Hill in Guwahati, Assam</li> <li>• Considered one of the oldest and sacred places of worship.</li> <li>• Millions of pilgrims and tourists visit the temple every year, especially during the Ambubachi Mela held in June every year. <ul style="list-style-type: none"> <li>○ Ambubachi Mela, is a four-day fair to mark the <b>annual menstruation of the goddess</b></li> <li>○ One of 51 shaktipeeths or seat of Shakti followers, each representing a body part of Sati, Lord Shiva’s companion. The temple’s sanctum sanctorum houses the yoni — <b>female genital — symbolised by a rock</b>.</li> <li>○ Temple priests said the ritualistic fair celebrating the goddess’ period is one of the reasons why the taboo associated with menstruation is less in Assam compared to other parts of India.</li> </ul> </li> </ul>

- The attainment of womanhood of girls in Assam is celebrated with a ritual called '**Tuloni Biya**', meaning small wedding.
- A centrepiece of **Tantrik Shaktism cult** in India
- **Nilachala Style of Architecture:** It had been modelled out of a combination of two different styles, namely, the **traditional nagara or North Indian and saracenic or Mughal**.
- The main temple is surrounded by individual temples dedicated to the ten Mahavidyas: Kali, Tara, Sodashi, Bhuvaneshwari, Bhairavi, Chhinnamasta, Dhumavati, Bagalamukhi, Matangi and Kamalatmika.



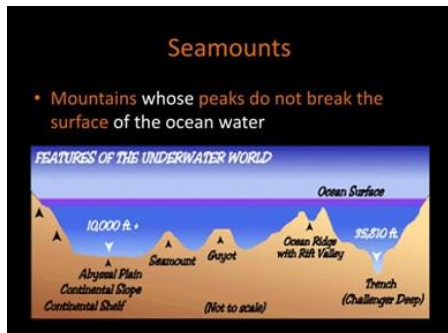
## GEOGRAPHY



### Seamounts

**Context:** Recently, scientists have reported finding 19,325 new **seamounts**.

**About Seamounts:-**



**IMAGE SOURCE:** [PPT – Features of the Ocean Floor PowerPoint Presentation, free download – ID:2365741 \(slideserve.com\)](#)

- A seamount is an **underwater mountain**.
- They are **formed through volcanic activity**.
- They are **hotspots for marine life**.
- Like volcanoes on land, seamounts can be **active, extinct or dormant volcanoes**.
- Most seamounts are formed near **mid-ocean ridges**, where the earth's tectonic plates are moving apart, allowing molten rock to rise to the seafloor.
  - The planet's two most-studied mid-ocean ridges are the **Mid-Atlantic Ridge and the East Pacific Rise**.
  - Some seamounts have also been found **near intraplate hotspots** and oceanic island chains with a volcanic and seismic activity called island arcs.
  - **Intraplate hotspots:** regions of heavy volcanic activity within a plate
- Because seamounts are formed when the molten rock comes up from below the tectonic plates, they **provide information about the mantle's composition and about how tectonic plates evolve**. ([UPSC PRELIMS: Understanding PLATE TECTONICS](#))
- They are good places for life because they **can cause localised ocean upwelling**. ([UPSC MAINS: UPWELLING AND DOWNWELLING](#))
  - **Upwelling:** the process by which nutrient-rich water from deep within the ocean moves up to the surface.
- A **2011 census** had already mapped 24,000 seamounts across the world's oceans.
- Since the 2011 seamount survey, altimetry has improved as:-
  - European Space Agency launched the **CryoSat-2 and Envisat**, and
  - NASA and the French space agency jointly launched the **Jason-1 geodetic missions**.
- **SARAL**, a **satellite that India and France developed together for oceanographic studies**, made a significant contribution by further reducing radar noise and enabling the expansion of the seamount catalogue. ([UPSC PRELIMS: Deep-Sea Mining](#))

**MUST READ:** [Mission Samudrayan](#)

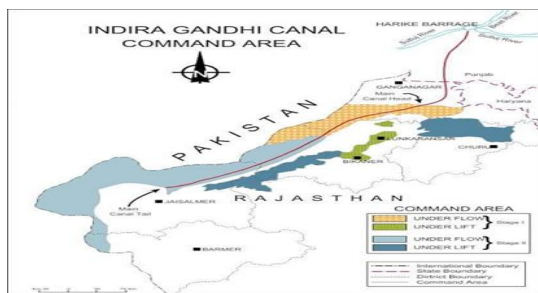
### Indira Gandhi Canal

**Context:** Recently, reports have suggested that the closure of the Indira Gandhi Canal for repairs may impact Rajasthan's drinking water, and irrigation needs.

**About Indira Gandhi Canal:-**

**IMAGE SOURCE:** [https://nwa.mah.nic.in/sdmc/irrigation/04\\_projects.htm](https://nwa.mah.nic.in/sdmc/irrigation/04_projects.htm)





- Indira Gandhi canal is the **longest in India**
- It was constructed from **1952 to 2010**.
- It was **originally known as the Rajasthan canal**.
- It was renamed in **1984 as Indira Gandhi canal**.
- The origin of this canal is from the **Harike barrage** in Punjab.

- It is **built on Sutlej and Beas rivers**.

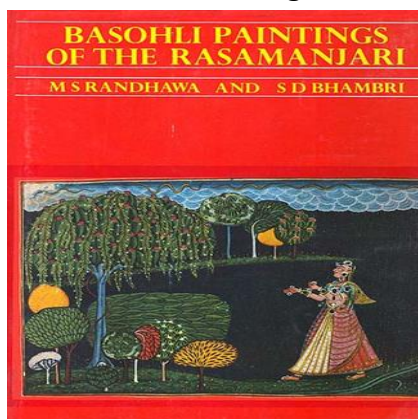
## Nagri Dubraj Rice

**Context:** Recently, Chhattisgarh's Nagri Dubraj rice variety, Basohli Painting of Jammu, Banarasi Paan, and Langda mango were accorded the geographical indication tag.

**About Nagri Dubraj Rice:-**

- It is known as the **Basmati of Chhattisgarh** because of its fragrance.
- It is produced by a women's self-help group "**Maa Durga Swasahayata Samuh**".
- The grain finds reference in **Valmiki Ramayana**.
- It is an **indigenous variety** and has **small grains, is very soft to eat after cooking**.

**About Basohli Painting:-**



**IMAGE SOURCE:** [Basohli Paintings of the Rasamanjari | Exotic India Art](#)

- Basohli painting belongs to the **Kathua district** of Jammu.
- It belongs to the **Pahari School of Paintings**.
- It has a unique style of **miniature paintings** that have a **fusion of mythology and traditional folk art**.
- The **characteristic features** of these paintings were the **use of bright and bold colours like red, yellow, and blue in the borders, as well as for the generally flat background**.

- The other distinguishing part was the **facial features- a prominent nose and lotus-shaped eyes**.
- The **female figures can be categorised into three types** according to their attire.

**About Banarasi Paan:-**

- It is **made in Banaras, UP**.
- It is known for its **delicious taste**.
- It is made using **special ingredients** in a unique way.
- It is an **exotic combination of areca nuts, catechu (kattha) of fresh betel leaf, tobacco, and slaked lime**.
- Other ingredients like **rose petals (gulkand), silver foil (Parekh) etc.** are added to it.

**About Langda mango:-**

- Langra aam is believed to have **originated in Banaras (now Varanasi)**.
- It **maintains its green colour** after it **gets ripe**, while other mangoes change into yellow-reddish colour.
- This pulpy fruit is cultivated in mid-season in states including **Uttar Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Orissa, Punjab, West Bengal and Rajasthan**

**About GI Tag:-**

- It is used for **products which have specific geographical origins** or have **qualities that can be attributed specifically to the region**.
- The GI tags are issued as per the **Geographical Indications of Goods (Registration and Protection) Act, of 1999**.
- It is a part of the **intellectual property rights** that comes under the **Paris Convention for the Protection of Industrial Property**.
- This tag is valid for a **period of 10 years** following which it can be renewed.

**MUST READ:** [GI Tag for Mithila Makhana](#)

#### Earth4All Initiative

**Context:** Recently published **Earth4All Initiative** predicted the world's human population.

**About Earth4All Initiative:-**

- Earth4All is a **collective initiative of leading economic thinkers, scientists, and advocates**.
- It is convened by **The Club of Rome, the Potsdam Institute for Climate Impact Research, the Stockholm Resilience Centre and the Norwegian Business School**.
- It is guided by a **Transformational Economics Commission**, made up of economic thinkers from across the globe to explore new economic thinking and test the model outcomes.
- Its global campaign aims to make the Earth4All vision a reality, **advocating for governments to adopt policies that will enable resilient and healthy societies**.

**Findings of the Report:-**

- The researchers advance two scenarios:
  - **Too Little, Too Late:** predicts that if economic development continues as it has in the last five decades, the **world's population would peak at 8.6 billion in 2050, and decline to 7 billion by 2100**.
  - **The Giant Leap:** the researchers conclude that the **population will peak at 8.5 billion by 2040 but then rapidly decline** to around 6 billion by 2100.
- This will be due to our investments in poverty alleviation, gender equity, education and health, ameliorating inequality, and food and energy security.
- The Earth4All report contradicted the **U.N. 'World Populations Prospects 2022' report**, which predicted that the global population **would steadily rise to 10.4 billion** in 2080 and then stabilise around that number in 2100.

**Indian Scenario:-**

- As of 2022, **more than half the world's population lives in Asia**.
  - **China and India** are the two most populous countries.
- According to the **United Nations Population Fund (UNFPA)**, while India's population growth is stabilising, it is still growing at 0.7% Steps taken by India for Stabilising Population
- **Mission Parivar Vikas Compensation scheme for sterilization acceptors:** Under the scheme, MoHFW provides compensation for loss of wages to the beneficiary.
- **Clinical Outreach Teams (COT) Scheme:** for providing **Family planning services** through mobile teams
- **Scheme for Home delivery of contraceptives by ASHAs** at the doorstep of beneficiaries.
- **Family Planning Logistic Management and Information System (FP-LMIS):** A dedicated software to ensure **smooth forecasting, procurement and distribution of family planning** **National Family Planning Indemnity Scheme (NFPIS)** under which clients are insured in the eventualities of death, complication and failure following sterilization.

- Ensuring **quality of care in Family Planning** services by establishing **Quality Assurance Committees** in all states and districts.

**MUST READ:** [World Population Prospects](#)

## Taiwan strait

**Context:** Recently, China conducted a military drill in the **Taiwan Strait**.

**About Taiwan Strait:-**



**IMAGE SOURCE:** [cover-taiwan \(cover man. be\)](#)

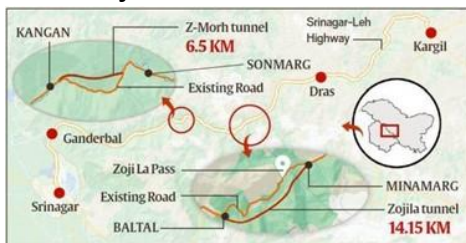
- The Taiwan Strait is a 180 km wide **strait** separating **Taiwan and mainland China**.
- It is also known as the **Formosa Strait**.
  - Strait:** a narrow piece of the sea that joins two larger seas
- The strait is currently **part of the South China Sea** and connects to the **East China Sea to the north**.
- The **entire strait** is on Asia's continental shelf.
- Historically both the People's Republic of China (PRC) and Taiwan espoused a **One-China Policy**.
  - One-China Policy:** that considered the strait part of the exclusive economic zone of a single "China".

**MUST READ:** [China- Taiwan Tussle](#)

## Zojila tunnel

**Context:** Recently, Union Road Transport and Highways Minister inspected the under-construction **Zojila tunnel**.

**About Zojila tunnel:-**



**IMAGE SOURCE:** [Why the Zojila tunnel promises to revolutionise connectivity to Ladakh – Kashmir.Report](#)

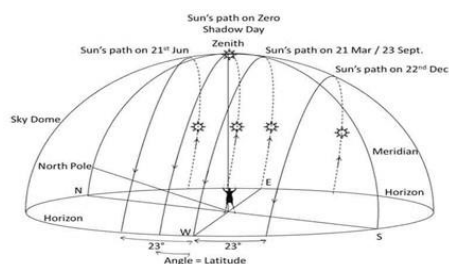
- The tunnel will provide **all-weather connectivity** between **Srinagar Valley** and **Leh** on **NH-1**.
- It will bring about an **all-around economic and socio-cultural integration** of [Jammu and Kashmir](#).
- It takes 3.5 hours to travel between Srinagar and Ladakh currently.
- The tunnel **will reduce the travel time** to 15 minutes.
- The 14.15-km tunnel will be **Asia's longest bi-directional tunnel**.

**MUST READ:** [Zojila tunnel work](#)

## Zero Shadow Day

**Context:** Recently, Bengaluru saw **Zero Shadow Day**.

**About Zero Shadow Day:-**



**IMAGE SOURCE:** [YOUTH TREND](#)

- 'Zero Shadow Day' is an astronomical event that **occurs twice a year** on **specific dates** in **some parts of the world**.
- It is a phenomenon that **occurs when the Sun is directly overhead**.
- The shadows of vertical objects such as poles, trees, and buildings disappear completely for a brief period of time during this.
- There are **two zero shadow days every year** in **May and July/August**, observed in places that lie between the **tropic of Cancer** and the **tropic of Capricorn**.
  - One fall during the **Uttarayan** (when the [Sun](#) moves northwards).

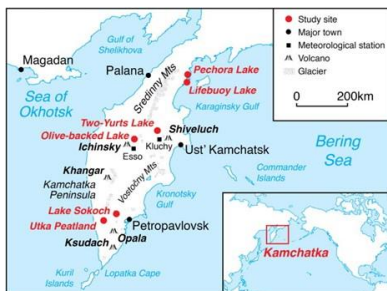
- The other is during **Dakshinayan** (when the Sun moves southwards).
- It **lasts for a small part of a second**, but the effect can be seen for a minute to a minute-and-a-half.
- Ramanujan explained that the Sun's location moves from 23.5°N to 23.5°S of Earth's equator and back.
  - All places **whose latitude equals the angle between the Sun's location and the equator** on that day experience zero shadow day, with the shadow beneath an object at local noon.

**MUST READ:** [Aditya-L1 Mission](#)

## Kamchatka Peninsula

**Context:** Russia's most active volcano 'The Shiveluch [volcano](#)' in Russia's **Kamchatka Peninsula** erupted recently.

**About Kamchatka Peninsula:-**



**IMAGE SOURCE:** [Location of the Kamchatka Peninsula showing the main volcanoes and... | Download Scientific Diagram \(researchgate.net\)](#)

- The Kamchatka Peninsula is a 1,250-kilometre-long peninsula in the **Russian Far East**.
- The **Pacific Ocean** and the **Sea of Okhotsk** make up the peninsula's eastern and western coastlines, respectively.
- Immediately offshore along the Pacific coast of the peninsula runs the 10,500-metre-deep **Kuril-Kamchatka Trench**.
- The Kamchatka Peninsula, the Commander Islands, and Karaginsky Island constitute **the Kamchatka Krai of the Russian Federation**.
- The vast majority of the 322,079 inhabitants are ethnic Russians, although about 13,000 are **Koryaks** (2014).
- The Kamchatka peninsula contains the volcanoes of Kamchatka, a [UNESCO World Heritage Site](#).
- The **highest peak** is the highest active volcano in Eurasia, **Klyuchevskaya Sopka (4750 m)**.
- The higher parts of Kamchatka are glaciated with an area of about 900 km<sup>2</sup> covered by 446 glaciers (Solomina et al., 2007).

**MUST READ:** [National Disaster Management Authority \(NDMA\)](#) and [India – Russia Relations](#)

## Einstein's theory of gravity

**Context:** Recently, a new detailed map of dark matter has agreed **with Einstein's theory of gravity**.

**About Einstein's theory of gravity:-**

- [Albert Einstein](#) published his full theory of general relativity in **1915**.
- As per this theory, **no motion can exceed the speed of light**.
- In general relativity (GR), **concentrations of mass and energy curve the structure of spacetime**, affecting the motion of anything passing near including light.
- Physicists made many exotic predictions using general relativity.

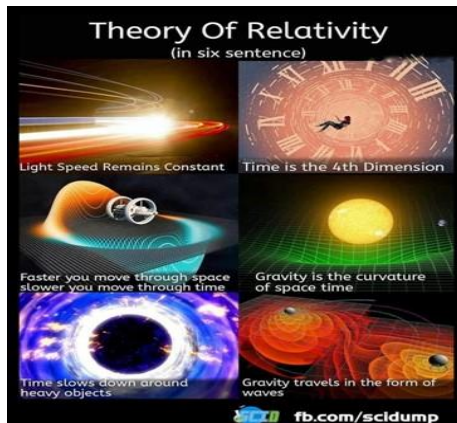
**Significance of the theory:-**

**IMAGE SOURCE:** [Space – SciDump](#)

- The theory explained the **anomalous orbit of Mercury**.
- In 1919 when **Arthur Eddington** and his colleagues **measured the influence of the Sun's gravity on light from stars during a total solar eclipse**.



- The bending of light around the [Sun](#) is small, but researchers realized the effect would be much larger for galaxies, to the point where gravity would form images of more distant objects.
  - The phenomenon now called **gravitational lensing**.
- The theory predicted the **existence of [black holes](#)**
  - **Black holes:** objects with gravity so intense that nothing getting too close can escape again, not even light.



- General relativity **showed that gravitation has a speed, which is the same as the speed of light**. Catastrophic events like **collisions between black holes or neutron stars produce gravitational waves**. Researchers finally detected these waves in 2015 using the **Laser Interferometer Gravitational Observatory (LIGO)**
  - Laser Interferometer Gravitational Observatory (LIGO): a sensitive laboratory that took decades to develop.

**MUST READ:** [Dark matter](#)

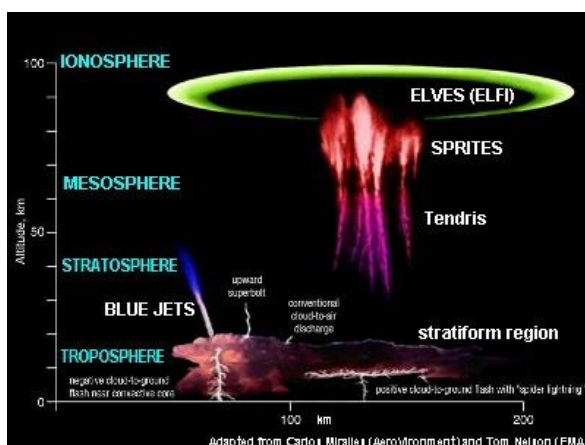
**Emission of light and very low-frequency perturbations due to electromagnetic pulse sources ( ELVE)**

**Context:** Recently, a shot of the luminous halo called emission of light and very low-frequency perturbations due to electromagnetic pulse sources, or ELVE was reported in Italy.

**About the Emission of light and very low-frequency perturbations due to electromagnetic pulse sources( ELVE):-**

**IMAGE SOURCES:** [SkySentinel](#)

- ELVES (Emission of Light and Very Low-Frequency perturbations due to Electromagnetic Pulse Sources) are **indistinct types of TLE**, producing large diffuse and expanding ring-shaped glows, up to 400 km in diameter.
- They **occur in the ionosphere** 100 km above the **ground over thunderstorms**.
- **Generation:** The light is generated by the excitation of nitrogen molecules due to electron collisions (the electrons possibly having been energized by the **electromagnetic pulse caused by a discharge** from an underlying thunderstorm).



to electron collisions (the electrons possibly having been energized by the **electromagnetic pulse caused by a discharge** from an underlying thunderstorm).

- They are so quick (0.001 seconds), that it is **impossible to see them with the naked eye**.

• **Safety concerns:-**

- It is possible that **sprites and jets** could cause electromagnetic pulses in the flight electronics of aircraft flying

directly overhead a storm but the evidence is limited

**MUST READ:** [The Lightning 'disaster](#)



## ENVIRONMENT



### Project Tiger

**Context:** Recently, Bandipur completed 50 years as Project Tiger Reserve.

#### About Project Tiger:-

- The **Indira Gandhi** government launched **Project Tiger** in **1973** from the **Jim Corbett National Park** in **Uttarakhand**.
- The **tiger** is a **globally endangered species**. India had a **tiger population** ranging from **20000 to 40000** at the turn of the **twentieth century**.
- A group of conservationists and researchers applied sustained pressure on the Indian government around 1970.
- As a result, the **Wildlife Protection Act** was **drafted in 1972**, effectively ending all hunting in India and legally protecting individual species.
- In **1973**, **Project Tiger** was launched.
- **Dr. Kailash Sankhla** was named the **first Director of Project Tiger** in India.

#### About Bandipur Tiger Reserve:-

- It was **established in 1973** under Project Tiger.
- In 1985, by including adjacent areas from **Venugopala Wildlife Park**, it was enlarged and **named as Bandipur National Park**.
- It is situated in two contiguous districts (**Mysore and Chamarajanagar**) of Karnataka.
- It is located in the **tri-junction area** of the States of **Karnataka, Tamil Nadu and Kerala**.
- It forms a part of the **Nilgiri Biosphere Reserve**.
- It lies in one of the **richest biodiversity** areas of the country.
- It is surrounded by
  - **Mudumalai Tiger Reserve** (Tamil Nadu) in the South,
  - **Wayanad Wildlife Sanctuary** (Kerala) in the South-west &
- The **Kabini Reservoir** separates the Bandipur and Nagarhole Tiger Reserve on the North-west.
- The park is located between the **Kabini River** in the north and the **Moyar River** in the south.
- The **Nugu River** runs through the park.
- The highest point in the park is on a hill called **Himavad Gopalswamy Betta**.

**MUST READ:** [Tiger Estimation](#)

### Tiger Census 2022

**Context:** Number of tigers in India has increased to 3,167, in 2022 from 2,967 in 2018 (a rise of 6.74%), according to the fifth cycle of the All India Tiger Estimation (2022) released recently.

#### Key findings of All India Tiger Estimation (2022):-

- The tiger **population in India** grew by **200** from **2018 to 2022**.
- The tiger population has grown the most in the **Shivalik hills and Gangetic flood plains**, followed by central India, the Northeastern hills, the Brahmaputra flood plains, and the Sundarbans.

#### About Tiger Census 2022:-

- The national tiger census is conducted once every four years.
- The nationwide tiger census was earlier held in 2006, 2010, 2014, and 2018.

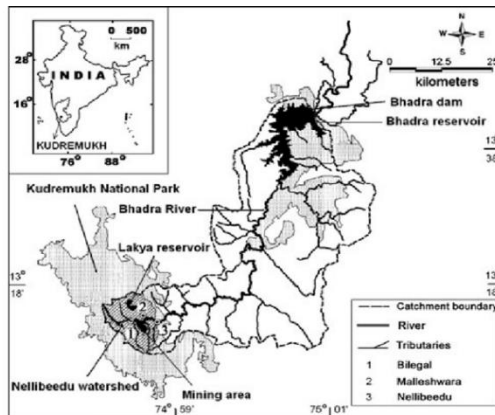
	<ul style="list-style-type: none"> <li>The National Tiger Conservation Authority (NTCA) conducts tiger censuses in partnership with state forest departments, conservation NGOs, and the Wildlife Institute of India (WII).</li> <li>India hosts some 75% of the global tiger population living in forests.</li> </ul> <p><b>MUST READ:</b> <a href="#">Tiger Estimation</a></p>
<b>Dibang Wildlife Sanctuary</b>	<p><b>Context:</b> As per recent announcements, the <b>Dibang Wildlife Sanctuary</b> in Arunachal Pradesh would soon be notified as a tiger reserve.</p> <p><b>About Dibang Wildlife Sanctuary:-</b></p> <ul style="list-style-type: none"> <li><b>Dibang Wildlife Sanctuary</b> is located nearby <b>Anini district, Arunachal Pradesh</b>.</li> <li>It has been named after the <a href="#">Dibang River</a>, a tributary of the <a href="#">Brahmaputra River</a>.</li> <li>It occupies part of the <b>Eastern Himalayas</b>.</li> <li><b>Flora:</b> the two main categories of vegetation are <b>temperate broad-leaved forest</b> and <b>temperate conifer forest</b> (Rhododendron, Bamboo, Gregaria, Tsuga etc).                         <ul style="list-style-type: none"> <li><b>Alpine vegetation</b> occurs at higher altitudes with <b>herbs, stunted trees and dwarf bushes</b>.</li> </ul> </li> <li><b>Fauna:</b> Mishmi takin, Asiatic black bear, tigers, gongshan muntjac, red panda, red goral and musk deer.</li> </ul> <p><b>About Idu Mishmis:-</b></p> <ul style="list-style-type: none"> <li>It is a <b>sub-tribe of the larger Mishmi group</b> in <b>Arunachal Pradesh</b> and neighbouring <b>Tibet</b>.</li> <li>They primarily live in <a href="#">Mishmi Hills</a>, bordering Tibet.</li> <li>They are believed to have migrated from the <b>Mongoloid race</b>.                         <ul style="list-style-type: none"> <li><b>Mongoloid race:</b> belong to the Tibeto-Burman family.</li> </ul> </li> <li><b>Their language</b> (also called Idu Mishmi) is considered <b>endangered by UNESCO</b>.</li> <li>They follow a strict belief system of myths and taboos like 'iyu-ena'.                         <ul style="list-style-type: none"> <li><b>Iyu-ena:</b> restrict them from hunting many animals, including a complete prohibition on killing tigers.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">Wildlife Conservation in Arunachal Pradesh</a></p>
<b>Eravikulam National Park</b>	<p><b>Context:</b> Recently, the Eravikulam National Park got a terrarium inside its premises.</p> <p><b>About Eravikulam National Park:-</b></p> <ul style="list-style-type: none"> <li>It is located in the <b>Eravikulam and Idukki districts of Kerala</b></li> <li>It is located in the <b>High Ranges (Kannan Devan Hills)</b>.</li> <li>It hosts South India's highest peak, <b>Anamudi</b>.</li> <li>It is famous for <a href="#">Nilgiri Tahr</a>.</li> <li>Another speciality of Eravikulam national park is the <a href="#">Neelakurinji flower</a> that <b>blooms every 12 years</b>.</li> <li><b>In 1975</b> the government <b>declared the region as Eravikulam Wildlife Sanctuary</b>.</li> <li><b>In 1978</b> the region was <b>declared a National park</b>.</li> <li><b>Vegetation:</b> Grasslands, Shrub Land, and Shola Forests are the three major plant species present.</li> <li>It serves as a catchment area for both east-flowing rivers (tributaries of the <b>Pambar</b>) and west-flowing rivers (tributaries of the <b>Periyar and Chalakkudy</b>).</li> <li><b>Fauna:</b> Lion-tailed macaques, Indian muntjac, gaur and sambar deer are the other animals found in the national park.</li> <li><b>Flora:</b> The Park contains three major types of plant communities namely <b>grasslands, shrublands, and woods</b>.</li> </ul> <p><b>About Ferns:-</b></p> <ul style="list-style-type: none"> <li>A fern is a member of a group of <b>vascular plants</b>.</li> </ul>

	<ul style="list-style-type: none"> <li>○ <b>Vascular plants:</b> plants with xylem and phloem.</li> <li>• They <b>reproduce via spores</b>.</li> <li>• They <b>have neither seeds nor flowers</b>.</li> <li>• They have <b>specialized tissues that conduct water and nutrients</b> and in having life cycles in which the sporophyte is the dominant phase.</li> <li>• They have complex leaves called <b>megaphylls</b>.</li> </ul> <p><b>Significance:-</b></p> <ul style="list-style-type: none"> <li>• They are used for <b>food, medicine, and as biofertilizers</b>.</li> <li>• They are used as <b>ornamental plants</b> and for <b>remediating contaminated soil</b>.</li> <li>• They have been the subject of research for their ability to remove some <b>chemical pollutants</b> from the atmosphere.</li> <li>• Some fern species, such as bracken (<i>Pteridium aquilinum</i>) and water fern (<i>Azolla filiculoides</i>) are <b>significant weeds worldwide</b>.</li> <li>• Some fern genera, such as <b>Azolla</b>, can <b>fix nitrogen</b> and make a significant input to the nitrogen nutrition of rice paddies.</li> <li>• They also play <b>certain roles in folklore</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">Silent Valley National Park</a></p>
World Energy Transitions Outlook report	<p><b>Context:</b> Recent reports have suggested that the global energy transition has made progress but it falls short of the 1.5°C pathway.</p> <p><b>About World Energy Transitions Outlook report:-</b></p> <ul style="list-style-type: none"> <li>• It is taken out by <b>International Renewable Energy Agency (IRENA)</b>.</li> <li>• The World Energy Transitions Outlook <b>outlines a vision for the transition of the energy landscape to meet the goals of the Paris Agreement</b>.</li> <li>• It presents a pathway for <b>limiting global temperature rise to within 1.5°C of pre-industrial levels</b> and bringing CO2 emissions to net zero by mid-century.</li> <li>• It outlook charts an evolving pathway to achieving a <b>climate-safe future</b> in line with the goals of the <b>Paris Agreement</b>.</li> <li>• Its 1.5°C pathway offers a roadmap for accelerating the <b>global energy transition by positioning electrification and efficiency</b> as key drivers of change, backed by renewables, hydrogen and sustainable biomass.</li> <li>• This Preview presents high-level insights from the forthcoming 2023 report, which <b>builds on two of IRENA's key scenarios</b> to capture global progress toward meeting the 1.5°C climate goal: <b>the Planned Energy Scenario (PES)</b> and the 1.5°C Scenario.</li> <li>• <b>International Renewable Energy Agency (IRENA):-</b> <ul style="list-style-type: none"> <li>○ It is an <b>intergovernmental organisation</b>.</li> <li>○ It was officially founded in <b>Bonn, Germany, in 2009</b>.</li> <li>○ It has <b>167 members</b> and India is the 77th Founding Member of IRENA.</li> <li>○ It has its headquarters in <b>Abu Dhabi, United Arab Emirates</b>.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">Renewable Energy Transition</a></p>
Suhelwa Wildlife Sanctuary	<p><b>About Suhelwa Wildlife Sanctuary:-</b></p> <ul style="list-style-type: none"> <li>• Suhelwa wildlife sanctuary is located in the <b>Sravasti, Balrampur and Gonda districts of Uttar Pradesh</b>.</li> <li>• It is connected with the forest of <b>Mahadevpuri in Nepal</b>.</li> <li>• It was <b>declared a Wildlife Sanctuary in 1988</b>.</li> <li>• <b>Flora:</b> Sal, Sheesham, Khair, Sagaun (Teak), Asna, Jamun, Haldu, Phaldu, Dhamina, Jhingan and Bahera trees.</li> <li>• <b>Fauna:</b> Leopard, Tiger, Bear, Wildcat, Wild Boar and various birds.</li> <li>• Suhelwa Wild Life Division is situated on the <b>Indo-Nepal International Border</b>.</li> </ul>



	<ul style="list-style-type: none"> <li>Adjacent to the Sanctuary area there are the <b>Shivalik Ranges of Himalaya</b>.</li> </ul> <p><b>Cultural Aspect:-</b></p> <ul style="list-style-type: none"> <li><b>Shrawasti</b>, a famous historical place known as Baoudh teeth situated at about 15 Km on Balrampur- Bahraich road.</li> <li><b>Devipatan Mandir</b> has situated in Tulsipur this mandir is a Sidhpeeth of Maa Durga.</li> <li><b>Baba Vibhutinath Mandir</b>, which is a famous Shiv Mandir is situated in East Sohelwa Range.</li> </ul>
Amolops siju	<p><b>Context:</b> Recent reports suggest that India's newest named frog '<b>Amolops siju</b>' is a dark cave dweller in Meghalaya.</p> <p><b>About Amolops siju:-</b></p> <ul style="list-style-type: none"> <li>Amolops siju is named after the <b>Siju cave system</b> of Meghalaya, from where four specimens were collected.</li> <li>This is the <b>second cave-dwelling species of frog recorded from India</b> after Micrixalus spelunca in Tamil Nadu nine years ago.</li> <li><a href="#">Frogs</a> are known to <b>inhabit the subterranean world of caves</b> due to the constant humidity and temperature that a cave ecosystem provides.</li> <li>The Amolops siju <b>is the first cave-dwelling cascade frog from the northeast</b>.</li> <li>Cascade frogs being morphologically cryptic in nature, tissue samples of the specimens were subjected to molecular studies to ascertain their specific identity from the other known species.</li> <li>Amolops siju is the <b>fourth species of cascade frog described from the northeast</b> . <ul style="list-style-type: none"> <li>They had earlier described <b>Amolops Chanakya, Amolops terraorchis, and Amolops tawang</b> from Arunachal Pradesh.</li> </ul> </li> </ul> <p><b>Siju Cave:-</b></p> <ul style="list-style-type: none"> <li>The cave is a <b>natural limestone cave</b>.</li> <li>It is located in the <b>South Garo Hills District of Meghalaya, Northeast India</b>.</li> <li>The cave contains the twilight zone, an area with limited light.</li> <li>This 'dark zone' has consistent 'temperature and humidity' all year long.</li> <li>The cave is known to harbour more than 100 faunal species, mostly <b>invertebrates like cave crickets, spiders, beetles, and earthworms</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">New Species of frog in Andaman found</a></p>
Kudremukh Range	<p><b>Context:</b> Recently, the Kudremukh Iron Ore Company Limited (KIOCL) has sought post-facto approval for subsuming 700 acres of forest in the <b>Kudremukh Range</b>.</p> <p><b>About Kudremukh Range:-</b></p> <ul style="list-style-type: none"> <li>It is located in the <b>Western Ghats in the Chikmagalur district of Karnataka</b>.</li> <li>It got its name from its main peak, <b>Kudremukh Peak</b> (1892 metres), which has a marked <b>similarity to the face of a horse</b>.</li> <li>Kudremukh National Park, the <b>second largest <a href="#">wildlife protected area</a> in the <a href="#">Western Ghats</a></b>, is located in these ranges.</li> <li>It is believed that Kudremukh served as a <b>landmark for sailors</b> on the western coast for over 2000 years.</li> </ul> <p><b>Kudremukh national park:-</b></p>

**IMAGE SOURCE:** [Map showing the location of the Kudremukh mining area and sampling sites....](#) | [Download Scientific Diagram \(researchgate.net\)](#)



- The Kudremukh national park stretches from the **Narasimha Parvat** in the north to the **Jamalabad Fort** in the south.
- Kudremukh National Park covers the areas of three districts namely **Dakshina Kannada, Udupi and Chikmagalur**.
- It was established as a **Reserved Forest** in the year **1916**.
- In 1987 it was **declared a National Park**.
- The **Tunga, the Bhadra and the Nethravathi rivers** originate from this national park.
- The famous **Kadambi waterfalls** are also located in the Kudremukh National Park.

- **Key Feature:** It has the single largest contiguous population of Lion Tailed Macaque (LTM) in the world, tropical wet evergreen forests, top three carnivores (Tiger, Leopard, and wild dogs)
- **Fauna:** tigers, wild dogs, leopards, Malabar giant squirrels, sloth bears, common langurs, gaur, sambar, barking deer, spotted deer and sloth bears.
  - The Malabar whistling thrush, Malabar trogon, imperial pigeon, and great pied hornbill are among the 195 bird species found in the park.
- **Flora:** It has the least disturbed low-altitude **wet evergreen forests and shola-grassland biome**.
  - Kudremukh represents one of the world's major habitats and has tropical biological richness and is thus among one of the 34 biological hotspots of the world.

**MUST READ:** [Eco-sensitive Zones \(ESZ\)](#)

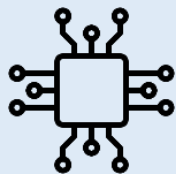
#### Sukhna Wildlife Sanctuary

**Context:** Recently, the Supreme Court passed an order on the matter of **Sukhna Wildlife Sanctuary**.

**About Sukhna Wildlife Sanctuary:-**

- Sukhna Wildlife Sanctuary is in **Chandigarh**, and shares boundaries with **Punjab and Haryana** from the side of Mohali and Panchkula, respectively. ([UPSC CSE: Understanding Wildlife Protection](#))
- It **has an ESZ area** of up to 1.75 km, and Birds Sanctuary, Sector 21, has an ESZ of around 100 metres.
- It is situated at 1 Km in the **North-East of Sukhna Lake**.
- It forms the **part of Sukhna Lake catchment area** falling in **Shivalik hills**.
  - Shivalik hills are **ecologically sensitive and geologically unstable**.
  - They are **highly prone to soil erosion during rains**.
  - The **soil in the Shivaliks is sandy**, embedded with pockets of clay which is highly susceptible to erosion by surface runoff.
- **Sukhna Lake** was constructed in 1958 and **in the sixties & early seventies, the rate of siltation of the lake was very high** due to the high rate of soil erosion from its catchment area.
- The Punjab and Haryana High Court declared Sukhna Lake (Chandigarh) as a **living entity in 2020**.
- Upto 1988, **66% of the original water holding capacity of the lake was lost due to siltation**. ([UPSC Mains: Wildlife Diplomacy](#))

<b>Preparedness and Resilience for Emerging Threats (PRET)</b>	<p><b>MUST READ:</b> <a href="#">Kambalakonda Wildlife Sanctuary</a></p> <p><b>Context:</b> Recently, WHO launched the <b>Preparedness and Resilience for Emerging Threats (PRET) Initiative</b>.</p> <p><b>About Preparedness and Resilience for Emerging Threats (PRET):-</b></p> <ul style="list-style-type: none"> <li>• The Preparedness and Resilience for Emerging Threats (PRET) initiative of WHO(<a href="#">UPSC Prelims: WHO</a>)</li> <li>• It is an innovative approach to <b>improving disease pandemic preparedness</b>(<a href="#">UPSC Mains: Emerging issues in international relations during the COVID-19 pandemic</a>).</li> <li>• The first module of PRET focuses on <b>respiratory pathogen pandemic preparedness</b>. <ul style="list-style-type: none"> <li>◦ It presents <b>an integrated and efficient respiratory pathogen pandemic planning approach</b> (<a href="#">UPSC CSE: WHO and Traditional Medicine</a>) covering both novel pathogens and those known to have pandemic potential.</li> <li>◦ It enables <b>coherence in addressing pathogen-agnostic and pathogen-specific elements</b> for better preparedness.</li> <li>◦ It gives an <b>organizing framework including operational stages</b> and triggers for escalation and de-escalation between pandemic preparedness and response periods.</li> <li>◦ It <b>describes the critical sectors for respiratory pathogen pandemic preparedness</b> to trigger multisectoral collaboration.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">H5N1 virus/Bird Flu</a></p>
<b>Barnawapara wildlife sanctuary</b>	<p><b>Context:</b> Recently, Chhattisgarh Forest Department successfully translocated four sub-adult wild buffaloes from Assam to Chhattisgarh's <b>Barnawapara wildlife sanctuary</b>.</p> <p><b>About Barnawapara wildlife sanctuary:-</b></p> <ul style="list-style-type: none"> <li>• Barnawapara wildlife sanctuary is located in the district of <b>Raipur in Chhattisgarh</b>.</li> <li>• Barnawapara the <b>name coined from</b> village Bar and Nawapara.</li> <li>• The <b>rivers Balmedhi, Jonk and Mahanadi</b> are the lifeline river which runs along the sanctuary.</li> <li>• River Balamdehi forms the western boundary and Jonk River forms the northeastern boundary of the Sanctuary.</li> <li>• The <b>Balar reservoir</b> situated inside the sanctuary supports a number of wetland birds and fishes.</li> <li>• <b>Flora:</b> The sanctuary contains major vegetation of Teak, Sal and Mixed forest.</li> <li>• <b>Fauna:</b> Cheetal, Sambhar, Nilgai Wild Boar, Sloth Bear, and Wild Dogs, are commonly seen.</li> </ul> <p><b>The Indian Wild Buffalo</b></p> <ul style="list-style-type: none"> <li>• It is the <b>state animal of Chhattisgarh</b> (India)</li> <li>• <b>Habitat:</b> mainly found in the <b>alluvial grasslands, marshes, swamps and river valleys</b>.</li> <li>• In India, they are generally concentrated in North East India in <b>Kaziranga National Park, Manas and Dibru-Saikhowa National Parks, Laokhowa Wildlife Sanctuary and Bura Chapori Wildlife Sanctuary</b>, <b>D'Ering Memorial Wildlife Sanctuary</b> in <a href="#">Arunachal Pradesh</a>.</li> <li>• <b>Conservation Status:</b> <ul style="list-style-type: none"> <li>◦ IUCN: Endangered</li> <li>◦ <a href="#">Wild Life (Protection) Act, 1972</a>: Schedule 1.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">Tungareshwar Wildlife Sanctuary</a></p>



## SCIENCE & TECHNOLOGY



### Kala-azar

**Context:** Recently, IACS's novel compound was found to be treating drug-resistant kala-azar infections.

**About Kala-azar:-**

WHAT IS KALA-AZAR	
<ul style="list-style-type: none"> <li>A slow progressing indigenous disease</li> <li>Caused by protozoan parasite of genus <i>Leishmania</i></li> <li>In India, <i>Leishmania donovani</i> is the only parasite causing the disease</li> <li>The parasite primarily infects reticuloendothelial system</li> </ul>	<b>Signs &amp; Symptoms</b> <ul style="list-style-type: none"> <li>Recurrent fever</li> <li>Loss of appetite</li> <li>Weakness</li> <li>Spleen enlargement</li> <li>Anaemia</li> </ul>
Transmission	
<ul style="list-style-type: none"> <li>Sandfly of genus <i>Phlebotomus argentipes</i> only known vector of kala-azar in India</li> </ul>	<ul style="list-style-type: none"> <li>Indian kala-azar has a unique epidemiological feature of being anthroponotic</li> <li>Female sandflies pick up parasite while feeding on infected human host</li> <li>Development and multiplication in the gut of sandflies and move to mouthparts</li> </ul>
<ul style="list-style-type: none"> <li>Parasite undergoes morphological change to become flagellate</li> </ul>	<ul style="list-style-type: none"> <li>Healthy human hosts get infection when an infective sandfly vector bites them</li> </ul>

**IMAGE SOURCE:** [Kala-Azar: Oral Nano Medicine \(10pointer.com\)](https://www.10pointer.com)

- It is caused by the protozoa parasite **Leishmania**.
- It is one of the three conditions in the disease group called **leishmaniasis**.
- It is a **Neglected Tropical Disease**.
- It is the **second-largest parasitic killer in the world**

after **Malaria**.

- It is a zoonotic infection transmitted by the sand fly, a blood-sucking pest, found in moist (humid) mud and sand and close to livestock.
  - The parasite is **transmitted to humans by the bite of an infected female phlebotomine sandfly**.
- This type of leishmaniasis **affects the internal organs, usually the spleen, liver and bone marrow**.
- The parasite primarily **infects the reticuloendothelial system** and may be found in abundance in **bone marrow, spleen and liver**.

**Symptoms:-**

- Some people have **no symptoms**.
- For others, symptoms may include **fever, weight loss and swelling of the spleen or liver**.

**Treatment:-**

- Medication exists** to kill the parasites.
- If left untreated, **severe cases are typically fatal**.
- Up to 20% of the patients who are correctly treated and cured, develop a skin condition called **Post-Kala-Azar Dermal Leishmaniasis (PKDL)** which surfaces within months to years after treatment.
- These patients can contain large amounts of parasites in their skin lesions, making them an important source of transmission.

**MUST READ:** [Marburg Viral Disease Outbreak](#)

### Calcium carbide

**Context:** Recently, the FSSAI urged food commissioners of all states and Union Territories (UT) to act against the unauthorised use of **calcium carbide** for the ripening of fruits.

**About Calcium carbide:-**





**IMAGE SOURCE:** [Calcium Carbide Market | Global Industry Report, 2031 \(transparencymarketresearch.com\)](https://www.transparencymarketresearch.com)

- Calcium carbide, also known as calcium acetylide or 'masala'.
- It is commonly used in **mining** and **metal industries** as well as in the **production of acetylene gas**.
- It is a **highly reactive compound** and **releases acetylene gas** which is

used to artificially ripen fruits.

#### Uses:-

- Calcium Carbide is used in **producing polyvinyl chloride as acetylene**, which is the derivative of calcium carbide and is used as a raw material for PVC production.
- Calcium Carbide is also used in the **production of acetylene and calcium hydroxide**.
- It can be used in the **removal of sulphur from iron**.
- We can use it to **produce calcium cyanamide**.
- This compound can also be **used as a ripening agent such as ethylene**.
- It can be used in lamps like **carbide lamps**.
- It is also used as a **deoxidizer**, which means it helps in oxygen removal during **steel manufacturing**.
- It is also **used in bamboo cannons** and big-bang cannons.

#### Health damages:-

- Its use can prove in **serious health consequences**.
- The use of 'masala' in fruits is **highly toxic**.
- It can **cause health damage** including **respiratory problems** and **skin irritation**, which **may lead to cancer**.

**MUST READ:** [Vinyl Chloride](#)

#### PSLV-C55 mission

**In News:** Indian Space Research Organisation (ISRO) is scheduled to launch the **Polar Satellite Launch Vehicle C55 (PSLV-C55) mission** with Singapore's **TeLEOS-2** as primary satellite and **Lumelite-4** as a co-passenger satellite.

- The PSLV-C55 mission has the **PSLV Orbital Experimental Module (POEM)**, where the spent PS4 of the launch vehicle would be **utilised as an orbital platform** to carry out scientific experiments through non-separating payloads.
- This is the third time that PS4 will be used after satellite separation as a platform for experiments.

#### TeLEOS-2 satellite

- Primary Satellite
- Support the satellite imagery requirements of various agencies within the government of Singapore.
- Carries a Synthetic Aperture Radar (SAR) payload.
- Provide all-weather day and night coverage, and be capable of imaging at 1m full-polarimetric resolution.

#### Lumelite-4 satellite

- A co-passenger satellite
- An advanced 12U satellite developed for the technological demonstration of the high-performance space-borne VHF Data Exchange System (VDES).

	<ul style="list-style-type: none"> <li>Aims to augment Singapore's e-navigation maritime safety and benefit the global shipping community.</li> </ul> <p><b>About Polar Satellite Launch Vehicle(PSLV):</b></p> <ul style="list-style-type: none"> <li>PSLV is known as the '<b>workhorse</b>' of ISRO.</li> <li>It is the <b>third-generation launch vehicle of India</b>.</li> <li>It is a <b>four-staged launch vehicle</b> with first and third stages using solid rocket motors and second and fourth stages using liquid rocket engines.</li> <li>It is <b>the first Indian launch vehicle</b> to be equipped with <b>liquid stages</b>.</li> </ul>
<b>Blastomycosis</b>	<p><b>Context:</b> Recently, the fungus Blastomyces killed 1 &amp; infected 100 at a Michigan paper mill.</p> <p><b>About Blastomycosis:-</b></p> <ul style="list-style-type: none"> <li>Blastomycosis is an infection caused by a fungus called <b>Blastomyces</b>.</li> <li>The fungus lives in the environment, particularly in <b>moist soil and in decomposing matter</b> such as wood and leaves.</li> <li>In the United States, the fungus mainly lives in the <b>midwestern, south-central, and southeastern states</b>, particularly in areas surrounding the Ohio and Mississippi River valleys, the Great Lakes, and the Saint Lawrence River.</li> <li>People can get blastomycosis after <b>breathing in the microscopic fungal spores from the air</b>.</li> <li>Although most people who breathe in the spores don't get sick, some people will develop symptoms like <b>fever and cough</b>, and the infection can sometimes become serious if it is not treated.</li> </ul> <p><b>Symptoms:</b> Fever, Cough, Night sweats, Muscle aches or joint pain, Weight loss, Chest pain, Fatigue (extreme tiredness), Skin lesions; such as raised bumps, blisters, or ulcers etc.</p> <p><b>Treatment:-</b></p> <ul style="list-style-type: none"> <li><b>Itraconazole</b> is a type of <b>antifungal medication</b> that is typically used to treat mild to moderate blastomycosis.</li> <li><b>Amphotericin B</b> is usually recommended for severe blastomycosis in the lungs or infections that have spread to other parts of the body.</li> <li>Depending on the severity of the infection and the person's <b>immune</b> status, the course of treatment can range from six months to one year.</li> </ul> <p><b>MUST READ:</b> <a href="#">Mucormycosis</a></p>
<b>Amogha-III</b>	<p><b>Context:</b> Recently, the indigenous Anti-Tank Guided Missile, Amogha-III tests were conducted successfully. .</p> <p><b>About Amogha-III:-</b></p> <ul style="list-style-type: none"> <li>Amogha-III is an <b>indigenous missile</b>.</li> <li>It is developed under the <b>Integrated Guided Missile Development Programme (IGMDP)</b>.</li> <li>It has a <b>fire-and-forget capability</b>. <ul style="list-style-type: none"> <li><b>Fire-and-forget capability:</b> meaning it does not require external intervention after launch.</li> </ul> </li> <li>The missile <b>features dual-mode Imaging Infra-Red (IIR) Seeker</b> systems with a <b>range of 200 to 2500 meters</b>.</li> <li>It showcases a tandem warhead, consisting of <b>two separate explosive charges</b> that are detonated in sequence.</li> <li>The <b>first charge</b>, known as <b>the precursor charge</b>, <b>penetrates the target's armour</b>, creating a hole.</li> </ul>

	<ul style="list-style-type: none"> <li>The second charge or the main charge then <b>detonates inside</b>, maximizing damage inflicted on the target.</li> <li>One of the unique features of the missile is it <b>has both top and direct attack modes</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">Helina Missile</a></p>
GSAT-7B satellite	<p><b>Context:</b> Recently, the defence ministry signed a ₹3,000-crore contract with NewSpace India Limited (NSIL) for the GSAT-7B satellite.</p> <p><b>About GSAT-7B satellite:-</b></p> <ul style="list-style-type: none"> <li>It is a <b>communication satellite</b>.</li> <li>It is a part of the <b>GSAT-7 series</b>.</li> <li>It is the <b>first-ever</b> in the <b>five-tonne category</b> that will be <b>designed indigenously by the ISRO</b>.</li> <li><b>GSAT 7 series satellites</b> are <b>advanced communication satellites</b> developed by the Indian Space Research Organisation (ISRO) to meet the communication <b>needs of the defence services</b>.</li> <li>The GSAT 7B will <b>primarily fulfil the communication needs of the Indian Army</b>.</li> <li>It is a <b>geostationary satellite</b>.</li> <li>It will considerably enhance the <b>communication capability of the Indian Army</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">OneWeb Satellites</a></p>
Raccoon Stealer	<p><b>Context:</b> Recently, Eight govt entities were hit by info-stealing malware.</p> <p><b>About Raccoon Stealer:-</b></p> <ul style="list-style-type: none"> <li>It is an <b>information stealing malware</b> that is <b>usually delivered through email</b>.</li> <li>It is a kind of malware that <b>steals various data from an infected computer</b>.</li> <li>It was <b>first observed in early 2019</b>.</li> <li><b>Raccoon Stealer v2</b> first appeared in June of 2022. <ul style="list-style-type: none"> <li>It is capable of stealing information to include cookies and other browser data, credit card data, usernames, and passwords.</li> </ul> </li> <li>It is a classic example of information-stealing malware, which cybercriminals typically use to gain possession of sensitive data saved in users' browsers and cryptocurrency wallets.</li> <li>Raccoon Stealer is an <b>info stealer</b> sold on underground hacker/cybercriminal forums.</li> <li>In the case of browsers, targeted data typically includes cookies, saved login details, and saved credit card details.</li> <li>In the case of <b>cryptocurrency wallets</b> (henceforth, 'crypto-wallets'), targeted data typically includes public keys, private keys, and seed phrases.</li> <li><b>Risk:</b> once sensitive browser and crypto-wallet data is in the hands of cybercriminals, it will likely be used to conduct harmful activities, such as <b>identity theft, cryptocurrency theft, and credit card fraud</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">India's cyber infrastructure</a></p>
Haemophilia	<p><b>Context:</b> Recently, World Haemophilia Day 2023 was celebrated.</p> <p><b>About Haemophilia:-</b></p> <ul style="list-style-type: none"> <li>World Haemophilia Day is celebrated on the <b>17th of April every year</b>.</li> <li>It aims to increase <b>awareness</b> about haemophilia and other inherited bleeding disorders.</li> <li>The day is celebrated in honour of <b>Frank Schnabel</b>. <ul style="list-style-type: none"> <li><b>Frank Schnabel:</b> founder of the World Federation of Haemophilia (WHF).</li> </ul> </li> <li>Haemophilia is a medical condition, <b>mostly inherited</b>.</li> </ul>

- In this, **the ability of blood to clot is severely reduced**, so that even a minor injury can cause severe bleeding.
- It is **caused by a mutation** or change, in one of the genes, that provides instructions for making the clotting factor proteins needed to form a blood clot.
  - This change or mutation can **prevent the clotting protein from working properly** or at all.
  - These genes are **located on the X chromosome**.
- **Men are more vulnerable** to haemophilia than women.
- It is quite a **rare disease**, about 1 in 10,000 people are born with it.

**Types:-**

- **Haemophilia A:-**
  - It is The **most common type of Haemophilia is called Haemophilia A**.
  - A person **does not have enough clotting factor VIII (factor eight)**.
- **Haemophilia B:-**
  - A person with Haemophilia B **does not have enough factor IX (factor nine)**.

**Symptoms:-**

- Big bruises.
- Bleeding into muscles and joints.
- Spontaneous bleeding (sudden bleeding inside the body for no clear reason).
- Prolonged bleeding after getting a cut, removing a tooth, or having surgery.

**Treatment:-**

- The main treatment for Haemophilia is **Replacement Therapy**.
- **Replacement Therapy:-**
  - Concentrates of clotting factor VIII (for Haemophilia A) or clotting factor IX (for Haemophilia B) are slowly **dripped or injected into a vein**.
  - These infusions help replace the clotting factor that is missing or low.

**MUST READ: [The Human Genome Project](#)**

**LockBit ransomware**

**Context:** Recently, the **LockBit ransomware** was found to be targeting Apple devices.

**About LockBit ransomware:-**

- It was first reported in **September 2019** and dubbed the “abcd” virus, due to the file extension used when encrypting victims’ files.
- The LockBit ransomware is designed to **infiltrate victims’ systems and encrypt important files**.
- The virus is **categorized as a “cryptovirus”** due to its **requests for payment in cryptocurrency** to decrypt files on the victim’s device.
- In the past, LockBit ransomware **has been used to target enterprises and organizations** in the **U.S., China, India, Ukraine, and Indonesia**.
- Attacks have also been recorded throughout **Europe, including France, Germany, and the U.K.**

**Working:-**

- It works as a **self-spreading malware**, not requiring additional instructions once it has successfully infiltrated a single device with access to an organisational intranet.
- It also known to **hide executable encryption files** by disguising them in the **PNG format**, thereby avoiding detection by system defences.
- Once it has gained access, the ransomware prepares the system to release its encryption payload across as many devices as possible.



- It then **disables security programs and other infrastructures** that could permit system data recovery.
- The goal is **to ensure that data recovery without assistance from the LockBit gang is impossible**.
- Once this is ensured, the ransomware places an encryption lock on all system files, which can only be unlocked via a custom key created by the LockBit gang.
- The process leaves behind **a ransom note**, with instructions to restore the system, and has reportedly also included threatening blackmail messages.
- Victims are then left with no choice but to contact the LockBit gang and pay up for the data.

**MUST READ:** [India's cyber infrastructure](#)

## Darwin's theory of evolution

**Context:** Recently, the scientific community voiced concern against NCERT's decision to remove **Darwin's theory of biological evolution** from Class 10<sup>th</sup> CBSE textbooks.

### About Darwin's theory of evolution:-

- Charles Darwin is known as the **father of evolution** due to his contribution to the establishment of the theory of evolution.
- Darwin published his concept of evolution in his book entitled "**The Origin of Species**".

Ideas by Darwin on the theory of natural selection:-

- The **species keep on changing or evolving with time**.
- As the environment changes, the requirements of the organisms also change and they need to adapt to their new environment.
- According to the natural requirements, the phenomenon of change over a period of time is known as **adaptation**.
- According to Darwin's theory, **only higher changes tend to get naturally selected** and lower ones are automatically eliminated.
- This leads to **progressive evolution** and not all the adaptations are able to contribute.
- **All the organisms had a common ancestor at some point in time** and this kept on diverging since then according to Darwin.
- As per Charles Darwin, **evolution is a gradual and slow process**.
- Darwinism consists of five principles which are:
  - **Over-production or prodigality of over-production:** Many more individuals are born in each generation that will be able to survive and reproduce.
  - **Variation and Heredity:** There is natural variation among individuals of the same species. Many of the favourable adaptations are hereditary and are passed on to the progeny of future generations.
  - **Struggle for existence:** Organic beings increase by a geometrical ratio, while food production only increases in an arithmetic ratio such that in a very short time, an area will be overpopulated with any one species unless something happens to check the increase. This struggle for existence is **threefold** as given below:-
    - **Intraspecific struggle:** The Intraspecific struggle is found among **Individuals of the same species**.
    - **Interspecific struggle:** – It is found **among organisms of different species living together**.
    - **Struggle with the environment:** Living organisms struggle with adverse environmental conditions like floods, cold waves, heat waves, and earthquakes, etc.

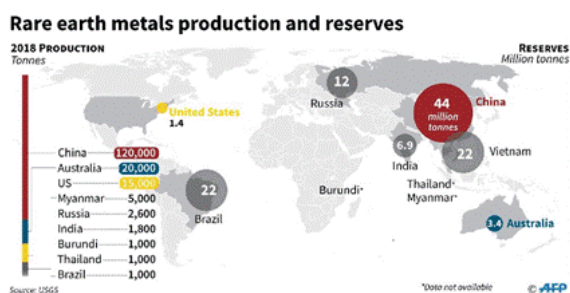
	<ul style="list-style-type: none"> <li>• <b>Survival of the fittest or natural selection:</b> Individuals with certain Characteristics have a better chance of surviving and reproducing than others with less favourable ones.</li> <li>• <b>Modifications of species:</b> Gradual modification of <a href="#">species</a> could have occurred over long periods of geological time through additive processes occurring in the past in the same manner as they are occurring in the present.</li> </ul> <p><b>MUST READ:</b> <a href="#">Synthetic biology</a></p>
Reusable Launch Vehicle Autonomous Landing Mission (RLV LEX)	<p><b>Context:</b> Recently, ISRO successfully carried out the Reusable Launch Vehicle Autonomous Landing Mission.</p> <p><b>About Reusable Launch Vehicle Autonomous Landing Mission (RLV LEX):-</b></p> <ul style="list-style-type: none"> <li>• RLV-LEX involves taking an unmanned, winged prototype to an altitude of about 2.3 km to 2.4 km on a helicopter and releasing it to land.</li> <li>• It <b>must travel the distance</b> autonomously, gain velocity, maintain control and come in like any typical aircraft, touching down with the rear wheels first.</li> <li>• The first in the series of experimental flights is the <b>hypersonic flight experiment (HEX)</b>.</li> <li>• It was followed by the <b>landing experiment (LEX)</b>, <b>return flight experiment (REX)</b> and <b>scramjet propulsion experiment (SPEX)</b>.</li> <li>• A <b>reusable launch system</b> is a launch system that allows for the reuse of some or all of the component stages. <ul style="list-style-type: none"> <li>◦ The vehicle <b>returns to earth intact after a mission</b>.</li> </ul> </li> </ul> <p><b>Benefits of RLV:-</b></p> <ul style="list-style-type: none"> <li>• <b>Cheaper access to space</b> is what makes an RLV attractive</li> </ul> <p><b>Challenges of RLV:-</b></p> <ul style="list-style-type: none"> <li>• Reusable stages <b>weigh more than equivalent expendable stages</b>.</li> <li>• After the launcher lands, it may <b>need to be refurbished</b> to prepare it for its next flight. <ul style="list-style-type: none"> <li>◦ This process may be <b>lengthy and expensive</b>.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">Next Generation Launch Vehicle (NGLV)</a></p>
Rare earth elements(REE)	<p><b>Context:</b> Recently, large deposits of 15 <b>rare earth elements (REE)</b> were recently found in Andhra Pradesh's Anantapur district.</p> <p><b>About Rare earth elements (REE):-</b></p> <ul style="list-style-type: none"> <li>• Rare earth elements are a <b>set of seventeen metallic elements</b> in the periodic table.</li> <li>• The 17 Rare Earths are <b>cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y)</b>.</li> <li>• They are characterized by <b>high density, high melting point, high conductivity, and high thermal conductance</b>.</li> <li>• They <b>do not occur in a free state</b> rather are found in mineral oxide ores.</li> <li>• They <b>occur abundantly</b> but are often not concentrated enough to <b>undertake viable extraction</b>.</li> </ul> <p><b>Uses of Rare earth elements:-</b></p> <ul style="list-style-type: none"> <li>• They are widely used in <b>high technology</b> owing to their <b>luminescent and catalytic properties</b>.</li> <li>• <b>Neodymium</b>, is a critical component for <b>permanent</b>.</li> <li>• <b>Aerospace and Defence:</b> it is used in <b>precision-guided munitions</b> in missiles, high-power sonar on ships and submarines, stealth helicopters, etc.</li> </ul>

- **Health care:** are used in **medical imaging devices**, such as MRIs, and modern surgical machines.
- **Clean Energy:** is used in **wind turbines, electric car batteries** and energy-efficient lights (LEDs and CFLs).
- **Nuclear Energy:** these are useful for **controlling nuclear reactions** and are used in control rods.
- **Electronics:** Used as **phosphors in cathode ray tubes**, fluorescent lamps and X-ray intensifying screens.
- **Chemicals, Oil Refining, and manufacturing:** Make the refining of crude oil into gasoline more efficient and are used in many speciality metal alloys.
- **Europium** is necessary for **LED bulbs and colour television screens**.
- **Samarium** is used in **optical lasers**.

#### India's situation:-

- **India is almost 100% import-dependent** for most rare earth.
- However, India possesses the **5th highest reserves of rare earth** in the world
- In India, rare earth minerals like ilmenite, sillimanite, garnet, zircon, monazite, and rutile, collectively are found and these are called **Beach Sand Minerals (BSM)**.
- **Monazite** is the principal source.
  - It is mainly found in **Odisha, Andhra Pradesh, Tamil Nadu, Kerala, West Bengal, and Jharkhand**.

#### International situation:-



**IMAGE SOURCE:** [World map showing reserves of rare earth metals, vital to the... | Download Scientific Diagram \(researchgate.net\)](#)

- **China** holds the leading position among producers of rare earth oxides.
- Other major producers are **Myanmar, Australia, the USA, Russia**

and Malaysia.

- **Concentrated/partially-processed intermediate products** are further processed at many locations in **Europe, the USA, Japan and China**.

**MUST READ:** [Deep-sea Mining for Building EV Batteries](#)

#### Sodium cyanide

**Context:** Recently, India has initiated an anti-dumping probe into imports of the poisonous chemical sodium cyanide from China, the European Union, Japan and Korea.

#### About Sodium cyanide:-

- This sodium salt is **white in colour** and is **soluble in water**.
- It is **one of the highly toxic salts** as it has a high affinity (highly reactive) for metals.
- Sodium cyanide is also a moderately strong base, and when it is treated with an acid (such as sulfuric acid).
- It forms a highly toxic gas known as **hydrogen cyanide**.

#### Sodium Cyanide Uses:-

- **Gold Mining:** In the mining industry sodium cyanide has exorbitant uses.
- **Chemical Feedstock:** Sodium cyanide helps in producing a number of commercially significant chemical compounds such as cyanogen chloride, many types of nitriles and also cyanuric chloride.

	<ul style="list-style-type: none"> <li>• <b>Pharmaceutical industry:</b> Nitriles are present in many chemicals which it has vast usage in the industry.</li> <li>• <b>Other industries:</b> <ul style="list-style-type: none"> <li>◦ it is <b>used for cleaning metals</b>.</li> <li>◦ In the <b>dye industry</b>, the chemical is <b>used to produce dyes</b>.</li> <li>◦ This said the chemical can also be used for <b>producing hydrocyanic acid</b>.</li> <li>◦ In many other sectors, the chemical is used to manufacture the <b>electroplating solution</b>.</li> <li>◦ It is also used as an agricultural chemical and farmers use it as a pesticide to kill pests that damage the crop.</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">Shortcomings of Indian Chemical Industry: TIFAC</a> and <a href="#">Anti-Dumping Duty</a></p>
Magnetoresistance	<p><b>Context:</b> Recently, the researchers in the UK have found that graphene displays an anomalous giant <b>magnetoresistance</b> (GMR) at room temperature.</p> <p><b>About Magnetoresistance:-</b></p> <ul style="list-style-type: none"> <li>• Magnetoresistance is a phenomenon where the <b>electrical resistance of a conductor is affected by magnetic fields in adjacent materials</b>.</li> <li>• When the materials are magnetised in the same direction, the electrical resistance in the conductor is low.</li> <li>• When the <b>directions are opposite each other</b>, the <b>resistance increases</b>.</li> <li>• The <b>magnetoresistance observed in the <a href="#">graphene</a>-based device</b> was found to be “almost 100 times higher than that observed in other known semimetals in this magnetic field range.”</li> </ul> <p><b>Uses:-</b></p> <ul style="list-style-type: none"> <li>• It is used in <b>hard disk drives and magnetoresistive RAM in computers, biosensors, automotive sensors, microelectromechanical systems, and medical imagers</b>.</li> <li>• GMR-based devices are particularly used to <b>sense <a href="#">magnetic fields</a></b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">Synthetic biology</a></p>
Harpoon missiles	<p><b>Context:</b> Recently, China warned the U.S. as Taiwan mulls buying 400 <b>Harpoon missiles</b>.</p> <p><b>About Harpoon missiles:-</b></p> <ul style="list-style-type: none"> <li>• <b>Harpoon missiles</b> are the <b>Torpedoes lightweight missiles</b> and Harpoon air-launched missiles.</li> <li>• The Harpoon is a <b>U.S.-designed subsonic antiship <a href="#">cruise missile</a></b>.</li> <li>• It has <b>been in service since 1977</b>.</li> <li>• Numerous variants have been produced since its inception, <b>including air-, ship-, and sub-launched versions</b>.</li> </ul> <p><b>Salient Features:-</b></p> <ul style="list-style-type: none"> <li>• <b>PAYLOAD:</b>224 kg</li> <li>• <b>PROPULSION:</b> Turbojet, solid propellant</li> <li>• <b>RANGE:</b>90 – 240 km</li> <li>• <b>SPEED:</b> 0.85 Mach (High subsonic), 291.55 m/s</li> <li>• <b>OPERATORS:</b> United States, Australia, Bahrain, Belgium, Brazil, Canada, Chile, Denmark, Egypt, Germany, Greece, Indonesia, Iran, Israel, <b>India</b>, Japan, Malaysia, Mexico, Netherlands, Pakistan, Poland, Portugal, South Korea, Saudi Arabia, Singapore, Spain, Taiwan, Thailand, Turkey, UAE, United Kingdom, and Venezuela.</li> </ul> <p><b>MUST READ:</b> <a href="#">Vertical Launch Short Range Surface to Air Missile</a></p>
The Olkiluoto 3 reactor	<p><b>Context:</b> Recently, Europe’s most powerful nuclear reactor, <b>The Olkiluoto 3 reactor</b> has completed its test phase in Finland.</p> <p><b>About the Olkiluoto 3 reactor:-</b></p>

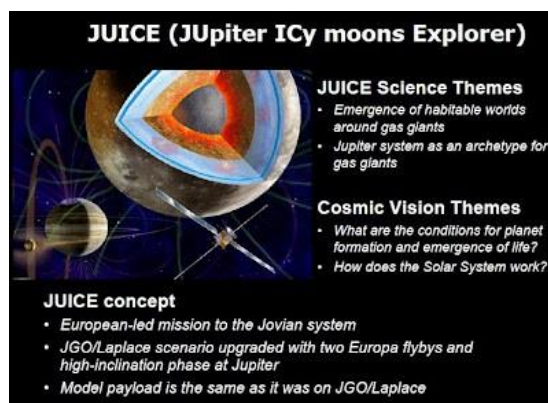


- The Olkiluoto 3 reactor is an **EPR (European Pressurized Water Reactor)**.
- It is the **first new-generation EPR**, or European Pressurized Reactor, plant to have gone online in Europe.
- It is located in [Finland](#).
- It is built by the **French-led Areva-Siemens consortium**.
- It is the **most powerful nuclear reactor in Europe**.
- It has a capacity of generating **1,600 megawatts**.
- Construction of Olkiluoto 3 **began in 2005**.
- It covers approximately **14% of Finland's electricity demand**.
- **The Olkiluoto 3 is Western Europe's first new reactor in more than 15 years**.
- It will help Finland to achieve its [carbon neutrality targets](#) and increase [energy security](#).

**MUST READ:** [India's Nuclear Energy](#)

### Jupiter Icy Moons Explorer (Juice)

**Context:** Recently, European Space Agency launched **Jupiter Icy Moons Explorer (Juice)**.  
**About Jupiter Icy Moons Explorer (Juice):-**



**IMAGE SOURCE:** [Future Planetary Exploration: Good News Times Three!](#) ([futureplanets.blogspot.com](http://futureplanets.blogspot.com))

- JUICE has been constructed by an industrial consortium led by **Airbus Defence and Space** based on the parameters provided by the ESA.
- The mission is planned to reach [Jupiter](#) in 2031.
- **Only two other spacecraft have ever examined Jupiter:-**
  - **the Galileo probe:** which orbited the gas giant between 1995 and 2003, and Juno, which has been circling the planet since 2016.
  - **NASA's Europa Clipper:** scheduled to be launched in October 2023 and would already be orbiting Jupiter when Juice reaches the planet.
    - Europa Clipper aims to study the Europa moon.

**Goals of JUICE:-**

- It will help scientists **understand the origin, history, and evolution of Jupiter and its moons**.
- The mission will **reveal how possibly habitable environments** can arise in Jupiter-like systems around other stars.
- Juice will **analyze the chemistry, structure, dynamics, weather, and climate of Jupiter** and its ever-changing atmosphere.

**MUST READ:** [NASA's Lucy mission](#)

### India's first 3D-printed post office

**Context:** As per recent announcements, Bengaluru will soon have **India's first post office constructed using 3D printing technology**.

**About India's first 3D-printed post office:-**

- **India's first 3D-printed post office** would be located in Cambridge Layout in Ulsoor, Bangalore.
- The project is being implemented by **Larsen & Toubro**, which has experience in constructing 3D-printed buildings.

**About 3D printing:-**

## BENEFITS OF 3D PRINTING



IMAGE

SOURCE: [Benefits of 3d printers | Visual.ly](https://www.visual.ly/blog/benefits-of-3d-printing/)

- 3D printing is a process of making three-dimensional solid objects from a digital file.
- It 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 **enables you to produce complex shapes** using less material than traditional manufacturing methods.

**MUST READ:** [3D printing](#)

### Extended Range Anti-Submarine Rocket (ER-ASR)

**Context:** Recently, the Extended Range Anti-Submarine Rocket (ER-ASR) was successfully test-fired for the first time.

**About Extended Range Anti-Submarine Rocket:-**

- The ER-ASR was designed by the **Pune-based Armament Research and Development Establishment (ARDE)** and the **High Energy Materials Research Laboratory (HEMRL)** of the DRDO.
- It is designed to **intercept submarines at specific depths**.
- Its rocket system will be deployed in **anti-submarine operations**.
  - It will be fired from an **indigenised rocket launcher mounted onboard** various Indian naval ships.
- ER-ASR can be fired in **single or in salvo mode** depending on the tactical mission requirements.
- The maiden successful test from the ship is a step towards enhancing the capability of the Indian Navy in anti-submarine warfare and towards achieving '**Atma Nirbharta**' in defence.
- ER-ASR has been **designed to replace the existing Russian-origin Rocket Guided Bombs (RGBs)** which are already fitted in ships.
  - While the **RGB has a range of five kilometres**, the ER-ASR can achieve a range of over eight kilometres.

**MUST READ:** [Pinaka and Smerch rocket systems](#)

### The Tropospheric Emissions: Monitoring of Pollution (TEMPO) instrument

**Context:** Recently, SpaceX launched NASA's TEMPO air quality monitoring instrument.

**About The Tropospheric Emissions: Monitoring of Pollution (TEMPO) instrument:-**

- The Tropospheric Emissions Monitoring of Pollution (TEMPO) instrument will **monitor major air pollutants** across North America.
- It is going to be in a **geostationary orbit**.
  - **Geostationary orbit: 36,000 kilometres above the equator**, where the orbiting satellite will match the rotation of the Earth.
- It was launched by NASA in a **Falcon 9 rocket**.
- TEMPO will take **important scientific observations**, including that of ozone, nitrogen oxide, sulphur dioxide and formaldehyde levels.
- It is a **payload** on the satellite **Intelsat 40E**.

**Applications:-**

- measuring levels of various **pollutants**
- Provide **air quality forecasts**
- helping the **development of emission-control** strategies

**Significance:-**

- Using TEMPO data, scientists will be able to **study rush hour pollution**, the potential for **improved air quality alerts**, the impact of lightning on the **ozone layer**, the movement of **pollution from forest fires and volcanoes** and even the effects of fertiliser application.
- TEMPO will join **South Korea's Geostationary Environment Monitoring Spectrometer** and the European Space Agency's **Sentinel-4 satellite** to become an air quality monitoring satellite constellation that will **track pollution across the Northern Hemisphere**.
- It will be the **first space-based instrument** that is **capable of measuring air quality over North America hourly during the daytime** with a resolution of several square miles.
  - The **current limit is about 100 square miles** or about 258 square kilometres.

**MUST READ:** [NavIC](#)



## DEFENCE



## SLINEX-23

**Context:** Recently, the 10th edition of IN-SLN bilateral maritime exercise SLINEX-23 was scheduled to take place in Colombo.

**About SLINEX-23:-**

- It is an **India -Sri Lanka** Bilateral Maritime Exercise.
- This is the **10<sup>th</sup> edition of the exercise**.
- It is scheduled to take place in **Colombo, Sri Lanka**.
- Indian Navy is being represented by **INS Kiltan**.
  - **INS Kiltan**: it is an **indigenous Kamorta class** ASW Corvette and
  - **INS Savitri**: an Offshore Patrol Vessel.
- The Sri Lanka Navy is represented by **SLNS Gajabahu** and **SLNS Sagara**.

**MUST READ:** [India-Sri Lanka relations](#)



## MISCELLANEOUS



## Deadnaming

**Context:** Recently, Twitter removed protection against **deadnaming**.

**About Deadnaming:-**

- A deadname is essentially the **name that a [trans](#), non-binary, and/or gender-expansive person was called before they adopted a more self-affirming name**.
- The act of, **intentionally or not, calling a trans, non-binary, and/or gender-expansive person by the deadname** is known as deadnaming, which can lead to adverse consequences.
- Deadnaming is harmful because refusing to use a person's chosen name or pronouns is a form of [transphobia](#) or **cissexism**.
- Cissexism can contribute to **mental health conditions**, such as depression and suicidality.
- It can also lead to **physical and verbal assault** and abuse.
- This might result in the person being harassed, discriminated against or assaulted.
- Deadnaming not only **invalidates someone's true identity** but also may **reveal information about the sex assigned to them at birth** that the person concerned may not want anyone to know.

**MUST READ:** [Transgender Persons \(Protection of Rights\) Act, 2019](#)

## International Conference on Disaster Resilient Infrastructure 2023

**Context:** Prime Minister Narendra Modi, underlined the need for an integrated response to disasters recently.

**About International Conference on Disaster Resilient Infrastructure 2023:-**

- It is the **annual conference** of the Coalition for Disaster Resilient Infrastructure (CDRI) and its partners.
- **International Conference on Disaster Resilient Infrastructure 2023** is being hosted by **India**.
- **The Coalition for Disaster Resilient Infrastructure (CDRI):-**



	<ul style="list-style-type: none"> <li>○ It is a <b>multi-stakeholder global partnership</b> of national governments, UN (United Nations) agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions.</li> <li>○ <b>The Prime Minister of India launched CDRI</b> during his speech at the <b>UN Climate Action Summit in 2019</b>.</li> <li>○ It aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.</li> <li>○ <b>Members:</b> 30 countries and 8 organizations.</li> <li>○ The CDRI Secretariat is based in <b>New Delhi, India</b>.</li> <li>• The ICDRI 2023 will focus on charting these solutions and pathways to <b>Shaping Resilient Infrastructure</b>.</li> <li>• It aims at delving into practices of <b>creating risk-informed systems, resilient infrastructure assets and innovative financing to deliver infrastructure needs</b>.</li> </ul> <p><b>Thematic Focus:-</b></p> <ul style="list-style-type: none"> <li>• <b>Pillar 1: Delivering Resilient Infrastructure</b> <ul style="list-style-type: none"> <li>○ Inclusive and Risk-Informed Systems</li> </ul> </li> <li>• <b>Pillar 2: Delivering Resilient Infrastructure</b> <ul style="list-style-type: none"> <li>○ Providing Reliable Services through Resilient Infrastructure Assets</li> </ul> </li> <li>• <b>Pillar 3: Delivering Resilient Infrastructure</b> <ul style="list-style-type: none"> <li>○ Realising Finance and Investments for Infrastructure Resilience</li> </ul> </li> </ul> <p><b>MUST READ:</b> <a href="#">National Disaster Management Authority (NDMA)</a></p>
<b>International Prize in Statistics 2023</b>	<p><b>Context:</b> Recently, the Indian-American statistician Calyampudi Radhakrishna Rao has been awarded the 2023 <b>International Prize in Statistics</b>.</p> <p><b>About International Prize in Statistics 2023:-</b></p> <ul style="list-style-type: none"> <li>• International Prize in Statistics 2023 was established in <b>2016</b>.</li> <li>• It is <b>awarded to an individual or group once every two years</b>.</li> <li>• It is awarded for significant breakthroughs <b>utilising statistics to improve science, technology, and human welfare</b>.</li> <li>• The prize is <b>modelled after the <a href="#">Nobel Prize</a>, <a href="#">Abel Prize</a>, Fields Medal, and Turing Award</b>.</li> <li>• It carries an <b>\$80,000 monetary award</b>.</li> <li>• The <b>International Prize in Statistics</b> and the <b>COPSS Presidents' Award</b> are the <b>two top honours in statistics</b>.</li> </ul> <p><b>MUST READ:</b> <a href="#">Porter prize</a></p>

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## MAINS



## POLITY &amp; GOVERNANCE



## Judicial pendency in India

**Context:** As per the [India Justice Report 2022](#), as of December 2022, against a sanctioned strength of 1,108 judges, the High Courts were functioning with only 778 judges leading to huge pending of cases in the judiciary.

**Statistics related to pendency in Indian Judiciary:**

Court	Pendency in 2019	Pendency in 2020	Pendency in 2021	Pendency in 2022
Supreme Court	59,535 (as on December 2019)	64,426 (as on December 2020)	69,855 (as on December 2021)	70,154 (as on March 2022)
High Courts	46,84,354 (as on December 2019)	56,42,567 (as on December 2020)	56,49,068 (as on December 2021)	58,90,726 (as on March 2022)
District & Subordinate Courts	3,22,96,224 (as on December 2019)	3,66,39,436 (as on December 2020)	4,05,79,062 (as on December 2020)	4,09,85,490 (as on March 2022)

**Source:** National Judicial Data Grid

**Reasons for judicial pendency:**

- **Government – the biggest litigant:** The Centre and state governments are party to 46% of the pending cases.
  - Thus, a simple negative list which identifies instances in which government and its agencies are barred from going to court would be helpful to avoid futile litigation.
- **Judge strength:** As of 2021, India had 21.03 judges per million people compared to the UK with 51 and the US with 107 judges per million. Hence India needs more judges for speedy justice delivery.
  - The 120th Law Commission of India report has suggested a judge strength fixation formula.
  - India should utilize its most experienced judges since present **retirement age (62 for HC judges and 65 for SC judges in contrast with 75 in UK or Canada) was fixed when life expectancy was lower.**
- **Judicial appointments:** The tussle between the executive and the judiciary over judicial appointments must be resolved on a war footing.
  - The collegium system of judges appointing other judges should be replaced with a more viable scheme.
  - The Constitution of the **All-India Judicial Services** can also help India establish a better judicial system.
- **Administrative burden:** The Indian judges spend majority time in scheduling hearings, deciding admission, etc., unlike in developed countries where administrative tasks of courts are supported by an external agency.
  - India can emulate the same with a separate professional agency with administrative expertise, specialization, and modern management practices and technologies.
  - **The Union government had suggested Indian Courts and Tribunal Services (ICTS)** – an authority charged with supervising and fulfilling the administrative requirements of the courts.
- **Frivolous litigation:** Certain categories of cases such as dishonouring of cheques or landlord-tenant disputes are voluminous and clog the system.
  - Thus, rules should be established for disincentivizing such litigations by imposing exceptionally heavy costs on losing party.

- This would lead to several frivolous disputes settled out of court.
- **Poor judicial infrastructure:** For example, many court complexes operate from rented premises.
  - **Ex CJI N V Ramana** has remarked that a National Judicial Infrastructure Corporation (NJIC) should be created for the standardization and improvement of judicial infrastructure.
- **Technology constraints:** Certain categories of cases can be moved permanently to an online disposal system, similar to online hearings during Covid-19 lockdown.
  - The computer algorithms could also be used to manage the roster, thus eliminating bias.
- **Issue of undertrials:** Around 76% of prisoners in Indian jails are undertrials, i.e., three out of four prisoners are not even convicted.
  - The SC recently directed the government to consider the introduction of Indian Bail Act to streamline the grant of bails, as done in various other countries like the UK.
- **Frequent adjournments:** A norm needs to be formed that once a date is fixed no adjournment should be possible unless the side that requests it is willing to pay the other side's legal costs along with a substantial penalty.
- **Poor management practices:** The system of long vacations for courts is a colonial practice that should be done away for optimum justice delivery owing high pendency in courts today.
  - **Former CJI Lodha** has recommended that instead of all the judges going on vacation at one time, individual judges should take their leave at different times through the year.
  - It will ensure that the courts are constantly open and there are always benches present to hear cases.
- **Low number of Special courts:** Special Courts can be established on specialised areas such as commercial cases can be transferred to the commercial division and the commercial appellate division of High Courts.
  - Similarly, Special Courts within High Courts can be set up to address litigations pertaining to land, crime, traffic challans etc., in order to reduce the burden on main courts.
- **Less budgetary allocation:** The budget allocated to the judiciary is between 0.08 and 0.09 per cent of the GDP. Only four countries — **Japan, Norway, Australia and Iceland** — have a lesser budget allocation and they do not have problems of pendency like India.

#### Suggestive measures:

- **Speedy appointment of judges:** By not appointing judges, the government is depriving common persons of justice. Justice delayed is justice denied.
  - There is urgent need to improve the judge-to-population ratio to reduce the workload of judges.
- **Guidelines by Union government:** Centre had suggested measures like increasing the number of working days of courts, establishment of fast track courts and Indian Courts and Tribunal Services (ICTs) to increase the productivity of the court system.
- **E-platforms:** Improve judicial infrastructure through the use of e-platforms and setting up of more courts.
  - India has launched the e-Courts National portal [ecourts.gov.in](https://ecourts.gov.in) of the eCourts Project.
- **Strengthen the Alternative Dispute Resolution (ADR) mechanism:** It uses the modes like Arbitration, Mediation and Conciliation.
  - It uses a neutral third party who helps the parties to communicate, discuss the differences and resolve the dispute.
  - It offers to resolve all types of matters related to civil disputes, as explicitly provided by the law.
- **Counselling:** Disputes can be settled at the pre-litigation stage through counselling.
- **Lok Adalat:** Voluntary agencies like Lok Adalats (People's Courts) are an interesting feature of the Indian legal system.
  - It is one of the alternative dispute redressal mechanisms.



## Anganwadi Services

**Context:** Recently, the Women and Child Development Ministry informed the Parliament on the contribution of the MGNREGA scheme to the building of Anganwadi centres.

### About Anganwadi Centres:

- Anganwadi is a **centrally sponsored scheme** implemented by the States / UTs which serves as a rural child and maternal care centre in India.
- It was started by the Government of India In 1975 as part of the **Integrated Child Development Services** program to combat child hunger and malnutrition.
- **Anganwadi centres provide a package of six services:** supplementary nutrition, pre-school non-formal education, immunisation, health check-up, nutrition and health education, and referral services.
- The beneficiaries under the **Anganwadi Services Scheme are identified on the basis of Aadhaar.**

### Significance of Anganwadi scheme:

- **Affordable and accessible healthcare:** Today in India, about 2 million Anganwadis workers are reaching out to a population of 70 million women, children and sick people, helping them become and stay healthy.
  - Anganwadi workers are the most important and soft-ignored essential link of Indian healthcare.
- **Eradicating Malnourishment:** One-third of the world's stunted children live in India. Anganwadis are integral for the success of ICDS programme that caters to the nutrition, health and pre-education needs of children till six years of age as well as the health and nutrition of women and adolescent girls.
- **Local Connect & Community Mobilisation:** Anganwadi workers have the advantage over the physicians living in the same rural area, which gives them insight into the state of health in the locality and assists in identifying the cause of problems and in countering them.
- **Ensuring Access to Government Programmes:** Anganwadi workers are India's primary tool against the menace of child malnourishment, infant mortality, and lack of child education, community health problems and in curbing preventable diseases.
  - These community health workers have been point-persons for rural communities to access key health services and benefits.
- **Health Crisis Management:** With little training and immense risk, they went to households to spread awareness on COVID-19 as well as carry out tasks like contract tracing.

### Challenges Faced by Anganwadis:

- **Lack of Skill Set:**-Despite being the major source of nutrition advice, Anganwadis staff may be lacking in technical skills.
  - Knowledge of critical health behaviours such as complementary feeding and handwashing was poor among mothers listed as Anganwadis workers.
- **Lack of Resources:** Anganwadi personnel frequently lack the resources or training necessary to deliver ECCE.
- **Lack of Time:** Administrative obligations consume a large amount of time, and fundamental services such as pre-school education suffer as a result.
- **Lack of Infrastructure:** Infrastructure is frequently lacking in Anganwadis.
  - According to NITI Aayog, only 59% of Anganwadis had enough seating for children and employees, and more than half were unsanitary.
- **Issues in Urban Areas:** According to NFHS-4 statistics, the use of early childcare services at Anganwadis in urban regions is just 28 percent, compared to 42 percent in rural areas.

### Govt measures taken for Strengthening of Anganwadis:

- **Convergence with MNREGA** : the government has taken up **Construction of 4 lakh AWC buildings** across the country under **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)** in convergence with Anganwadi Services (ICDS Scheme).
- **Mobile Phones**: Anganwadi Workers (AWWs) have been provided with Smart Phones for efficient service delivery.
  - Streamlined guidelines were issued covering several aspects such as quality assurance, roles and responsibilities of duty holders, procedure for procurement, integrating AYUSH concepts and Data management
- **Increased Training**: the Ministry has formulated a comprehensive training strategy for the functionaries of Anganwadi Services.
  - Training is imparted to the functionaries on a regular basis. Anganwadi Workers are provided job training for 26 working days.
  - During this job training, the knowledge, understanding and skills of Anganwadi Workers on various Acts, Policies, Programmes related to women and children, setting up vibrant Anganwadi Centres and conducting **Early Childhood Care and Education activities**, .
- **ICT Integration**: a robust ICT enabled platform named Poshan tracker has been designed to capture real-time data on implementation and monitoring of Anganwadi Services across the country.
  - The Poshan Tracker management application provides a 360 – degree view of the activities of the Anganwadi Centre (AWC), service deliveries of Anganwadi Workers (AWWs) and complete beneficiary management.

#### Way Forward:

AWCs play an important role in improving basic child learning and health needs for the poor people and help the government to implement its various programs especially related to child and women development. The steps like **Saksham Abhiyan and technological up-gradation by states like Gujarat** are positive steps but not sufficient considering issues AWCs are grappling with.

Hence, the government must resolve the issues and improve the functioning of AWCs through better schemes and adhering to recommendations of think tanks like NITI AYOOG.

Source: [The Hindu](#)

### Competition Amendment Bill, 2023

**Context:** Recently, Rajya Sabha passed the Competition Amendment Bill, 2023.

- The bill seeks to amend the Competition Act, 2002 which regulates competition in the Indian market and prohibits anti-competitive practices such as cartels, mergers and acquisitions that may have an adverse effect on competition.

#### About Competition Act, 2002:

- The Competition Act, 2002, regulates competition in the Indian market and prohibits anti-competitive practices such as cartels, abuse of dominant market position, and mergers and acquisitions that may have an adverse effect on competition.
  - The Act has been amended by the **Competition (Amendment) Act, 2007**.
- The [Competition Commission of India \(CCI\)](#) is responsible for implementing and enforcing the Act.
- The **Competition Appellate Tribunal** is a statutory body created in accordance with the Competition Act, 2002 to hear and regulate on appeals against any rules made, decisions made, or orders made by the Competition Commission of India.
- The government replaced the **Competition Appellate Tribunal with the National Company Law Appellate Tribunal (NCLAT) in 2017**.

#### Amendments:

- **Penalties**: The Bill seeks to defines '**turnover**' for the purpose of penalty as global turnover derived from all the products and services by a person or an enterprise

- The idea is to levy a penalty as a percentage of global turnover of the offending company, moving away from the current practice of levying a part of the local or relevant market turnover as penalty.
- **Decriminalisation:** The Bill **decriminalises certain offences under the Act** by changing the nature of punishment from imposition of fine to civil penalties.
  - These offences include failure to comply with orders of the CCI and directions of the Director General related to anti-competitive agreements and abuse of dominant position.
- **Expands CCI's Scope:** The new provisions expand the scope of CCI's merger regulation by bringing deals worth **more than Rs. 2,000 crore** requiring regulatory clearance.
- **Settlement Mechanism:** The amendment introduces a scheme for commitment and settlement which is meant to reduce litigation by way of negotiated settlements.
  - This scheme is available to cases of anti-competitive agreements and abuse of dominance, but not to cartels.
- **Reducing US monetary Policy Influence:** By reducing the use of the US dollar, countries can reduce the influence of US monetary policy on their own economies.

### Way Forward:

India should focus on promoting free and fair competition by focusing on competitive neutrality i.e. creating level playing field between all private and public sectors and gradual opening of sectors such as mining, ports, railways, and electricity towards true competition.

The recent government initiatives to introduce limited privatisation of Indian Railways by introducing 109 pairs of routes for private train operations for passenger train services indicate India's growing realization of the importance of introducing competition in the public sector.

## National Policy for Rare Diseases 2021

**Context:** The Union Government has given full exemption from basic customs duty on all drugs and food for special medical purposes imported for personal use for treatment of all Rare Diseases listed under the National Policy for Rare Diseases 2021.

- The exemption has been granted by the **Central Board of Indirect Taxes and Customs (CBIC)** by substituting "Drugs, Medicines or Food for Special Medical Purposes (FSMP)" instead of "drugs or medicines".

### Easing health costs

The government has announced policy changes in import duties to ease the healthcare costs of rare diseases. A lowdown:

- Full exemption from basic customs duty on imported drugs and special medical foods for personal use in treating rare diseases
- Certificate from health authorities required for individuals to get the exemption
- Previously, drugs/medicines attracted customs duty of 10%, with some lifesaving drugs having concessional rates
- Pembrolizumab, used in cancer treatment, also fully exempted from basic customs duty



Annual treatment costs for rare diseases can range from ₹10 lakh to over ₹1 crore per year

Source: [The Hindu](#)

### About Rare Diseases:

- Rare diseases (also called "**Orphan**" diseases) are broadly defined as diseases that **infrequently occur in a population** and three markers are used (the total number of people with the disease, its prevalence, and the availability/non-availability of treatment options).

- The World Health Organisation (WHO) defines a rare disease as having a frequency of **less than 6.5-10 per 10,000 people**.

- **Example:** Lysosomal Storage Disorders (LSD), Pompe disease, cystic fibrosis, muscular dystrophy, spina bifida, haemophilia etc.

- About **95% rare diseases** have no approved treatment and less than 1 in 10 patients receive disease-specific treatment.

### National Policy for Rare Diseases, 2021

- It categories 'rare disease' into three groups:
  - **Group 1:** Disorders amenable to one-time curative treatment.
  - **Group-2:** Diseases requiring long term/lifelong treatment having relatively lower cost of treatment and benefit has been documented in literature and annual or more frequent surveillance is required.

- **Group 3:-** Diseases for which definitive treatment is available but challenges are to make optimal patient selection for benefit, very high cost and lifelong therapy.
- The government would notify selected Centres of Excellence at premier government hospitals for comprehensive management of rare diseases.
- Provision for financial support of up to Rs. 50 lakhs to the patients suffering from any category of the Rare Diseases and for treatment in any of the **Centre of Excellence (CoE)** mentioned in NPRD-2021, outside the **Umbrella Scheme of Rashtriya Arogya Nidhi**.
- In order to receive financial assistance for treatment of rare disease, the patient of the nearby area may approach the nearest Centre of Excellence to get him assessed and avail the benefits.
- Eight (08) Centres of Excellence (CoEs) have been identified for diagnosis, prevention and treatment of rare diseases.
- **Five Nidan Kendras** have been set up for genetic testing and counselling services.

#### **Preventive measures adopted by the policy**

The preventive measures adopted by the National Policy for Rare Diseases are as follows:

- Preventing birth of an affected child.
- Prenatal Screening
- Prenatal Screening by invasive testing
- New born screening
- Early postnatal diagnosis and treatment

#### **Challenges to be addressed by the policy**

The National Policy for Rare Diseases, 2021, will address the following challenges:

- The research and development for majority of rare diseases is less as very little is known about pathophysiology of these diseases.
- The patient pool of rare diseases is less.
- Lack of availability and accessibility of medicines to rare diseases.
- Cost of treatment of rare disease is highly expensive.

#### **Way Forward:**

There is an immediate need to create awareness amongst the general public, patients & their families and doctors, training of doctors for early and accurate diagnosis. As resources are limited and have multiple uses, the policy makers have to make a choice of prioritizing certain set of interventions over others. There should be policy measures for supporting R&D and drug development for rare diseases.

### **Bhu – Aadhaar**

**Context:** By March 2024, India aims to digitise 100 per cent of its land records and the land registration process and give a unique 14-digit alpha-numeric identity, also called Bhu-Aadhaar.

**About ULPIN (Unique Land Parcel Identification Number)/ Bhu-Aadhaar:**

- **Digital India Land Record Modernisation Programme (DILRMP)**, which integrates the computerisation of land records, strengthening of revenue administration, and updating of land records.
- Once this has been done and the system is cleaned up, every plot/parcel of land (both urban and rural) can get the **14-digit alpha-numeric ULPIN** (Unique Land Parcel Identification Number) which is also named as **Bhu-Aadhaar**.
- **Department of Land Resources (DoLR)** along with the **Ministry of Electronics and Information Technology, the Department of Science and Technology and the National Remote Sensing Centre** came up with the Unique Land Parcel Identification Number system.

#### **Significance of Bhu Aadhaar:**

- **Data mapping:** The Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhaar will have the longitude and latitude coordinates of the land parcel and is based on detailed surveys and geo-referenced cadastral maps.

- It will cover all land parcels rural as well as urban.
- **Language processing:** Currently, the Records of Rights in each state and Union territory are maintained in local languages.
- DILRMP will also process transliterating the Records of Rights to any of the 22 languages recognised by the Constitution.
- Being described as “**the Aadhaar for land**”, it is a number that would **uniquely identify every surveyed parcel of land and prevent land fraud**, especially in the hinterlands of rural India, where land records are outdated and often disputed.
- The identification will be based on **the longitude and latitude coordinates of the land parcel**, and is dependent on detailed surveys and geo-referenced cadastral maps.
  - This is the next step in the Digital India Land Records Modernisation Programme (DILRMP), which began in 2008.
- Delivery of citizen services of land records through the single window.
- Sharing of land records data across departments, financial institutions and all stakeholders.

**Challenges:****Difficulty in accomplishing target:**

- Given the history and the complex nature of land laws, it is claimed that this process certainly cannot be accomplished by March 2024 (or even March 2026), both target dates.

**Issues with updating of land records:**

- Digitisation of Cadastral maps will typically not have latitude/longitude data.
  - There could be **elevation and projection problems**.
- The record we have of the title must reflect ownership, with new registrations and mutation being automatic.
  - With or without title insurance, this guarantees title and just as Aadhaar captures biometry, ULPIN captures everything about that plot/parcel, which in all is a difficult process.

**Feasibility and sustainability:**

- The feasibility and sustainability of the project have also raised concerns due to the cost of implementation, particularly considering the Department of Land Resources’ restricted financial resources.

**Way Forward:**

Modernisation of land records in absence of other changes such as multiplicity of laws on land, should not be overstated. ULPIN is about incremental improvements. There are parts where land titles and records are in a mess. Cleaning them up is a huge task.

Despite the challenges and controversies surrounding the Bhu Aadhaar project, it has the potential to bring significant benefits to India’s land management system.

### The obstacles against humane policing

**Context:** Recently, concern was expressed about the degree of human rights violations in police stations in the country.

**Issue of inhumane policing:****Global Issue:**

- Against the known instances of police brutality across the globe, we can safely assume that a large number of cases of torture have also gone unreported.
  - This largely constitutes assaults on women.
  - Only about 10% of complaints are believed to have been registered.
- Also, only a small percentage of the offenders have been convicted.
- The **S. is one country** which has had far too many instances of police torture.
- In contrast, **police handling of the public is more civilised in most of Europe**, including the U.K.

**India’s case:**



- **National Crime Records Bureau (NCRB)** data reveal that though the number of custodial deaths varies year to year, on average of about 100 custodial deaths have taken place every year between 2010 and 2019. Of them,
  - About 3.5 persons allegedly died due to injuries caused by policemen,
  - 6 while escaping from custody,
  - 1 due to suicide, and
- The rest is due to various reasons like illness and injuries caused in road accidents.
- A judicial inquiry, which is **mandatory for every suspicious custodial death**, was conducted in 26.4 cases.

#### Issues with the Police Forces:

##### Lack of Reporting:

- Against the known instances of police brutality across the globe, we can safely assume that a large number of cases of torture have also gone unreported.
- This largely constitutes assaults on women.
- **Only about 10% of complaints** are believed to have been registered and only a small percentage of the offenders have been convicted.

##### Corruption:

- Due to corruption among public servants which has burgeoned in recent times, such incidents of police brutality are increasing day by day.

##### Increased Stress level:

- The pressure to produce results has been on the rise and at the same time, stress that an average policeman is subjected to from his higher-ups has not abated.
- Additionally, our country has large police forces.
- Therefore, disseminating the message of ethics to the bottom of such large outfits is a gargantuan task.

##### Tussle Between Centre and state:

The exchange of barbs by the two sides has been an unfortunate and avoidable development.

##### Permission to CBI:

- There are frequent spats between States and the Centre over the use or alleged misuse of the Central Bureau of Investigation (CBI).
- Insensitive action by a few States to withdraw consent to the CBI to function in a State smacks of politics and vindictiveness, which diminishes the fight against public servant graft.

##### Lack of Infrastructure:

- According to the CAG report, state police departments' weaponry is archaic, and the purchase process for firearms is lengthy, resulting in a scarcity of arms and ammunition.

##### Colonial Legacy:

- The Police Act of 1861 was legislated by the British right after the revolt of 1857 to bring in efficient administration of police in the country and to prevent any future revolts.
- Now the situations have changed so there is a need for the act as per current demands.

##### Role of Technology and Ethics in Policing

- **Both technology and ethics are necessary for effective policing:** While technology can help solve crimes and improve policing efficiency, ethics and a commitment to human rights are necessary to ensure that police officers act within the law and respect the rights of all citizens.
- **Technology alone is not enough:** The technology has played a significant role in improving policing in India, with many officers now trained in the use of modern tools and techniques to solve crimes.
  - However, technology alone is not enough, and that ethics must also be prioritized in policing.

- **Training in ethics must be prioritized at all levels of the police force:** Many police officers in India lack sufficient training in ethics and human rights, which makes it easier for them to resort to violence and abuse of power.
  - Training in ethics must be prioritized at all levels of the police force, from the highest-ranking officers to those on the front lines.
- **Police leaders are crucial players:** The police leaders, such as DGPs and IGPs, have a crucial role to play in indoctrinating young recruits on the value of sticking to the law and civilised behaviour.

#### Significance of Humane Policing:

- Humane policing refers to a **style of law enforcement** that places a greater emphasis on preserving the human rights and dignity of individuals.
- Humane policing recognizes that police officers are entrusted with great power and authority and that they have a duty to exercise this power with **respect, compassion, and professionalism**.
- It prioritizes building **trust and positive relationships** between law enforcement agencies and the communities they serve.
- It seeks to **avoid the use of excessive force**, unnecessary aggression, or intimidation in policing activities.
- It recognizes the **importance of accountability and transparency** in law enforcement.
- It also recognizes the importance of training and education for police officers in areas such as cultural competence, mental health awareness, and conflict resolution.

#### Various recommendations:

##### Separating investigations from law and order:

- **The National Police Commission (1977-81), the Law Commission in its 154th report (1996) and the Malimath Committee Report (2003)**, among others, and the Supreme Court in **Prakash Singh v. Union of India (2006)**, have recommended that the investigating police should be separated from the law-and-order police to ensure better expertise in the investigation.
- It is believed that a separate wing will do a more professional investigation and will not use unwarranted methods to **extract a confession from the accused**.
- Though efforts have been made by some states in this direction, more resources are required in policing to implement the Court's directions.

##### Guidelines by the apex court:

- In the judgment in **K. Basu v. State of West Bengal (1996)**, the Supreme Court laid down guidelines to check custodial torture and increase the transparency and responsibility of the police officer effecting arrest.
- Most of these guidelines such as providing information to a friend or relative about the arrest, medical examination, and permission to meet a lawyer have now been incorporated in the CrPC.
- Investigating officers mostly comply with them.

#### Way Forward:

Solid training in ethics at the time of induction is not enough. The pressures in the field are so enormous that the impact of ethical education will evaporate quickly. **DGPs and IGPs have a crucial role in indoctrinating young recruits** on the value of sticking to the law and civilised behaviour.

**Strengthened Criminal Justice System** and our grassroots level policing institutions with **humane and civilized conduct**, are necessary to prepare our police to deal with the present and emerging challenges.

### 50 years of Kesavananda Bharati case

**Context:** The seminal ruling in Kesavananda Bharati, in which the Supreme Court laid down the "basic structure" doctrine on the limits of Parliament's power to amend the Constitution, recently completed 50 years.

- The Supreme Court's 13 judges bench in the **Kesavananda Bharati case, 1973 articulated the "doctrine of basic structure"**.

- According to this doctrine, the **Parliament cannot use its amending power under Article 368** to destroy the basic structure of the Indian constitution such as democracy, secularism, federalism, judicial independence, etc.
- The basic structure doctrine is a **judicial principle that limits the power of the Parliament of India to amend the Constitution.**

**The significance of this case:**

- **Established Supremacy of the Constitution:** It established the supremacy of the Constitution over the Parliament and the executive and limited their power to amend the Constitution without affecting its basic features.
- **Protected Fundamental Rights:** It preserved the democratic and federal nature of the Constitution and protected the rights and freedoms of the citizens from arbitrary or authoritarian amendments.
- **Judicial Review:** It asserted the judicial review power of the Supreme Court to examine the validity of any constitutional amendment and strike it down if it violated the basic structure doctrine.
- **Primacy of Fundamental Rights over DPSPs:** It resolved the conflict between the fundamental rights and the directive principles of state policy, and harmonized them by giving primacy to the former over the latter.
- **Judiciary power to define “basic structure”:** It paved the way for subsequent judgments that expanded and enriched the basic structure doctrine, such as the **Minerva Mills case (1980)**, which added secularism and judicial independence as basic features, and the **Indira Gandhi case (1975)**, which invalidated the 39th Amendment that sought to immunize the election of the Prime Minister from judicial scrutiny.

**Way Forward:**

The Basic Structure Doctrine is a cornerstone of the Indian Constitution, which has been instrumental in ensuring the preservation of the fundamental principles of democracy and protecting the rights of citizens. Its establishment in the Kesavananda Bharati case is a testament to the strength and resilience of India's democratic institutions and the judiciary's commitment to upholding the Constitution.



## ECONOMY

**Changes in UPI Transaction Fees: Impact on Your Wallet**

**Context:** The National Payments Corporation of India (NPCI) has allowed prepaid payment instruments (PPIs) to be part of the interoperable Unified Payments Interface (UPI) ecosystem.

- The NPCI has recently introduced interchange fees of up to 1.1 per cent on merchant UPI transactions done using prepaid payment instruments (PPIs) from April 1, 2023.

**Key highlights of the changes:****Applicability:**

- The new NPCI guidelines on wallet interoperability establish interchange fee for wallet usage, which will be paid to issuers of wallets such as **Paytm, PhonePe and Google Pay, among others**.
- They also include **charges for UPI-wallet-loading** that will be **paid by wallet issuers to remitter banks or the bank accounts** from which the amount is being debited.

**Benefit for wallet players:**

- The inter-operability norms will enable **universal acceptance of wallets across all UPI QR codes and devices**, thus increasing the salience or relevance of wallets.
- It will also ensure uniformity and parity by clearly defining the interchange fees on wallet payments as against the current practice of bilateral agreements between wallet issuers and payment platforms.

**Interchange fees:**

- The interchange rates vary according to **merchant category codes, in the range of 0.5 per cent to 1.1 per cent**.
- Categories such as **fuel, education, agriculture and utility payments** attract a lower interchange of 0.5-0.7 per cent; convenience stores across food shops, specialty retail outlets and contractors, have the **highest charge of 1.1 per cent**.

**Wallet transactions:**

- The interchange fees are paid by merchants to wallets or card issuers and are usually absorbed by merchants.
- **Smaller merchants and shopkeepers** are unlikely to be impacted as it is **applicable only on payments of over Rs. 2,000**.
- **MDR or merchant discount rate** is applicable on wallets-on-UPI in certain cases and this move may lead to higher MDRs imposed on merchants, depending on payment companies' ability and willingness to pass on the interchange.

**Impact on Customers:**

- The norms are expected to increase the appeal, scope, role and usability of wallets as they can now be used to make UPI payments across QR codes and devices, increasing payments alternatives for customers.
- Consumers will also be able to load their wallets from anywhere including **credit or debit cards, BNPL (Buy Now Pay Later) and net banking, among others**, thus creating a mechanism to use any instruments for UPI transactions, albeit directly or indirectly.
- Currently, **MDR for bank-to-bank UPI transactions is zero**.

**About Prepaid Payment Instruments (PPIs):**

- PPIs are instruments that facilitate purchase of goods and services, conduct of financial services, enable remittance facilities, etc., against the value stored therein.
- Prepaid payment instruments' examples include smart cards, online accounts, online wallets, stripe cards, paper vouchers, etc.

- The primary objective of these instruments is to get access to the amount already prepaid.
  - So, one can purchase the required goods without any physical exchange of cash or card.

### Way Forward:

The digital payment landscape in India has been transformed and **India has emerged as a leader in the creation of digital assets**, which can serve as an example to many other nations. The Government of India needs to make **more efforts to help India attain the status of one of the most efficient payments markets in the world**.

There is a need for regulatory intervention to explore alternative payment methods, such as **digital wallets and UPI, which offer lower transaction fees**. Overall, the benefits of digital transactions outweigh the challenges, and as technology continues to evolve, we can expect to see further innovation in the payments landscape.

## Cooperatives in India

**Context:** The Central Government has recently introduced a Bill to amend the Multi-State Co-operative Societies Act, 2002.

### The key features of this Bill are:

- The Central Government will establish the **Cooperative Election Authority** to conduct the election of board members;
- Provision for **amalgamation of UCBs with other multi-State UCBs** as decided by general meeting with two-thirds of its members present and voting;
- The Central Government will **prepare a scheme and create a fund**, to be contributed by profit-making multi-State UCBs, for rehabilitation of sick multi-State UCBs;
- There are **restrictions on the redemption of government shareholding**; and
- **One or more Co-operative Ombudsman** with territorial jurisdiction to be appointed by the Central Government for the redress of complaints.

### About the Cooperative Societies:

- According to **International Labour Organization**, a cooperative is an **autonomous association of persons united voluntarily** to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise.
- A co-operative society is a voluntary association of individuals having common needs who join hands for the achievement of common economic interest.
- Its aim is to serve the interest of the poorer sections of society through the principle of self-help and mutual help.
- The cooperative movement is as old as India's Independence.

### Cooperative evolution in India:

- Cooperatives were **first started in Europe and the British Government** replicated it in India to mitigate the miseries of the poor farmers.
- First credit cooperative society was formed in Banking in 1903 with the support of the Government of Bengal
- Enactment of the **Cooperative Credit Societies Act, 1904** gave Cooperative a definite structure and shape.
- In 1919, cooperation became a provincial subject and the provinces were authorised to make their own cooperative laws under the Montague-Chelmsford Reforms.
- **National Cooperative Development Corporation (NCDC)**, a statutory corporation, was set up under National Cooperative Development Corporation Act, 1962.
- The Government of India announced a **National Policy on Co-operatives in 2002**.

### Current status in India:

- The country has 1,94,195 cooperative dairy societies and 330 cooperative sugar mill operations.
- **Constitution (97th Amendment) Act, 2011** added a new **Part IXB right after Part IXA (Municipals)** regarding the cooperatives working in India.



- Village-level **primary agricultural credit societies (PACs)** formed by farmer associations are the best example of grassroots-level credit flow
- Central Government recently established a distinct '**Ministry of Co-operation**' to realize the aim of '**Sahakar se Samridhi**' (**Prosperity via Cooperation**) and to revitalize the cooperative movement.
- Cooperative Societies is in **Item No. 32 in the State List**.

#### Benefits of Cooperative Societies;

- **Easy setup, less legal implications:** Any ten members who have acquired the majority can form a cooperative society with few legal formalities.
- **Promote equality and transparency:** A cooperative society is based on the principle of 'one man, one vote'.
  - All members have equal rights in handling the internal affairs. The surplus generated by these societies is dispensed equally among the members.
- **Limited Liability:** The member's liability in a cooperative society is confined to the extent of their capital contribution.
- **Eliminate Middlemen:** Consumer cooperative societies are set up to attain a seamless supply of essential commodities.
  - These societies purchase commodities directly from the producers & wholesalers and sell them to the end-users at affordable prices.
- **Fosters Habit of Saving:** Cooperative societies cultivate the habit of saving among their members. They render credit facilities generally for productive purposes only.
- **Social Benefits:** Cooperative societies have played a significant role in modulating social customs and controlling irrelevant expenses.
  - The profits reaped by the cooperatives can be used for facilitating fundamental amenities of the society.
- **Access to Credit:** Cooperative societies have helped in reducing the influencing of private money lenders in rural areas. Cooperatives facilitate credit at the nominal interest rate.
- **Support Agriculture:** Cooperative societies have supported the government's effort to improve agricultural production.
  - They act as a bridge between the government and farmers e.g., the government disburses High-Yielding Variety (HYV) seeds and fertilizers via Cooperatives.
- **Reserve Funds:** Cooperative societies are under the legal obligation to transfer their 25% of profit to the general reserve. Thus, it reduces the need for external funding.

#### Challenges:

##### Non-accountability:

- The government gave too many benefits to cooperatives, but then there was no further accountability which led to these cooperatives becoming more and more lethargic.

##### Vested interest of some people:

- A lot of times people who are in position in control of cooperatives are actually people who have joined cooperatives for personal gains.

##### Lack of coordination:

- Generally what happens in cooperatives is that different cooperatives at different level don't coordinate this makes the work of cooperatives difficult.

##### The Internal Free Rider Problem:

- New members who provide very little capital enjoy the same benefits as long-standing or founding members who have major investments in the cooperative
- New members get a "free ride" on the investments and other efforts of existing members, thereby diluting the returns to existing members.

**No Balanced Growth:**

- The cooperatives in northeast areas and in areas like West Bengal, Bihar, Orissa are not as well developed as the ones in Maharashtra and the ones in Gujarat.

**Political Interference:**

- This is the biggest problem faced by Sugar cooperatives in Maharashtra.

**Mismanagement and Manipulation:**

- A hugely large membership turns out to be mismanaged unless some secure methods are employed to manage such co-operatives.
- In the elections to the governing bodies, money became such a powerful tool that the top posts of chairman and vice-chairman usually went to the richest farmers who manipulated the organization for their benefits.

**Lack of Awareness and Restricted Coverage:**

- People are not well informed about the objectives of the Movement, rules and regulations of co-operative institutions.
- Most of these societies are confined to a few members and their operations extended to only one or two villages.

**Way Forward:**

The Cooperative societies can play a vital role in the rural transformation. Provision of adequate financial and technical assistance can enable them to address rural challenges and contribute to India's growth story. Government should take all possible steps to facilitate growth ecosystem for the Cooperatives.

**RBI's Green Deposits Framework**

**Context:** Recognising that climate change is one of the most critical challenges in the present era, the Reserve Bank of India (RBI) has issued a framework for banks to accept and promote green deposits.

**About Green Deposit:**

- A green deposit refers to an **interest-bearing deposit received by regulated entities** (usually banks and non-banking financial institutions) for a fixed period.
  - The proceeds are earmarked for being **allocated towards green finance**.
- The investment in this **fixed tenure deposit** will go towards financing eligible businesses and projects that promote the transition to a **low-carbon, climate-resilient, and sustainable economy**.
- The projects must **encourage energy efficiency in resource utilization, reduce carbon emissions and greenhouse gases, promote climate resilience** and/or adaptation and value, and improve natural ecosystems and biodiversity.

**The green deposit framework:**

- As per the RBI framework, banks will offer the deposits as cumulative/ non-cumulative deposits.
- On maturity, the green deposits would be renewed or withdrawn at the choice of the depositor.
- The green deposits shall be **denominated in rupees only**.

**Key Features of the Framework:****Applicability:**

- The framework is applicable to Scheduled Commercial Banks, including Small Finance Banks, excluding Regional Rural Banks, Local Area Banks and Payments Banks and all deposit-taking Non-Banking Financial Companies (NBFCs), including Housing Finance Companies.

**Allocation:**

- REs will be required to allocate the proceeds raised through green deposits towards a list of green activities and projects that encourage energy efficiency in resource utilization, reduce carbon emissions and greenhouse gases, promote climate resilience and/or adaptation, and improve natural ecosystems and biodiversity.

**Exclusion:**

- Projects involving new or existing extraction, production and distribution of fossil fuels, including improvements and upgrades, nuclear power, direct waste incineration, alcohol, weapons, tobacco, gaming, or palm oil industries.
- Renewable energy projects generating energy from biomass using feedstock originating from protected areas, landfill projects and hydropower plants larger than 25 MW have been excluded from green financing.

#### Financing Framework:

- To ensure effective allocation of green deposits, REs must put in place a Board-approved Financing Framework (FF).
  - The green deposits shall be denominated in Indian Rupees only.
- The allocation of funds raised through green deposits by REs during a financial year shall be subject to independent third-party verification/assurance, which shall be done on an annual basis.

#### Significance:

- The idea is to foster and develop a green finance ecosystem in the country.
- It aims to encourage regulated entities (REs) to offer green deposits to customers, protect the interest of the depositors, aid customers to achieve their sustainability agenda, address greenwashing concerns, and help augment the flow of credit to green activities/projects.
- Climate change has been recognised as one of the most critical challenges and globally, various efforts have been taken to reduce emissions as well as promote sustainability.
- The financial sector can **play a pivotal role in mobilising resources and their allocation thereof in green activities/project**
  - Green finance is also progressively gaining traction in India,
- The allocation of proceeds raised from green deposits should be based on the official Indian green taxonomy.
- The projects must **encourage energy efficiency** in resource utilisation and improve natural ecosystems and biodiversity.
- **Banks and NBFCs** will have to put in place a comprehensive board-approved policy on green deposits.
- There are **no penal provisions for banks** that do not utilize green deposits.
  - However, since the **utilization of green deposits is transparent**, if funds are not adequately deployed, depositors may not be very forthcoming to invest in green deposits of the bank.

#### Way Forward:

Green deposits are a step towards promoting sustainable financing and addressing environmental concerns. These deposits offer investors an opportunity to invest in eco-friendly projects while earning reasonable returns. By investing in green deposits, investors can make a positive impact on the environment and contribute towards creating a sustainable future.

Thus, with the transparency and regulatory framework in place, green deposits are an attractive option for savers looking to invest in socially responsible investment products.

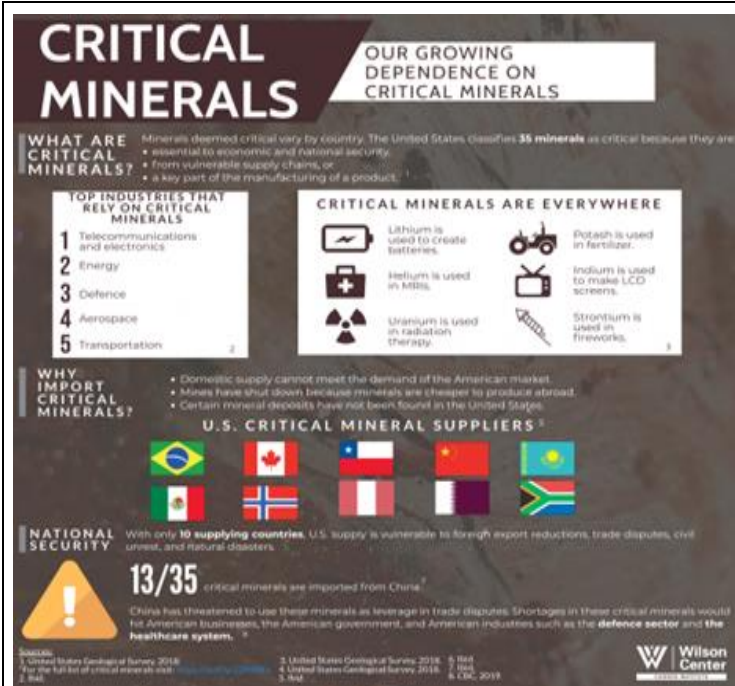
### Critical minerals and supply chain challenges

**Context:** A recent working paper from the Centre for Social and Economic Progress (CSEP) extends the earlier minerals assessment for 23 minerals by assessing the criticality levels of 43 select minerals for India based on their economic importance.

#### About critical minerals:

Source: <https://www.wilsoncenter.org>

- Critical minerals refer to **mineral resources, both primary and processed**, which are essential inputs in the **production process of an economy**, and whose supplies are likely to be **disrupted due to the risks of non-availability or unaffordable price spikes**.



• To tackle such supply risks, major global economies periodically evaluate which minerals are critical for their jurisdiction through a quantitative assessment.

• Minerals such as **antimony, cobalt, gallium, graphite, lithium, nickel, niobium, and strontium** are among the **22 assessed to be critical for India**.

#### Criticality of these Minerals

• As countries around the world scale up their transition towards clean energy and digital economy, these critical resources are key to the ecosystem that fuels this change.

• Any supply shock can severely imperil the economy and strategic autonomy of a country over-dependent on others to procure critical minerals.

• But these supply risks exist due to rare

availability, growing demand and complex processing value chain.

- Many times the complex supply chain can be disrupted by hostile regimes, or due to politically unstable regions.
- According to the **International Energy Association (IEA)**, the rise of low-carbon power generation is projected to triple mineral demand from this sector by 2040.
- **A US government statement** noted that as the world transitions to a clean energy economy, global demand for these critical minerals is set to rapidly increase by 400 per cent to 600 per cent over the next several decades, and, for minerals such as lithium and graphite used in EV batteries, demand will increase by as much as 4,000 per cent.

#### Applications:

- **Electric vehicles:** cobalt, lanthanum, lithium
- **Fuel cells:** platinum, palladium, rhodium
- **Wind energy technologies:** neodymium, dysprosium, terbium
- **Aviation sector:** titanium
- **Photovoltaic solar technologies:** cadmium, indium, gallium

#### Significance for India:

- Many of these are required to meet the manufacturing needs of green technologies, high-tech equipment, aviation, and national defence.
- However, while India has a significant mineral geological potential, many minerals are not readily available domestically.
- Hence, India needs to develop a national strategy to ensure resilient critical minerals supply chains, which focuses on minerals found to be critical.

#### India and Critical Minerals:

##### Lithium Agreement:

- In mid-2020, India, through a newly floated state-owned company, had signed an agreement with an Argentinian firm to jointly prospect lithium in the South American country that has the third largest reserves of the metal in the world.

##### India-Australia Critical Minerals Investment Partnership:

- India and Australia decided to strengthen their partnership in the field of projects and supply chains for critical minerals.

- Australia has the resources to help India fulfil its ambitions to lower emissions and meet the growing demand for critical minerals to help India's space and defence industries, and the manufacture of solar panels, batteries and electric vehicles.

### Challenges

#### International Challenges:

##### China:

- China, the most dominant player in the critical mineral supply chains, still struggles with Covid-19-related lockdowns.
- As a result, the extraction, processing and exports of critical minerals are at risk of slowdown.

##### Russia Ukraine war:

- Russia is one of the significant producers of nickel, palladium, titanium sponge metal, and the rare earth element scandium.
- Ukraine is one of the major producers of titanium. It also has reserves of lithium, cobalt, graphite, and rare earth elements, including tantalum, niobium, and beryllium.
- The war between the two countries has implications for these critical mineral supply chains.

#### Shifting Balance of power:

- As the balance of power shifts across continents and countries, the critical mineral supply chains may get affected due to the strategic partnership between China and Russia.
- As a result, developed countries have jointly drawn up partnership strategies, including the Minerals Security Partnership (MSP) and G7's Sustainable Critical Minerals Alliance, while developing countries have missed out.

#### Domestic challenges:

##### Scarce reserves:

- Manufacturing renewable energy technologies would require increasing quantities of minerals, including copper, manganese, zinc, and indium.
- Likewise, the transition to electric vehicles would require increasing amounts of minerals, including copper, lithium, cobalt, and rare earth elements.
- However, India does not have many of these mineral reserves, or its requirements may be higher than the availability, necessitating reliance on foreign partners to meet domestic needs.

##### Inadequate listing:

- Many critical and strategic minerals constitute part of the list of atomic minerals in the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957.
- However, the present policy regime reserves these minerals only for public sector undertakings.

#### Way Forward:

Critical minerals are the possible next **"Geopolitical Battleground"** just as crude oil has been over the last 50 years. The **Economic Survey 2022-23** has rightly prescribed a "carefully crafted multi-dimensional mineral policy".

The skewed distribution of the resource poses a supply risk in the face of its enhanced demand. A **National Critical Minerals Strategy** for India, underpinned by the minerals identified, can help focus on priority concerns in supply risks, domestic policy regimes, and sustainability.

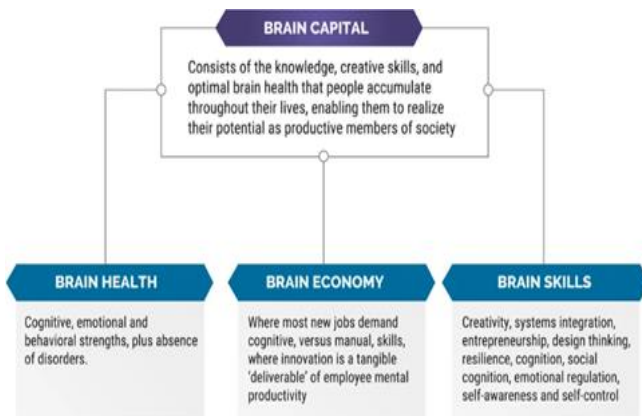
### Brain economy

**Context:** Emergence of brain economy in recent times that is., technology driven knowledge based economy, which will change the way we look at labour, capital and skills.

#### About Brain Economy:

Source: <https://www.nature.com>





- The Brain Economy refers to the **shift towards a knowledge-based economy** where the primary source of economic growth is driven by innovation and creativity, and the ability to generate, process, and use knowledge effectively.

#### Advantages of the brain economy

- **Higher Productivity:** With advancements in technology and automation, the brain economy has the potential to significantly increase productivity and efficiency.
- **Improved Quality of Life:** Brain-based work can create jobs that are less physically demanding and more intellectually stimulating.
  - This can lead to an improved quality of life for those who work in the brain economy.
- **Increased Innovation:** Brain-based work is about rapid innovation and creation, driven by technology.
  - This can lead to new products, services, and technologies that can enhance people's lives.
  - **Amazon, for example,** has brains that **create new offerings, skills that maintain their vast data centres** and bodies that deliver packages to homes.
- **Increased Collaboration:** The brain economy requires collaboration across different fields, disciplines, and cultures.
  - This can lead to increased cooperation and understanding among people from diverse backgrounds.
- **Consistency in Social Progress:** Technology and brain power can be used to address social and environmental challenges, such as poverty, inequality, climate change, and healthcare.
- **Much Flexibility:** With technology, brain-based work can be done from anywhere, at any time, providing greater flexibility for workers and businesses.
- **Easy Access to Information:** Technology has made it easier than ever to access information and knowledge, which can help to create a more informed and educated society.
- **Personal Development:** Brain-based work requires continuous learning and personal development, which can lead to increased self-awareness, creativity, and adaptability.

#### Challenges for the brain economy:

- **Inequality:** The brain economy has the potential to exacerbate inequality by assigning exponentially differential values to body, skill, and brain.
  - This can lead to a widening gap between those who have access to education and training in advanced technology and those who do not.
- **Ethical dilemmas:** As technology continues to evolve and become more integrated into the brain economy, ethical dilemmas around privacy, inclusivity, fairness, and the impact on social issues such as gender parity and wealth sharing may arise.
- **Regulatory challenges:** The fast-paced nature of technology development in the brain economy may pose regulatory challenges for policymakers and regulators.
  - There may be a need for more agile and responsive regulatory frameworks to keep pace with technological developments.
- **Access to technology:** Not everyone may have access to the technology required to participate in the brain economy, leading to a digital divide and further exacerbating inequality.
- **Job displacement:** The rise of the brain economy may result in the displacement of jobs that require physical labor or lower levels of skill, leading to job losses in certain sectors.
  - This may also require significant retraining and upskilling of workers in order to adapt to the new demands of the economy.

- **Societal impacts:** The widespread adoption of technology in the brain economy may have significant societal impacts, such as changes to the nature of work, social relationships, and human behavior.
  - It will be important to monitor these impacts and take steps to mitigate any negative effects.
- **Environmental impact:** The growth of the brain economy may lead to increased energy consumption and environmental impact, particularly as new technologies such as [quantum computing](#) and [genetic engineering](#) become more prevalent.
  - It will be important to consider the environmental impact of these technologies and take steps to mitigate any negative effects.

**Way Forward:**

There is a need to abandon outdated stereotypes of evil corporations, sinful profits and inhuman technology. The **myth of man vs machine needs to be ended**. Technology doesn't destroy jobs, instead It creates jobs, liberates people and drives social progress.

The **education architecture of the country** needs to be revamped. Students and teachers in primary and secondary education need to be equipped with technology. Failures in experimentation and creation in schools should be celebrated.

**Multidisciplinary research universities** should be created on a war footing. Courses in different aspects of technology must be made mandatory for all liberal arts programmes, just like liberal arts courses should be made mandatory in **all science and technology departments**.



## INTERNATIONAL RELATIONS



## Foreign Trade Policy 2023

**Context:** Recently, the Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles has launched the Foreign Trade Policy 2023.

**The Key Approach to the Foreign Trade Policy is based on 4 pillars:**

- Incentive to Remission,
- Export promotion through collaboration – Exporters, States, Districts, Indian Missions,
- Ease of doing business, reduction in transaction cost and e-initiatives and
- Emerging Areas – E-Commerce Developing Districts as Export Hubs and streamlining SCOMET policy.

## Key Features of Foreign Trade Policy 2023

## Policy overhauled

Key highlights from India's updated Foreign Trade Policy:



- It focuses on lowering costs for smaller firms and offering swifter clearances
- It aims at tripling exports to \$2 trillion by 2030 from \$760 billion in 2022-23
- Policy allows for adjustments based on world trade and industry feedback
- Export promotion initiatives include encouraging international trade settlement in Indian currency

**Source: The Hindu**

- The new policy will have no sunset date (ending date) and will be tweaked based on the emerging world trade scenario and industry feedback. While the policy will be open-ended, the schemes sanctioned under it will be time bound.
- There are **no major new schemes**, barring a one-time amnesty under the existing **Advance Authorisation and Export Promotion Capital Goods (EPCG) schemes**, that allow imports of capital goods

subject to specified export obligations.

- The Policy had opened up a new area of potential exports called **“merchanting trade”**.
- Merchanting trade refers to shipment of goods from one foreign country to another foreign country without touching Indian ports, involving an Indian intermediary. This will also enable exports of restricted goods
- Four towns in **Uttar Pradesh — Faridabad, Moradabad, Mirzapur and Varanasi** — were announced as centres of export excellence for their performance in the apparel, handicrafts, handmade carpets and handlooms, respectively.
- The policy also plans to launch a special advance authorisation scheme for the clothing and apparel sector so that they can react to market demands and fashion trends faster.
- It is also looking to lower qualification thresholds for star ratings which recognise exporters based on export performance.
- The importance of simplifying the **SCOMET( Special Chemicals, Organisms, Materials, Equipment, and Technologies) Licensing Procedure** which aims at streamlining the export of dual-use items.
- Special one-time **Amnesty Program for Export Obligations Default**.
- The dairy industry will be excused from maintaining average export obligations under the new foreign trade strategy, and a particular advance authorization procedure has been extended to textiles and clothing.

## Challenges:

- **Low credit access:** Indian exporters have very low access to trade finance and export credit. This is especially true for Micro, Small, and Medium Enterprises (MSMEs), even though they account for close to half of India's total exports.
  - The financial support Indian exporters receive is far less than in other countries.

- Export credit agencies doled out \$7.6 billion in funds in India while the figure for China stood at \$39.1 billion.
- **Inadequate Infrastructure:** Infrastructure is India's weakest link. In data firm Statista's ranking of 100 countries based on the quality of their infrastructure in 2019, India's score was 68.1.
  - To put this in perspective, top-ranked Singapore scored 95.4 while bottom-ranked Bolivia was 10-odd points behind India, at 57.1. .
- **Bureaucracy:** The export process in India is more time-consuming than in many other countries due to a high documentation requirement.
  - Indian exporters must prepare a large set of documents for each stage of the shipping process.
  - It is also important to plan ahead because certification authorities at Indian ports are not available round the clock or on all days of the week.
- **Pendencies:** There is long list of pending cases of redemption with respect to Advance Authorization scheme due to pre-import conditions.
  - This needs to be sorted out immediately by withdrawing the pre-import condition retrospectively.

#### **Govt Initiatives for Improving Exports:**

- **Remission of Duties or Taxes on Export Product (RoDTEP):** It is a fully automated route for Input Tax Credit (ITC) in the GST (Goods and Service Tax) to help increase exports in India.
  - ITC is provided to set off tax paid on the purchase of raw materials, consumables, goods or services that were used in the manufacturing of goods or services.
  - This helps in avoiding double taxation and the cascading effect of taxes.
- **Merchandise Exports from India Scheme:** MEIS was introduced in the Foreign Trade Policy (FTP) 2015-20, under MEIS, the government provides duty benefits depending on product and country.
  - Rewards under the scheme are payable as percentage of realised free-on-board value (of 2%, 3% and 5%) and MEIS duty credit scrip can be transferred or used for payment of a number of duties including the basic customs duty.
- **Rebate of State and Central Taxes and Levies:** The scheme was offered for embedded state and central duties and taxes that are not refunded through Goods and Services Tax (GST).
  - It was available only for garments.
  - It was introduced by the Ministry of Textiles.
- **Common Digital Platform for Certificate of Origin** has been launched to facilitate trade and increase Free Trade Agreement (FTA) utilisation by exporters.



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## Flash Droughts

**Context:** As per a recent study, flash droughts occurred more often than conventional 'slow' droughts in tropical places like India, Southeast Asia, sub-Saharan Africa and the Amazon basin.

### About Flash Droughts:

- A considerably long dry spell with significantly low precipitation anomalies during the monsoon results in an increase in air temperature. Increased air temperature and precipitation deficit together cause a rapid depletion of soil moisture leading to flash drought.
- There is **little known about flash droughts or 'hidden hazards'** when compared to research available on long-term droughts.
- Flash droughts can occur in the **monsoon season as well**, primarily caused by the **monsoon breaks** and these can also occur due to delayed onset of the summer.
- **Atmospheric anomalies (variations), anthropogenic greenhouse gas emissions and ongoing climate change** can lead to flash droughts.
- **Early-warning systems (EWS)**, that could identify trends in climate and sources of water, are used to detect the emergence or probability of the occurrence of flash droughts.

FIVE TYPES OF DROUGHT	
1	<b>METEOROLOGICAL</b> drought refers to an extended period of dry weather patterns. 
2	<b>HYDROLOGICAL</b> drought refers to low water supply in our rivers, lakes, aquifers, and other reservoirs that often follows meteorological drought. 
3	<b>AGRICULTURAL</b> drought occurs when a water shortage significantly damages or destroys agricultural crops. 
4	<b>ECOLOGICAL</b> drought is the most recently defined type of drought and refers to widespread ecological damage caused by the lack of soil moisture. 
5	<b>SOCIOECONOMIC</b> drought refers to when a water shortage affects the supply and demand of drought commodities, such as water, food grains, and fish. 

### About Droughts:

- A drought is a **period of unusually persistent dry weather** that persists long enough to cause serious problems such as crop damage and/or water supply shortages.
- The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area.

### Causes of Droughts:

**Causes of Meteorological Droughts:** Lean monsoon and below average rainfall, Late onset or early withdrawal of monsoons and Prolonged breaks in Monsoon.

**Causes of Hydrological Droughts :** Large scale deforestation, Ecologically hazardous mining and Excessive pumping of ground water.

### Causes of Agricultural Droughts:

- Excessive use of HYV(High Yielding Varieties) seeds
- Change in cropping pattern e.g. with introduction of green revolution

### Impacts:

- Drought causes **economic, environmental and social impacts**.
  - The first round impacts on agriculture and water resources account for a significant proportion of drought impacts.
  - Others are follow-up impacts on the population immediately affected by droughts, such as farmer incomes and the health, nutrition, and education status of drought-affected populations.
  - A third level is on downstream activities, such as industries reliant on agriculture and water.
  - Finally, there are the diffuse and longer-term impacts on growth, trade, foreign exchange, fiscal balance, and so on.



- **Crop Weather Watch Group (CWWG)**, an inter-Ministerial mechanism, evaluates information and data furnished by IMD and other scientific and technical bodies to determine the likely impact of meteorological events and other environmental parameters on agriculture.



#### Drought Prone Areas in India

- In India, around **68% of the country** is prone to drought to varying degrees.
- The 35% area which receives rainfall between 750 mm and 1125 mm is considered drought prone while 33% receiving less than 750 mm is chronically drought prone.

#### Steps being taken at the global level:

- **THE DELHI DECLARATION OF 2019**, signed by [14th CoP of the UNCCD](#) (Refer this link for Bonn Challenge, Great Green Wall Initiative: etc) , called for better access and stewardship over land, and emphasised gender-sensitive transformative projects.
- **THE BONN CHALLENGE**: To bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.
- **GREAT GREEN WALL**: Initiative by [Global Environment Facility \(GEF\)](#), where eleven countries in **Sahel-Saharan Africa** have focused efforts to fight against land

degradation and revive native plant life to the landscape.

- **PEACE FOREST INITIATIVE**: It is an initiative of South Korea to use ecological restoration as a peacebuilding process and aims at addressing the issue of land degradation in conflict-torn border areas.
- **INTERNATIONAL COALITION FOR ACTION ON SAND AND DUST STORMS (SDS)**: SDS source base map will be developed with the goal of improving monitoring and response to these storms.

#### Way Forward: [National Disaster Management Authority \(NDMA\)](#) guidelines for Drought Management

- NDMA guidelines include developing **vulnerability profiles for regions, communities, population groups**, and others to **compile critical information** which when integrated into the planning process can enhance the outcome of the **process of identifying and prioritizing specific areas**.
- **Specific Drought Management cells** should be created at the state level under SDMA.
  - These DMCs will be responsible for the preparation of vulnerability maps for their respective states.
  - Arid and semi-arid areas that are most vulnerable should be given priority where drought is a recurring feature occurring with varying magnitudes.
- Specific guidelines for **use of Information and Communication Technology (ICT)** and role of the **National Informatics Centre (NIC)** for online interaction and availability of real-time drought-related information that will help in the assessment and early warning.
- Assessment of damage expected will include agricultural production, depletion of water resources, livestock population, land degradation, and deforestation as well as human health.



## ENVIRONMENT



## Human Composting: A greener way to die

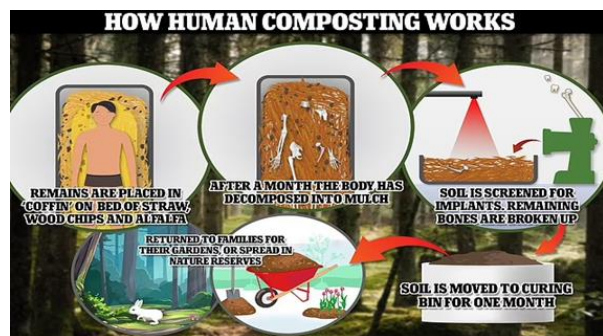
**Context:** Recently, New York became the sixth state in the US to legalise human composting as a burial option.

- Washington was the first to do so in 2019.

## About Human Composting:

Source: [dailymail.co.uk](https://www.dailymail.co.uk)

- Human composting, also known as **natural organic reduction**, is a process of **transforming the human body into nutrient-rich soil** that has emerged as an eco-friendly alternative to traditional burial or cremation.
- It has gained popularity, especially among the younger generation, for being an eco-friendly alternative to dispose of a corpse.



## Process of human composting:

- The body is first washed and dressed in a **biodegradable gown**.
- It's then placed in a closed vessel, **usually measuring 8 feet by 4 feet**, along with selected materials such as alfalfa, straw, and sawdust.
- The body is **left to decompose for the next 30 days**.
- To speed up the decay, oxygen is added to the vessel, which results in the unfolding of a process called **"aerobic digestion"**, in which microbes start to consume organic matter.
- Temperature inside the container is **kept around 130 degrees Fahrenheit or 55 degrees Celsius to kill off contagions**.
- By the time aerobic digestion is over, the body has been transformed into a soil-like material, containing nutrients, bones, and some medical devices — these are taken out from the compost pile and recycled.
- As the **microbial activity comes to an end**, the temperature inside the pile drops, marking the transformation from an active composite pile into the soil.

## Concerns:

- The biggest opponent of this process has been the Catholic Church and called it an **"unfortunate spiritual, emotional, and psychological distancing from the deceased"**.
- It has been believed that the **'transformation' of the remains** would create an emotional distance rather than a reverence for the remains.
- Even cremated remains must remain in a communal place befitting of the dignity inherent in the human body and its connection to the immortal soul.

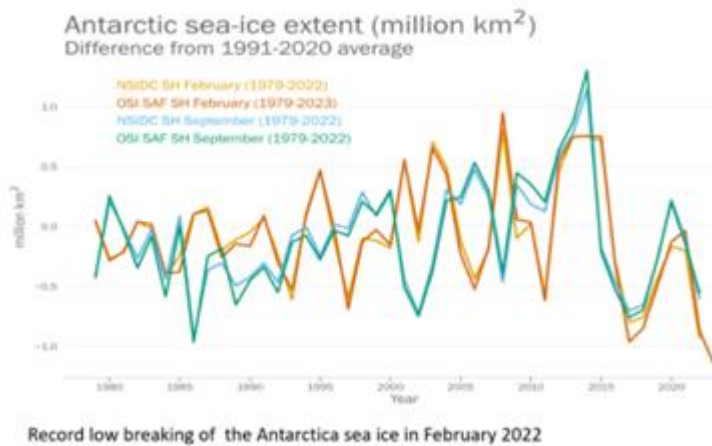
## Significance: Human composting is seen as an alternative to burials and cremations:

- Methods like burials and cremations are increasingly being seen as **contributors to carbon emissions**.
  - Cremating one body emits an **estimated 190 kg of carbon dioxide** into the air, which is the equivalent of driving 756 km in a car.
- Burial has its hazards too — apart from an **indefinite use of land**, it involves embalming a **corpse in toxic solutions**, which could be harmful to the soil.
- **Burials and cremations are expensive**, and not many can afford them.
  - In the US, on average, traditional funerals cost \$7,000 to \$10,000.

- Therefore, **human composting costs around \$5,500 including the laying-in ceremony**, and uses much less energy than cremation has emerged as a viable option.
- The soil produced through this procedure can be used for gardening or can be spread in designated memorial grounds or forest conservation areas.

### Glacial Retreat: Causes and Impact

**Context:** The State of Global Climate 2022 was recently released by the UN's World Meteorological Organization (WMO).



#### Highlights of the report:

- Melting glaciers and warming oceans **triggered global sea levels** to jump to the highest on record in 2022.
- Global sea levels have hiked at more than **double the rate they did in the first decade of the satellite record from 1993 to 2002**.
- Ocean heat levels broke records, with almost 60 % experiencing at least one marine heatwave.
- Melting glaciers and high ocean

temperatures accounted for an **average increase in sea levels of 4.62mm a year from 2013 to 2022**.

#### About Glacial Retreat:

- Glacial retreat refers to the **process of a glacier shrinking or receding in size over time** due to a decrease in ice accumulation or an increase in ice melt.
- **Examples of melting of glaciers:**
  - **Greenland Ice Sheet** – losing about 280 billion tons of ice per year;
  - **Himalayan glaciers** could disappear entirely by 2100.
  - Glaciers in the **European Alps** have been in retreat since the mid-19th century,
  - Glaciers in the **Andes Mountains of South America** lost up to 80% of their mass since the 1970s.

#### Reasons for melting of glaciers:

- **Global warming due to climate change:** Rising temperatures cause glaciers to melt faster than they can accumulate new snow.
- **Changes in precipitation:** Changes in the amount, timing, and form of precipitation can also affect the extent and thickness of glaciers.
- **Human activities:** Deforestation, burning of fossil fuels, and industrial processes etc. contribute to the emission of greenhouse gases, which are a key driver of global warming, which in turn leads to the melting of glaciers.
- **Solar radiation:** The most important of these is the quantity of solar energy that touches the ice, which has an impact on glacier melting and receding. Glaciers lose mass as a result of increased radiation-induced melting.
- **Glacial till:** The unsorted mass of material known as glacial till is gathered by moving glaciers and can include everything from silt to big boulders.
  - The ice is protected by boulders while the weaker ice around it melts.

#### Impact of melting glaciers:

- As a glacier retreats, it can lead to a **number of significant environmental impacts**, including changes in water availability, alterations to local ecosystems, and increased risk of natural disasters such as floods and landslides.

- **Rising sea level and coastal erosion:** When Sea levels rise due to melting glaciers, more frequent and more powerful coastal storms like hurricanes and typhoons are produced.
  - The Antarctic and Greenland ice sheets in particular are the main causes of the rise in sea levels worldwide.
- **Water scarcity:** Glaciers are an important source of freshwater for many communities around the world.
  - As glaciers melt and retreat, it can lead to water scarcity and affect agriculture and other industries.
- **Changes in weather patterns:** Melting glaciers can affect weather patterns, leading to changes in temperature, precipitation, and other weather-related phenomena.
  - When glaciers melt, the resulting freshwater enters the ocean, which can destabilize the salinity balance of the North Atlantic and weaken the AMOC.
  - This weakening can cause changes in regional climate patterns, such as cooler temperatures in Europe and increased hurricane activity in the North Atlantic.
- **Reduced albedo effect:** As glaciers melt, they reduce the earth's ability to reflect sunlight back into space, leading to increased absorption of solar radiation and warmer temperatures.
- **Fishing industries:** Industries that thrive on vibrant fisheries will be affected as warmer waters change where and when fish spawn.
  - Coastal communities will continue to face billion-dollar disaster recovery bills as flooding becomes more frequent and storms become more intense.
- **Wildlife:** In the Arctic, as sea ice melts, wildlife like walrus are losing their home and polar bears are spending more time on land, causing higher rates of conflict between people and bears.
- **Threat of coral reefs:** To thrive through the process of photosynthesis, coral reefs need sunshine.
  - Due to glaciers melting or retreating, rising sea levels prevent corals from receiving adequate sunlight.

#### Way Forward: Suggestive measures

- **Reduce carbon emissions:** This can be done by increasing the use of alternative energy sources such as wind and solar power, and by implementing policies to reduce energy consumption. e.g. **fulfilling the net zero emission targets.**
- **Promote energy efficiency:** This includes measures such as improving building insulation and promoting the use of energy-efficient appliances. e.g. **Green Housing Scheme by National Housing Bank.**
- **Encourage public transportation:** This can reduce the use of private cars and consequently the emission of greenhouse gases. e.g. **Public Transport Fare Subsidy Scheme in Hong Kong.**
- **Afforestation and reducing deforestation:** Trees absorb carbon dioxide from the atmosphere, so planting more trees can help reduce the amount of greenhouse gases in the air.
- **Reduce waste and recycle:** This can reduce the amount of greenhouse gases released through landfill and other waste disposal methods.
- **Implement sustainable agriculture practices:** These practices can help reduce emissions from agricultural activities and preserve water resources. e.g. conservation tillage.
- **International agreements:** Governments can work together on international agreements to limit carbon emissions and combat global warming. e.g. [Paris Agreement](#), **Montreal protocol etc.**



## HISTORY AND ART &amp; CULTURE

**Vaikom Satyagraha**

**Context:** Recently, Kerala Chief Minister and Tamil Nadu Chief Minister jointly inaugurated the centenary year celebrations of the anti-caste struggle Vaikom Satyagraha.

**About Vaikom Satyagraha**

- Vaikom Satyagraha was a historic non-violent movement against untouchability and caste discrimination in the country.
- The Satyagraha took place between March 30, 1924 and November 23, 1925 and also marked the start of temple entry movements across India.
- The movement was spearheaded by Congress leader T.K. Madhavan, as an opposition against social injustice.
- Apart from Madhavan, K.P. Kesava Menon (then secretary of Kerala Congress) and Congress leader and educationist K. Kelappan are considered the pioneers of the Vaikom Satyagraha movement.
- Vaikom is situated on the **western side of Kottayam district** in the Indian state of Kerala.
  - It shares its **border with Vembanad Lake**.
- Its importance in Indian history is due to the Vaikom Satyagraha against untouchability, in which **Mahatma Gandhi and Periyar Ramasamy**
- The Satyagraha aimed at securing freedom of movement for all sections of society through the public roads leading to the **Sri Mahadevar Temple at Vaikom**.

**Situation Prior to Vaikom Satyagraha**

- The Kingdom of Travancore had **rigid and oppressive caste system**.
- The people belonging to the oppressed classes, especially the **Ezhavas**, had no right to walk on the four roads surrounding the **Vaikom Mahadeva temple**.
- The injustice meted out to the depressed classes was brought to the notice as a resolution at the **Kakinada meet of All India Congress Committee**.
- The **Congress Untouchability Committee** formed by the **Kerala Pradesh Congress Committee in January 1924**, decided to take up this issue.
- **K Kelappan (Kerala Gandhi), T K Madhavan, Velayudha Menon, K Neelakantan Namboothiri and TR Krishnaswami Iyer** were members of the committee.
- The committee decided to launch a '**Kerala Paryatanam**' to urge temple entry and also advocate the opening of all public roads for everyone regardless of caste or creed.

**Role of Periyar:**

- Periyar accepted the request of leaders such as **Neelakandan Nampoothiri and George Joseph** and led the protest making the protest successful.
- **Vi. Kalyanasundaram (Thiru.Vi.Ka.) conferred** the title Vaikom Veerar (Hero of Vaikom) on Periyar.
- Tamil Nadu played a pivotal role in Vaikom Satyagraha, which symbolised a struggle by the untouchables.
- **Emperumal Naidu and Sivathanu Pillai** were prominent leaders in Nagercoil, Tamil Nadu.

**Reach of the movement**

- The movement was backed by Gandhiji, Chatampi Swamikal, and Sree Narayana Guru.
- Prominent Leaders in Kerala such as **Madhavan, K.P. Kesava Menon and George Joseph launched the movement**.
- **Periyar and Kovai Ayyamuthu from Tamil Nadu** worked in tandem with leaders in Kerala despite facing repressive action.
- The campaign gained popularity throughout India, and supporters arrived from around the country.



- **Punjab's Akalis** helped by establishing kitchens to feed the Satyagrahis.
- **Even Muslim and Christian** authorities backed the initiative.

#### Impacts of the Vaikom Satyagraha

- Vaikom Satyagraha was a testing ground for the **Gandhian Principles of Satyagraha**.
- In 1925, Gandhiji wrote to **H. Pitt, then Police Commissioner of Travancore to resolve the ongoing matter**.
  - Thus, Pitt intervened and a settlement was signed between the Government and Gandhiji.
- In 1925, the Government agreed to nullify the prohibitory orders passed in February 1924, and **Gandhiji gave his consent to withdraw the Satyagraha**.
- It was announced by the government that roads (pathways) on **three sides of the Shiv shrine or Mahadev temple of Vaikom (north, south, and west)** would be open for all public but the road on the eastern side i.e the roads leading to that eastern approach would be reserved for Savarnas only.
- Many historians believed the Vaikom Satyagraha had not given the desired outcome, while considered the settlement was humiliating as compared to the enigma of the revolutionary cause.
  - However, this movement laid the foundation which ultimately laid the fruit to end orthodox colonialism.
- The Vaikom Satyagraha proclaimed its significance almost a decade later when in November 1936, the **historic Temple Entry Proclamation** was passed, which lifted the **age-old orthodox ban on the entry of marginalized depressed castes into the temples of Travancore**.
- It was also a great opportunity for the **Indian National Congress Party to Grow in Kerala**.
  - It became the first struggle for human rights in India.
- The Vaikom Satyagraha had a significant impact on **Indian society and politics**.
  - It led to the **formation of the Sree Narayana Dharma Paripalana Yogam (SNDP)**, a social reform organization that worked for the upliftment of the lower castes in Kerala.

The Vaikom Satyagraha was a pivotal moment in the Indian independence movement that brought attention to the injustices of the caste system and the need for social reform. The protest helped pave the way for a **more inclusive and equitable society and demonstrated the power of nonviolent resistance** in achieving social change. The movement has been **documented in history** as one of the most **non-violent struggles against caste oppression and discrimination**.



## SOCIAL ISSUES



### Mental Illness : A Serious Concern for India

**Context:** Recently a new study conducted by Journal of Health Management, on the burden of mental illness highlighted expenditure on treatment of mental illness pushes 20% Indian households into poverty.

**Key findings of the study:**

- **20 % of Indian households** become poor as a result of spending money on the **treatment of mental illnesses**.
  - India's national average healthcare burden due to mental illness is 10.4 %.
- **States and UTs with a higher burden:** Daman and Diu (19.4 %), Himachal Pradesh (18.0 %), Sikkim (17.4 %), Lakshadweep (14.6 %), Maharashtra (13.7 %), Telangana (13.3 %), Punjab (12.7 %) and Uttarakhand (12.5 %).
- **States and UTs with a lower burden:** Mizoram (0.5 %), Andaman and Nicobar Islands (1.2 %), Puducherry (1.7 %), Dadra and Nagar Haveli (2.0 %), Arunachal Pradesh (3.0 %) and Nagaland (3.5 %).
- **Majority of people in low- and middle-income countries** with mental illness do not receive healthcare, leading to chronicity, suffering, and increased costs of care.

**About Mental Health and illness**

- Mental health is a **state of mental well-being** that enables people to cope with the **stresses of life, realize their abilities, learn well and work well, and contribute to their community**.
- It is an **integral component of health and well-being** that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in.
- Mental health is a basic human right.
- It is crucial to **personal, community and socio-economic development**.
- **World Mental Health Day is observed on 10th October every year**
- The term '**mental disorders**' is used to denote a **range of mental, behavioral disorders and psychosocial disabilities**.
  - They are generally characterised by a **combination of abnormal thoughts, perceptions, emotions, behaviour and relationships** with others.
  - Mental Disorders include **depression, bipolar disorder, schizophrenia and other psychoses, dementia, and developmental disorders including autism**.

**Determinants of Mental Health:**

- Multiple social, psychological, and biological factors determine the level of mental health of a person at any point of time.
- For example, **violence and persistent socio-economic pressures** are recognized risks to mental health. The **clearest evidence is associated with sexual violence**.
- **Poor mental health is also associated with:** rapid social change, stressful work conditions, gender discrimination, social exclusion, unhealthy lifestyle, physical ill-health and human rights violations.
- There are specific psychological and personality factors that make people vulnerable to mental health problems. Biological risks include genetic factors.

**Issues and Concerns:**

- Mental health problems have been growing rapidly over the last few decades.
- In 2015, the GOI carried out a **National Mental Health Survey — 2015-16** to assess the prevalence of mental health in the country.

- The report showed **mental disorders at 10.6 per cent among above 18-year-olds, 16 per cent among the productive age group of 30-49-year-olds — and lifetime morbidity affecting 150 million people** with one per cent reporting high suicidal risk.
- The human resources and treatment facilities are woefully low.
- For policymakers, mental health is a low priority.
  - Such poor policy attention is often ascribed to indifference among bureaucrats and politicians.
- Designing a policy is the most challenging piece of policy-making.

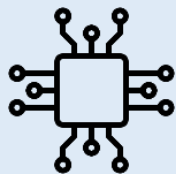
#### **Government of India Initiatives:**

- **Constitutional Provision:** The Supreme Court has held **healthcare to be a fundamental right under Article 21 of the Constitution.**
- **National Mental Health Program (NMHP):** To address the huge burden of mental disorders and shortage of qualified professionals in the field of mental health, the government has been implementing the National Mental Health Program (NMHP) since 1982.
  - **The Program was re-strategized in 2003 to include two schemes**, viz. Modernization of State Mental Hospitals and Up-gradation of Psychiatric Wings of Medical Colleges/General Hospitals.
- **[Mental HealthCare Act 2017](#):** It guarantees every affected person access to mental healthcare and treatment from services run or funded by the government.
  - It has significantly reduced the scope for the use of Section 309 IPC and made the attempt to commit suicide punishable only as an exception.
- **Kiran Helpline:** In 2020, the Ministry of Social Justice and Empowerment launched a 24/7 toll-free helpline 'Kiran' to provide support to people facing anxiety, stress, depression, suicidal thoughts and other mental health concerns.
- **Rights of Persons with Disabilities Act, 2017:** The Act acknowledges mental illness as a disability and seeks to enhance the Rights and Entitlements of the Disabled and provide effective mechanism for ensuring their empowerment and inclusion in the society
- **Mano Darpan Initiative:** An initiative under Aatmanirbhar Bharat Abhiyan, aims to provide psycho-social support to students for their mental health and well-being.

#### **Way Forward:**

To promote mental health, there is a need to create such living conditions and environment that support mental health and allow people to adopt and maintain healthy lifestyle. A society that respects and protects basic, civil, political, and cultural rights is needed to be built to promote mental health.

The National mental health policies should not be solely concerned with mental disorders, but should also recognize and address the broader issues which promote mental health. This includes education, labour, justice, transport, environment, housing and health sector.



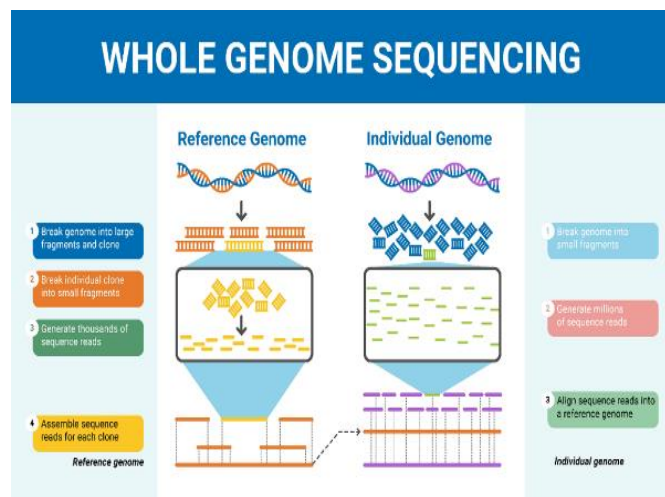
## SCIENCE &amp; TECHNOLOGY



## Genome Sequencing and the Genome India Project

**Context:** 10,000 genomes are expected to be completely sequenced by the end of the year 2023 under the Genome India Project.

## About Genome Sequencing:



- A genome is a **complete set of genetic instructions** which are present in an organism in its DNA.

- Sequencing is the sequence of occurrences of the four nucleotide bases i.e., **adenine (A), cytosine (C), guanine (G), and thymine (T)**.

- The human genome is made up of over 3 billion of these genetic letters.

- The whole genome can't be sequenced all at once because available methods of DNA sequencing can **only handle short stretches of DNA at a time**.

- While human genomes are **made of DNA (Deoxyribonucleic acid)**, a virus genome can be made of **either DNA or RNA (Ribonucleic acid)**.

- Coronavirus is made of RNA. Every organism has a unique genome sequence.
- Genome sequencing is a technique that **reads and interprets genetic information found within DNA or RNA**.

## Significance of Genome Sequencing

- **Understands the Virus:** The purpose of genome sequencing is to understand the role of certain mutations in increasing the virus's infectivity.
  - Some mutations explain immune escape or the virus's ability to evade antibodies which have consequences for vaccines.
- **Studying Efficacy:** It helps in studying whether the vaccines developed so far are effective against such mutant strains of the virus and if can prevent reinfection and transmission.
- **Tracing Mutations:** Sequencing of the genomes of viral strains is important from a "know-thy-enemy" point of view as it becomes easier to trace the mutations.
  - Scientists can find mutations much more easily and quickly.
- **Developing Vaccines:** Knowledge generated through vital research assists in developing diagnostics and potential therapeutics and vaccines now and for the potential diseases in the future.
- **Vital Information:** Important information and findings can be derived from the Genome sequencing of those who tested positive for COVID or any other virus of concern.

## Challenges in Genome Sequencing in India

- **Very High target:** The aim was to sequence at least 5% of the samples, the minimum required to keep track of the virus variants.
  - This has so far been only around 1%, primarily due to insufficient reagents and tools necessary to scale up the process.
- **Low Capacity:** The ten laboratories together can sequence about 30,000 samples a month, or 1,000 a day, six times less than what is needed to meet the target.

- **Sample Collection:** The healthcare system is already overstretched and this is one additional task for them to sort and package samples and RNA preparations regularly for shipping in a cold chain to sequencing centres along with recording extensive metadata to make sequence information useful.

#### About Genome India Project:

- It is a Centre-backed, Department of Biotechnology's (DBT) initiative to sequence 10,000 Indian human genomes in three years and create a database.
- **Progress and the target:** The project has sequenced close to 7,000 genomes and 3,000 of these are already available for public access by researchers.
- **Stakeholders:** About 20 institutions across India are involved in the project though the analysis and coordination is done out of the Centre for Brain Research, Indian Institute of Science (IISc), Bangalore.
- **Data collection:** For conducting the project, investigators in hospitals will lead the data collection through a simple blood test from participants and the information will be added to biobanks.
- **Priority areas:** Some of the priority areas are Precision health, Rare genetic disorders, Mutation spectrum of genetic and complex diseases in the Indian population, Genetic Epidemiology of Multifactorial Lifestyle Diseases, and Translational Research.

#### Significance of the Project:

- **Disease-based human genetics:** The Indian population of 1.3 billion consists of over 4,600 population groups, and many of them are endogamous.
  - These factors have contributed to the genetic diversity of the current population.
  - Thus, the Indian population harbours distinct variations and often many disease-causing mutations are amplified within some of these groups.
  - Therefore, findings from population-based or disease-based human genetics research from other populations of the world cannot be extrapolated to Indians.
- **Help in customising drugs and therapies:** Creating a database of Indian genomes means that researchers anywhere can learn about genetic variants that are unique to India's population groups and use that to customise drugs and therapies.
  - The United Kingdom, China, and the United States are among the countries that have programmes to sequence at least 1,00,000 of their genomes.
- **Boost to biotechnology sector:** It will also boost India's biotechnology sector to expand and have more valuable companies and start-ups.
- **Designing of genome-wide association chips:** This would aid in the designing of genome-wide association chips which will facilitate further large-scale genetic studies in a cost-effective manner.

#### Way Forward:

This project allows India to draw upon its tremendous genetic diversity, given the series of large migrations historically, and thus, add greatly to the current information about the human species. This initiative reflects India's progress in gene therapies and precision medicine, and its movement towards emerging next-generation medicine which yields the possibilities for greater customization, safety, and earlier detection.





## PRACTICE QUESTIONS



### Practice Questions

**Q.1)** With reference to India, consider the following statements regarding Hue and cry notice:

1. It is issued by the District Magistrate
2. It is issued when it requires the help of the public in cases such as locating missing persons, identifying unclaimed bodies and looking out for a suspect

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.2)** Consider the following statements regarding the Mahila Samman Savings Certificate (MSSC):

1. It is a one-time small savings scheme for women to commemorate celebrations of 75 years of Independence.
2. It will be under the Ministry of Finance.
3. The small saving certificate will have a fixed interest rate of 7.5% for two years.

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1 2 and 3

**Q.3)** Consider the following:

1. T.K. Madhavan,
2. K.P. Kesava Menon
3. George Joseph

Who among the above personalities associated with Vaikom Satyagraha?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1 2 and 3

**Q.4)** Consider the following statements regarding the Krishi Udan Scheme:

1. The scheme aims to ensure seamless, cost-effective, time-bound air transportation and associated logistics for all Agri-produce in the country.
2. It is under the Ministry of Civil Aviation.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.5)** The Eravikulam National Park is located in

- a. Tamil Nadu
- b. Kerala
- c. Goa
- d. Odisha

**Q.6)** Consider the following countries:

1. Australia
2. Canada
3. USA
4. Malaysia
5. Russia

Which of the above are part of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)?

- 1 3 and 5 only
- 2 3 and 4 only
- 1 2 and 4 only
- 1 2 3 4 and 5

**Q.7)** Consider the following statements and Identify the tiger reserve:

1. It was established in 1973 under Project Tiger.
2. It is located in the tri-junction area of the States of Karnataka, Tamil Nadu and Kerala.
3. It forms a part of the Nilgiri Biosphere Reserve.

Select the correct answer using the code given below:

- Mudumalai tiger reserve
- Bandipur tiger reserve
- Kaval tiger reserve
- Sathyamangalam tiger reserve

**Q.8)** With reference to India, consider the following:

1. Income Tax
2. Service Tax
3. Minimum Alternate Tax
4. Capital Gain Tax

Which of the above are examples of direct taxes?

- 1 2 and 4 only
- 2 3 and 4 only
- 1 3 and 4 only
- 1 2 3 and 4

**Q.9)** Consider the following pairs:

GI Tag item and State

1. Basohli Painting – Bihar

2. Nagri Dubraj Rice – Odisha
3. Langda mango – Uttar Pradesh

How many pair/s given above is/are correctly matched?

- One pair only
- Two pairs only
- All three pairs
- None

**Q.10)** Which of the following statements is not correct regarding Babu Jagjivan Ram?

- He was instrumental in the foundation of the All-India Depressed Classes League.
- He was jailed twice in the early 1940s for his political activities associated with the Quit India movement against British rule.
- He was the longest-serving cabinet minister in India
- All statements are correct

**Q.11)** Consider the following passes:

1. Jalep La
2. Khardung la
3. Nathu La
4. Banihal pass

Which of the above are located in Sikkim?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 2 and 4 only

**Q.12)** Netravali Wildlife Sanctuary is often mentioned in the news located in

- Goa
- West Bengal
- Odisha
- Karnataka

**Q.13)** Consider the following statements regarding the UN Statistical Commission:

1. It is the highest body of the global statistical system bringing together the Chief Statisticians from member states from around the world.
2. It is headquartered at London
3. India is a member of the commission

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1 2 and 3

**Q.14)** Consider the following countries:

1. The United Kingdom
2. Russia
3. Ukraine
4. France
5. Finland

Which of the above are members of North Atlantic Treaty Organisation (NATO)?

- a. 1 3 and 4 only
- b. 1 4 and 5 only
- c. 2 3 and 5 only
- d. 1 2 and 5 only

**Q.15)** Parambikulam Tiger Reserve is in

- a. Karnataka
- b. Tamil Nadu
- c. Goa
- d. Kerala

**Q.16)** Consider the following statements regarding the Pradhan Mantri MUDRA Yojana:

1. The scheme was launched in 2015 to promote entrepreneurship among the youth, generate employment and enhance income
2. The loans under this scheme are collateral-free loans
3. It is under the Ministry Of MSME

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 2 and 3 only

- c. 1 and 3 only
- d. 1 2 and 3

**Q.17)** Consider the following statements and identify the freedom fighter:

1. She was a freedom fighter from Kaushambi.
2. She had spent her savings on revolutionary works fighting against British imperialism.
3. She gave shelter to Bhagat Singh, Sukhdev and Rajguru after the assassination of Assistant Superintendent of Police John Saunders and later rescued them out of Lahore.
4. She was an active member of the Naujawan Bharat Sabha.

Select the correct answer code using the code given below:

- a. Lakshmi Sahgal
- b. Usha Mehta
- c. Durga Bhabhi
- d. Rani Gaidinliu

**Q.18)** Consider the following pairs:

Mahajanpadas	Capital	
1. Vatsa	Kaushambi	
2. Magadha	Shravasti	
3. Avanti	Ujjaini	or
Mahishmati		
4. Kosala	Rajgriha	

How many pair/s given above is/are correctly matched?

- a. One pair only
- b. Two pairs only
- c. Three pairs only
- d. All four pairs

**Q.19)** Consider the following statements regarding the National Mission for Cultural Mapping:

1. It was launched by the Ministry of Tourism in 2017
2. It encompasses data mapping, demography building, formalising the processes and bringing all cultural activities under one.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

**Q.20)** Consider the following statements regarding the Laser Interferometer Gravitational-Wave Observatory, or LIGO-India project:

- LIGO-India is a collaborative project between a consortium of Indian research institutions and the LIGO Laboratory in the USA.
- It will be located in the Raichur district of Karnataka
- It was built by the Department of Atomic Energy

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1 2 and 3

**Q.21)** Radhuni or wild celery (*Trachyspermum roxburghianum*) often mentioned in the news is a

- Popular spice variety in India
- Medicinal plant for cancer treatment
- Plant fungal disease causing warm
- None of the above

**Q.22)** Consider the following statements regarding Ramakrishna Mission:

- The Ramakrishna Mission was established in 1897 by Swami Vivekananda.
- The mission worked to help the poor, improve the conditions of women, fight against untouchability and superstition and overhaul the education system.
- It believed in the unity and equality of all religions.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1 2 and 3

**Q.23)** Consider the following pairs:

Trade unions and associated persons

- All India Trade Union Congress - Acharya JB Kripalani
- Indian National Trade Union Congress - Lala Lajpat Rai
- Bhartiya Mazdoor Sangh - Dattopant Thengadi

How many pairs given above is/are correctly matched?

- None
- One pair only
- Two pairs only
- All three pairs

**Q.24)** Taiwan strait connects which of the following water bodies?

- South China Sea and North China Sea
- South China Sea and Philippines Sea
- Gulf of Thailand and South China Sea
- South China Sea and East China Sea

**Q.25)** Consider the following statements regarding the Pradhan Mantri Fasal Bima Yojana:

- It is an insurance service scheme for farmers for their yields which aims to reduce the premium burden on farmers and ensure early settlement of crop assurance claims for the full insured sum.
- It is implemented by the Ministry of Agriculture
- The Scheme covers all Food & Oilseeds crops and Annual Commercial/Horticultural Crops.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1 2 and 3

**Q.26)** Suhelwa wildlife sanctuary is located in

- Uttarakhand
- Uttar Pradesh
- Jharkhand
- Andhra Pradesh

**Q.27)** State Energy Efficiency Index (SEEI) 2021-22 recently released by

- Ministry of Power
- Ministry of New and Renewable Energy
- NITI Aayog
- Bureau of Indian Standards

**Q.28)** Consider the following statements regarding the State Development Loans (SDLs):

- SDLs are dated securities issued by states for meeting their market borrowings requirements.
- SDLs are auctioned by the Commercial Banks through the e-Kuber

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

**Q.29)** With reference to India's biodiversity, Amolops siju, Amolops Chanakya, Amolops terraorchis, and Amolops tawang are

- Birds
- Primates
- Reptiles
- Amphibians

**Q.30)** Consider the following statements regarding the Cost inflation index (CII):

- The CII is an index that is used to calculate the inflation-adjusted rise in the value of an asset including land, buildings, houses, gold jewellery etc.
- CII number will assist in determining the short-term capital gains on which one is required to pay taxes while filing your income tax returns (ITR) next year.
- The CII value cannot be used to calculate LTCG/LTCL on equity mutual funds.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1 2 and 3

**Q.31)** Consider the following statements regarding the Central Bureau of Narcotics:

- It is a central government organization dealing with the international trade of Narcotic Drugs, Psychotropic Substances, and Precursor Chemicals.
- It is regulated by the country's Central Board of Indirect Taxes and Customs.
- Its Headquarters are in Gwalior.
- It is affiliated with the Ministry of Home Affairs.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 4 only
- 1 and 3 only
- 3 and 4 only

**Q.32)** Consider the following statements regarding the Institute of Company Secretaries of India (ICSI):

- It works under the Ministry of Personnel, Public Grievances and Pensions
- It is the only recognized professional body in India to develop and regulate the profession of Company Secretaries in India
- It has its headquarters in Mumbai

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 only
- 3 only
- 1 and 3 only

**Q.33)** He was a former MP and revolutionary leader from Punjab. Following the Jallianwala Bagh massacre in 1919, he joined the Akali Dal to participate in the movement to liberate gurdwaras from degenerate mahants. He was a revolutionary leader who led the PEPSU Muzara movement which started in the 1930s and went on till 1952 against the Biswedari system. He saved hundreds of Muslims from communal riots during the Partition. Being a prominent leader of the Kisan Sabha, led a number of peasant agitations against the government and landlords.

Who among the following described in the above passage?



- a. Lala Lajpat Rai
- b. Bhagat Singh
- c. Teja Singh Sutantar
- d. None of the above

**Q.34)** Justice Ranganath Mishra Commission often mentioned in the news related to

- a. Linguistic and Religious minorities
- b. Economic Weaker Section
- c. Identification of Other Backward Classes
- d. To study the status of scheduled tribes

**Q.35)** which of the following countries is not participant of the Exercise Orion?

- a. Netherlands
- b. Spain
- c. The USA
- d. China

**Q.36)** Consider the following statements regarding Uttaramerur inscription:

1. It was established by the Pallava king Nandiverman II
2. The inscription gives astonishing details about the constitution of wards, the qualification of candidates standing for elections, the disqualification norms, the mode of election.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.37)** Consider the following statements regarding International Civil Aviation Organization (ICAO):

1. ICAO is funded and directed by 200 national governments to support their diplomacy and cooperation in air transport.
2. The Chicago Convention established the core principles permitting international transport by air, and led to the creation of the ICAO.
3. India is part of the Chicago Convention.

Which of the statements given above is/are correct?

- a. 1 and 2 only
- b. 2 only
- c. 2 and 3 only

- d. 3 only

**Q.38)** Consider the following statements regarding giant magnetoresistance (GMR):

1. It is the tendency of a material (often ferromagnetic) to change the value of its electrical resistance in an externally-applied magnetic field.
2. It is used in hard disk drives, computers, biosensors, automotive sensors, microelectromechanical systems, and medical imagers.
3. GMR-based devices are particularly used to sense magnetic fields.

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1 2 and 3

**Q.39)** Dr B R Ambedkar associated with which of the following events/organisations?

1. Bahishkrit Hitkarini Sabha
2. The Mahad Satyagraha
3. Poona Pact

Select the correct answer using the code given below:

- a. 1 2 and 3
- b. 1 and 2 only
- c. 2 and 3 only
- d. 1 and 3 only

**Q.40)** Barnawapara wildlife sanctuary is located in

- a. Jharkhand
- b. Chhattisgarh
- c. Maharashtra
- d. Odisha

**Q.41)** Consider the following countries:

1. United States
2. Japan
3. India
4. China
5. France

Which of the above are members of G7 group?

- a. 1 3 and 4 only

- b. 1 4 and 5 only
- c. 2 3 and 4 only
- d. 1 2 and 5 only

**Q.42)** Consider the following statements regarding the Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):

- a. PMJJBY is an insurance scheme by the Ministry of Health and Family Welfare.
- b. To apply for benefits under the scheme, the age of the applicant must be between 18 and 50 Years.
- c. The scheme is being offered by Life Insurance Corporation only.

Which of the statements given above is/are correct?

- a. 1 and 2 only
- b. 2 only
- c. 3 only
- d. 1 and 3 only

**Q.43)** The famous I R Coelho v. State of Tamil Nadu case is related to

- a. Ninth schedule
- b. Anti defection
- c. Sixth schedule
- d. Reservation of Other backward classes

**Q.44)** Consider the following pairs:

Buddhist council and place of meeting

- 1. First Buddhist Council – Vaishali
- 2. Second Buddhist Council – Rajgriha
- 3. Third Buddhist Council – Pataliputra
- 4. Fourth Buddhist Council – Kundalavana

How many pairs given above is/are correctly matched ?

- a. One pair only
- b. Two pairs only
- c. Three pairs only
- d. All four pairs

**Q.45)** Consider the following statements regarding Supercritical carbon dioxide:

- 1. Supercritical carbon dioxide (CO<sub>2</sub>) is a fluid state of CO<sub>2</sub> where it is heated and held at or above its critical temperature(31°C) and pressure(73 atm).
- 2. It is used in the oil and gas industry for gas injections during enhanced oil recovery (EOR) techniques.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.46)** Kudremukh national park is often mentioned in the news located in

- a. Rajasthan
- b. West Bengal
- c. Karnataka
- d. Odisha

**Q.47)** Consider the following statements regarding the Blastomycosis:

- 1. It is a fungal disease caused by Blastomyces
- 2. The fungus lives in the environment, particularly in moist soil and in decomposing matter such as wood and leaves.
- 3. It is an airborne disease

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 1 and 3 only
- c. 2 and 3 only
- d. 1 2 and 3

**Q.48)** Consider the following statements regarding the Limited Purpose Clearing Corporation (LPCC):

- 1. LPCC is an entity established by RBI.
- 2. It will undertake the activity of clearing and settlement of repo rate transactions.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.49)** The State of World Population (SOWP) 2022 report recently released by

- a. The United Nations Population Fund
- b. United Nations Development Programme
- c. NITI Aayog
- d. World Economic Forum

**Q.50)** 'E-2025 Initiative' and High Burden to High Impact (HBHI) are the Initiatives of WHO launched to eliminate

- Tuberculosis
- Malaria
- Dengue
- Polio

**Q.51)** Consider the following statements regarding the National Technical Research Organisation (NTRO):

- It is a technical intelligence Agency under the National Security Advisor in the Prime Minister's Office, India.
- It was formed in 1985 after the assassination of Prime Minister Indira Gandhi on the recommendation of the Birbal Nath committee.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

**Q.52)** The Global Food Policy Report 2023 recently released by

- UN Food and Agricultural Organization
- United Nations Development Programme
- International Food Policy Research Institute
- None of the above

**Q.53)** Consider the following statements regarding the Kamakhya Temple:

- It is situated on Nilachal Hills in Assam
- It is regarded as one of the oldest of the Shakti Peethas in India.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

**Q.54)** Consider the following statements regarding the Polar Satellite Launch Vehicle(PSLV):

- It is the third-generation launch vehicle of India.
- It is a five-staged launch vehicle
- It is the first Indian launch vehicle to be equipped with liquid stages.

Which of the statements given above is/are correct?

- 1 and 2 only
- 1 only
- 3 only
- 1 and 3 only

**Q.55)** Gandhisagar Wildlife Sanctuary is located in

- Rajasthan
- Madhya Pradesh
- Haryana
- West Bengal

**Q.56)** which of the following countries are members of the Caribbean Community and common market (CARICOM):

- Antigua and Barbuda
- Bahamas
- Belize
- Guyana
- Jamaica

Select the correct answer using the code given below:

- 1 2 and 4 only
- 2 3 and 5 only
- 1 4 and 5 only
- All of the above

**Q.57)** Logistic Performance Index 2023 recently released by

- World Trade Organization
- World Economic Forum
- World Bank
- UNCTAD

**Q.58)** Markets in Crypto-Assets (MiCA) law is often mentioned in the news approved by

- World Bank
- European union
- Ministry of Science and Technology
- BRICS

**Q.59)** Calcium carbide often used as a ripening agent for mangoes and other fruits also used in the manufacturing of which of the following?

1. Polyvinyl chloride
2. Acetylene
3. Calcium cyanamide
4. Carbide lamps
5. Bamboo cannons

select the correct answer using the code given below:

- a. 1 3 and 4 only
- b. 2 4 and 5 only
- c. 1 3 and 5 only
- d. All of the above

**Q.60)** Consider the following statements regarding the Systematic Voters' Education and Electoral Participation (SVEEP):

1. SVEEP is the flagship program of the Election Commission of India.
2. It is for voter education, spreading voter awareness and promoting voter literacy in India.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.61)** Consider the following statements regarding the State Wide Attention on Grievances by Application of Technology (SWAGAT):

1. The SWAGAT initiative of the Government of Gujarat was started in 2003.
2. It is an innovative concept that enables direct communication between the citizens and the Chief Minister.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.62)** Recently, the State Finances: A Study of Budgets of 2022-23 report was launched by

- a. Reserve Bank of India
- b. Ministry of Finance
- c. NITI Aayog
- d. None of the above

**Q.63)** Consider the following statements regarding the Misinformation Combat Alliance (MCA):

1. MCA is an alliance of media companies set up in March 2022.
2. It was set up to combat misinformation and build tools to aid fact-checking.
3. Membership in the MCA is open to any organization that applies.

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1 2 and 3

**Q.64)** Consider the following statements regarding the Thirunelly temple:

1. It is located at the confluence of three rivers – Papanasini, , Kudamurutti, and Koothappuzha.
2. It is the only temple in the world where the devotees can perform all the rituals related to one's life, starting from birth to death and life after death.

Which of the statements given above i/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.65)** Which of the statements given below is not correct regarding the United Nations Permanent Forum on Indigenous Issues (UNPFII)?

- a. It is a high-level advisory body to the UN Economic and Social Council.
- b. It has the mandate to deal with indigenous issues related to economic and social development, culture, the environment, education, health and human rights.

- c. The 22nd Session of the United Nations Permanent Forum on Indigenous Issues (UNPFII) will convene in New York from 17 to 28 April 2023.
- d. It has the theme “Indigenous peoples, business, autonomy and the human rights principles of due diligence including free, prior and informed consent”.

**Q.66)** Manamadurai pottery recently receives Geographical Indication Tag belong to

- a. Kerala
- b. Odisha
- c. Tamil Nadu
- d. Telangana

**Q.67)** Consider the following countries:

- 1. Belgium
- 2. Sweden
- 3. France
- 4. Finland
- 5. the United Kingdom

which of the above countries borders with the North Sea?

- a. 1 3 and 4 only
- b. 2 4 and 5 only
- c. 1 3 and 5 only
- d. All of the above

**Q.68)** Consider the following statements regarding the Support for Up-gradation Preventive Repair and Maintenance of Equipment (SUPREME) Initiative:

- 1. It extends financial support for repair, upgradation, maintenance, retrofitting, or acquiring additional attachments to increase the functional capabilities of existing analytical instrumentation facilities.
- 2. It is an initiative of the Ministry of Commerce and Industry

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only

- c. Both 1 and 2
- d. Neither 1 nor 2

**Q.69)** With reference to India's Nuclear Energy, which of the following statements is not correct?

- a. India is signatory to the Convention on Supplementary Compensation which ensures compensation is available to the victims for nuclear damage caused by a nuclear incident or disaster
- b. India currently has 25 nuclear reactors
- c. All the existing reactors are operated by the state-owned Nuclear Power Corporation of India Limited (NPCIL)
- d. NPCIL works under the administrative control of the Department of Atomic Energy (DAE), Government of India.

**Q.70)** Automatic Exchange of Information (AEOI) framework and Crypto-Asset Reporting Framework (CARF) often mentioned in the news are Initiatives of

- a. World Bank
- b. World Economic Forum
- c. Organisation for Economic Co-operation and Development
- d. European Union

**Q.71)** Consider the following statements regarding the Wrestling Federation of India (WFI):

- 1. It is the governing body of wrestling in India
- 2. It is headquartered in Bengaluru
- 3. It is affiliation to the United World Wrestling (UWW)

Which of the statements given above are correct?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1 2 and 3

**Q.72)** Sukhna Wildlife Sanctuary is located in

- a. Uttar Pradesh
- b. Haryana
- c. Gujrat
- d. Odisha



**Key Answers**

1	b	16	a	31	a	46	c	61	c
2	c	17	c	32	b	47	d	62	a
3	d	18	b	33	c	48	b	63	d
4	a	19	b	34	a	49	a	64	c
5	b	20	c	35	d	50	b	65	d
6	c	21	a	36	c	51	a	66	c
7	b	22	d	37	c	52	c	67	c
8	c	23	b	38	d	53	c	68	a
9	a	24	d	39	a	54	d	69	b
10	d	25	c	40	b	55	b	70	c
11	c	26	b	41	d	56	d	71	c
12	a	27	a	42	b	57	d	72	b
13	c	28	a	43	a	58	b		
14	b	29	d	44	b	59	d		
15	d	30	c	45	c	60	c		

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