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GEOGRAPHY

1. Chambal River (Source: The Hindu)

- Originate from Singar Chouri peak in the northern slopes of the Vindhya Mountains (Madhya Pradesh)
- Join Yamuna River as a right bank tributary (Uttar Pradesh)
- It is a rainfed river and its basin is bounded by the Vindhyan mountain ranges and the Aravallis.
- Tributaries are Banas, Kali Sindh, Parbati.
- Main Power Projects/ Dam are Gandhi Sagar Dam, Rana Pratap Sagar Dam, Jawahar Sagar Dam, and Kota Barrage.
- The National Chambal Sanctuary is located along river Chambal on the tri-junction of Rajasthan, Madhya Pradesh and Uttar Pradesh. It is known for critically endangered gharial, the red-crowned roof turtle, and the endangered Ganges river dolphin.

2. Tropical Monsoon Intra-seasonal Oscillation and Mid-latitude Oscillation (Source: The Hindu)

Tropical Monsoon Intra-seasonal Oscillation

- Tropical monsoon intra-seasonal oscillation (ISO), often called the Monsoon Intraseasonal Oscillation (MISO) or Boreal Summer Intraseasonal Oscillation (BSISO), drives active and break phases in Indian summer monsoon rainfall.
- This oscillation features eastward and northward propagation of convective bands over the Indian Ocean and monsoon regions, with periods of 10-20 days (quasi-biweekly) and 30-60 days.
- It causes wet active spells and dry breaks lasting 1-3 weeks, impacting agriculture in South Asia during May-October.
- Key drivers include Madden-Julian Oscillation (MJO) influences and local air-sea interactions.

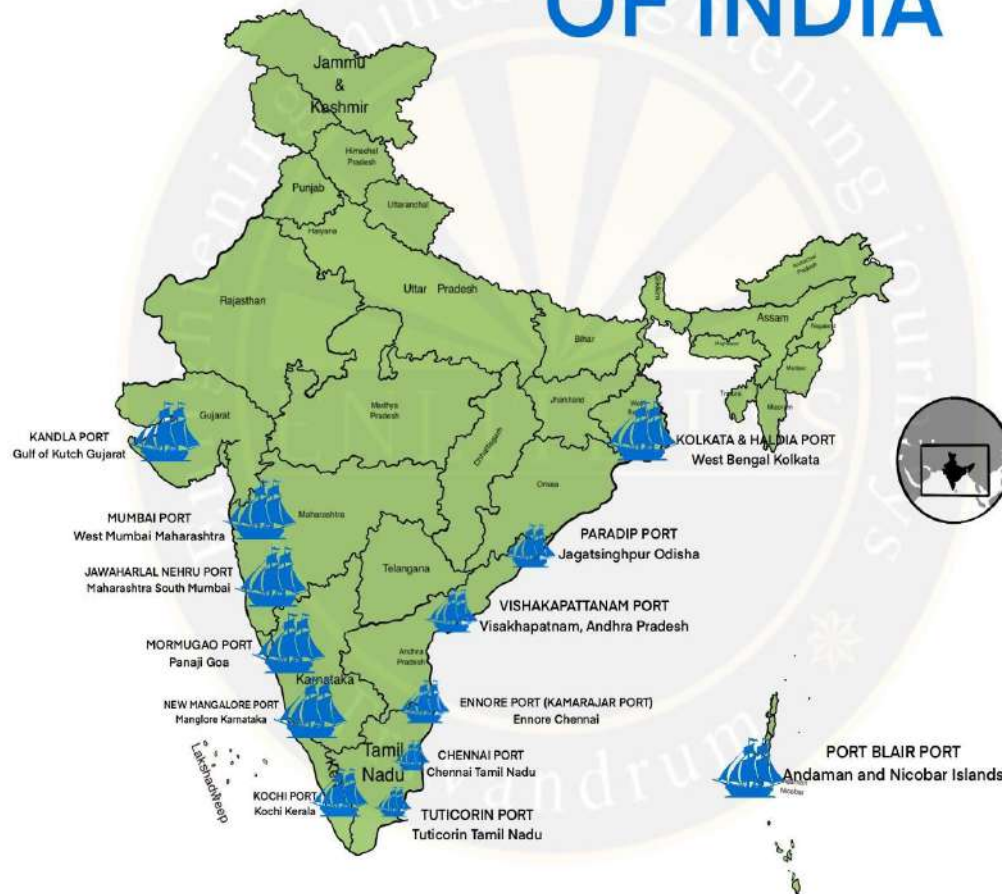
Mid-latitude Oscillation

- Mid-latitude oscillations refer to patterns like the circumglobal teleconnection (CGT), which involve wave trains in upper-level winds influencing monsoon variability from extratropical regions.
- Mid-latitude ISOs arise from jet stream interactions with topography and exhibit low-frequency variability (10-60 days) in the Northern Hemisphere extratropics.
- The CGT pattern, a wavenumber-5 Rossby wave train along the subtropical jet, originates near the Caspian Sea and extends across Eurasia to the Pacific.

- It links North Atlantic variability, like NAO-related waves, to Asian circulation

3. Major Ports in India (Source: The Hindu)

MAJOR PORTS OF INDIA



4. Hailstorms (Source: Down To Earth)

A hailstorm is a type of precipitation in which ice pellets (hailstones) fall from the sky during thunderstorms, especially from Cumulonimbus Clouds.

- They are most common in the midlatitudes.

Conditions For Formation

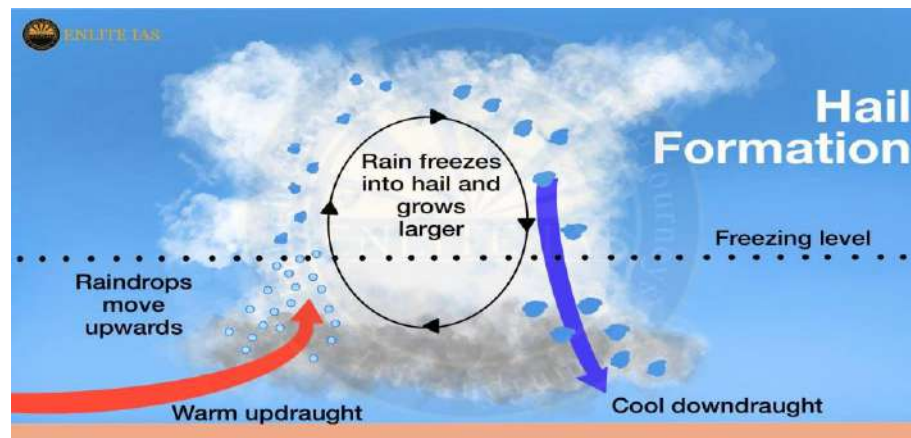
- Presence of intense thunderstorms
- Strong vertical air currents (updrafts)
- Freezing temperatures at upper levels
- High moisture content

Hailstorm Forming Process

- Hail forms inside Cumulonimbus Clouds, which are tall clouds with strong winds.
- Strong upward winds (updrafts) carry tiny water droplets high into the cloud.
- At high altitude, temperature is very low → droplets freeze into small ice particles.
- These ice particles move up and down inside the cloud and collect more water → layers of ice form.
- Hailstones keep growing as more ice is added.
- When they become too heavy for the updraft to hold, they fall as hailstones.

Impact

- Crop damage , infrastructure damage and loss of lives.



5. Bauxite Distribution in India (Source: The Indian Express)

Bauxite is the ore of aluminium and deposits of Bauxite are mainly associated with laterites regions (hills / plateaus)

Major Producers

- **Orissa**
 - Orissa is the largest producer, which produces about 50% of the total bauxite production of the country.
 - The main bauxite belt is in Kalahandi, Koraput, and Baragarh districts.

- **Gujarat**

- Gujarat is the second-largest producer and produces over 15 percent of the total bauxite of India.

Bauxite Mines in India



6. Scarborough Shoal (Source: The Hindu)

The Scarborough Shoal is an oceanic coral atoll that developed on top of a seamount into a triangle shape in the eastern part of the South China Sea.

- It is the largest atoll in the South China Sea.
- The deep waters around the shoal make it a productive fishing area, rich in marine life.
- Dispute between the China and the Philippines.



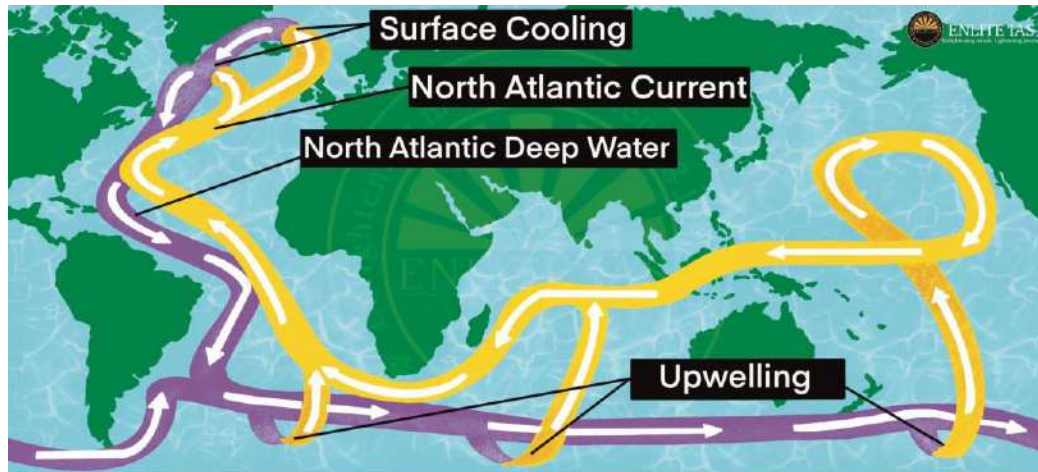
7. Druzhba Pipeline System (Source: The Hindu)

- *The Druzhba (meaning Friendship) pipeline is one of the world's longest and largest crude oil pipeline networks connecting Russia and Central and Eastern Europe.*
- It originates in the Almetyevsk region of central Russia and runs through Belarus and then splits into two major branches:
 - Northern Branch: Continues through Poland to Germany.
 - Southern Branch: Runs through Ukraine to Hungary, Slovakia, and the Czech Republic.



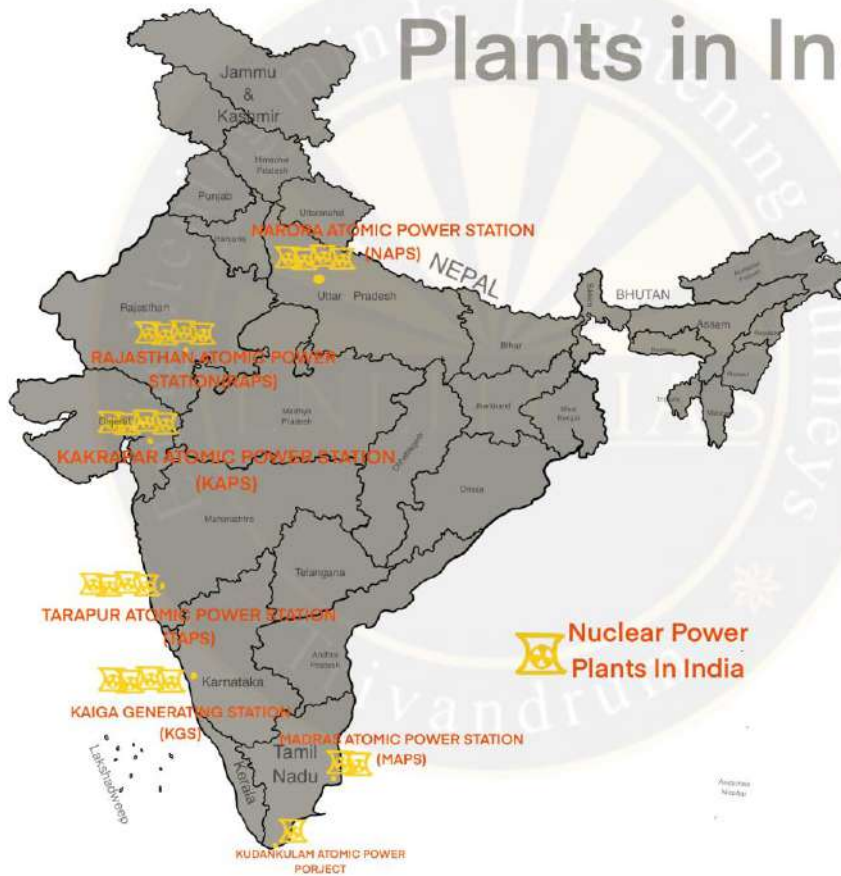
8. Atlantic Meridional Overturning Circulation (AMOC) (Source: **The Indian Express**)

- *It is a large system of ocean currents in the Atlantic Ocean, part of the global Thermohaline Circulation (also called the "Global Conveyor Belt").*
- AMOC transports warm, salty surface water northward and cold, deep water southward.
- **How it works?**
 - Warm surface water flows from the tropics to the North Atlantic (e.g., Gulf Stream).
 - In the North Atlantic, the water cools and sinks due to increasing density (from cooling and salinity).
 - The cold, dense water flows southward at deep ocean levels.
 - Eventually, it upwells in the Southern Ocean and elsewhere, completing the circulation loop.



9. Nuclear Power Plants in India (Source: The Hindu)

Nuclear Power Plants in India



10. Atacama Desert (Source: The Hindu)

The Atacama Desert is the driest non-polar place on earth. It is located in Chile.

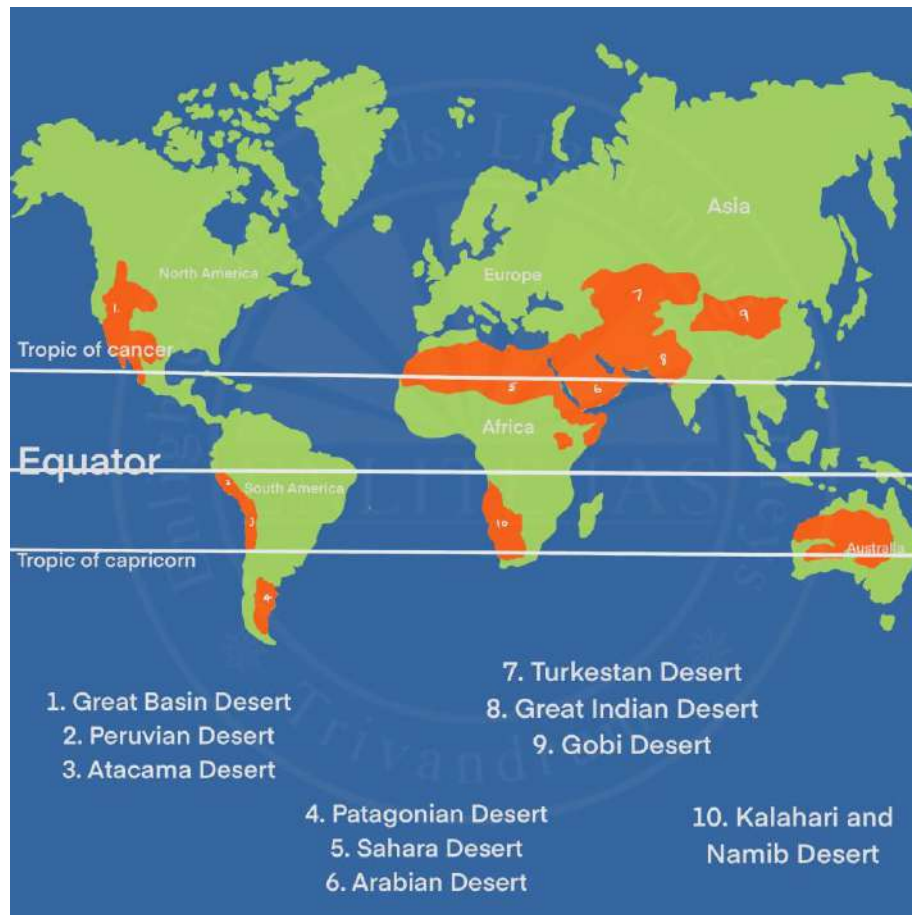
Facts To Know About Atacama Desert

- It is an example of a coastal desert.
- It is situated between the Andes and the Pacific Ocean.
- It is known for its Martian-like landscape and high-altitude salt flats.
- It is rich in various resources like copper.

How deserts are formed?

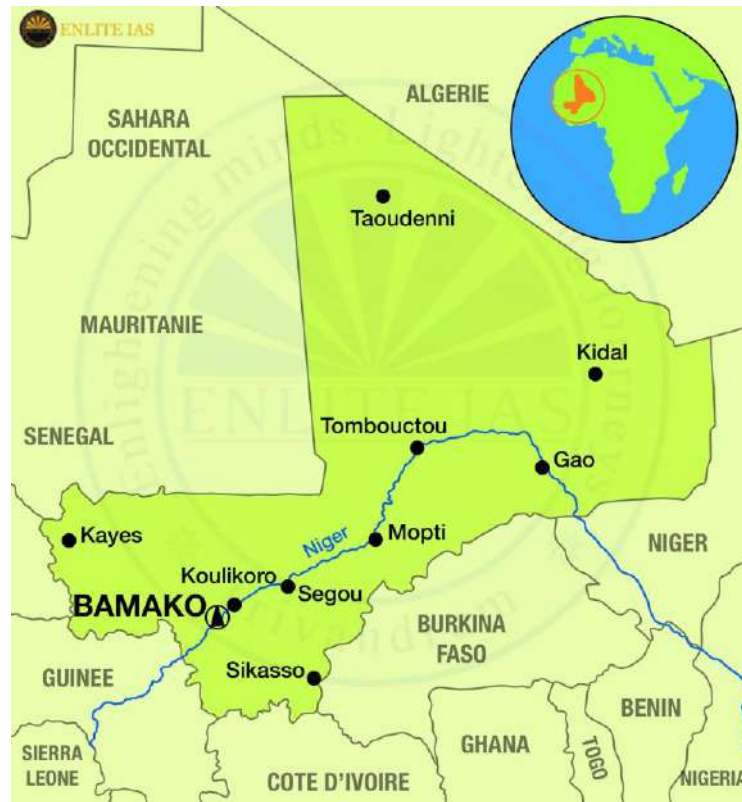
- An area must receive less than 12.5 centimetres of rainfall a year is recognised as a desert.
- They can be formed due to the impact of air current like subtropical deserts (Mojave of the USA).

Important Deserts Around the World



11.Mali (Source: The Hindu)

- **Location:** Mali is a landlocked country in West Africa.
- **Capital:** Bamako
- **Border Countries:** Algeria, Niger, Mauritania, Burkina Faso, Côte d'Ivoire, Guinea, and Senegal.
- **Associated Geography:**
 - It is also part of the Sahara Desert, the Sudanian savanna.
 - Mali is one of the countries in Africa through which the Tropic of Cancer passes.



HISTORY/ART & CULTURE

1. Jainism (Source: **The Indian Express**)

- The Jain tradition has a succession of teachers called Tirthankaras. There are a total of 24 Tirthankaras associated with Jainism.
- The first Tirthankara is believed to be Rishabhanatha. The last Tirthankara is believed to be Vardhaman Mahavira.
- It is believed that all Tirthankaras were Kshatriyas by birth.

Main Teachings of Jainism

- Jainism rejects the idea of a creator of the world as well as the authority of the Vedas.
- Jainism believes that humans may be good or bad according to their actions and not on account of their birth.
- They believe in karma and the transmigration of the soul.
- Salvation or nirvana comes from getting rid of the cycle of birth and rebirth and can be attained by leading a pure life guided by the three-fold path of right faith, right knowledge and right conduct.
- Right to conduct involves– abstinence from lying and stealing, non-possession, ahimsa, and control of the senses.
- The teachings of the Tirthankaras were compiled in 12 angas which were written down at Vallabhi in the 5th century CE.

2. Elephanta Caves (Source: **The Hindu**)

- Located on Elephanta Island (historically known as Gharapuri, meaning “city of caves”), are a **UNESCO World Heritage Site situated in Mumbai Harbour.**
- Likely constructed between the 5th and 7th centuries CE during the rule of the **Kalachuri or Chalukya dynasty.**
- *Dedicated primarily to Lord Shiva, showcasing rock-cut architecture and Shaivism traditions.*
- The name “Elephanta” was given by the Portuguese in the 16th century.

3. Jyotirao Phule (Source: **The Indian Express**)

Jyotirao Phule (11 April 1827 – 28 November 1890) was an Indian social reformer, writer, and advocate for equal rights for everyone, including the poor and women.

- Born in Pune and his wife is Savitribai Phule.

Fact To Know

- Influenced by Thomas Paine's 'Age of Reason'.
- He was a
 - Advocacy for Women's Rights: Put forward the idea of Widow Remarriage
 - Advocated Secular and Rational Thought

Educational Reforms

- In 1848, Mahatma Jyotiba Phule and Savitribai Phule founded the first girls' school in Pune.
- Supported the education of downthrown communities like Dalits.
- Mahatma Phule established night schools for working-class individuals, allowing them to gain education alongside their jobs.

Social Reforms

- Jyotiba Phule critiqued Brahmanical orthodoxy.
- Phule founded Satyashodhak Samaj (Truth Seekers' Society) in 1873 to promote social equality and challenge oppression.

Major Literature Works

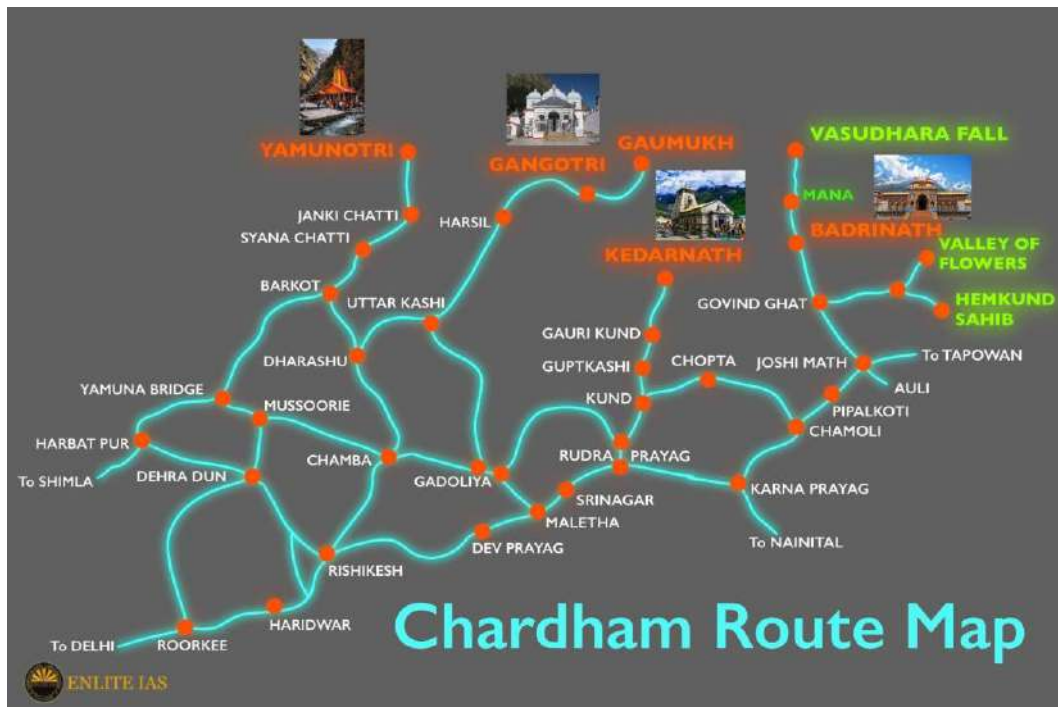
- Tritiya Ratna (1855); Powada: Chatrapati Shivajiraje Bhosle Yancha (1869); Gulamgiri (1873), Shetkarayacha Aasud (1881).

4. Basaveshwara (Source: **The Hindu**)

- He was a 12th-century poet and philosopher.
- **Founder of Lingayatism.**
 - The term Lingayat denotes a person who wears a personal linga, an iconic form of God Shiva, on the body which is received during the initiation ceremony.
- Basavanna spread social awareness through his poetry, popularly known as **Vachanaas**.
- *He developed and inspired a new devotional movement named Virashaivas.*
- **Social Reforms**
 - He believed in a society free of the caste system, with equal opportunity for all and preached about manual hard work.

- He also founded the Anubhava Mantapa which was a common forum for all to discuss the prevailing problems of socio, economic and political strata.
- **Key Principle**
 - Anubhava (divine experience)
 - Arivu (true knowledge)
 - Achara (right conduct)

5. Chardham Sites (Source: PIB)



6. Konark Sun Temple (Source: The Indian Express)

- Located at Coastline of Odisha in the Puri district
- Built by King Narasimha Deva I of the Eastern Ganga Dynasty
- Also called the Surya Devalaya, the temple is dedicated to the Hindu god Surya.
- Built in Kalinga Architecture
- It has been a UNESCO World Heritage Site since 1984.
- The temple, built from Khondalite rocks, is also known as 'BLACK PAGODA' due to its dark colour.
- The temple remains a site of contemporary worship for Hindus, during the annual Chandrabhaga Festival, around the month of February.

POLITY

1. Lokayukta (Source: The Hindu)

Lokayukta is a state-level anti-corruption ombudsman in India, complementing the national Lokpal. It investigates complaints against public officials like chief ministers, ministers, and bureaucrats for graft and maladministration.

- Recommendations are advisory and non-binding. They submit annual reports to the Governor and the legislature

Formation

- The Administrative Reforms Commission, (1966-70), had recommended the creation of the Lokpal at the Centre and Lokayukta in the states.
- It is formed by the Lokpal and Lokayuktas Act in 2013.

Appointment

- Lokayukta was appointed by governor of state after consulting the the chief justice of the state high court, and the leader of Opposition in the state legislative assembly.

Tenure

- The term of office fixed for lokayukta is of 5 years duration or 65 years of age, whichever is earlier.

2. Contempt of Court (Source: The Hindu)

Contempt of court is a concept that seeks to protect judicial institutions from motivated attacks and unwarranted criticism, and as a legal mechanism to punish those who undermine its authority.

- **Statutory Basis:** The Contempt of Courts Act, of 1971, gives statutory backing to the idea.
- **Constitutional Provision:** Article 129 of the Constitution conferred on the Supreme Court the power to punish contempt of itself. Article 215 conferred a corresponding power on the High Courts.
- **Type of Contempt**
 - **Civil Contempt** - Civil contempt is committed when someone wilfully disobeys a court order or wilfully breaches an undertaking given to the court.

- **Criminal Contempt** - Criminal contempt consists of three forms: (a) words, signs, and actions that “scandalize” or “lower” the authority of any court (b) prejudices or interferes with any judicial proceeding, and (c) interferes with or obstructs the administration of justice.
- **Punishment:** The punishment for contempt of court is simple imprisonment for a term of up to six months and/or a fine of up to ₹2,000.
- **What is not contempt of court?**
 - Fair and accurate reporting of judicial proceedings will not amount to contempt of court.
 - Nor is any fair criticism on the merits of a judicial order after a case is heard and disposed of.

3. Parliament Sessions (Source: The Hindu)

Terms	What is it?
Summoning	<ul style="list-style-type: none"> ● Summoning is the process of calling all members of the Parliament to meet. ● The President summons each House of the Parliament from time to time. ● However, the maximum gap between two sessions of Parliament cannot be more than six months.
Sessions	<ul style="list-style-type: none"> ● Parliament meets for three sessions in a year. ● Budget Session: Longest session, starts towards the end of January, and concludes by the end of April. ● Monsoon Session: Second session, usually begins in July and finishes in August. ● Winter Session: Third session, held from November to December.
Adjournment	<ul style="list-style-type: none"> ● An adjournment suspends the work in a sitting for a specified time, which may be hours, days or weeks.
Adjournment sine die	<ul style="list-style-type: none"> ● When the meeting is terminated without any definite time/date fixed for the next meeting, it is called Adjournment sine die. ● The power of adjournment as well as adjournment sine die lies with the presiding officer of the House.
Prorogation	<ul style="list-style-type: none"> ● Prorogation terminates a sitting as well as the session of the House.

	<ul style="list-style-type: none"> ● It is done by the President of India.
Dissolution	<ul style="list-style-type: none"> ● Only the Lok Sabha is subject to dissolution. ● A dissolution ends the very life of the existing House, and a new House is constituted after general elections are held. ● Two ways for dissolution <ul style="list-style-type: none"> ○ On the expiry of its tenure of five years. ○ Whenever the President decides to dissolve the House

4. Deemed University (Source: The Indian Express)

Deemed University is a type of higher education institute, it has been recognized by the status of “deemed to be university” under the University Grants Commission (UGC) Act, 1956.

- The institution has been granted permission to offer its own degree programs, which are equivalent to those provided by regular universities.

Benefits

- Increased funding opportunities and attracting better faculty.
- More flexible admissions policies.

Different Types of Universities in India

- **Central University:** A university established or incorporated by a Central Act. The establishment and operation are funded by the Union Government.
- **State University:** A university established or incorporated by a Provincial Act or by a State Act.
- **Private University:** A university established through a State/Central Act by a sponsoring body.
- **Institution of National Importance:** An Institution established by Act of Parliament and declared as Institution of National Importance. They are funded by the Government of India and include all the IITs, NITs and AIIMS institutes.
- **Institution under State Legislature Act:** An Institution established or incorporated by a State Legislature Act.

5. Article 161 (Source: The Hindu)

Grants the Governor power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any convicted person.

- **Pardon:** Removes both the sentence and the conviction, absolving the convict from all punishments and disqualifications.
- **Commutation:** Substitutes one form of punishment for a lighter one.
- **Remission:** Reduces the period of a sentence without changing its nature.
- **Respite:** Awards a lesser sentence due to special circumstances like physical disability or pregnancy.
- **Reprieve:** Temporarily stays the execution of a sentence to allow time to seek pardon or commutation.

6. Article 25 - Freedom of Conscience and Free Profession, Practice and Propagation of Religion (Source: The Hindu)

Article 25 says that all persons (, both citizens and noncitizens) are equally entitled to freedom of conscience and the right to freely profess, practice and propagate religion.

- **Forms part of Articles 25–28 under “Right to Freedom of Religion” in Part III.**

Reasonable Restriction

- These rights are subject to public order, morality, health, and other provisions relating to fundamental rights.

State Role

- Regulate or restrict any economic, financial, political, or other secular activity associated with religious practice.
- Provide for social welfare and reform or throw open Hindu religious institutions of a public character to all classes and sections of Hindus.

Implication

- **Freedom of Conscience:** Inner freedom of an individual to mould his relation with God or Creatures in whatever way he desires.
- **Right to Profess:** Declaration of one’s religious beliefs and faith openly and freely.
- **Right to Practice:** Performance of religious worship, rituals, ceremonies and exhibition of beliefs and ideas.

- **Right to Propagate:** Transmission and dissemination of one's religious beliefs to others or exposition of the tenets of one's religion. But, it does not include a right to convert another person to one's own religion. Forcible conversions impinge on the 'freedom of conscience' guaranteed to all persons alike.

7. 106th Constitutional Amendment Act, 2023 (Source: **The Hindu**)

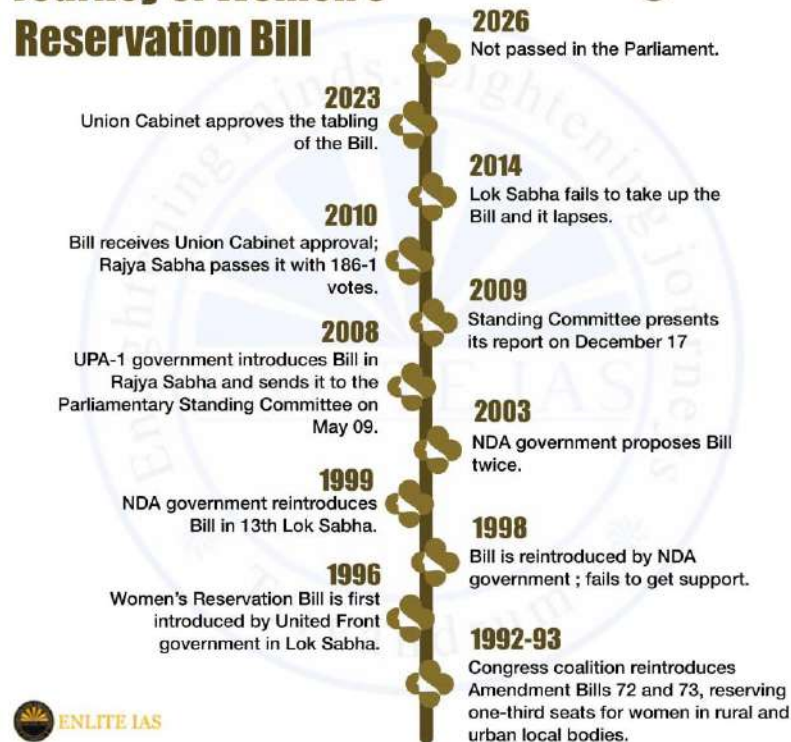
The 106th Constitutional Amendment Act, 2023, reserves one-third of seats for women in the Lok Sabha, state legislative assemblies, and the Delhi Legislative Assembly.

- It aims to boost women's political participation amid India's patriarchal landscape.
- **Known as Nari Shakti Vandan Adhiniyam, it builds on the 73rd and 74th Amendments' success in local bodies.**

Key Provision

- **Articles Amended:** Article 239AA of the Constitution was amended to reserve one-third of seats for women in the Legislative Assembly of the National Capital Territory of Delhi.
- **Articles Inserted:** Three new articles were inserted into the Constitution:
 - **Article 330A:** Reserves one-third of seats for women in the Lok Sabha, including seats reserved for Scheduled Castes (SCs) and Scheduled Tribes (STs).
 - **Article 332A:** Reserves one-third of seats for women in the State Assemblies, including seats reserved for SCs and STs.
 - **Article 334A:** Specifies that the Act shall come into effect after the next delimitation of constituencies, has a 15-year sunset clause, and allows for extension and periodic rotation of seats by law.

Journey of Women's Reservation Bill



8. Union Territories (UTs) (Source: The Indian Express)

Union Territories (UTs) in India are centrally administered regions under direct control of the Union Government and they are initially created through 7th Constitutional Amendment Act (1956) and the States Re-organization Act (1956).

- **Current Union Territories:** Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli and Daman and Diu, National Capital Territory of Delhi, Jammu and Kashmir, Lakshadweep, Ladakh and Puducherry.

Reasons For Formation of Union Territories

- **Political and Administrative Consideration:** Delhi and Chandigarh.
- **Cultural Distinctiveness:** Puducherry, Dadra and Nagar Haveli, and Daman and Diu.
- **Strategic Importance:** Andaman and Nicobar Islands, Lakshadweep, Delhi, Puducherry and Jammu and Kashmir, Ladakh.
- **Special Treatment and Care of the Backward and Tribal People:** Andaman and Nicobar Islands, Ladakh.

Constitutional Provisions

- **Article 1:** Territories of India shall comprises of
 - The territories of the States
 - The Union Territories
 - Such other territories may be acquired .
- *Articles 239 to 241 in Part VIII of the Constitution deal with the union territories*
 - **Article 239:** Union Territory shall be administered by the President through an Administrator to be appointed by the President.
 - **Article 239A:** Provides for creation of local Legislatures or Council of Ministers or both for certain Union Territories.
 - **Article 239AA:** Added by 69th Constitutional Amendment Act, 1991. It says that Union Territory of Delhi shall be called the National Capital Territory of Delhi and the Administrator thereof appointed under Article 239 shall be designated as the Lieutenant Governor.

Parliament Role

- The Parliament can make laws on any subject of the three lists (including the State List) for the union territories.
- The President can make regulations for the peace, progress and good government of the Andaman and Nicobar Islands, Lakshadweep, Dadra and Nagar Haveli, and Daman and Diu.
- The Parliament can establish a high court for a union territory.

UTs with Legislature

- Delhi, Puducherry and Jammu and Kashmir.

9. National Education Policy (NEP) 2020 (Source: The Hindu)

The National Education Policy 2020 aims to address issues of quality, equity, access, and affordability across all levels of education. It replaced the 34-year-old NEP of 1986.

- **It is based on the recommendations of the Dr. K. Kasturirangan Committee.**

Targets

- Universalization of Early Childhood Care and Education (ECCE) to Secondary Education by 2030, in line with SDG 4.
- By 2025, the National Mission will have achieved Foundational Learning and Numeracy Skills.
- By 2030, the Pre-School to Secondary Level will be 100% Gross Enrolment Ratio (GER).
- By 2035, higher education will have a 50% GER.
- Bring 2 billion kids back into the mainstream by using the open-schooling method.
- By 2023, teachers must be ready for evaluation reforms, and by 2030, there will be an inclusive and equitable educational system.

Features

- Providing Universal Access at All Educational Levels from Pre-K to Grade 12.
- Ensuring all children between the ages of 0 and 3 receive high-quality early care and education.
- The age ranges for the New Curricular and Pedagogical Structure (5+3+3+3+4) are 3–8, 8–11, 11–14, and 14–18 years, respectively.
- There are no clear boundaries between the arts and sciences.
- Promoting multilingualism and Indian languages is prioritised.
- A new National Assessment Centre called PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) has been established.
- Special Education Zones and a distinct gender inclusion fund for underprivileged areas and organisations.



Government Schemes and Initiatives under NEP 2020

01. PM SHRI Schools
Launched in 2022, PM SHRI aims to upgrade over 14,500 schools into NEP-aligned model institutions with integrated smart classrooms, experiential pedagogy, and 21st-century skills.

09. Diksha
A national platform offering digital content and teacher training resources. It supports states with multilingual, curriculum-aligned materials and is a key enabler of online learning and CPD.

02. Samagra Shiksha
Samagra Shiksha integrates all school education schemes from pre-primary to class 12. It emphasises equity, inclusivity, and quality through holistic development, gender inclusion, and foundational learning.

10. PM e-Vidya
This comprehensive initiative is launched to unify all efforts related to digital/online/ on-air education to enable multi-mode access to education. This will benefit nearly 25 crore school going children across the country.

03. Prerana
PRERNA was an immersive, week-long residential programme designed for students of classes IX-XII. Plioted in Gujarat, it combines cultural heritage, cutting-edge technology, and values-based learning to foster lead.

06. NMM and NPST
National Mission for Mentoring (NMM) focuses on providing mentoring and professional support to teachers. National Professional Standards for Teachers (NPST) guides career advancement and defines the quality of teachers and their competencies.

11. NISHTHA
One of the largest teacher training initiatives, NISHTHA provides in-service training for teachers across foundational, elementary, and secondary levels- via both online and blended modes on DIKSHA.

04. ULLAS
Launched for 2022-27, ULLAS empowers adults (15+years) with basic literacy and digital skills. It encourages lifelong learning and enables greater societal participation by those previously left out of formal education.

07. Vidya Pravesh
A 3-month play-based transition module for children entering Grade I. It ensures school readiness through activities that promote socio-emotional learning and familiarity with classroom routines.

12. PM POSHAN
PM POSHAN provides hot cooked meals to children studying in Government and Government-aided school to improve their nutritional status and encourage regular school attendance.

05. NIPUN Bharat Mission
Initiated in 2021 to ensure that every child attains foundational literacy and numeracy by the end of Grade 3, with nationwide targets set for 2026-27. It's a cornerstone for building strong early learning foundations.

08. Vidyanjali
This School Volunteer Management Programme fosters community participation by inviting individuals, NGO's, and corporates to contribute to school improvement-ranging from mentoring to infrastructural support.



10. Delimitation in India (Source: The Hindu)

- *Delimitation means the act or process of fixing limits or boundaries of territorial constituencies in a country to represent changes in population.*
- *The constitution mandates that the Commission's orders are final and cannot be questioned before any court, and it work on the principle of "One Vote One Value".*

Constitutional Provisions For Delimitation

- **Article 82:** The Parliament enacts a Delimitation Act after every Census.
- **Article 170:** States also get divided into territorial constituencies as per the Delimitation Act after every Census.

Do You Know?

- The first delimitation was carried out in 1950 -51.

Delimitation Commission

- **Formation:** The Delimitation Commission was established by the Delimitation Commission Act, 1952.
- **Appointment:** The Delimitation Commission is appointed by the President of India and works in collaboration with the Election Commission of India.
- **Composition**
 - Retired Supreme Court Judge
 - Chief Election Commissioner
 - Respective State Election Commissioners
- **Functions**
 - To determine the number and boundaries of constituencies to make the population of all constituencies nearly equal.
 - To identify seats reserved for the Scheduled Castes and the Scheduled Tribes, wherever their population is relatively large.

11. Whip (Source: The Hindu)

It is a directive issued by political parties to ensure members attend and vote as per the party line.

- It is based on the conventions of the parliamentary government.

Appointment of Whip

- Parties appoint senior members as Whip, to issue directions and ensure compliance in the House.

Types of Whip

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Types of Whip

- **One Line Whip:** Usually issued to inform party members of a vote, and allows them to abstain.
- **Two Line Whip:** Directs members to be present during voting.
- **Three Line Whip:** Mandates members to strictly follow party line on important occasions, such as no-confidence motion, etc.

Legal Backing

- The Anti-defection law allows the Speaker/ Chairperson to disqualify a member if he/she votes or abstains from voting in such House contrary to any direction issued by the political party.

12. Overseas Citizen of India (OCI) (Source: The Indian Express)

To secure access to information to citizens under the control of public authorities, the government introduced the Right to Information Act, 2005.

Eligibility: Any foreign national, except a national of Pakistan or Bangladesh

- Were citizens of India on or after 26th January, 1950.
- Were eligible to become Indian citizens on 26th January, 1950.
- Belonging to a territory that became part of India after 15th August, 1947.
- Are children, grandchildren, or great-grandchildren of such persons
- Minor children of such individuals or those with one Indian parent.
- A foreign-origin spouse of an Indian citizen or an existing OCI cardholder is eligible if the marriage has been registered and has subsisted for at least two years preceding the application.

Ineligible Categories

- Individuals who are currently serving or retired from foreign military services are not entitled to receive OCI status.

Benefits for OCIs

- Multiple-entry multi-purpose life-long visa to visit India
- Equality with NRIs in certain financial, economic and educational matters except for acquisition of agricultural or plantation land and in matters pertaining to inter-country adoption of Indian children.
- Eligible for grant of Indian citizenship under Section 5(1)(g) of the Citizenship Act, 1955 after completion of 5 years as OCI card holder, provided he has resided in India for one year out of 5 years before making the application.
- Eligible to enroll in the National Pension Scheme (NPS) at par with Non Resident Indians.

Restrictions related to OCI Cardholders

- OCI does not confer political rights to vote.
- Do not provide dual citizenship.
- Not eligible to hold Indian constitutional posts like President, Vice President, Judges of Supreme Court or High Court.
- Not eligible for being a member of the House of the People/Council of States/ Legislative Assembly/Legislative Council.
- OCI cardholders cannot hold regular government jobs, except where specifically permitted by the Central Government via special notifications.
- Special permission is mandatory for research, mountaineering, missionary/journalistic work, and travel to Protected or Restricted Areas.

13. Compulsory Provisions of Panchayati Raj (Source: The Hindu)

The concept of Panchayati raj was added to constitution by 73rd Amendment and inserted Part IX. It also added Eleventh Schedule to the constitution that contains 29 functional items for Panchayats.

Compulsory Provisions of Panchayati Raj

- Organization of Gram Sabhas.
- Creation of a three-tier panchayat system.
- Direct elections.
- The minimum age for contesting would be 21 years.
- Indirection elections to post of chairman.
- Reservation of seats for SC/STs in proportion to population.
- Reservation for the women.
- Creation of SECs (State election committee).
- Creation of SFCs (State finance committee).

14. Registrar General of India (Source: The Hindu)

The Registrar-General and Census Commissioner of India (RGI) is the top authority for managing Census operations and civil registration across the country.

- Formed in 1961 under the Ministry of Home Affairs.
- Functions
 - Conducts the decennial Census of India under the Census Act, 1948.
 - Oversees compulsory registration of births and deaths under the Registration and Birth and Death Act, 1969.
 - Conducts bi-annual sample surveys to provide reliable estimates of birth rate, death rate, IMR, and MMR.
 - It maintains a database of all people usually residing in India, under the Citizenship Act, 1955 and Citizenship Rules, 2003.
 - Documents consistently used mother tongues across Census decades.

15. Anti - Defection Law (Source: The Hindu)

- *Introduced in India in 1985 under the 52nd Amendment to the Constitution of India*
 - Mention in the Tenth Schedule to the Constitution
- **What is it?:** It lays down the process by which legislators may be disqualified on grounds of defection.
- **Aim:** The main aim of this schedule was to prevent political defections and to strengthen democracy by bringing stability in politics and making members of parliament more responsible and loyal to their parties.
- **Deciding Authority:** Presiding officer of the house.
- **Grounds of Disqualification**
 - He voluntarily gives up his membership in a political party.
 - He disobeys the directions of his political party or votes or does not vote in the legislature contrary to the directions of his political party
 - After the election, he joined another political party.
 - If a nominated member joins any political party after 6 months from the day he becomes a member of the legislature.
- **Exemption**
 - Disqualification of a member is not applied in case of a merger, provided that this merger with or into another party shall be done with the consent of at least two-thirds of its legislators.
 - It exempts the speaker, chairman, and deputy chairman of various legislative houses from disqualification on the grounds of defection.

16. Denotified Tribes (Source: The Hindu)

- Denotified Tribes, **also known as Vimukta Jatis**, are communities that were collectively **branded as criminal tribes during British rule.**
- *These groups are largely nomadic or semi-nomadic, historically dependent on occupations such as pastoralism, salt trading, acrobatics, snake charming, transport services, and artisanal work.*

Need To Know

- In 1871, the colonial government enacted the Criminal Tribes Act, declaring entire communities as addicted to crime by birth.
- The law was repealed in 1952, after Independence, and the communities were officially denotified, giving rise to the term Denotified Tribes.

Associated Committees

- **Ayyangar Committee (1949):** After the independence of India, the Criminal Tribes Enquiry Committee was set up in 1949-1950 and was chaired by M Ananthasayanam Ayyangar. The Committee also emphasised the need for the allocation of adequate funds for their welfare and rehabilitation.
- **Kalelkar Committee (1953):** The first Backward Class Commission was appointed under the Chairmanship of Mr Kakasaheb Kalelkar.
- **Renke Commission (2008):** There are nearly 1,500 nomadic and semi-nomadic tribes and 198 Denotified tribes, comprising 15 crore Indians. The Renke Commission estimated their population at around 10.74 crore based on Census 2001.
- **Idate Commission (2014):** The Ministry of Social Justice & Empowerment took a historic decision to constitute a National Commission for Denotified, Nomadic, and Semi-Nomadic Tribes for three years. To prepare a state-wise list of castes belonging to DNTs.

17. Right to Education (RTE) Act, 2009 (Source: The Hindu)

The Right to Education (RTE) Act, 2009, was enacted to ensure free and compulsory education to children in the age group of 6 to 14.

Features

- Free and Compulsory Education for children aged 6 to 14.
- Neighborhood Schools must be provided within an accessible distance.
- 25% Reservation in private schools for children from economically weaker sections (EWS) and disadvantaged groups.
- No Capitation Fees or Screening Procedures allowed for school admissions.
- Infrastructure Norms for schools, including classrooms, toilets, and playgrounds.
- Pupil-Teacher Ratio requirements to ensure quality education.
- No Detention Policy (initially) till Class 8, focusing on child progression.
- Continuous and Comprehensive Evaluation (CCE) system for student assessments.
- Qualified Teachers only; mandatory teacher qualifications and training.
- School Management Committees (SMCs) with parents and local authorities for school oversight.
- Prohibition of Physical Punishment and discrimination in schools.
- Special Focus on Marginalized Groups, including SC/ST, girls, and disabled children.

Link to the Constitution of India: 86th Amendment 2002

- **Article 21 A:** The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may by law determine.
- **Article 45 :** The State shall endeavor to provide early childhood care and education for all children until they complete the age of six years..
- **Article 51 A:** 'who is a parent or guardian to provide opportunities for education to his child or ward between the ages of six and fourteen years.

INTERNATIONAL RELATIONS

1. Ganga Water Sharing Treaty (Source: The Hindu)

The 1996 Ganga Water Sharing Treaty is a 30-year bilateral agreement between India and Bangladesh, signed in December 1996, to share the Ganga's, water during the lean season (January 1–May 31). The treaty is scheduled to expire in December 2026.

Why such an initiative?

- It ensures fair water distribution for both upstream (India) and downstream (Bangladesh) users, especially during low-flow periods.

Key Features

- It regulates the flow of water at the Farakka Barrage in West Bengal.
- Projects will be selected through a transparent and competitive challenge mode focusing on result oriented projects.
- Private sector participation will be encouraged through structured risk-sharing frameworks and benchmarking of service delivery standards.
- The fund will cover all cities with a population of 10 lakh or more.
- Central assistance will cover 25% of project costs.
- Minimum of 50% of the project cost should be raised from the market, including municipal bonds, bank loans, and public-private partnerships.
- A dedicated ₹5,000 crore corpus will enhance the creditworthiness of 4,223 cities.

Facts You Need To Know

- Farakka Barrage is essential for maintaining the navigability of the Calcutta Port.
- Calcutta port or Syama Prasad Mookerjee Port is India's oldest operating and sole major riverine port, situated on the banks of the Hooghly River.

2. Most Favoured Nation (Source: The Hindu)

MFN is a principle under the World Trade Organization (WTO) that mandates non-discrimination among member countries in trade policies.

Features

- Ensures lowest tariffs, highest import quotas, and minimal trade barriers among member countries.
- Aims to promote fair trade and equitable market access.

Exceptions

- Bilateral or regional trade agreements.
- Special access for developing nations.
- Non-WTO countries like Iran or North Korea are not bound by these rules.

Removal of MFN

- No formal WTO procedure for suspending MFN status exists.
- Members are not obligated to notify the WTO when removing MFN treatment.

3. United Nations Convention on the Law of the Sea (UNCLOS) (Source: The Indian Express)

UNCLOS is a international treaty that establishes the legal framework for marine and maritime activities.

- Also called law of seas
- Adopted in 1982 and came into force in 1994.

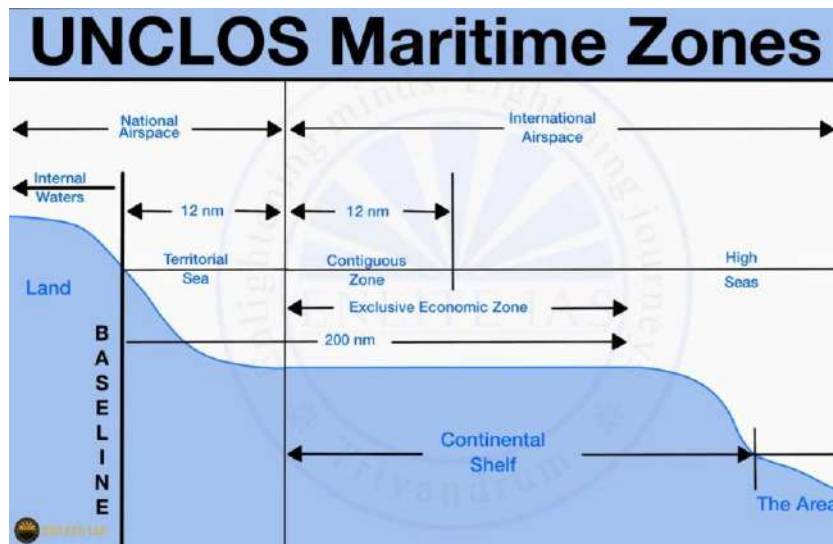
Fact To Know

- Aim to ensure peaceful use of oceans, equitable use of marine resources, protection of marine environment, and regulation of maritime boundaries.
- Creates the International Seabed Authority (ISA) to regulate mineral resources in areas beyond national jurisdiction.
- There are 168 members including European Union.

UNCLOS Division of Maritime Zone

- **Internal Waters:** Internal waters are waters on the landward side of the baseline from which the breadth of the territorial sea is measured. Each coastal state has full sovereignty over its internal waters as like its land territory. For example ports, bays etc.

- **Territorial Sea (Up to 12 nm):** The state exercises sovereignty over the water, seabed, subsoil, and airspace. Other nations' ships enjoy the right of innocent passage.
- **Contiguous Zone (Up to 24 nm):** Extends another 12 nm beyond the territorial sea. The state may exercise control to prevent and punish infringements of its customs, fiscal, immigration, or sanitary laws.
- **Exclusive Economic Zone - EEZ (Up to 200 nm):** The state has sovereign rights over exploring, exploiting, conserving, and managing natural resources (fish, oil, gas) in the water column and seabed. Other nations have freedom of navigation.
- **High Seas (Beyond EEZ):** Waters not included in any state's EEZ, territorial sea, or internal waters. It is considered the "common heritage of all mankind," where freedom of navigation, overflight, fishing, and scientific research applies.



4. International Labour Organisation (ILO) (Source: The Indian Express)

It is a tripartite United Nations agency, bringing together governments, employers and workers representatives from its 187 member states to devise international labour standards.

Facts

- Established in 1919 by the Treaty of Versailles as an affiliated agency of the League of Nation (LoN).
- First specialized agency of UN in 1946.
- Headquarters at Geneva, Switzerland
- Received the Nobel Peace Prize in 1969.

Objectives

- To promote and realize standards and fundamental principles and rights at work.
- To create greater opportunities for women and men to secure decent employment.
- To enhance the coverage and effectiveness of social protection for all.
- To strengthen tripartism and social dialogue.

Functions

- Creation of coordinated policies and programs, directed at solving social and labour issues.
- Adoption of international labour standards in the form of conventions and recommendations and control over their implementation.
- Assistance to member-states in solving social and labour problems.
- Human rights protection (the right to work, freedom of association, collective negotiations, protection against forced labour, protection against discrimination, etc.).
- Research and publication of works on social and labour issues.

5. DIVEX 2026 (Source: PIB)

- ***It is India – Sri Lanka diving exercise between both countries navies.***
- The bilateral exercise brings together diving teams from both navies to undertake specialised underwater operations.
- The engagement aims at enhancing interoperability, operational cohesion, and the exchange of best practices between the two maritime forces.

Other Exercise

- **SLINEX** : Bilateral naval exercise between India and Sri Lanka, initiated in 2005 to enhance maritime interoperability, exchange best practices, and strengthen regional security.
- **Mitra Shakti**: A Joint Military Exercise between the Armies of India and Sri Lanka.

6. Organization of the Petroleum Exporting Countries (OPEC) (Source: The Hindu)

It is a permanent intergovernmental organization of oil-exporting countries.

Formation:

- It was established in 1960 by the five founding members Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela.

Headquarters

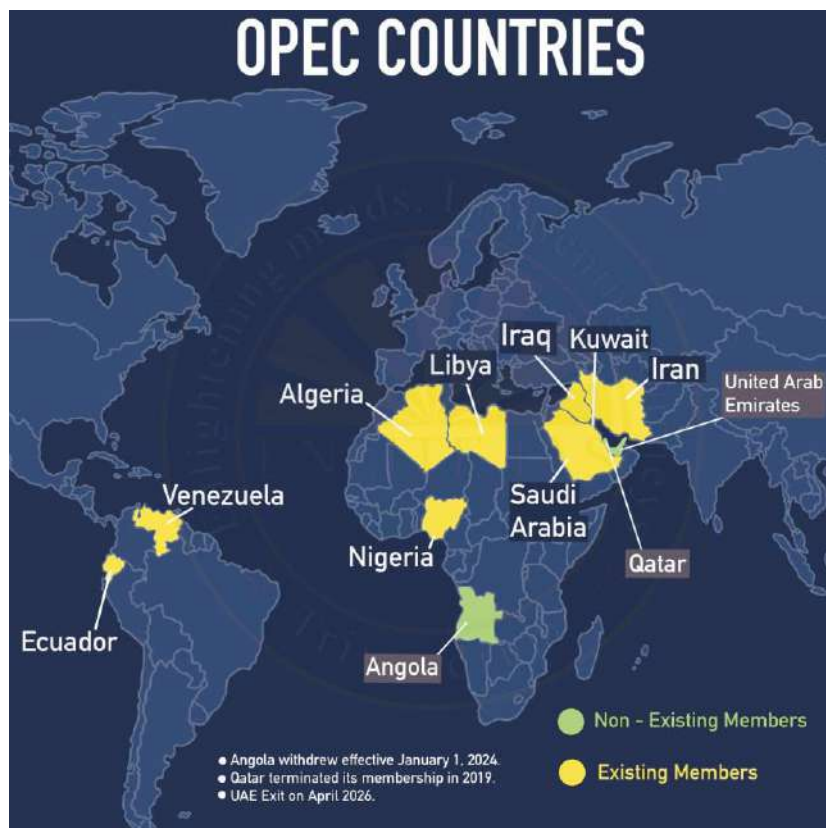
- Vienna, Austria.

Mission

- To coordinate and unify the petroleum policies of its Member Countries.
- Ensure the stabilization of oil prices in the international oil markets, with a view to eliminating harmful and unnecessary fluctuations.

Members

- Countries Currently Part of Grouping: Algeria, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, and Venezuela.
- Note: Angola withdrew effective January 1, 2024, and Qatar terminated its membership in 2019. UAE Exit on April 2026



OPEC +

- It is a group of oil exporters consisting of 23 member countries which meet regularly to decide how much crude oil to sell on the world market.
- It comprises 13 OPEC countries plus Azerbaijan, Bahrain, Brunei, Kazakhstan, Russia, Mexico, Malaysia, South Sudan, Sudan, and Oman.

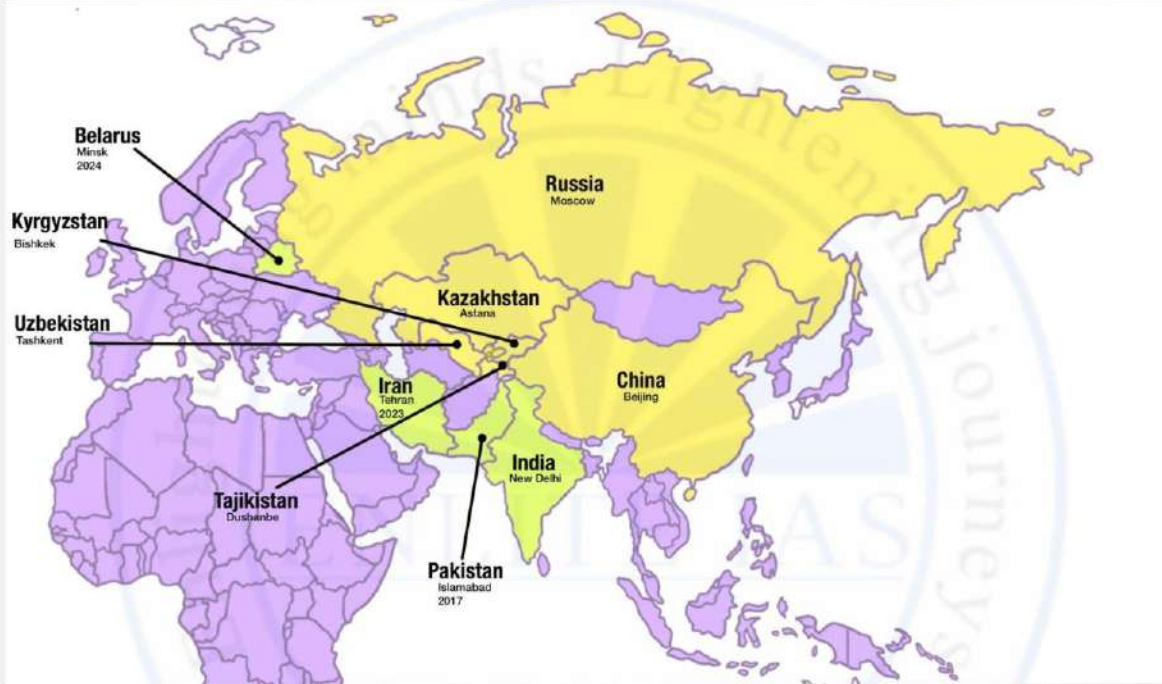
7. Shanghai Cooperation Organisation (Source: The Hindu)

Shanghai Cooperation Organisation (SCO)

Founding Members (2001) :



Recent Members :



Key Facts :

- Established 2001, in Shanghai China
- Charter Signed : 2002; came into force on 19th September 2003.
- Goals :
 - Strengthen regional peace, stability & cooperation
 - Combat, terrorism, separatism , & extremism
 - Foster economic, political & cultural collaboration
- Structure :
 - Supreme Decision-making Body - Council of Heads of State
 - Permanent Bodies - Secretariat (Beijing & Regional Anti - Terrorist Structure (Tashkent)
- Official Languages : Russian & Chinese
- Headquarters : Beijing, China
- SCO & India : Varanasi has been nominated as the first ever SCO tourism and cultural capital at the SCO summit in Samarkand 2022.



ENLITE IAS

ECONOMY

1. Stagflation (Source: The Indian Express)

Stagflation is an economic phenomenon combines high inflation, stagnant economic growth, and elevated unemployment.

- The term was first used in the 1960s and became prominent during the 1970s oil crisis.

Causes

- Supply shocks like rising crude oil price (Eg : Iran Conflict).
- Spike input costs (e.g., energy),
- Slowing production while raising prices.
- Cost-push factors, such as wage-price spirals or poor policy (e.g., excessive money supply).

Impacts

- Inflation erodes household incomes, reducing consumption.
- Companies facing higher costs and weaker demand cut jobs.
- Economic uncertainty discourages businesses from investing, further hampering growth.
- High interest rates, necessary to fight inflation, reduce the value of banks' bond holdings.

2. Windfall Tax (Source: The Hindu)

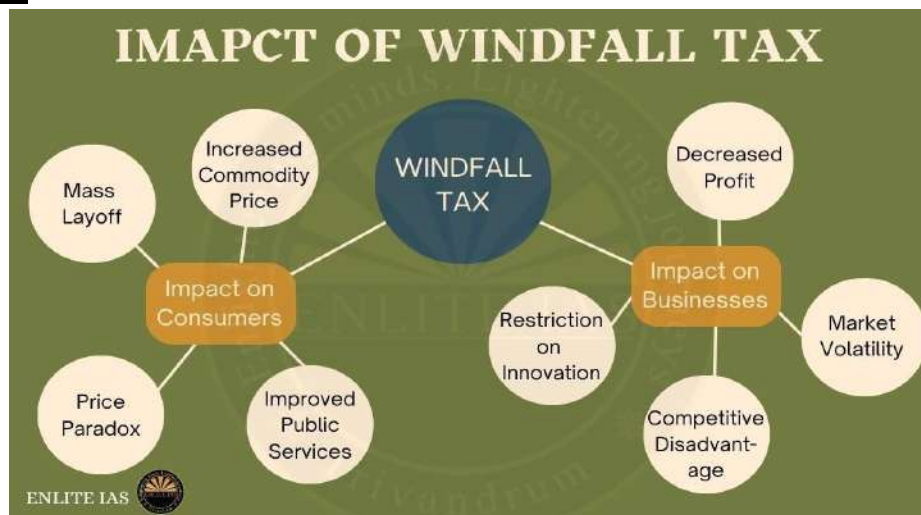
A windfall tax is a special tax that governments impose on industries or entities earning unexpected, above-average profits due to external factors like market surges or geopolitical events.

- It is commonly levied on industries such as oil, gas, and mining.

Need To Know

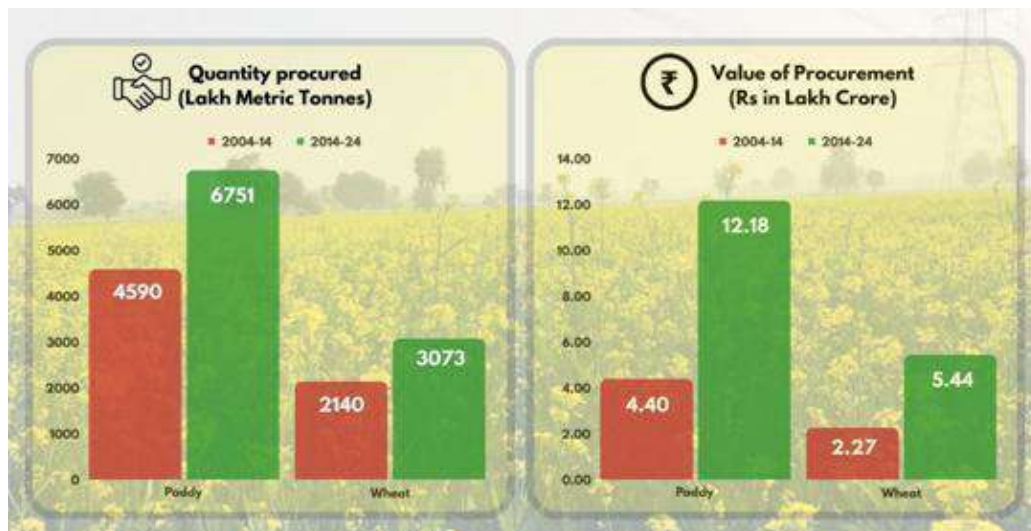
- Governments use it to capture excess profits for public revenue, fund welfare, or stabilize economies.
- India first implemented windfall profit taxes on 1st July 2022.

Impact



3. Minimum Support Price (MSP) (Source: The Hindu)

Minimum Support Price (MSP) is a mechanism through which the government supports farmers by purchasing their crops at a pre-determined price. This assured price encourages farmers to invest in quality seeds and technology without fear of distress sales.



What you need to know?

- MSPs is announced by government for 22 mandated agricultural crops.
- It is announced based on the recommendations of the Commission for Agricultural Costs & Prices (CACP).
- Cereals and coarse cereals are procured by the Food Corporation of India (FCI) and designated State Agencies.



4. Economic Recession (Source: The Hindu)

A recession is a period of temporary economic decline, typically involving reduced GDP, industrial output, employment, and income.

Major Causes

- High inflation, rising interest rates, supply-demand imbalances, or external shocks like pandemics or conflicts.

Types

- **Technical Recession:** Two quarters of GDP contraction.
- **Balance Sheet Recession:** Firms focus on debt repayment over investment.
- **Double-Dip Recession:** A relapse after partial recovery.

Impacts

- Unemployment, reduce consumer spending, and strain government revenues, often hitting low-skilled workers hardest.
- Businesses may close, amplifying fiscal deficits.

5. Wholesale Price Index (WPI) (Source: The Hindu)

- Measures price changes at the wholesale level.
- Base year is 2011 – 12 (proposed based year is 2022 – 23).
- Primarily includes manufactured products, fuel, and primary articles. (service sector not included).
- The measurement of the WPI are based on production values.
- Exclude indirect tax.
- Released by Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Union Ministry of Commerce & Industry.

Consumer Price Index

- Measure retail inflation.
- Covers both goods and service
- Base year 2012.
- The weights of the CPI basket are based on the average household expenditure taken from the Consumer expenditure survey.
- Include indirect tax.
- Released by National Statistics Office (NSO), Ministry of Statistics and Programme Implementation.

6. Critical Minerals (Source: The Hindu)

Critical minerals are those minerals which are essential for economic development and national security of a country.

- **Examples:** Lithium, Cobalt, Nickel and Graphite etc.

Major Features

- High supply risk
- Limited substitutes
- Strategic importance

Applications

- **Green Energy:** Lithium, cobalt, and nickel form the core of lithium-ion batteries for electric vehicles (EVs) and Graphite supports EV batteries and fuel cells.
- **Electronics and Tech:** Gallium and germanium drive semiconductors, LEDs, integrated circuits, and optical fibers. Copper is fundamental for wiring, solar infrastructure, and consumer electronics.

- **Defense and Aerospace:** Rare earths and titanium enhance jet engines, missile guidance, fighter jets, and submarines. Hafnium aids nuclear reactors and superalloys for strategic tech. Beryllium supports satellites and space telescopes.
- **Healthcare and Other Uses:** Cadmium and bismuth feature in medical imaging like MRI systems and pharmaceuticals. Antimony provides flame retardants and alloys, while beryllium aids automotive and machinery manufacturing.

7. Insolvency (Source: The Hindu)

Insolvency refers to a situation where individuals or companies cannot repay back their outstanding debt obligations.

Criteria For Declaring

- **Criteria for Corporate Insolvency (Companies & LLPs)**
 - A minimum default of ₹1 Crore must exist for initiating the Corporate Insolvency Resolution Process (CIRP).
 - Can be initiated by a Financial Creditor (banks), Operational Creditor (suppliers/employees), or the Corporate Debtor itself.
- **Criteria for Individual/Personal Insolvency**
 - Applies to individuals and partnership firms where the default is ₹1,000 or more (the government may increase this threshold to a maximum of ₹1 Lakh).

Declaring Insolvency as per the Insolvency and Bankruptcy Code, 2016

- IBC covers individuals, companies, LLPs, and partnership firms under a single, consolidated framework, merging multiple earlier laws.
- Strict timelines:
 - Resolution must be completed in 180 days (extendable to 330 days in special cases, including litigation).
 - Special provisions for small companies and startups (90 days + 45 days).
 - Personal insolvency cases are to be resolved within 180 days through the Debt Recovery Tribunal (DRT).

Insolvency and Bankruptcy Board of India (IBBI)

- *Regulates professionals and agencies, sets standards, and oversees proceedings.*
- Formed as per the **Insolvency and Bankruptcy Code (IBC), 2016.**
- **Composition**

- **Chairperson:** Appointed by the Central Government.
- **Government Representatives:** Three members from the Ministry of Finance, the Ministry of Corporate Affairs, and the Ministry of Law (ex officio).
- **RBI Representative:** One member nominated by the Reserve Bank of India (ex officio).
- **Additional Members:** Five other members appointed by the Central Government, of which at least three must be full-time members.
- **Tenure of Members**
 - Chairperson and non-ex officio members serve for five years or until they reach the age of 65 years, whichever is earlier, and are eligible for re-appointment.

8. Depreciation of Currency (Source: **The Hindu**)

Currency depreciation is the decline in a nation's currency value relative to others.

Facts To Know

- Easy monetary policy and high inflation can lead to currency depreciation, affecting a country's trade and investment.
- Controlled depreciation might benefit a country's export competitiveness.
- Political actions and rhetoric, such as trade disputes and tariffs, can also influence currency value.

Effects

- Exports will become cheaper and export will be more competitive in foreign markets.
- Imports will become more expensive from the country.

Appreciation

- The opposite of currency depreciation is currency appreciation, where a currency becomes stronger.

9. Payments Bank (Source: **The Hindu**)

- It was set up based on the recommendations of the **Nachiket Mor Committee**.
- *It aims to advance financial inclusion by offering banking and financial services to the unbanked and underbanked areas, helping the migrant labour force, low-income households, small entrepreneurs, etc.*
- It is registered as a public limited company under the **Companies Act 2013**.
- **Features**
 - These operate on a smaller scale.

- The minimum paid-up equity capital for payments banks shall be Rs. 100 crores.
- **Activities Involves**
 - It can take deposits up to Rs. 2,00,000. It can accept demand deposits in the form of savings and current accounts.
 - The money received as deposits can be invested in secure government securities only in the form of Statutory Liquidity Ratio (SLR). This must amount to 75% of the demand deposit balance.
 - The remaining 25% is to be placed as time deposits with other scheduled commercial banks.
 - It can offer remittance services, mobile payments/transfers/purchases, and other banking services like ATM/debit cards, net banking, and third-party fund transfers.
 - It can become a banking correspondent (BC) of another bank for credit and other services which it cannot offer.
- **Actives cannot be performed**
 - It cannot issue loans and credit cards.
 - It cannot accept time deposits or NRI deposits.
 - It cannot set up subsidiaries to undertake non-banking financial activities.

10. Non-Performing Assets (NPAs) (Source: The Hindu)

An NPA is a loan or advance for which the principal or interest payment remained overdue for a period of 90 days.

Classification of Assets: As per the RBI guideline, banks are required to classify NPAs further into:

- **Substandard Assets:** Assets which have remained NPA for a period less than or equal to 12 months.
- **Doubtful Assets:** An asset that has remained in the substandard category for a period of 12 months.
- **Loss Assets:** It is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted, although there may be some recovery value.

11. Non-Banking Financial Companies (NBFCs) (Source: The Hindu)



Non-Banking Financial Companies (NBFCs)

A Non-Banking Financial Company (NBFC) provides, acquires financial securities, and offers leasing & insurance services. However, it excludes companies primarily engaged in agriculture, industrial activities, trading, or real estate.

About

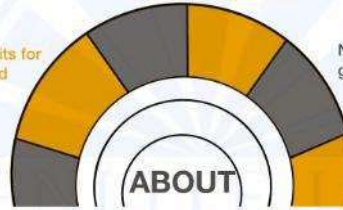
Do not have a banking license; not part of the payment system; cannot issue cheques.

Insurance by Deposit Insurance & Credit Guarantee Corporation- not available for NBFC depositors.

Can accept public deposits for 12-60 months (no demand deposits).

NBFCs require an investment-grade credit rating.

Registration- Companies Act 1956.



Key services offered - Personal loans, Home loans, Vehicle Financing, Gold Loans, Microfinance, Infrastructure Financing, Insurance Services, Investment Management.

Classification

By Major Activity :

- Asset Finance Company
- Investment Company
- Loan Company
- Infrastructure Finance Company
- Core Investment Company
- Infrastructure Debt Fund
- Micro Finance Institution (NBFC -MFI)
- Malegam Committee Recommendation NBFC - Factors
- Mortgage Guarantee Companies
- Non-Operative Financial Holding Company

By Deposits :

- Deposit - taking NBFC's
- Non -deposit taking NBFCs - Systemically Important (NBFC - NDSI)
- Other non - deposit holding (NBFC - ND)



Systemically important NBFCs
Assets of 500.crores or more

Regulation :



Type of Institution	Regulatory Authority
<ul style="list-style-type: none"> -NBFCs registered with RBI. -Housing Finance Institutions. -Merchant Banking Companies, Venture Capital Fund Companies, Stock Broking, Collective Investment Schemes (CIS). -Nidhi Companies, Mutual Benefit Companies. -Chit Fund Companies. -Insurance companies. -Non - Banking Non - Financial Companies. 	<ul style="list-style-type: none"> -RBI - National Housing Bank. - SEBI - Ministry of Corporate Affairs (MCA) - State Government - IRDAI - Statute - Companies Act 1956 Regulator- Ministry of Corporate Affairs Enforcement Agency- State Governments.

Benefits of NBFCs

- Financial Inclusion.
- Innovative Products.
- Liquidity
- Support for MSMEs.

Challenges of NBFCs

- Funding Constraints.
- Asset Quality & credit risk.
- Regulatory Compliance.
- Corporate Governance.



ENVIRONMENT

1. UN Convention on Biological Diversity (CBD) (Source: PIB)

- *The CBD, a legally binding treaty to conserve biodiversity has been came into force in 1993 with objectives like*
 - The conservation of biological diversity.
 - The sustainable use of the components of biological diversity.
 - The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
- *The CBD Secretariat is based in Montreal, Canada and it operates under the United Nations Environment Programme.*
- The Parties (Countries) under Convention of Biodiversity (CBD), meet at regular intervals and these meetings are called Conference of Parties (COP).
- **Supplementary Agreements**
 - **Cartagena Protocol on Biosafety (2000)** : To protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. It is outcome of COP -5.
 - **Nagoya Protocol (2010)**: On Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) was adopted in Nagoya, Japan at COP10.

India enacted Biological Diversity Act, 2002 for giving effect to the provisions of the CBD.

2. Bengal Florican (Source: Down To Earth)

The Bengal florican also called Bengal bustard, is a bustard species native to the Indian subcontinent, Cambodia, and Vietnam.

- Small population also present on Nepal.

Major Threats

- Habitat Loss (Grasslands)
- Collision with power transmission line

Protection Status

- **IUCN Status:** Critically Endangered.
- **Wildlife Protection Act of India, 1972:** Schedule I
- **CMS:** Appendix 1

3. Forever Chemical (Source: Down To Earth)

Forever chemicals, also known as Per- and Polyfluoroalkyl Substances (PFAS), are a large group of man-made chemicals known for their persistence in the environment and potential health risks.

Sources

- PFAS are used in a wide range of consumer products due to their beneficial properties. Some common examples include:
 - Non-stick cookware
 - Waterproof clothing and textiles
 - Food packaging (pizza boxes, popcorn bags)
 - Carpets and furniture
 - Cosmetics (mascara, foundation)
 - Firefighting foams

Harmful Effects

- They cause a variety of health risks that are attributed to PFA exposure, including decreased fertility, developmental effects in children, interference with body hormones, increased cholesterol levels, and increased risk of some cancers.

4. Periyar Tiger Reserve (Source: The Hindu)

- **Location:** Idukki, Kerala
- **Main Rivers:** Mullayar and Periyar.
- **Associated Tribal Community:** Mannans, Paliyans, Malayarayans, Mala Pandarams, Uralis, and Ulladans.
- **Vegetation:** Tropical evergreen, semi- evergreen, and moist deciduous forest with species like teak, mangoes, rosewood, and jamun.
- **Fauna:** Elephants, Sambar, Gaur, Mouse Deer, Indian Wild Dog, and Tiger.



5. United Nations Framework Convention on Climate Change (UNFCCC) (Source: The Hindu)

It is an international treaty formed in the Rio Earth Summit (1992) to coordinate the global response to climate change.

- **Headquarters:** Bonn, Germany
- **Objectives**
 - The primary role of UNFCCC is to provide a framework for negotiating specific international treaties, known as “protocols.”
 - UNFCCC itself sets no binding limits but aims to stabilize greenhouse gas (GHG) concentrations in the atmosphere at a level preventing dangerous consequences.
- **Funding:** Under Green Environment Fund (GEF)
- **Major COPs and Outcomes**
 - **COP 3 (1997):** Kyoto Protocol
 - **COP 16 (2010):** Established the **Green Climate Fund (GCF)**.
 - **COP 21 (2015):** Paris Agreement and Nationally Determined Contributions (NDCs).

6. Indus River Dolphin (Source: Down To Earth)

It is a freshwater dolphin species found in the lower parts of the Indus River in Pakistan and in the River Beas, a tributary of the Indus River in Punjab, India.

Threats

- Unsustainable fishing
- Construction of dams led to habitat fragmentation
- River water pollution

Conservation Status

- **International Union for the Conservation of Nature (IUCN):** Endangered.
- **Convention on International Trade in Endangered Species(CITES):** Appendix I
- **Indian Wildlife (Protection), Act 1972:** Schedule I

Ganges River Dolphin

- **Indian Wildlife (Protection), Act 1972:** Schedule I.
- **IUCN Status:** Endangered.
- **CITES:** Appendix I
- **Convention on Migratory Species (CMS):** Appendix II

Irrawaddy Dolphin

- **IUCN Status:** Endangered.
- **Wildlife (Protection) Act, 1972:** Schedule I.
- **CITES:** Appendix I.

7. Corporate Average Fuel Efficiency (CAFE) Norms (Source: **The Economic Times**)

- *Corporate Average Fuel Efficiency or CAFE norms were first introduced in 2017 under the Energy Conservation Act, 2001, with aim to curb fossil fuel dependence and air pollution from road transport.*
- Issued by the **Bureau of Energy Efficiency (BEE).**
- The regulations set limits on corporate average fuel consumption, measured in litres per 100 kilometres, based on the average weight of vehicles sold by an automaker during a financial year.
- *The rules aim to reduce carbon intensity by pushing companies to improve the efficiency of their overall fleet.*
- **Phases**

- **CAFÉ 1:** implemented in 2017–18, capped average fuel consumption at 5.5 litres/100 km and emissions at <130 gm CO₂/km.
- **CAFÉ 2:** in force since 2022–23, tightened this to 4.78 litres/100 km and <113 gm CO₂/km.
- **CAFÉ 3 (or CAFÉ 2027):** Proposes to reduce permissible fuel consumption to a range of 3.72–3.01 litres/100 km, with emissions expected to fall below 91.7 gm CO₂/km.

8. Kuno National Park (Source: The Hindu)

- *A national park in the Vindhya's of Madhya Pradesh. It is in news due to the Cheetah reintroduction programme.*

Ecosystem Features

- The Kuno river, a tributary of Chambal passes through this park.
- It has dry deciduous forest characterised by Kardhai, Khair, and Salai trees.
- This area has been found suitable location for Lion Reintroduction Program also.



9. Microplastics Pollution (Source: Down To Earth)

Tiny plastic particles less than 5 millimeters in size, resulting from the breakdown of larger plastics or produced intentionally for commercial use (e.g., in cosmetics).

Source

- **Industrial and Consumer Products:** Microbeads in cosmetics, synthetic textiles, and cleaning agents.
- **Breakdown of Plastics:** Plastic bags, bottles, and other packaging.
- **Industrial Waste:** Tire abrasion and paint particles.

- **Marine and Terrestrial Sources:** Fishing gear and agricultural films.

Impact

- **Environmental**
 - Ingestion by marine organisms disrupts ecosystems. (Biomagnification)
 - Accumulates in soil and water, reducing fertility and contaminating drinking water.
 - Airborne microplastics contribute to air pollution.
- **Health**
 - Linked to respiratory and endocrine disruptions.

10. Carbon Border Adjustment Mechanism (CBAM) (Source: **The Hindu**)

CBAM is part of the “Fit for 55 in 2030 package”, which is the EU’s plan to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels in line with the European Climate Law.

Aim

- The CBAM is a policy tool aimed at reducing Carbon Emissions by ensuring that imported goods are subject to the same carbon costs as products produced within the EU.

Facts

- It applies first to carbon-intensive sectors such as cement, iron and steel, aluminium, fertilisers, electricity, and hydrogen.
- The CBAM will be implemented by requiring importers to declare the quantity of goods imported into the EU and their embedded Greenhouse Gas (GHG) emissions on an annual basis.
- It is linked to the EU Emissions Trading System and the gradual phase-out of free allowances.

Impact on India

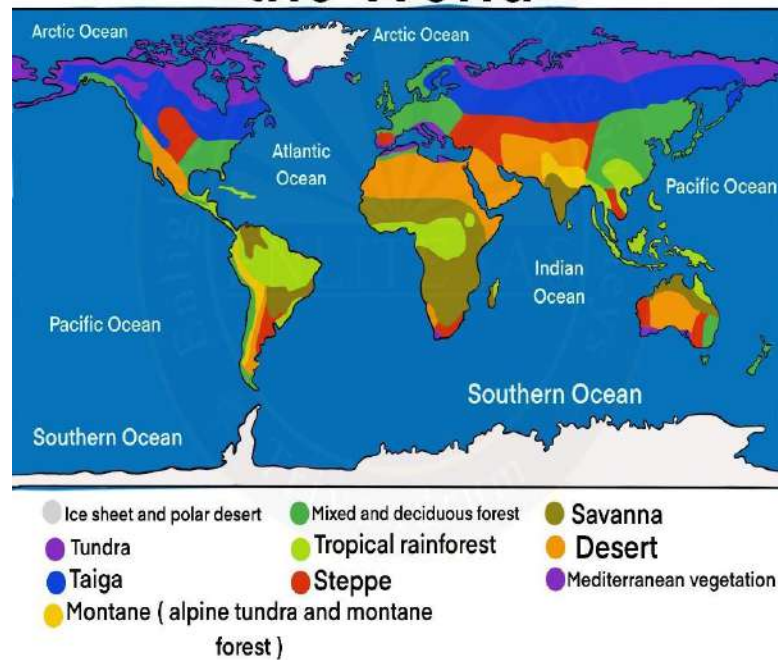
- India’s exporters in steel, aluminium, and related sectors may face higher compliance costs.
- It may push Indian industry toward cleaner production and stronger MRV systems.

- It also raises concerns about climate equity, trade fairness, and CBDR-RC under UNFCCC

11. Amazon Rainforest (Source: Down To Earth)

- Lies in the Amazon River Basin (world's largest river by discharge volume)
- Countries with Amazon Rainforests are 60% of it is in Brazil, 13% is in Peru, 8% in Bolivia, 7% and 6% respectively in Colombia and Venezuela, and nearly 3% each in Guyana and Suriname and around 1% in French Guiana and Ecuador.
- The Amazon rainforest or Amazonia constitutes close to 1.3% of the planet's surface and 4.1% of the earth's land surface, but as a biome, the Amazon is host to 10% of the world's wildlife species.

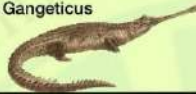


The main Biome in the World



12. Gharial (Source: The Hindu)

CROCODILE SPECIES IN INDIA

India harbours three diverse crocodile species - Mugger, Saltwater, and Gharial- found in distinct habitats nationwide.

Aspects	Gharial	Mugger/Indian Crocodile	Saltwater Crocodile
Scientific Name	Gavialis Gangeticus 	Crocodylus Palustris 	Crocodylus Porosus 
Distribution : India	Viable Population: National Chambal Sanctuary (U.P, Raj, M.P) Small Non Breeding Population: Son, Gandak, Hooghly, Ghagra & Satkosia WLS (Odisha)	Throughout India	East Coast (Odisha's Bhitarkanika WLS, Andaman & Nicobar Islands coast & Sundarbans)
Distribution: Neighborhood	Brahmaputra of Bhutan & Bangladesh & Irrawaddy River	Extinct in Bhutan and Myanmar	Across Southeast Asia
Special Feature	Longest of all Crocodile, Long and thin Snout	Egg-laying, Hole-nesting, Wide & U-shaped snout	Largest living reptile, Pointed & V-shaped Snout
Habitat	Freshwater	Freshwater	Saltwater, Brackish & Wetlands
International Union for Conservation of Nature Status	CR	VU	LC
Convention on International Trade in Endangered Species Status	Appendix I	Appendix I	Appendix I
CMS Status	Appendix I	-	Appendix II
WPA, 1972 Status	Schedule I	Schedule I	Schedule I
Threats	Dams, Pollution, sand mining	Habitat Destruction	Hunted for its skin and Habitat loss
Government Initiatives	<ul style="list-style-type: none"> ● Odisha : Rs1000 award to conserve Gharial in Mahanadi River Basin ● Indian Crocodile Conservation Project, 1945 	<ul style="list-style-type: none"> ● Indian Crocodile Conservation Project, 1975 ● Mugger Conservation Programme ● Madras Crocodile Bank Trust 	Indian Crocodile Conservation Project, 1975

Facts

17th June : World Crocodile Day

Annual Reptile Census, 2023: Marginal Increases in number of saltwater crocodiles (Bhitarkanika National Park and its nearby areas).

Odisha's Kendrapara District: Only district in India where all three species of crocodiles found.



13. Sundarban Delta (Source: The Hindu)

The Sundarbans, a cluster of low-lying islands in the Bay of Bengal, spread across India and Bangladesh, is famous for its unique mangrove forests.

Formation

- Sundarbans formed by the deposition of Ganges, Brahmaputra and Meghna rivers on the Bay of Bengal.

Biodiversity

- Home to protected species like estuarine crocodile, water monitor lizard, Gangetic dolphin and olive ridley. turtle , royal bengal tiger.

Protection Status

- Sundarban was designated a **UNESCO World Heritage site** in 1987 (India) and 1997 (Bangladesh).
- Sundarban Wetland, India was recognised as the '**Wetland of International Importance**' under the **Ramsar Convention** in January 2019.
- It is also protected as **national park and tiger reserve in India.**

14.Ramsar Sites and Shekha Jheel Bird Sanctuary (Source: PIB)

Ramsar Sites

- *Ramsar Sites are wetlands of international importance designated under the Ramsar Convention on Wetlands.*
 - Adopted in 1971 at Ramsar and came into force in 1975.
 - It is an intergovernmental treaty for conservation and wise use of wetlands.
- **Criteria For Declaring**
 - contains a representative, rare, or unique example of a natural or near-natural wetland type.
 - supports vulnerable, endangered, or critically endangered species; or threatened ecological communities.
 - supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.
 - supports plant and/or animal species at a critical stage in their life cycles or provides refuge during adverse conditions.
 - regularly supports 20,000 or more water birds.
 - regularly supports 1% of the individuals in a population of one species or subspecies of water birds.
 - supports a significant proportion of indigenous fish subspecies.
 - is an important source of food for fishes, spawning ground, nursery and/or migration path.
 - is an important source of food and water resource, increased possibilities for recreation and eco-tourism, etc.

Shekha Jheel Bird Sanctuary

- Shekha Jheel Bird Sanctuary is located in the state of Uttar Pradesh.

- It is a fresh water perennial water body present in Gangetic plains.
- It acts as a crucial stopover on the Central Asian Flyway.

15. Groundwater Contamination Reasons (Source: The Indian Express)

- **Natural Reasons:** High levels of arsenic, fluoride, iron, and uranium exist naturally in geological formations, contaminating groundwater.
- **Agriculture:** Excessive use of fertilisers, pesticides, and herbicides leach harmful chemicals into the water table.
- **Industrial Waste:** Release of untreated industrial effluents leads to seepage of heavy metals (lead, cadmium, mercury).
- **Urbanisation:** Leaky sewage systems and improper waste disposal in urban areas contribute to groundwater pollution.
- **Saltwater Intrusion:** In coastal areas, over-pumping of groundwater can cause saltwater from the ocean to infiltrate freshwater aquifers.
- **Excessive Groundwater Extraction:** In Gangetic region excessive extraction leads to Arsenic contamination.

16. Stubble Burning (Source: The Hindu)

Stubble burning, also known as parali burning, is the practice of setting fire to leftover crop residue in fields after harvest. This is a prevalent practice in North-West India, particularly in states like Punjab, Haryana, and Uttar Pradesh.

Reasons for Stubble Burning:

- **Quick and inexpensive method:** Farmers find it to be a quick and cheap way to clear their fields for sowing the next crop.
- **Lack of alternatives:** Limited access to or awareness of alternative methods for crop residue management.

Impacts of Stubble Burning:

- **Air pollution:** Stubble burning is a major contributor to air pollution, particularly PM2.5 particles, leading to respiratory problems and health issues.
- **Soil degradation:** Burning destroys essential nutrients and microbes in the soil, reducing fertility and long-term productivity.
- **Climate change:** Releases greenhouse gases like carbon dioxide, contributing to climate change.

Government Initiatives:

- **National Policy on Sustainable Agriculture (2015):** Promotes crop residue management practices.
- **Sub-Mission on Agricultural Mechanization (SMAM):** Provides subsidies for machinery like Happy Seeder that can sow seeds directly into the stubble.
- **Financial incentives:** Schemes to encourage farmers to adopt alternative practices like composting or baling.
- **National Green Tribunal (NGT) bans:** Imposed bans on stubble burning with penalties for violations.

17. Ethanol Blending (Source: The Hindu)

Ethanol Blending involves mixing of ethanol with petrol to create cleaner, more sustainable fuel. Initially, the target was 5% blending, which has now been increased to 20% blending.

- The present target is E100 (pure ethanol). E100 needs flex-fuel vehicles that can run on varying ethanol blends.

Benefits

- Reduces the hydrocarbon emissions making atmosphere cleaner (GHG emissions in case of use of sugarcane and maize based Ethanol are less by 65% and 50%, respectively than those of petrol.)
- Saves precious foreign exchange by reducing demand for import.
- Ensures alternate source of income for farmers.

Challenges

- It can lead to food security crisis due to food crop diversion and water usage for sugarcane cultivation.

Ethanol Blended Petrol (EBP) Programme

- Aimed at mixing ethanol with standard motor petrol. Operating under the ambit of the National Biofuel Policy (NBP) 2018, the program is driven by the Ministry of Petroleum and Natural Gas.
- Its primary goals are to reduce India's heavy reliance on imported crude oil, cut greenhouse gas emissions, and boost farmers' incomes by creating a lucrative alternate market for agricultural produce.

Generation of Ethanol

- **1st Generation Ethanol:** It is made from food crops such as cereals (rice, wheat, barley, corn and sorghum), sugarcane, sugar beet etc.
- **2nd Generation Ethanol:** It is made from ligno-cellulosic or woody biomass, or agricultural residues/waste such as wheat straw, corn stover, wood etc.

- **3rd Generation Ethanol:** It includes those derived from aquatic biomass such as algae.
- **4th Generation Ethanol:** It is derived from engineered plants and microorganisms

SCIENCE AND TECHNOLOGY

1. Key Difference Between LPG, LNG, PNG, and CNG

(Source: **The Hindu**)

Liquefied Petroleum Gas (LPG)

- LPG is a portable, clean, and efficient energy source composed mainly of propane and butane.
- It is stored as a liquid in pressurized cylinders and is widely used for household cooking.

Compressed Natural Gas (CNG)

- CNG is an environmentally friendly automotive fuel composed primarily of methane (80–90%).
- It is compressed to a pressure of about 200–250 kg/cm², allowing large amounts of gas to be stored in small vehicle tanks.
- CNG remains in gaseous form.
- CNG is widely used to reduce vehicular greenhouse gas emissions.

Piped Natural Gas (PNG)

- PNG is composed mainly of methane (CH₄) with small amounts of other hydrocarbons.
- It is supplied directly to households, commercial establishments, and industries through pipelines.

Liquefied Natural Gas (LNG)

- LNG is natural gas, primarily methane, cooled to –160°C to convert it into liquid form.
- It is transported in specialized cryogenic tankers and stored in insulated tanks at terminals near ports.
- Qatar supplies roughly half of India's LNG imports.
- Use in electricity generation, fertilizer production, city gas distribution, and industrial processes.

2. Nuclear Fusion VS Nuclear Fission (Source: The Hindu)

Nuclear Fission vs Nuclear Fusion	
A heavy nucleus breaks up to form two lighter nuclei.	Two nuclei combine to form a heavy nucleus.
It involves a chain reaction.	Chain reaction is not involved.
The heavy nucleus is bombarded with neutrons.	Light nuclei are heated to an extremely high temperature.
We have proper mechanisms to control fission reaction for generating electricity.	Proper mechanisms to control fusion reaction are yet to be developed.
Disposal of nuclear waste is a great environmental problem.	Disposal of nuclear waste is not involved.
Raw material is not easily available and is costly.	Raw material is comparatively cheap and easily available.

3. Coal Gasification (Source: The Economic Times)

Coal gasification is a process that transforms Coal into a Synthetic gas (Syngas), consisting of mixture of gasses such as Carbon monoxide (CO), Hydrogen (H₂), Carbon dioxide (CO₂), Methane (CH₄) and Water vapor (H₂O).

- Syngas can be used to produce a wide range of Fertilizers, Fuels, solvents and synthetic materials.

Process

- **Preparation:** Coal is crushed into a fine powder to increase its surface area and enhance the chemical reactions during the process.
- **Gasification Reactor:** The crushed coal is introduced into a high-temperature and high-pressure reactor along with limited oxygen or air and steam.

- **Chemical Reactions:** In the absence of sufficient oxygen for complete combustion, the coal undergoes a series of complex chemical reactions.
- **Gas Cleaning:** The raw syngas produced from the reactor contains impurities like tar, sulfur, and dust. These impurities need to be removed through a gas cleaning process before the syngas can be used further.

Advantages

- Gasification boosts efficiency to 50%+ in integrated gasification combined cycle (IGCC) plants versus 30–40% in traditional coal plants, via gas turbine plus steam recovery.
- It cuts local pollutants (sulfur, particulates) through pre-use cleaning and enables >90% CO₂ capture potential.
- Applications include power, hydrogen, liquids (CTL), and chemicals, reducing oil import reliance

4. Fast Breeder Reactor (FBR) (Source: The Indian Express)

A Fast Breeder Reactor (FBR) is a type of nuclear reactor that uses fast (high-energy) neutrons to sustain the fission chain reaction and, at the same time, “breeds” more fissile fuel than it consumes, thereby enhancing the efficiency of nuclear fuel use.

- It use use plutonium-based fuel.
- FBRs are central to the second stage of the three-stage nuclear power programme, bridging PHWRs (Stage-1) and future thorium-based reactors (Stage-3).
- Recent development: Kalpakkam fast breeder reactor attains criticality.

Criticality

- Criticality is the state in which a nuclear fuel sustains a self-supporting chain reaction. It is the point at which the number of neutrons produced by fission is exactly equal to the number of neutrons lost (through leakage or absorption) plus those causing new fissions.

5. Malaria (Source: The Hindu)

Malaria is a life-threatening mosquito-borne blood disease caused by Plasmodium parasites.

Need To Know

- **Transmission:** The parasites spread through the bites of infected female Anopheles mosquitoes.
- **Treatment:** Malaria is preventable as well as curable.

- **Symptoms of Malaria:** Headache, Fever, Fatigue, Pain, Back Pain, Chills, Sweating, Dry cough, Nausea, Vomiting
- **Prevalent in:** Africa, South America, Asia

6. CAR-T Cell Therapy (Source: The Hindu)

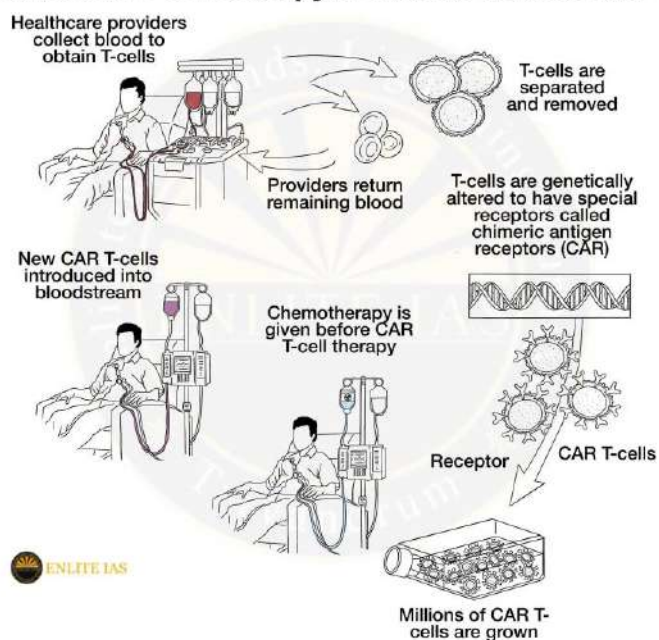
CAR-T cell therapy, also known as chimeric antigen receptor T-cell therapy, is a type of immunotherapy that uses a patient's own immune system to fight cancer.

- Currently it is approved for treating leukaemias, lymphomas.

Procedure for the Therapy

- **Collecting T Cells:** T cells, a type of white blood cell that helps fight infection, are extracted from the patient's blood through a process known as Apheresis.
- **Genetic Engineering:** In the laboratory, the T cells are genetically modified to express a special protein called a chimeric antigen receptor (CAR) on their surface.
- **Expansion:** The engineered T cells are multiplied in large numbers in the lab.
- **Infusion:** The expanded CAR-T cells are then infused back into the patient's bloodstream, where they can identify and attack cancer cells that express the targeted antigen.

How CAR T-cell therapy is used to treat cancer



SCHEMES

1. PM Surya Ghar Muft Bijli Yojana (Source: The Hindu)

PM Surya Ghar Muft Bijli Yojana is a flagship government scheme to promote rooftop solar installations for households and it was launched in 2024.

- Under Ministry of New and Renewable Energy (MNRE)
- It is a central sector scheme.
- The households will be able to get 300 units of electricity free every month.

Implementation

- **National Level:** Managed by the National Programme Implementation Agency (NPIA).
- **State Level:** Managed by State Implementation Agencies (SIAs), which are the Distribution Utilities (DISCOMs) or Power/Energy Departments of the respective states or UTs.

Subsidy

- The scheme provides subsidies to reduce the cost of installing solar rooftop systems. The subsidy is capped at a maximum of 3kW capacity.
 - 60% subsidy for solar systems up to 2kW capacity.
 - 40% subsidy for systems between 2kW to 3kW capacity.

Additional Features

- A "Model Solar Village" will be developed in each district to serve as a demonstration project and promote rooftop solar adoption in rural areas.
- Urban Local Bodies and Panchayati Raj Institutions will receive incentives to promote rooftop solar installations in their respective areas.
- Collateral-free loans up to ₹2 lakh at a 6.75% subsidised interest rate through 12 Public Sector Banks.

Fact

- Chandigarh and Daman & Diu have achieved 100% of their rooftop solar targets for government buildings.
- Gujarat is top performing state in solar rooftop installations followed by Kerala and Uttar Pradesh.

Solar Potential of India

- As per the study India has a total potential of 10,830 GW, including 4,909 GW from ground-mounted, 4,177 GW from Agri-PV, and 960 GW from rooftop solar.
- Rajasthan, Gujarat, Maharashtra, and Karnataka hold high potential due to large, arid landmasses and high solar irradiation

