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LAL BAHADUR SHASTRI

In News:

The Prime Minister, Shri Narendra Modi has paid floral tributes to former Prime Minister, Lal Bahadur Shastri Ji on his Jayanti at Vijay Ghat.

Analysis of Background:

- He was born on 2nd October, 1904 in Mughalsarai in Uttar Pradesh.
- Participated in the freedom movement since 1930.
- He joined the Kashi VidyaPeeth in Varanasi, one of the many national institutions set up in defiance of the British rule.
- He was minister in the Union Cabinet from 1951 to 1956 when he resigned taking responsibility for the railway accident and later from 1957-1964.
- He was India's second Prime Minister (1964-66).
- While India was still recovering from the economic implications of the war with China (1962), failed monsoons, drought and serious food crisis presented a grave challenge. The country also faced a war with Pakistan in 1965.
- Shastri's famous slogan 'Jai Jawan Jai Kisan', symbolised the country's resolve to face both these challenges.
- Shastri's Prime Ministership came to an abrupt end on 10th January 1966, when he suddenly expired in Tashkent, then in USSR and currently the capital of Uzbekistan. He was there to discuss and sign an agreement (Tashkent Agreement) with Muhammad Ayub Khan, the then President of Pakistan, to end the war.
- He was the first person to be posthumously awarded the Bharat Ratna (1966).

MANGARH DHAM

In News:

Rajasthan Chief Minister has sought the declaration of the memorial for tribals as a monument of national importance.

Analysis of Background:

- Mangarh Dham is known for the massacre of tribals by the British Indian Army in 1913.
- It is located in the district on the Gujarat-Rajasthan border, a region with a large tribal population.

- Social reformer Govind Guru led the gathering of tribals and forest dwellers in 1913 in Mangarh against the British Raj.
- Monuments and protected areas declared as of national importance under sections 3 and 4 under the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010.

TOPIC: GEOGRAPHY

CYCLONE SITRANG

In News:

The developing cyclonic storm in the Bay of Bengal — Cyclone Sitrang — will bypass Odisha and make landfall near West Bengal-Bangladesh coasts on October 25, 2022, said the India Meteorological Department (IMD).

Analysis of Background:

- The India Meteorological Department forecasted that a low-pressure area is likely to form over the southeast and adjoining east-central Bay of Bengal.
- The low-pressure area in turn could intensify into a cyclonic storm that could affect Odisha, West Bengal, the northern part of Andhra Pradesh and adjoining areas.

The name Sitrang:

- This cyclone, when it forms, could be named Cyclone Sitrang.
- The name Sitrang has been given by Thailand.
- Sitrang will follow cyclone Asani, which developed in the Bay of Bengal in early May this year. This will be the second cyclonic storm of 2022.
- The cyclones that are forming over the north Indian Ocean, including the Arabian Sea and Bay of Bengal, are given names by IMD. Thirteen members—Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates, and Yemen—are given warnings about tropical cyclones and storm surges by the IMD.

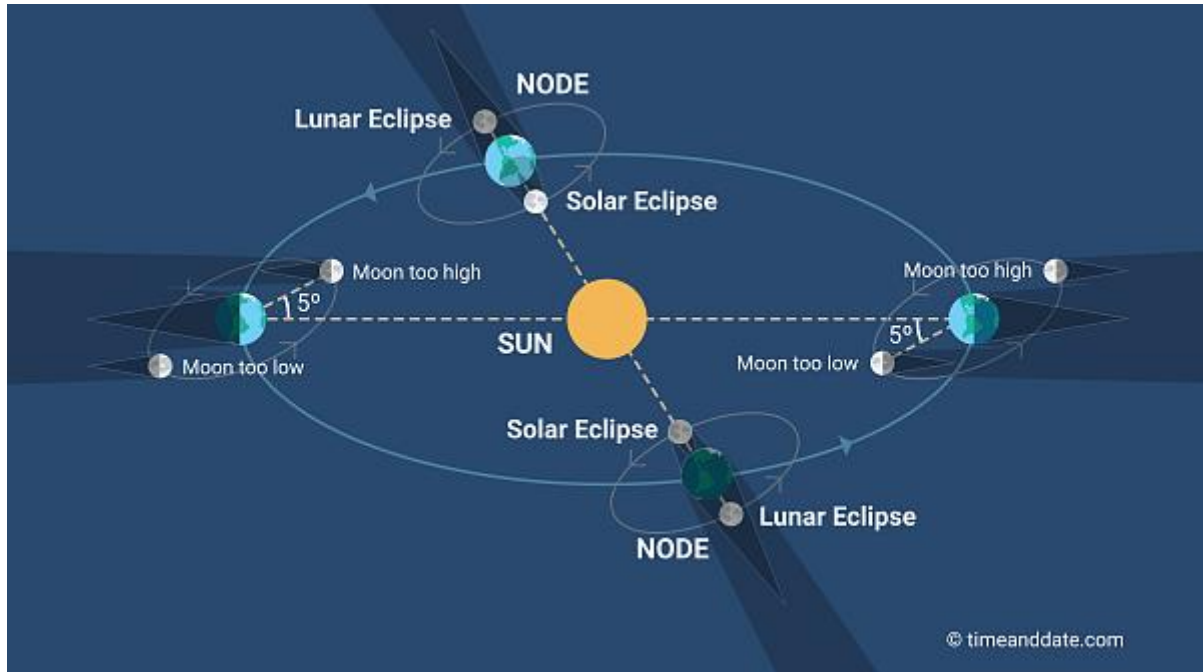
SOLAR ECLIPSE

What is a solar eclipse?

- A solar eclipse occurs when the Moon is positioned in between the Sun and the Earth for a few minutes. Under certain-alignment, the Moon partially or fully blocks the Sun's light

and instead casts its shadow on Earth. That is why, there can be a partial or a total solar eclipse, depending on how much portion of the Sun's disc gets hidden by the Moon.

- In a partial solar eclipse, only the edge of the Moon's shadow falls on the northern hemisphere, which is where Tuesday's eclipse will be visible.



Types of Solar Eclipses:

There are 4 different types of solar eclipses. How much of the Sun's disk is eclipsed, the eclipse magnitude, depends on which part of the Moon's shadow falls on Earth.

1. **Partial solar eclipses** occur when the Moon only partially obscures the Sun's disk and casts only its penumbra on Earth.
2. **Annular solar** eclipses take place when the Moon's disk is not big enough to cover the entire disk of the Sun, and the Sun's outer edges remain visible to form a ring of fire in the sky. An annular eclipse of the Sun takes place when the Moon is near apogee, and the Moon's antumbra falls on Earth.
3. **Total solar eclipses** happen when the Moon completely covers the Sun, and it can only take place when the Moon is near perigee, the point of the Moon's orbit closest to Earth. You can only see a total solar eclipse if you're in the path where the Moon casts its darkest shadow, the umbra.
4. **Hybrid Solar Eclipses**, also known as annular-total eclipses, are the rarest type. They occur when the same eclipse changes from an annular to a total solar eclipse, and/or vice versa, along the eclipse's path.



SUKAPAIKA RIVER

In News:

Odisha Government has started working on Sukapaika River revival plan following a recent direction from the National Green Tribunal (NGT).

Analysis of Background:

- This is probably the first serious attempt being made to restore a river to its original shape in Odisha.
- The problem has started in 1952, when the state government blocked the starting point of the Sukapaika with an embankment to save the villages around it from floods.
- Subsequently, in 1957, two major projects — Hirakud Dam in Sambalpur district and Naraj barrage at Cuttack — were built upstream on the Mahanadi, ostensibly to control floods in it.
- The river dried up due to the development of the Taladanda Canal System, a major canal of the State.
- Sukapaika is one of the several tributaries of the mighty Mahanadi river in Odisha.
- It branches away from the Mahanadi at Ayatpur village in Cuttack district and flows for about 40 kilometres (km) before rejoining its parent river at Tarapur in the same district.
- In the process, it drains a large landmass comprising over 425 villages under 26 gram panchayats in three blocks — Cuttack Sadar, Nischintakoili and Raghunathpur.

TOPIC: POLITY AND GOVERNANCE

ONE DISTRICT ONE PRODUCT (ODOP)

In News

Prime Minister of India asked the IAS officers to focus on One District One Product and explore the opportunities of exporting products of their district.

Analysis of Background:

One District One Product (ODOP):

- ODOP was launched by the state Government of Uttar Pradesh in 2018, later it was adopted by the Union Government.
- ODOP was launched by the Ministry of Food Processing Industries in 2018. It is a centrally sponsored scheme.
- It aims to facilitate balanced regional development across all districts of India.
- The programme helps the districts to attain their maximum potential, promotes economic growth, and creates more employment opportunities.
- The core idea of the ODOP is to choose and promote One Product from each District.
- The State Government would identify the food product from a district. The product could be a perishable Agri product, cereal-based product, or any food product produced in a district.
- Traditional and innovative products could be also supported under the Scheme.
- It will reduce wastage, and ensure proper storage and marketing.
- Aspirational District Programme (ADP)
- The Union Government launched the 'Transformation of Aspirational Districts' programme in 2018.
- The overall objective of the programme;
 - Convergence of Central & State Schemes.
 - Collaboration of Central, State level 'Prabhari' Officers and District Collectors.
 - Competition among districts with a spirit of mass Movement.
- 115 districts were transparently identified from 28 states by a committee of Senior Officers to the Government of India, in consultation with State Officials using a composite index.
- The Composite index included data from the Socio-Economic Caste Census, Key health and education sector performance and the basic infrastructure of the State.

- The NITI Aayog coordinates and manages the programme with support from Central Ministries and State Governments.
 - NITI Aayog is supervising the initiative in 30 districts.
 - Various central ministries oversee 50 districts.
 - The Ministry of Home Affairs focuses on 35 Left Wing Extremism (LWE) affected districts.
- The Officers at the level of Joint Secretary or Additional Secretary are nominated to become the 'Central Prabhari Officers' of each district.
- States have appointed Prabhari officers.
- An Empowered Committee under the NITI Aayog will help in the convergence of various government schemes and efforts.
- NITI Aayog release the Delta ranking for Aspirational Districts to assess the performance across 5 developmental areas;
 - Health and Nutrition
 - Education
 - Agriculture and Water Resources
 - Financial Inclusion and Skill Development
 - Basic Infrastructure

ONE NATION ONE UNIFORM

In News:

- The Prime Minister of India suggested the idea of "One Nation, One Uniform" for Indian police forces while addressing the first Chintan Shivir of state home ministers and top police officers.

Analysis of Background:

- He stated that the 'One Nation, One Uniform' for police is just an idea. The Union government is not trying to impose.
- He suggested that all the states should think it over.
- His suggestion is in line with his more comprehensive attempt to introduce a uniform set of policies across the country.
 - Recently, the Union Ministry of Chemicals and Fertilisers announced to implementation of the "One Nation One Fertiliser" scheme.

- In 2019, Union Government introduced the “One Nation One Ration Card” scheme.
- PM repeatedly suggested the implementation of “One Nation, One Election”, and adopting a single voter list for all polls.

Present Status:

- Police personnel in India are usually associated with khaki colour uniforms, which also differ in varying degrees in different regions.
- State governments decide on the uniform. For example:
 - The Kolkata Police wear white uniforms.
 - Puducherry Police constables wear bright red caps with their khaki uniforms.
 - Delhi Traffic Police personnel wear white and blue uniforms.

EK BHARAT SHRESHTHA BHARAT

In News:

The Union government recently announced a month-long programme to “strengthen” and “rekindle” the cultural and civilization bond between Tamil Nadu and Varanasi (Uttar Pradesh).

Analysis of Background:

- The programme would be organized as a part of the ‘Ek Bharat Shreshtha Bharat’ initiative.
- Under the programme, 2,500 people divided into 12 groups would travel to Varanasi. In Tamil Nadu, people would visit Chennai, Rameswaram and Coimbatore.
- The groups would include students, teachers, artisans, etc.
- For this Programme, the knowledge partners would be IIT-Madras and the Banaras Hindu University (BHU), and the Uttar Pradesh government would be the host State.

Ek Bharat Shreshtha Bharat:

- “Ek Bharat Shreshtha Bharat” was announced by the Prime Minister on 31st October 2015 on the occasion of the 140th birth anniversary of Sardar Vallabhbhai Patel.
- The Finance Minister announced the initiative in his Budget Speech for 2016-17.
- Through this innovative measure, the knowledge of the culture, traditions and practices of different States and UTs will lead to an enhanced understanding and bonding between the States, thereby strengthening the unity and integrity of India.
- All States and UTs will be covered under the programme.
- The pairing of States/UTs at the national level and these pairings will be in effect for one year, or till the next round of pairings.
- The State/UT level pairings would be utilized for state-level activities. District-level pairings would be independent of the State level pairings.
- The activity will be very useful to link various States and Districts in annual programmes that will connect people through exchanges in areas of culture, tourism, language, education trade etc. and citizens will be able to experience the cultural diversity of a much larger number of States/UTs while realizing that India is one.

Objectives of the initiative:

- To celebrate the Unity in Diversity of our Nation and to maintain and strengthen the fabric of traditionally existing emotional bonds between the people of our Country.

- Promote the spirit of national integration through a deep and structured engagement between all Indian States and Union Territories through a year-long planned engagement between States.
- To promote the rich heritage and culture, customs and traditions of either State for enabling people to understand and appreciate the diversity that is India, thus fostering a sense of common identity.
- To create an environment which promotes learning between States by sharing best practices and experiences.

HATE SPEECH

In News:

The Supreme Court of India expressed concern over rising incidents of hate speeches, the Court directed the police to take suo motu action against the culprits by registering criminal cases without waiting for formal complaints.

Analysis of Background:

- The court said that hate speech cases must be dealt with IPC Sections 153A, 153B and 295A and 505, etc.
- IPC Section 153A deals with promoting enmity between different groups on grounds of religion, race, place of birth, residence, language, etc., and doing acts prejudicial to the maintenance of harmony.
- IPC Section 153B speaks about imputations, and assertions prejudicial to national integration.
- IPC Section 295A refers to deliberate and malicious acts intended to outrage religious feelings of any class by insulting its religion or religious beliefs.
- IPC Section 505 deals with statements conducing to public mischief.

Hate Speech:

- Hate speech can be defined as “Any kind of communication; in speech, writing or behaviour that attacks or uses derogatory or discriminatory language with reference to a person or a group based on their religion, ethnicity, nationality, race, colour, descent, gender or other identity factors.”
- It is an act of using threatening words or Signs within the hearing or sight of a person to create fear.

- It has become one of the biggest challenges to the rule of law and our democratic structure.
- Hate speech is a serious global challenge; Recently Facebook, in its Transparency Report, disclosed that it ended up taking down 3 million hateful posts from its platform while YouTube removed 25,000 posts in one month alone.

Concern:

- The criminal law or the Constitution does not define hate speech.
- Hate Speech is the root of many forms of violence that are being committed.
- One of the most visible effects of hate speech is growing electoral mobilization along communal lines.
- It not only negatively affects human rights values but also affects the socioeconomic development of the nation and also undermines constitutional values.
- Hate speech has reached a systemic presence in the media and the internet, from electoral campaigns to everyday life.
- Abusive speech directed against minority communities, disinformation campaigns on TV channels and Social Media, trolling and fake news are becoming the new normal.
- In 2019, the Supreme Court criticized the Election Commission, dubbing it “toothless” for not taking action against candidates engaging in hate speech during the election campaigns.

Suggestions to curb the menace of Hate Speech:

- Monitoring and analyzing hate speech trend
 - Authorities must recognize, monitor, collect data and analyze hate speech trends.
- Addressing root causes, drivers and actors of hate speech
 - Government should adopt a common understanding of the root causes and drivers of hate speech to take relevant action to best address and/or mitigate its impact.
 - Government should also identify and support actors who challenge hate speech.
- Engaging and supporting the victims of hate speech
 - Government should show solidarity with the victims of hate speech and enforce human rights-centred measures which aim at countering hate speech and the escalation of violence.

- Promote measures to ensure that the rights of victims are upheld, and their needs addressed, including through advocacy for remedies, access to justice and psychological counselling.
- The government must also engage private sector actors, including social media companies, to address and counter hate speech, encouraging partnerships between government, industry and civil society.
- Raise awareness about respect for human rights, non-discrimination, tolerance and understanding of other cultures and religions, as well as gender equality, including in the digital world.
- We should promote intercultural, interfaith and interreligious dialogue and mutual understanding.
- Citizens' support must be used to address, counter and mitigate the impact of hate speech, as well as counteract its bearing, without restricting the right to freedom of expression.

QUALITY CONTROL OF INDIA

In News:

Shri Jaxay Shah has been appointed as the Chairman of the Quality Council of India (QCI) for three years. He succeeds Shri Adil Zainulbhai.

Analysis of Background:

Quality Council of India

- The Union Government established the Quality Council of India (QCI) in 1997 through a Cabinet decision.
- It was set up through a public-private partnership (PPP) model as an independent autonomous organization with the support of the Union Government and the Indian Industry represented by the three premier industry associations;
 - Associated Chambers of Commerce and Industry of India (ASSOCHAM).
 - Confederation of Indian Industry (CII).
 - Federation of Indian Chambers of Commerce and Industry (FICCI).
- It was registered under the Societies Registration Act of 1860, as a non-profit organization.
- The Department of Industrial Policy and Promotion, under the Union Ministry of Commerce and Industry, was designated as the nodal point for all matters connected with quality.

- It provides a mechanism for independent third-party assessment of products, services and processes.
- It aims to promote quality through national accreditation of testing, inspection and certification bodies which are internationally recognized.
- It manages capacity-building initiatives for sensitizing industry and consumers on quality and running a national quality campaign.
- It has the power to accredited organizations, emerging technologies, and a dynamic workforce to help the government with various flagship schemes to assess the quality of education, healthcare, food, sanitation, groundwater management, and natural resources like coal.
- It played important role in expanding India's quality of RTPCR testing capacity through accreditation during COVID-19.
- It also played an important role in the success of many schemes such as Swachh Bharat Mission, Government e-Marketplace (GeM), PM Ujjwala Yojana, PM Awas Yojana, Atal Innovation Mission, Atal Bhujal Mission, Zero Defect Zero Effect (ZED), etc, by developing a robust focus on monitoring and effectiveness in public service delivery and governance.

JAL JEEVAN MISSION

In News:

The Vice-President of India has launched Jal Jeevan Survekshan (JJS) Toolkit 2023. On this occasion, he described "quality, quantity and continuity" as the core principles of the Jal Jeevan Mission for ensuring a strong and credible accountability mechanism in the implementation of this people-centric program.

Analysis of Background:

Jal Jeevan Mission

- The Mission was launched on August 15, 2019.
- Implemented by the Ministry of Jal Shakti
- To provide safe and adequate drinking water through household tap connections by 2024 to all rural households and public institutions; Gram Panchayat building, Primary Schools, Anganwadi centre, Health and wellness centres, etc.

Features:

- The Mission ensures community participation and also includes an Awareness, Education and Communication Campaign.
- Development of water supply infrastructure to provide tap water connection to every rural household.
- Development of drinking water sources to ensure the long-term sustainability of the water supply system.
- Other features; Providing training, establishing water quality laboratories, Strict water quality testing and surveillance, Promoting Research work, starting a knowledge centre, a programme for capacity building of communities, etc.

Significance of the Mission:

- Jal Jeevan Mission has brought socio-economic benefits to the rural population.
- Regular tap water supply relieves people, especially women and young girls, from carrying heavy bucket loads of water to meet their daily household needs.
- The saved time can be used for income generation activities, learning new skills and supporting children's education.

Concern:

- India has adequate fresh water. The problem is inefficient and wasteful use.
- Law and policy measures to address it remain insufficient. The primary source of domestic water and irrigation is groundwater but the media and policymakers still and often focus on surface water.
- The reason for the excessive use of groundwater is the legal framework governing access to the resource; landowners see groundwater as their own and as a resource, they can exploit without considering the need to protect
- The present framework remains mostly top-down and is incapable of addressing local situations adequately.
- Water usage for major crops in India is two to four times that in other large farming nations due to wasteful flood irrigation, mostly in northern India.
- The present subsidy structure "encourages using more inputs such as fertilizer, water and power. Most states provide electricity either for free or at a flat rate. This leads to wasteful water extraction.

- About 80 Crore Indians face water Scarcity and about 2 lakh people die every year due to inadequate access to Safe water.
- The population of India will be more than 1.5 billion people by 2030. Achieving food Security for this rising Population becomes more difficult with water Scarcity.
- No Indian City Supplied 24x7 water to its entire urban Population, and only 35% of urban households in India had piped water.
- Water Shortages Can hamper industrial operations
- Biodiversity is impacted by human activities undertaken to Create additional water Sources. These activities include dam Construction and river diversion which Can lead to Changes in water flow, Salinity levels, and monsoon Patterns.

Steps by the Government for water management

- The government of India launched Jal Shakti Abhiyan with a mission mode approach intended to improve water availability including groundwater conditions in the water-stressed blocks in India.
- National Water Policy (2012) has been formulated by the Department of Water Resources for the conservation of rivers, river bodies and infrastructure in a scientifically planned manner through community participation.
- Central Ground Water Authority has been constituted under the “Environment (Protection) Act, 1986” for regulation and control of groundwater development and management in the Country.
- Master Plan for Artificial Recharge to Groundwater 2020 has been prepared in consultation with States/UTs.
- Construction of watershed management structure under Mahatma Gandhi National Rural Employment Guarantee Scheme.
- **Pradhan Mantri Krishi Sinchayee Yojana** promotes water conservation and management, water harvesting, soil and moisture conservation, groundwater recharge, flood protection, and land development.
- **Atal Bhujal Yojana** for sustainable management of groundwater with community participation is being taken up in the identified over-exploited and water-stressed areas in the States of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

PARLIAMENTARY COMMITTEES

In News:

Recently a controversy erupted after the announcement of the chairperson for 22 Parliamentary committees, as the main opposition party has the post of chairperson in only one, and the ruling party has the chairmanship of the important committees on Home, Finance, IT, Defense and External Affairs.

Analysis of Background:

- A Parliamentary Committee is a panel of Members of Parliament (MPs) that are appointed or elected by the House or nominated by the Speaker/Chairman and work under the direction of the Speaker/Chairman.
- There are generally two types of legislative committees—standing committees and ad-hoc committees. The former is permanent and operates continuously (constituted each year or periodically) while the latter is temporary and ceases to exist at the end of the mission assigned to them.

Public Accounts Committee:

- It was formed in 1921 and is in operation under the provisions of the Government of India Act of 1919.
- It is currently made up of 22 members (15 from the Lok Sabha and 7 from the Rajya Sabha). The representatives have a one-year term of office.
- Every year, the members are elected by the Parliament from among its members using a single transferable vote under the concept of proportional representation.
- A minister cannot be a member of the committee.
- The Speaker appoints the chairman of the committee from among its members.
- The committee's chairman is chosen from the opposition.
- The committee's job is to look over the Comptroller and Auditor General of India's annual audit reports (CAG).
- The committee investigates public spending not just from a legal and formal standpoint to uncover technological anomalies, but also from the standpoints of economy, prudence, wisdom, and propriety to uncover instances of waste, loss, corruption, extravagance, inefficiency, and nugatory expenditures.
- Its proposals are merely suggestions and not binding on the ministries.

Estimates Committee

- The origins of this committee can be traced back to the 1921 establishment of a standing finance committee.
- It has a total of 30 members. The Lok Sabha is represented by all 30 members.
- The Speaker appoints the committee's chairman from among its members, and he is invariably from the governing party.
- Their role is for one year. Every year, it discusses only a few chosen ministries and departments. As a result, it will rotate through all of them over years.
- Its proposals are merely suggestions and do not bind the ministries.
- Its function resembles that of a post-mortem.

Committee on Public Undertakings

- The Krishna Menon Committee recommended that this committee be established in 1964.
- It is made up of 22 people (15 from the Lok Sabha and 7 from the Rajya Sabha).
- Its members are chosen using a single transferable vote under the concept of proportional representation.
- The representatives have a one-year term of office.
- The Speaker appoints the committee's chairman from among its members, who must all be Lok Sabha members.
- They look at the Comptroller and Auditor General's reports on public undertakings.

Departmental Standing Committees

- Departmentally-Related Standing Committees (DRSCs) were formed in Parliament in 1993 on the recommendation of the Lok Sabha Rules Committee.
- The key goal of the standing committees is to ensure that the Executive is more accountable to Parliament, especially in terms of financial transparency.
- The 24 standing committees have authority over all of the Central Government's ministries and departments.
- Each standing committee is made up of 31 people (21 from Lok Sabha and 10 from Rajya Sabha).
- The Rajya Sabha has 8 standing committees, while the Lok Sabha has 16.
- Before they are debated and voted on in the Lok Sabha, they consider the requests for grants made by the relevant ministries and departments.
- Its study does not include any information about cut motions.
- They do not think about the day-to-day operations of the relevant ministries/departments.

ST STATUS

In News:

- The Union Home Minister has announced Scheduled Tribe (ST) status for the Pahari community in Jammu and Kashmir.
The Union Cabinet has approved the addition of four tribes to the list of Scheduled Tribes (ST) such as **Hatti tribe, Narikoravan and Kurivikkaran, Binjhia tribe.**

Analysis of Background:

- The Union Cabinet has approved the addition of four tribes to the list of Scheduled Tribes (ST);
 - **The Hatti tribe in the Trans-Giri area in Himachal Pradesh.**
 - **The Narikoravan and Kurivikkaran hill tribes of Tamil Nadu.**
 - **The Binjhia tribe in Chhattisgarh.**
- The Cabinet also approved a proposal to bring the Gond community (Uttar Pradesh) under the ST list from the current Scheduled Caste list.
- This includes the five subcategories of the Gond community: Dhuria, Nayak, Ojha, Pathari and Rajgond.

How will ST Status Occurred?

- The Indian President after consultation with the Governor of the state may specify tribes or tribal communities as scheduled tribes.
- Indian Parliament may by law include in or exclude from the list of Scheduled tribes.
- The criterion followed for specification of a community, as scheduled tribes are;
 - Indications of primitive traits.
 - Distinctive culture.
 - Geographical isolation.
 - Shyness of contact with the community at large.
- The above criterion is not mentioned in the Indian Constitution. It comes from the definitions contained in the 1931 Census, the reports of the first Backward Classes Commission 1955, on Revision of SC/ST lists (Lokur Committee) 1965.

Pahari Community

- The Pahari people is a blanket term used for several heterogeneous communities settling in Jammu and Kashmir, Himachal Pradesh and parts of Pakistan-occupied Kashmir (PoK).
- Pahari is a term used to describe a variety of Northern Indo-Aryan languages spoken by people, most of them are found in the lower Himalayas.

Hatti Tribe in Himachal Pradesh

- The Hattis are a close-knit community.
- Harris people take their name from their traditional occupation of selling home-grown crops, vegetables, meat, and wool at small-town markets known as 'haats'.
- Hatti men traditionally dress in distinctive white headgear on ceremonial occasions.
- In Himachal Pradesh, Hattis people live in 154 panchayat areas, and according to the 2011 census; members of the community are around 2.5 lakh.
- The present-day population of the Hattis is around 3 lakh.
- They live near the Himachal-Uttarakhand border area in the basin of the Giri and Tons rivers, both these rivers are tributaries of the Yamuna.
- The Tons River marks the border between the two states.
- Hattis live in the Trans-Giri area in Himachal Pradesh and Jaunsar Bawar in Uttarakhand.
- Both have a similar tradition, and inter-marriages are common among them.
- A rigid caste system operates in the community;
 - The Bhat and Khash are so-called upper caste people.
 - The Badhois are so-called lower caste people.
 - Inter-caste marriages between these 2 castes are discouraged.
- The Hattis people are governed by a traditional council called 'khumbli' which is similar to the 'khaps' of Haryana, they decide community matters.

Narikoravan and Kurivikkaran hill tribes of Tamil Nadu.

- The Narikuravar is an indigenous community in Tamil Nadu.
- The main occupation of the people is hunting, but as they were prohibited entry into the forests, they were forced to take up other alternatives such as selling beaded ornaments to survive.
- They migrate from place to place to find a market for their beads.

- Children follow the adults wherever they go, which means they never get to attend school.
- During British rule, they were placed under the Criminal Tribes Act of 1871 and hence stigmatized for a long time. However, they were denotified in 1952, but the stigma continues.
- Their original name is Kuruvikkaran or Nakkale or Akkibikki but wrongly named Narikurava.
- They speak the unclassified Indo-Aryan language called Vaagri Booli.
- Almost all Narikuravas are well-versed in Tamil.
- Although all they come under one roof based on their common clan they were broadly sub-divided into two sub-divisions: the buffalo-sacrificers and goat-sacrificers.

Binjhia tribe in Chhattisgarh

- The Binjhia is an ethnic group found in Chhattisgarh, Odisha and Jharkhand.
- According to some sources, the name Binjhia is derived from the word Vindhya meaning Vindhya Hills.
 - The Binjhias believe that their original home was Kolanagari in the Vindhya valley.
 - From Vindhya hills, they moved eastwards to Chhotnagpur, Keonjhar, Sundargarh and Barasombar.
 - A long time ago they called themselves Vindhyaniwasi. But after settling down at Chhotnagpur, gradually they were called Binjhia by the local people.
- The Binjhia settlements are large and homogeneous. They do not practice clan exogamy.
- They also allow cross-cousin marriage, levirate, sorority, and remarriage of widows and divorcees.
- They practice both burial and burning of the dead.
- They worship several benevolent and malevolent spirits along with Hindu gods and goddesses Such as Jagannath.
- They still use barter systems at the village community level and the weekly markets.
- Women are an important part of all forms of socio-economic transactions.

PREVENTIVE DETENTION

In News:

The Supreme Court of India has raised concern that the provisions under preventive detention rules negatively affect personal liberty.

Analysis of Background:

Preventive Detention

- Article 22 of the Indian Constitution grants protection to persons who are arrested or detained. Detention is of two types:
 - Punitive detention
 - Preventive detention
- Punitive detention is to punish a person for an offence committed by him after trial and conviction in a court.
- Preventive detention means the detention of a person without trial and conviction by a court.
 - Its purpose is not to punish a person for a past offence but to prevent him from committing an offence in the near future. Thus, preventive detention is only a precautionary measure and it is based on suspicion.
- Article 22 of the Indian Constitution has two parts;
 - One Part deals with the cases of ordinary law.
 - The second part deals with the cases of preventive detention law.
- A person who is arrested or detained under ordinary law has the following rights:
 - Right to be informed of the grounds of arrest.
 - Right to consult and be defended by a legal practitioner.
 - Right to be produced before a magistrate within 24 hours including the journey time.
 - Right to be released after 24 hours unless the magistrate authorizes further detention.
- These above safeguards are not available to an enemy alien or a person arrested or detained under a preventive detention law.
- Article 22 also grants protection to persons who are arrested or detained under a preventive detention law. This protection is available to both citizens as well as aliens and includes the following:

- The detention of a person cannot exceed three months unless the advisory board reports sufficient cause for extended detention. The board is to consist of judges of a high court.
- The grounds of detention should be conveyed to the detained person. However; the facts considered to be against the public interest need not be disclosed.
- The detained person should be allowed to make representation against the detention order.
- The Constitution authorized the Parliament to prescribe;
 - The circumstances and the classes of cases in which a person can be detained for more than three months under a preventive detention law without obtaining the opinion of an advisory board.
 - The maximum period for which a person can be detained in any case under a preventive detention law.
 - Procedure to be followed by an advisory board in an inquiry.
- The Constitution has divided the legislative power related to preventive detention between the Parliament and the state legislatures.
 - Both the Parliament and state legislatures can concurrently make a law on preventive detention.
 - The Parliament has exclusive authority to make a law of preventive detention related to defence, foreign affairs and the security of India.
 - State legislatures can make a law of preventive detention for reasons connected with the security of a state, the maintenance of public order and the maintenance of supplies and services essential to the community.

Concern:

- Preventive detention is the act of detaining an individual who has not committed any wrong but on mere suspicion that he/she is likely to commit a crime in future.
- It Violates the right of personal liberty and fundamental rights.

SC ABORTION RULING

In News:

The Supreme Court of India stated that differentiating between married and unmarried women for allowing termination of pregnancy on certain exceptional grounds is unconstitutional.

Analysis of Background:

Abortions law in India

- In the 1960s, the Union government constituted Shantilal Shah Committee to prepare a draft for the legalisation of abortion in India.
- In 1971, the Medical Termination of Pregnancy (MTP) Act was enacted to reduce maternal mortality due to unsafe abortions.
- It set an upper limit of the gestation period to which a woman can seek a medical abortion to 20 weeks.
- Abortion is to be performed only by doctors with specialisation in gynaecology or obstetrics.
- Under section 312 of the Indian Penal Code (IPC), a person who “voluntarily causes a woman with child to miscarry” will be jailed for up to 3 years or fine or both.
- The only exception from punishment is when it was done to save the life of the pregnant woman.
- The MTP Act was amended in 2003 to allow the use of the abortion medicine misoprostol, to medically terminate a pregnancy for up to 7 weeks.
- The MTP Act was again amended in 2021, it increased the upper limit of the gestation period to which a woman can seek a medical abortion to 24 weeks from 20 weeks permitted in the 1971 Act. But the new upper limit can only be applied in specific cases.
 - Abortion up to 20 weeks of gestational age can be done after the opinion of a single registered medical practitioner.
 - From 20 weeks up to 24 weeks, the opinion of two registered medical practitioners is required.
- Under the 2021 amendment Act, medical termination of pregnancy is permitted if it is based on medical opinion and fulfil at least one of the following reasons;
 - If the pregnancy would involve a risk to the life of the pregnant woman.

- If pregnancy results in any injury to the woman's physical or mental health.
- If f unborn child suffers from a serious physical or mental abnormality.
- The pregnancy can be terminated up to 24 weeks of gestational age under any of these conditions;
 - If the woman is either a survivor of sexual assault or rape.
 - If she is a minor.
 - If her marital status has changed during the ongoing pregnancy (widowhood or divorce).
 - If she has major physical disabilities or is mentally ill.
 - If foetal malformation was incompatible with life or after birth, it would be seriously handicapped.
- If the pregnancy has to be terminated beyond the 24-week gestational age, it can only be done on the grounds of foetal abnormalities and only after clearance from a four-member Medical Board.
- In the K.S. Puttaswamy v. Union of India and other cases, the Supreme Court had held that the decision taken by a pregnant person related to pregnancy is part of her right to privacy under article 21.

SWACHH SURVEKSHAN 2022

In News:

- Indore is the cleanest city in India, while Madhya Pradesh is the cleanest State in the country.
- Tirupati received the best city award in the Safai Mitra Suraksha category.
- Haridwar (Uttarakhand) received the best Ganga town award in more than one lakh population cities categories.

Analysis of Background:

- The field assessment for Swachh Survekshan was launched on 1st March 2022 by the Ministry of Housing and Urban Affairs (MoHUA).
- Swachh Survekshan 2022 is targeted toward capturing the initiatives of cities for the overall welfare and well-being of Sanitation workers.
- This year another new indicator 'Swachh Technology Challenge' has been added.
- To expand the Survekshan footprint, district rankings have been introduced.
- The scope of the survey has been expanded to now cover 100% of wards, as compared to 40% in previous years.

Swachh Survekshan:

- Swachh Survekshan was initiated by the Ministry of Housing and Urban Affairs in 2016 as a competitive framework to encourage cities to improve the status of urban sanitation.
- Swachh Survekshans are conducted under the Swachh Bharat Mission (Urban).
- It has promoted a spirit of healthy competition among cities and towns of India.
- The Primary goal of Swachh Survekshans is to encourage large-scale citizen participation and create awareness amongst all sections of society about the importance of working together towards making towns and cities better places to reside in.
- The performance of each city is evaluated on six parameters:
 - Municipal solid waste, sweeping, collection and transportation.
 - Municipal solid waste, processing, and disposal of solid waste.
 - Open defecation free and toilets.
 - Capacity building and e-Learning.
 - Provision of public toilets and community toilets.
 - Information, education and communication, and behaviour change.

Swachh Bharat Mission:

- **Swachh Bharat Mission (SBM) is a country-wide campaign initiated by the Government of India in 2014 to eliminate open defecation and improve solid waste management.**
- **It is a restructured version of the Nirmal Bharat Abhiyan launched in 2009.**
- Phase 1 of the Swachh Bharat Mission lasted till October 2019.
- Phase 2 is being implemented between 2020–21 and 2024–25.
- The mission aimed to achieve an "open-defecation free" (ODF) India by 2nd October 2019, the 150th anniversary of the birth of Mahatma Gandhi through the construction of toilets.
- The objectives of the first phase of the mission:
 - Eradication of manual scavenging.
 - Generating awareness and bringing about a behaviour change regarding sanitation practices.
 - Building capacity at the local level.

- The second phase of the mission aims to sustain the open defecation-free status and improve the management of solid and liquid waste, while also working to improve the lives of sanitation workers.
- Under the scheme, the Government provides subsidies for constructing toilets, waste management structures, and awareness campaigns to bring behaviour change.
- The campaign is financed by the Government of India and state governments.
- The mission is split into two: Rural and Urban.
 - In rural areas "SBM – Gramin is financed and monitored through the Ministry of Jal Shakti.
 - In Urban areas "SBM - Urban is overseen by the Ministry of Housing and Urban Affairs.

Present Status:

- According to the dashboards maintained by ministries, more than 100 million individual household-level toilets have been constructed in rural areas and 6 million household toilets in urban areas.
- Nearly 6 million community and public toilets have also been constructed in the urban areas.
- More than 4,200 cities and more than 600,000 villages across the country have declared themselves open defecation-free (ODF).
- More than 81.5 thousand wards in urban areas now have 100% door-to-door collection of solid waste and nearly 65 thousand wards practice 100% segregation of waste at source.
- According to UNICEF, the number of people without a toilet has been reduced from 550 million to 50 million.
- The World Bank reports that 96% of Indians who have a toilet use it.
- A study concluded that the construction of toilets under the program led to a reduction in the incidence of sexual assault against women.

TOPIC: IR / IO

FATF (FINANCIAL ACTION TASK FORCE)

In News:

- Four years after it was placed on the 'grey list' and penalised with severe financial strictures by the Financial Action Task Force (FATF), Pakistan won a major reprieve, as the international watchdog on terror financing and money laundering agreed to remove Pakistan's name from the list of countries under 'increased monitoring'.
- Reacting to the decision, the Ministry of External Affairs said that Pakistan must continue to take "credible, verifiable, irreversible and sustainable" action against terror groups on its soil. FATF said Pakistan had completed two action plans comprising a 34-point tasklist since 2018.

Analysis of Background:

About FATF:

- The Financial Action Task Force is an international watchdog for financial crimes such as money laundering and terror financing.
- It was established at the G7 Summit of 1989 in Paris to address loopholes in the global financial system after member countries raised concerns about growing money laundering activities.
- In the aftermath of the 9/11 terror attack on the U.S., FATF also added terror financing as a main focus area. This was later broadened to include restricting the funding of weapons of mass destruction.

Members and meetings:

- The FATF currently has 39 members. The decision-making body of the FATF, known as its plenary, meets thrice a year.
- Its meetings are attended by 206 countries of the global network, including members, and observer organizations, such as the World Bank, some offices of the United Nations, and regional development banks.

Mandate:

- The FATF sets standards or recommendations for countries to achieve in order to plug the holes in their financial systems and make them less vulnerable to illegal financial activities.

- It conducts regular peer-reviewed evaluations called Mutual Evaluations (ME) of countries to check their performance on standards prescribed by it. The reviews are carried out by FATF and FATF-Style Regional Bodies (FSRBs), which then release Mutual Evaluation Reports (MERs).
- For the countries that don't perform well on certain standards, time-bound action plans are drawn up.
- Recommendations for countries range from assessing risks of crimes to setting up legislative, investigative and judicial mechanisms to pursue cases of money laundering and terror funding.

What are FATF's 'grey' and 'black' lists?

- While the words 'grey' and 'black' list do not exist in the official FATF lexicon, they designate countries that need to work on complying with FATF directives and those who are non-compliant, respectively.
- At the end of every plenary meeting, FATF comes out with two lists of countries.

Grey List

- The grey countries are designated as "jurisdictions under increased monitoring", working with the FATF to counter criminal financial activities. For such countries, the watchdog does not tell other members to carry out due-diligence measures vis-a-vis the listed country but does tell them to consider the risks such countries possess. Currently, 23 countries including Pakistan are on the grey list.

Black List:

- For the black list, it means countries designated as 'high-risk jurisdictions subject to call for action'.
- In this case, the countries have considerable deficiencies in their AML/CFT (anti-money laundering and counter terrorist financing) regimens. Thus, FATF calls on members and non-members to apply enhanced due diligence.
- In the most serious cases, members are told to apply counter-measures such as sanctions on the listed countries. Currently, North Korea and Iran are on the black list.
- Being listed under the FATF's lists makes it hard for countries to get aid from organizations like the International Monetary Fund (IMF), Asian Development Bank (ADB), and the European Union. It may also affect capital inflows, foreign direct investments, and portfolio flows.

ASIAN INFRASTRUCTURE INVESTMENT BANK (AIIB)

In News:

Union Minister of Finance & Corporate Affairs Smt. Nirmala Sitharaman recently attended the 7th Annual Meeting of the Board of Governors of AIIB via video conference.

Analysis of Background:

- For the first time, China's head of state XI Jinping proposed an Asian Infrastructure Bank at the APEC Summit in Bali in 2013.
- It is a multilateral development bank working to improve social and economic outcomes in Asia and beyond.
- Former Reserve Bank of India (RBI) Governor Urjit Patel is a Vice President of the bank.
- Shareholders and voting rights:
- China is the AIIB's largest shareholder with a 26.5% voting share.
- India is the second-largest, with 7.5%, followed by Russia, which has a 5.97% voting share.

Membership:

- AIIB began operations in 2016 with 57 founding members (37 regions and 20 non-regions).
- Currently, there are 105 members.
- India is a founding member.

Headquarters: Beijing, China.

Structure

- Banks are run by a governing body consisting of a governor and a vice president.
- All the power of a bank rests with the board of directors, the highest decision-making body under the articles of incorporation.
- Bank staff are elected by AIIB shareholders for a five-year term and are headed by a president who can be re-elected once.
- The president is supported by five vice presidents in charge of policy and strategy, investment operations, finance and management, as well as senior management including the corporate secretariat and legal advisors.

Objective:

- To create prosperity and improve infrastructure connectivity in Asia through investment in infrastructure and other production sectors to promote sustainable economic development.
- Promote regional cooperation and partnerships in tackling development challenges through close cooperation with other multilateral and bilateral development agencies.

PLACING A HOLD BY THE CHINESE**In News:**

China placed a “hold” on a joint India-U.S. proposal, to designate Lashkar-e-Taiba commander Shahid Mehmood under the United Nations Security Council’s (UNSC) 1267 list of terrorists affiliated to Al Qaeda and ISIS.

Analysis of Background:

The hold marked the fourth time China had attempted to block a listing move by India and the U.S. in the past four months.

What does “placing a hold” mean?

- The 1267 committee that was set up in 1999 (updated in 2011 and 2015) allows any UN member state to propose adding the name of a terrorist or terror group to a consolidated list, maintained by the Committee, that has affiliations to Al Qaeda and ISIS.
- India has successfully proposed the listing of several terror entities in the past two decades, including Pakistan-based Jaish-e-Mohammed (JeM) and Lashkar-e-Taiba.
- According to the rules, once a listing is proposed, it will be adopted into the list according to a “no-objections” procedure: which means, if any member of the Committee, which comprises all members of the UN Security Council, places a hold on the listing or objects outright to it, the listing cannot be adopted.
- As a permanent member of the UNSC, China can do this any number of times as its term doesn’t run out, and it carries a veto vote.
- The Committee is bound to resolve all such pending issues within six months, but can allow extensions, meaning that technically at the end of the six-month period, the

“holding” country has to decide whether to accept the listing or place a permanent objection to it.

- However, in practice, many of the listing proposals have had prolonged waits.

What are the reasons China has given for holding the listings?

- Since 2001, China has placed holds on a number of listing proposals relating mainly to Pakistan-based groups and their leaders, given the close bilateral ties between the two countries.
- Chinese Ambassador to India Sun Weidong said they needed “some time to study these specific cases, but that doesn’t mean China has changed its position on counter-terrorism cooperation efforts.”
- In addition, it is possible that China objects to the listing proposals being brought by a group of countries, especially the joint proposals by India and the U.S. rather than by India alone, but has never given any comprehensive reason for the holds.

Does India have options?

- As a UN member state, Pakistan has an obligation under the sanctions to block access for all designated entities to funds, arms and travel outside its jurisdiction.
- This is something India has also pursued with the Paris-based Financial Action Task Force, where Pakistan was placed on a “grey list” due to its inability to curb terror financing and money laundering from 2012-2015 and 2018-2022.
- Finally, India and the U.S. have built their own separate list of “most wanted” terrorists that document the cases against them, with a view to eventually receiving global cooperation on banning them.

OPEC+:

In News:

The grouping of the world's largest oil-producing countries, the Organisation of the Petroleum Exporting Countries (OPEC) and its allies, together known as OPEC+, decided to cut oil production by 2 million barrels per day (bpd).

Analysis of Background:

About OPEC+:

- Established in 1960 by founding members Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, OPEC has since expanded and now has 13 member states.
- With the addition of another 11 allied major oil-producing countries that include Russia, the grouping is known as OPEC+.
- The objective of the organisation is to “coordinate and unify the petroleum policies of its Member Countries and ensure the stabilisation of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a fair return on capital for those investing in the petroleum industry,” according to the OPEC website.
- Previously controlled by western-dominated multinational oil companies known as the “Seven Sisters,” OPEC sought to give the oil-producing nations greater influence over the global petroleum market.
- They account for roughly 40 per cent of the world's crude oil and 80 per cent of the globe's oil reserves, according to estimates from 2018. They usually meet every month to determine how much oil the member states will produce.
- However, many allege that OPEC behaves like a cartel, determining the supply of oil and influencing its price in the world market.

Why are they slashing production?

- Oil prices skyrocketed after Russia's invasion of Ukraine in February, and have since begun to soften over the past few months, before dropping sharply to under \$90 in September due to fears of a recession in Europe and reduced demands from China because of its lockdown measures.
- Today's cut is the biggest of its kind since 2020 when OPEC+ members slashed outputs by 10 million bpd during the Covid-19 pandemic.

- The reductions would boost prices and be extremely beneficial for the Middle Eastern member states, to whom Europe has turned for oil after levelling sanctions against Russia since it invaded Ukraine.
- OPEC+ members are concerned that a faltering global economy would reduce the demand for oil, and the cuts are seen as a way to protect profits.
- Increased oil prices, which first occurred during the invasion of Ukraine, have helped Saudi Arabia, one of the founding members of OPEC, become one of the world's fastest-growing economies
- The New York Times raised the possibility that Moscow might be influencing OPEC, to make it more expensive for the West to extend energy sanctions on Russia.

Who is against this decision?

- Within the group, there are those that are opposed to such significant cuts in oil production, and a meeting of OPEC+ technocrats was cancelled because of disagreements that reportedly only a gathering of oil ministers could resolve.
- The United Arab Emirates (UAE) and Kuwait, in particular, are said to be concerned that extended cuts would interfere with their plans to increase oil output capacity.
- The move is likely to be highly detrimental to the US, which has repeatedly asked the organisation to increase oil production.

GULF COOPERATION COUNCIL (GCC)

In News:

India and the Gulf Cooperation Council (GCC) member countries are expected to start negotiations for a free trade agreement next month with an aim to boost economic ties between the two regions, an official said.

Analysis of Background:

- India has already implemented a free trade pact with the UAE in May this year.
- According to experts, the GCC region holds huge trade potential and a trade agreement would help in further boosting India's exports to that market.
- GCC market is unexploited by domestic exporters and it holds huge potential

- GCC is a major import dependent region. We can increase our exports of food items, clothing and several other goods. Duty concessions under a trade agreement will help in tapping that market. It will be a win-win situation for both sides.
- Sectors such as chemicals, textiles, gems and jewellery and leather will get a major impetus by this agreement
- India imports predominately crude oil and natural gas from the Gulf nations like Saudi Arabia and Qatar.

About GCC:

- The Cooperation Council for the Arab States of the Gulf, also known as the Gulf Cooperation Council (GCC) is a regional, intergovernmental, political, and economic union comprising Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
- The council's main headquarters is located in Riyadh, Saudi Arabia.
- The Charter of the GCC was signed on 25 May 1981, formally establishing the institution.

RUSSIAN ANNEXATION

In News:

President Vladimir Putin hosted a signing ceremony in the Kremlin to incorporate four Ukrainian regions into Russia, a major step towards formally annexing around 15% of Ukraine.

Analysis of Background:

- Russian-backed separatists and Russian-installed officials in the four partially Russian-controlled regions of Ukraine declared that voters had chosen to join Russia, in hastily organised “referendums” that the West said were illegal shams.
- Kherson region, Zaporizhzhia, Donetsk People’s Republic and Luhansk People’s Republic will now forever be part of Russia
- For Russia to formally annex the territories, some sort of treaty will be signed and then ratified by the Russian parliament, which is controlled by Putin allies. Moscow will then consider the areas part of Russia, and the “umbrella” of its nuclear defences will extend to them.
- Furthermore, their populations will be eligible to be drafted to fight for Russia against Ukraine, as men in the DNR and LNR, set up with Russian backing in 2014, already do.
- Ukrainian President Volodymyr Zelensky has repeatedly said that “pseudo-referendums” on annexation by Russia will destroy any chance of peace talks.

What will the West do?

- The West and Ukraine say Russia is violating international law by seizing another part of Ukraine, whose post-Soviet borders Moscow recognised shortly after the fall of the Soviet Union.
- Putin's forces had already seized the Crimean Peninsula from Ukraine in 2014, and declared it part of Russia.
- The West could increase arms supplies to Kyiv, and further tighten financial sanctions that are already the most severe imposed against a large economy in modern history.
- The areas that Russia is attempting to annex are not all under its control.
- From the Kremlin's perspective, once they are considered part of Russia, the front line of the conflict will run through Russian sovereign territory. That could prompt some sort of ultimatum from Russia to Ukraine and the West.
- The Kremlin said that its "special military operation" in Ukraine must continue at least until the capture of all of eastern Ukraine's Donetsk region, of which it currently holds around 60%.
- The neighbouring Luhansk province, also part of the majority Russian-speaking industrial Donbas region, is almost entirely under Russian control.

Concern

- According to the Lancet study, 6 million abortions were conducted every year in India.
- The Ministry of Health and Family Welfare's 2019-20 report indicates that there is a 70% shortage of obstetrician-gynaecologists in India.
- As the law does not permit abortion at will, it pushes women to adopt unsafe, illegal and dangerous ways of abortion.
- According to a study, every year more than 8, 00,000 unsafe and illegal abortions are performed in India and many of them result in maternal mortality.

NORD STREAM PIPELINE LEAKAGES

In News:

Sweden's coast guard said that it discovered the fourth leak in the two damaged offshore pipelines that comprise the crucial Nord Stream pipelines (Nord Stream 1 and Nord Stream 2), designed to carry gas from Russia to Europe via the Baltic sea.

Analysis of Background:

- Nord Stream 1 is a 1,224 km underwater gas pipeline running from Vyborg in northwest Russia to Lubmin in northeastern Germany via the Baltic Sea.
- The majority owned by the Russian energy giant Gazprom, it is the primary network through which gas reaches Germany.
- Most of the gas goes directly to Germany, while the rest travels west and southwards through onshore links to other countries and into storage caverns, according to Reuters.
- Gazprom and five other European firms decided to build Nord Stream 2 in 2015, valued at around \$11 billion.
- The 1,200-km pipeline was to run from Ust-Luga in Russia to Greifswald in Germany through the Baltic Sea and carry 55 billion cubic metres of gas per year. It was meant to run along with the Nord Stream 1 system.
- Germany is Russia's biggest European gas consumer, and most of it comes through the Nord Stream.
- The pipelines have been at the centre of tensions lately. Russia has been accused of leveraging Europe's dependency on its energy, as retaliation against the Western sanctions imposed on it since the Ukrainewar began.
- The leaks occurred a day before the ceremonial launch of the Baltic Pipe, which carries gas from Norway to Poland, a project that is part of Poland's attempt to reduce its dependence on Russian energy, according to Reuters.
- While investigations have not yet revealed the cause behind the leaks, leaders from Europe and the United States suspect foul play. They alleged that it was an act of sabotage with three separate leaks and explosions occurring on the very same day.
- While the EU and the United States have stopped short of explicitly blaming Russia so far, Ukraine and Poland have not been so cautious.
- Moscow has, however, called the allegations against it "predictably stupid and absurd", blaming the US and its collaborators for the attacks – a charge Washington has denied.

Who gains from it?

- The EU seems to be an unlikely source, as they would not seek to willingly lose out on their energy source.

- For the West, Russia would be the likely suspect. Russia has previously reduced its energy exports to Europe in retaliation since the invasion of Ukraine led to sanctions on it.
- Russia is also under the scanner because the leaks occurred a day before the launch of the Baltic Pipe, which would lessen Poland's dependence on Russian energy.
- However, as the Nord Stream pipelines are majority controlled by Russia's Gazprom, it is unclear why Moscow would damage the infrastructure it has a majority stake in and spent billions constructing.
- Europe continues to be heavily dependent on Russian energy and any damage to the pipelines would mean Russia losing its bargaining chip.
- European nations, who want to wean themselves off Russian energy, have increasingly turned towards the US, from whom they purchase liquified natural gas (LNG) that comes via ships.
- Russia alleges that the US has much to gain from the stoppage of the pipelines, as it can become a larger exporter of energy. However, such an attempt by the United States would carry immense risk and sever the close ties it shares with European countries, especially its own NATO allies.

TOPIC: SCHEMES

Pradhan Mantri Mudra Yojana (PMMY)

In News:

The disbursement of small business loans under Pradhan Mantri Mudra Yojana (PMMY) logged a record 30 per cent growth in the first half of the current financial year.

Analysis of Background:

About Pradhan Mantri Mudra Yojana

- The Union Government launched the Pradhan Mantri MUDRA Yojana (PMMY) on April 8, 2015, to provide loans up to Rs. 10 lakhs to non-farm small/microenterprises and non-corporate.
- All banks, including Public Sector Banks, Private Sector Banks, Regional Rural Banks (RRBs), State Co-operative Banks, Urban Co-operative Banks, Foreign Banks, and Non Banking Finance Companies (NBFCs)/Micro Finance Institutions (MFIs), are required to lend to non-farm sector income-generating activities with a value of less than Rs.10 lakh under the PMMY.
- These loans are categorized as MUDRA loans under

Institutional Mechanism:

- The government has established a new institution called MUDRA (Micro Units Growth & Refinance Agency Ltd.) to carry out the Scheme's development and refinancing activities, as well as serve as a regulator for the microfinance sector in general.
- PMMY's mission is to provide grants to small businesses that are not corporations. Loan offerings under PMMY.

Category of Loans:

- Shishu: covering loans up to Rs. 50,000/- given with no collateral, at 1% rate of interest/month repayable over a period of 5 years.
- Kishor: cover loans above Rs. 50,000/- and up to Rs. 5 lakh.
- Tarun: cover loans beyond Rs. 5 lakh to Rs. 10 lakh.

Approach of PMMY

- Enterprises in the smallest segment must receive at least 60% of the funding. MUDRA Bank's partner intermediaries must strive to adhere to the following general framework:
- First-time entrepreneurs, young entrepreneurs (those under 30 years old), and women entrepreneurs will be welcomed, with special schemes being planned for them.
- Cash flow-based lending would be prioritized over security-based lending. Collateral securities, among other things, must be avoided.
- Repayment commitments shall be flexible and framed in light of the entrepreneur's company cash flows.

About Micro Units Development Refinance Agency (MUDRA) Bank

- The Micro Units Development Refinance Agency (MUDRA) Bank is a microfinance refinancing institution. of SIDBI and renamed as MUDRA (SIDBI) Bank.
- The MUDRA Bank is primarily responsible for –
- Developing policy guidelines for the micro/small enterprise financing industry, as well as registering and regulating MFI organizations.
- MFI organizations are accredited and rated.
- Establishing responsible lending policies to avoid indebtedness and to ensure proper client security principles and recovery methods.
- Creating a standardized set of covenants for last-mile lending to micro and small businesses.
- Promoting appropriate technological strategies for the final mile.
- Creating and implementing a Credit Guarantee System to provide loan guarantees to micro-enterprises.
- Creating a good architecture of Last Mile Credit Delivery to micro businesses under the scheme of Pradhan Mantri Mudra Yojana.
- MUDRA Bank operates through regional level financing institutions who in turn connects with last-mile lenders like Micro Finance Institutions (MFIs), Small Banks, Primary Credit Cooperative Societies, Self Help Groups (SHGs), NBFC (other than MFI) and such other lending institutions.
- In lending, MUDRA gives priority to enterprises set up by the under-privileged sections of the society particularly those from the scheduled caste/tribe (SC/ST) groups, first-generation entrepreneurs and existing small businesses.

TOPIC: ECONOMY

Central Bank Digital Currency (CBDC)

In News:

The Reserve Bank of India (RBI) indicated that it will soon commence limited pilot launches of the much-awaited e-rupee, or central bank digital currency (CBDC), for specific use cases.

Analysis of Background:

What is Digital Rupee?

The Central Bank Digital Currency (CBDC) can be defined as the legal tender issued by the Reserve Bank of India, according to the concept note. Touted as Digital Rupee or e-Rupee, RBI's CBDC is the same as a sovereign currency and is exchangeable one-to-one at par with the fiat currency.

Features of Digital Rupee

- 1) CBDC is a sovereign currency issued by central banks in alignment with their monetary policy.
- 2) It appears as a liability on the central bank's balance sheet.
- 3) It must be accepted as a medium of payment, legal tender, and a safe store of value by all citizens, enterprises, and government agencies.
- 4) CBDC is freely convertible against commercial bank money and cash.
- 5) CBDC is a fungible legal tender for which holders need not have a bank account.
- 6) CBDC is expected to lower the cost of issuance of money and transactions.

Types of CBDC that could be introduced

- The Central Bank Digital Currency can be classified into two types — general purpose or retail (CBDC-R) and wholesale (CBDC-W).
- Retail CBDC
- Retail CBDC can be used by all including the private sector, non-financial consumers, and businesses. Wholesale CBDC is designed for restricted access to select financial institutions.
- Retail CBDC can provide access to safe money for payment and settlement as it is a direct liability of the central bank.

How is Digital Rupee different from money in digital form?

A CBDC would differ from existing digital money available to the public because a CBDC would be a liability of the Reserve Bank, and not of a commercial bank."

Why is RBI introducing CBDC?

- CBDC is aimed to complement, rather than replace, current forms of money and is envisaged to provide an additional payment avenue to users, not to replace the existing payment systems.
- RBI believes that the digital rupee system will "bolster India's digital economy, enhance financial inclusion, and make the monetary and payment systems more efficient."

NIHONSHU

In News:

The Embassy of Japan, New Delhi, has filed an application seeking Geographical Indication (GI) tag for nihonshu/Japanese sake.

Analysis of Background:

- This is the first time a product from Japan has filed for a tag at the Geographical Indication Registry in Chennai.
- In Japan, nihonshu is regarded as a special and valuable beverage made from fermenting rice.
- People traditionally drink nihonshu on special occasions, such as festivals, weddings or funerals, but it is also consumed on a daily basis. Thus, it is an integral part of the lifestyle and culture in Japan.
- The sake market (almost all are nihonshu) is the second largest brewed liquor (such as beer) market in Japan.
- For making nihonshu three main raw materials – rice, koji-kin (a type of fungal spore) and water – are required.
- The production of nihonshu follows an alcoholic fermentation method called parallel multiple fermentation and involves raw material treatment, koji making, starter culture making, mash making, pressing, heat sterilisation and bottling.
- The rice and koji used should originate in Japan.

More on Details:

- The economy of Japan was based around rice, which was used as a sort of quasi-money before the establishment of a monetary economy in the Meiji period (1869-1912).
- As a result, nihonshu production was thoroughly under the government's control.
- As nihonshu's production became more industrialised in the Edo period (1603-1868), those who had special licences began hiring many farmers in the agricultural off-season.
- They gradually won a reputation as craftsmen, which resulted in the establishment of the hierarchical Toii system (Toii is the person responsible for sake brewing), likened to an apprenticeship or guild system.

MOONLIGHTING

In News:

Moonlighting – or employees working for remuneration with entities other than their employers – has been a hot topic in recent months.

Analysis of Background:

- Moonlighting means taking up a second job or multiple other work assignments apart from one's full-time job.
- Moonlighting has become a topic of debate in the IT industry as working from home became the normal norm during the Covid-19 pandemic, which is believed to have led to a rise in dual employment.
- Indian IT firms are divided when it comes to moonlighting. For some, it's unethical while others call it the need of the hour.

Does Any Law Prevent Dual Employment?

- There is no law that prevents dual employment. Moonlighting is not defined under any statute in Indian employment laws. Moonlighting is also not necessarily dual employment, which is a formal employer-employee relationship, complete with legal obligations like minimum wage, provident fund, gratuity etc. It could also be side hustles or freelancing which can be with or without the knowledge of the primary employer.
- Moonlighting could be considered cheating if an employee's contract calls for non-compete and single employment, which is the situation with the majority of

conventional employment contracts. However, it is not cheating if the employment contracts do not have such a clause or provide relaxations.

Takes of Employees and Employers

- IT employees argue that in the absence of overtime pay and regulation of employment contracts, IT employees have the right to disconnect from their primary job after the committed work hours and engage in other projects either for additional income or for developing skills, or to pursue other interests outside their job.
- Many Employers have termed Moonlighting as an ethical issue. Employees working for rival firms are a "complete violation of integrity in its deepest form".

Concerns of the Companies

- The primary concerns companies have against moonlighting is data and confidentiality breaches, and loss of productivity.
- Moonlighting may give employees the opportunity to divulge trade secrets if they are working in a similar industry and job.
- If employees are working long hours, the second job may cause the employee to become distracted, unproductive, and neglect job responsibilities because of physical fatigue.
- Employees may use company resources for their second job which increases operating expenses.

Tax implications of Moonlighting

- Moonlighting means taking up another job while still in employment with an organization. The second job is usually without the employer's knowledge and hence the income earned from moonlighting can lead to tax complexities.
- For instance, if the moonlighting income is received as salary, both the employers will consider standard deduction of ₹50,000 and 80C deductions to calculate the tax liability. Additionally, both the employers will take into account the basic exemption limit and consider the tax slab as per the respective salaries. This could lead to the TDS being deducted by each employer to be lower than the taxpayer's aggregate tax liability.
- Section 44ADA of the Income Tax Act allows a professional engaged in specified professions to offer only 50% of their professional fees to tax. This rule presumes that

50% of the professional fees received would be spent for business purposes and hence only the remaining 50% is treated as income from business / profession and taxed accordingly. However, the fees should not exceed ₹50 lakh to avail presumptive taxation scheme.

Reasons that lead to Moonlighting

Seeking job satisfaction

- Many people work jobs they don't like; the reasons could be plenty – the need for a stable income, family, fear to start something new in the middle of their careers and so much more. A lot of people who take up secondary jobs are only trying to satisfy their appetite for growth, learning and doing what they love.

Pandemic

- The pandemic created a major economic imbalance for thousands of Indians. The brunt was borne by a lot of younger people who lost their jobs and failed to find new ones.

Post Pandemic

- After the pandemic – its ripple effects of which the corporate world can still feel in movements like 'quiet quitting' and the Great Resignation – most countries have failed to initiate policies to help their employees recuperate.

Incapacity of Governments

- India boasts of its gigantic population as 'human resources', but has failed to carry out policies and laws to ensure the productivity levels of this human resource. The Great Resignation in the US was an effect of this incapacity of governments.

COMPETITION COMMISSION OF INDIA (CCI)

In News:

The competition Commission of India (CCI) has imposed a provisional penalty of Rs 1,337.76 crore (\$162 million) on Google for “abusing its dominant position” in multiple categories related to the Android mobile device ecosystem in the country.

Analysis of Background:

About Competition Commission of India:

- It is a statutory body established under the Competition Act, 2002, tasked with ensuring a fair and healthy competition in economic activities of the country.
- It is to act as an antitrust watchdog and ensure that there is no abuse of dominant position by a company in the market.

Need for CCI:

- Protection against market distortions.
- Promotion of free enterprise system.
- Ensure no abuse of dominance by big players in the market.
- Promotion of domestic industries.
- Establishment of a regulative control over economic activities.

Composition of CCI:

- It is a quasi-judicial body which has one chairperson and six other members.
- They will all be appointed by the Central Government.
- The Chairperson and members shall be a person of ability, integrity and standing and who, has been, or is qualified to be a judge of a High Court, or, has special knowledge of, and professional experience of not less than fifteen years in international trade, economics, business, commerce, law, finance, accountancy, management, industry, public affairs, administration or in any other matter.

Functions of CCI:

- Eliminate practices that have an adverse impact on competition.
- Secure the interest of consumers and ensure that their welfare is not compromised.
- Undertake competition advocacy, create public awareness and impart training on competition issues.

- Ensure smooth alignment of sectoral regulatory laws and competition laws.
- Ensures that foreign companies abide by the country's competition laws.
- It guarantees that no enterprise abuses their 'dominant position' through the control of supply, manipulating purchase prices, or adopting practices that deny market access to other competing firms.
- Please note: the appeals from CCI goes to National Company Law Appellate Tribunal (NCLAT) constituted under the Companies Act, 2013.

REPO RATE

In News:

The repo rate, the rate at which RBI lends money to commercial banks, has been hiked by 50 basis points.

Analysis of Background:

Monetary policy

- It is the macroeconomic policy laid down by the central bank-RBI.
- Monetary policy is a set of tools that a nation's central bank has available to promote sustainable economic growth by controlling the interest rate and the overall supply of money that is available to the nation's banks, its consumers, and its businesses.
- It is the demand side economic policy that is used by the government of a country to achieve macroeconomic objectives like inflation, consumption, growth and liquidity.
- In India, monetary policy of the Reserve Bank of India is aimed at managing the quantity of money in order to meet the requirements of different sectors of the economy and to increase the pace of economic growth.
- The RBI implements the monetary policy through open market operations, bank rate policy, reserve system, credit control policy, moral persuasion and through many other instruments.
- Using any of these instruments will lead to changes in the interest rate, or the money supply in the economy.

Fiscal Policy	Monetary Policy
Fiscal policy is nothing but money policy of the government i.e; generation of money and expenditure of money.	it is concerned with supply of money. i.e; controlling inflation and ensuring liquidity.
It has two sides- income and expenditure	It is about money supply and Demand
It is generally formulated by the executive i.e; Ministry of Finance.	It is formulated by central bank of the Country i.e. Reserve bank of India
Its main tool is budget through which government tries to bring dynamism in the economy.	it has its own tools like Repo rate, Reverse Repo rate, OMO, etc
Expenditure Reforms -FRBM Act Income side Reforms - GST	Monetary Policy reforms- Monetary Policy Committee.

Types of Monetary Policy:

Expansionary Monetary Policy:

- This is a monetary policy that aims to increase the money supply in the economy by decreasing interest rates, purchasing government securities by central banks, and lowering the reserve requirements for banks.
- An expansionary policy lowers unemployment and stimulates business activities and consumer spending.
- The overall goal of the expansionary monetary policy is to fuel economic growth. However, it can also possibly lead to higher inflation.

Contractionary Monetary Policy

- The goal of a contractionary monetary policy is to decrease the money supply in the economy.
- It can be achieved by raising interest rates, selling government bonds, and increasing the reserve requirements for banks.
- The contractionary policy is utilized when the government wants to control inflation levels.

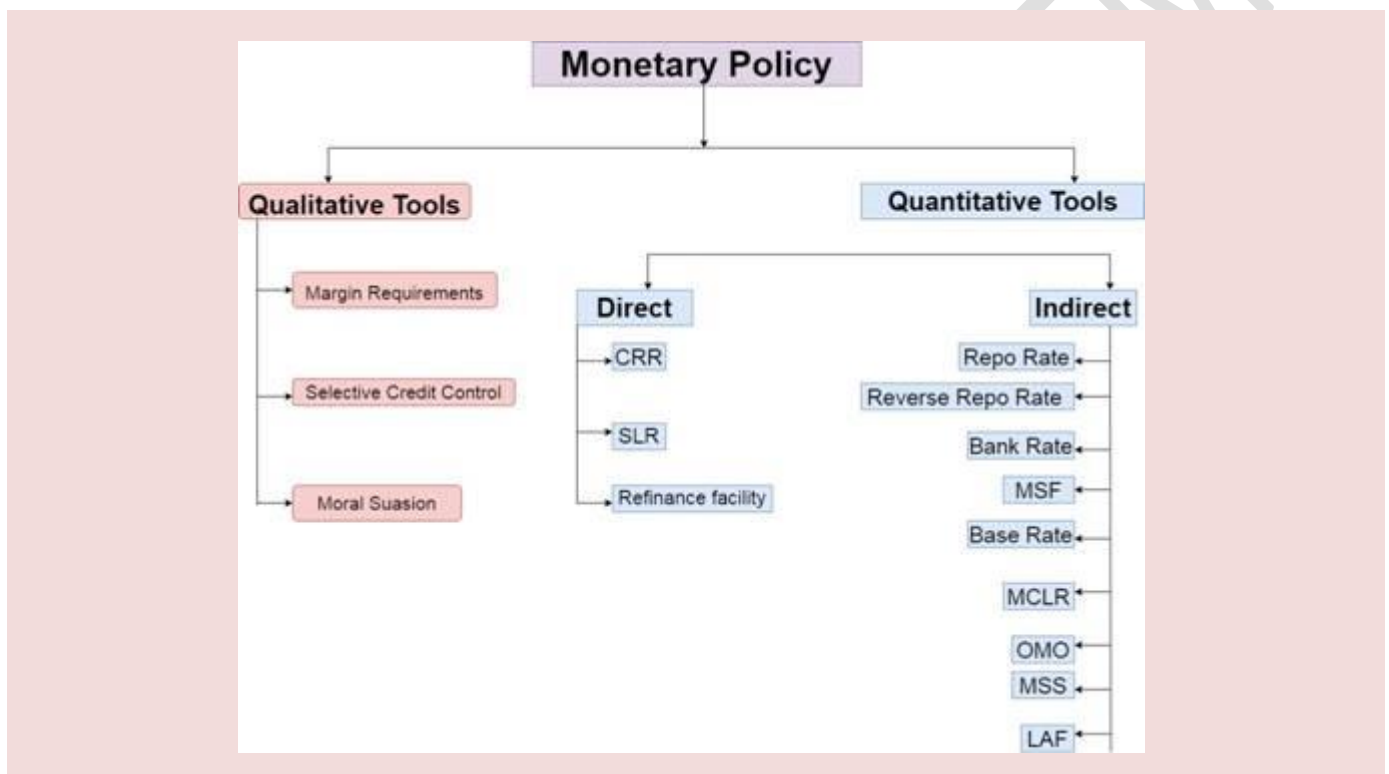
Objectives of Monetary Policy

- The primary objectives of monetary policies are the management of inflation or unemployment, and maintenance of currency exchange rates- Fixed vs. Pegged Exchange Rates.

- Foreign currency exchange rates measure one currency's strength relative to another.
- The strength of a currency depends on a number of factors such as its inflation rate, prevailing interest rates in its home country, or the stability of the government.

Monetary Policy Tools

- To control inflation, the Reserve Bank of India needs to decrease the supply of money or increase cost of fund in order to keep the demand of goods and services in control.
- RBI Monetary Policy instruments are divided into two category qualitative instruments and quantitative instruments.



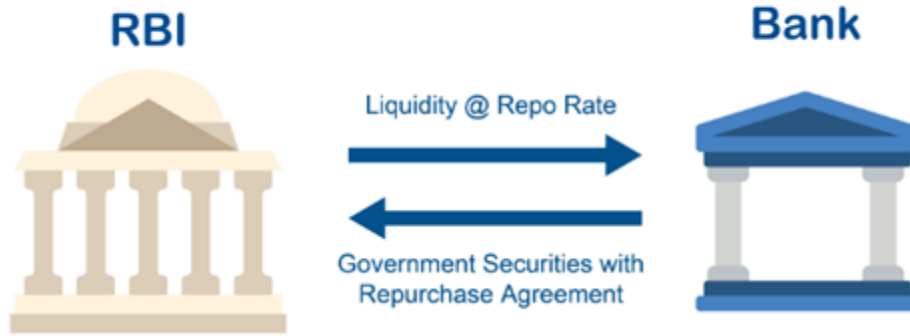
QUANTITATIVE TOOLS

The tools applied by the policy that impact money supply in the entire economy, including sectors such as manufacturing, agriculture, automobile, housing, etc.

Reserve Rate [CRR AND SLR]

- Banks are required to keep aside a set percentage of cash reserves or RBI approved assets. Reserve ratio is of two types:
- Cash Reserve Ratio (CRR) –Banks are required to set aside this portion in cash with the RBI. The bank can neither lend it to anyone nor can it earn any interest rate or profit on CRR.

WHAT IS REPO RATE?



- Statutory Liquidity Ratio (SLR) –Banks are required to set aside this portion in liquid assets such as gold or RBI approved securities such as government securities. Banks are allowed to earn interest on these securities, however it is very low.

Open Market Operations (OMO):

- In order to control money supply, the RBI buys and sells government securities in the open market. These operations conducted by the Central Bank in the open market are referred to as Open Market Operations.
- When the RBI sells government securities, the liquidity is sucked from the market, and the exact opposite happens when RBI buys securities. The latter is done to control inflation. The objective of OMOs is to keep a check on temporary liquidity mismatches in the market, owing to foreign capital flow.

Market Stabilization Scheme (MSS)

- Bank rate – The interest rate at which RBI lends long term funds to banks is referred to as the bank rate. However, presently RBI does not entirely control money supply via the bank rate. It uses Liquidity Adjustment Facility (LAF) – repo rates as one of the significant tools to establish control over money supply.
 - Bank rate is used to prescribe penalty to the bank if it does not maintain the prescribed SLR or CRR.
1. Liquidity Adjustment Facility (LAF) – RBI uses LAF as an instrument to adjust liquidity and money supply. The following types of LAF are:
 2. Repo rate: Repo rate is the rate at which banks borrow from RBI on a short-term basis against a repurchase agreement. Under this policy, banks are required to provide government securities as collateral and later buy them back after a pre-defined time.
 3. Reverse Repo rate: It is the reverse of repo rate, i.e., this is the rate RBI pays to banks in order to keep additional funds in RBI. It is linked to repo rate in the following way:

BASIS FOR COMPARISON	REPO RATE	REVERSE REPO RATE
Meaning	Repo rate is the rate at which the Central bank of India grants loan to the commercial banks for a short period against government securities.	Reverse repo rate is the rate at which the commercial banks grant loan to the Central Bank of India.
Purpose	To fulfil the deficiency of funds.	To ensure liquidity in the economy.
Rate	High	Comparatively less.
Controls	Inflation	Money supply in the economy.
Charged on	Repurchase Agreement	Reverse Repurchase Agreement

- **Marginal Standing Facility (MSF) Rate:** MSF Rate is the penal rate at which the Central Bank lends money to banks, over the rate available under the rep policy. Banks availing MSF Rate can use a maximum of 1% of SLR securities.

QUALITATIVE TOOLS

Unlike quantitative tools which have a direct effect on the entire economy's money supply, qualitative tools are selective tools that have an effect in the money supply of a specific sector of the economy.

1. **Margin requirements** –The RBI prescribes a certain margin against collateral, which in turn impacts the borrowing habit of customers. When the margin requirements are raised by the RBI, customers will be able to borrow less.
2. **Moral suasion** –By way of persuasion, the RBI convinces banks to keep money in government securities, rather than certain sectors.
3. **Selective credit control** –Controlling credit by not lending to selective industries or speculative businesses.

Monetary Policy Committee

- MPC is a government-constituted body of the RBI, which is responsible for framing the monetary policy of the country, using the tools like repo rate, reverse repo rate, bank rates etc.
- Proposal: Urjit Patel Committee was the first committee who proposed the Monetary Policy Committee (MPC). The first meeting of MPC was conducted on 3rd October 2016 in Mumbai.
- Mandate: Prime objective of RBI MPC is to determine the policy interest rate required to achieve the inflation target.
- Act: RBI Act, 1934 empowers the RBI to take Monetary Policy Decisions.
- Meetings: The meetings of the Monetary Policy Committee are held at least 4 times a year (specifically, at least once BIMONTHLY) and it publishes its decisions after each such meeting.
- Composition: The committee comprises six members - three officials of the Reserve Bank of India and three external members nominated by the Government of India.
- The Governor of Reserve Bank of India is the chairperson ex officio of the committee.
- Term: Each member has tenure of four years.
- Confidentiality: They need to observe a "silent period" seven days before and after the rate decision for "utmost confidentiality".
- Decision: Decisions are taken by majority with the Governor having the casting vote in case of a tie. MPC decisions are taken by voting, where a simple majority (4 out of 6) is necessary for a decision to be passed.

BHARATSKILLS FORUM

In News:

Recently, Directorate General of Training (DGT) launched Bharatskills Forum.

Analysis of Background:

DGT:

- The Directorate General of Training (DGT), under the aegis of the Ministry of Skill Development and Entrepreneurship (MSDE), is the key agency for providing Vocational

Training for the Indian youth under the Government's flagship of the Skill India Programme.

Bharat Skills:

- In Oct 2019 DGT launched an online learning platform called the Bharatskills. It is a Central Digital Repository for skills, for the trainees and trainers of the ITI ecosystem, providing easy access to updated curriculum, e-books, Question Banks, mock/practice papers, learning videos, etc., for courses under the Craftsmen Training Scheme (CTS), Craft Instructor Training Scheme (CITS) and the Apprenticeship Training Scheme (ATS), hence enabling anytime, anywhere learning outside the classrooms.
- This platform also presents unique access to a centralized, scalable, and thriving support ecosystem through its industrial partners for the students and teachers who can now learn the new age (Industrial Revolution 4.0) skills to meet the demands of the industry.

Bharat Skills Forum

- It will allow sharing of books, notes, videos, a question bank, etc., and other relevant skill-related content to interested learners.
- This facility shall act as a digital warehouse for the skilling community as it will allow access to handwritten trainers' or trainees' notes, PDFs, scanned copies, or recorded videos in any preferred language.

JAMES WEBB SPACE TELESCOPE

In News:

NASA's James Webb Space Telescope has captured a lush, highly detailed landscape – the iconic Pillars of Creation – where new stars are forming within dense clouds of gas and dust.

Analysis of Background:

- The James Webb Space Telescope (JWST or "Webb") is a joint **NASA–ESA–CSA** space telescope that is planned to succeed the Hubble Space Telescope as NASA's flagship astrophysics mission.
- JWST will study various phases in the history of the universe, from the formation of solar systems to the evolution of our own Solar System.
- The telescope must be kept very cold in order to observe in the infrared without interference, so it will be deployed in space near the Sun–Earth L2 Lagrange point.
- Also a large sunshield made of silicon-coated and aluminium-coated Kapton will keep its mirror and instruments below 50 K (–223.2 °C).

Note:

- A Lagrange point is a location in space where the combined gravitational forces of two large bodies, such as Earth and the sun or Earth and the moon, equal the centrifugal force felt by a much smaller third body.
- The interaction of the forces creates a point of equilibrium where a spacecraft may be "parked" without coming in the influence of gravitational field of any other body (example Earth or Sun).

NavIC

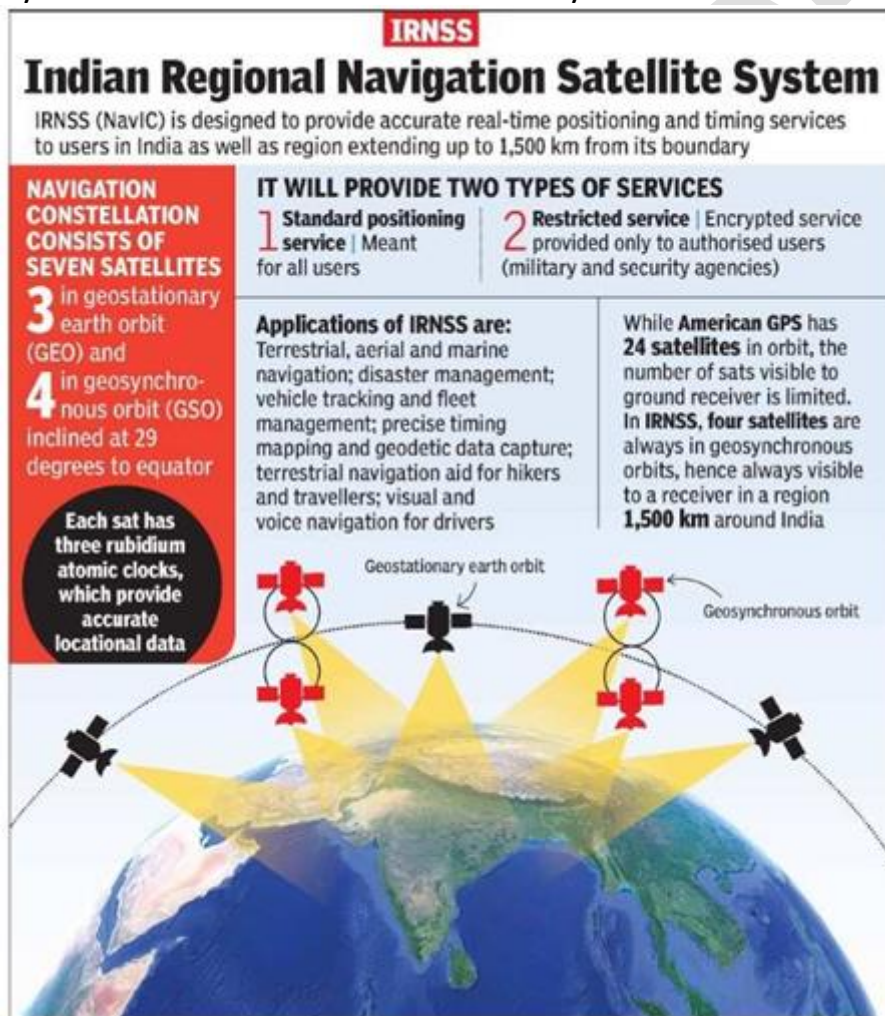
In News:

The Indian Space Research Organisation (ISRO) is working on a series of improvements to the NavIC, or India's equivalent of the Global Positioning System (GPS), so that more people are motivated to install it and use it.

Analysis of Background:

NavIC

- NavIC (Navigation with Indian Constellation) is an autonomous regional satellite navigation system established and maintained by ISRO.



Coverage

- It covers India and a region extending up to 1,500 km beyond Indian mainland (primary coverage area) with plans of extension.
- An extended service area lies between the primary service area and a rectangle area enclosed by the 30th parallel south to the 50th parallel north and the 30th meridian east to the 130th meridian east.

Satellites

- The system currently consists of a constellation of seven satellites, with two additional satellites on ground as stand-by.
- Three of the seven satellites in constellation are located in geostationary orbit (GEO) and four in inclined geosynchronous orbit (IGSO).

Accuracy:




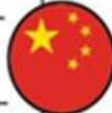
- The system is intended to provide an absolute position accuracy of better than 10 metres throughout Indian landmass and better than 20 metres in the Indian Ocean.
- In short, it provides position accuracy better than 20 m and timing accuracy better than 50 nanoseconds(20).

Applications

- NavIC will provide two levels of service, the "standard positioning service", which will be open for civilian use, and a "restricted service" (an encrypted one) for authorised users (including the military).
- NavIC based applications are being used in various civilian sectors, including, transport, map applications, and timekeeping.
- NavIC based trackers are compulsory on commercial vehicles in India.
- Today major mobile chipset manufacturers like Qualcomm, MediaTek and Broadcom already support NavIC across various chipset platforms.
- A few mobile handsets have been released which can be enabled to receive NavIC.
- Examples Redmi Note 9 series from Xiaomi, the Realme 6 series, the OnePlus Nord, etc.
- NavIC is an indigenous positioning system that is under Indian control.
- There is no risk of the service being withdrawn or denied in a given situation.

Navigation Satellites of countries:

IRNSS, India's answer to Global Positioning System, will cover a radius of 1,500km with India at the centre. Here is where India stands in a comity of space-faring nations

 <p>GPS Country US No. of Satellites 31 Coverage Global First satellite launch 1978 Lifetime of each satellite 10 years Precision 5m</p>	 <p>GALILEO Region European Union No. of satellites 40 (10 in orbit now) First launch 2011 Area of coverage Global Lifetime of each satellite 12 years Precision 1m for public and 1cm for military</p>	<p>No. of satellites 35 (20 now in orbit) First launch October 2000 Area of coverage global Lifetime of each satellite 12 years Precision 10m for public and 10cm for military</p>
 <p>GLONASS Country Russia No. of satellites 24 Coverage Global First satellite launch October 1982 Lifetime of each satellite 10 years Precision 5m to 10m</p>	 <p>BEIDOU Country China Has two separate satellite constellations- limited test system and full-scale global navigation system</p>	<p>IRNSS Country India No. of satellites 7(5 in orbit) Area of coverage Radius of 1500km First satellite launch 2013 Lifetime of each satellite 12 years Precision 20m for civilian, 10m for military</p>

WEB 3.0

In News:

India has a rapidly-growing Web3 ecosystem with more than 450 active start-ups in the space-Nasscom.

Analysis of Background:

World Wide Web:

- World Wide Web, which is also known as a Web, is a collection of websites or web pages stored in web servers and connected to local computers through the internet.
- These websites contain text pages, digital images, audios, videos, etc. Users can access the content of these sites from any part of the world over the internet using their devices such as computers, laptops, cell phones, etc. The WWW, along with internet, enables the retrieval and display of text and media to a device.

- So, the web/www provides a communication platform for users to retrieve and exchange information over the internet.

Web 1.0

- Web 1.0 is the earliest form of the internet created by Tim Berners Lee in 1989 that existed between the years of 1991 to 2005.
- It is an era where content creators were fewer in number and the wide majority instead were consumers of data. Users were allowed to view the content placed on websites but were not able to collaborate, give feedback, or add their own content to these websites. So, people could just access facts, information, and content from the source.
- Web 1.0 made the use of static HTML and displayed content using tables and frames.
- Websites were mostly static and data was stored predominantly in filesystems.
- Web 1.0 can be thought of as a massive digital encyclopedia that lacked interactivity.

A few elements that define Web 1.0 can include:

- HTML 3.2 elements such as frames and tables.
- HTML forms sent via email.
- Content from the server's filesystem, rather than a relational database management system.
- GIF buttons and graphics.
- The primary technologies that comprised web 1.0 were:
 - HTML (HyperText Markup Language)
 - HTTP (HyperText Transfer Protocol)
 - URL (Uniform Resource Locator)

Web 2.0:

- With Web 2.0, the focus moved away from a small amount of people making a large amount of content, to a large amount of people making even more content.
- Instead of static websites that simply pushed content, Web 2.0 introduced the concept of blogging, and zooming, scrolling, and manipulating content such as in Google Maps.
- This form of the internet emphasised UGC, ease of use, participation and interactivity, and compatibility with other devices and systems.

- Communities, collaborations, dialogue and social media popped up in Web 2.0. Web 2.0 is also the era that saw the rise of Software as a Service (SaaS) solutions and the use of technologies like HTML5, CSS3, and JavaScript frameworks.

A few elements that define Web 1.0 can include:

- Free sorting of information
- Developed APIs
- Self-usage
- Dynamic content
- Wide societal use, not just specific communities
- Ease of information sharing.
- Huge variety of information in a single click.

Web 2.0, or the 'social web', involves a number of tools and platforms where people can share their opinions, day-to-day, and perspectives, in a hyper interactive way. So, this can involve:

- Podcasting
- Social media
- Tagging
- Blogging
- Commenting
- Voting

Web 2 weaknesses:

- Risk of virus, fraud, and spam attacks.
- Risk of getting wrong information since the variety, veracity, and volume of information is too large.
- Compromised security since Web 2 users are at the mercy of the Big Tech companies (Alphabet (Google), Amazon, Meta (Facebook), Apple, and Microsoft) which store almost all their data.
- Information censoring by the Big Tech companies who can censor the information users are trying to access.
- Economic benefits are only limited to the Big Tech companies even though the content being introduced in the WWW is generated mainly by users.
- A centralized financial system whereby the financial system is centrally managed by a few central banks and financial institutions that have access to users' data.

Web 3.0

- Web 3.0 is also known as the read-write-execute web and introduces the concept of machine learning, artificial intelligence, and blockchain systems. It is built upon the core concepts of decentralization, openness and token-based economics.
- The term "Web3" was coined by Polkadot founder and Ethereum co-founder Gavin Wood in 2014, referring to a "decentralized online ecosystem based on blockchain."

Elements

- Decentralized: It is the concept that believes that content and data must be owned and controlled by decentralized autonomous bodies, thus reducing the censorship and centralized control exercised by the Big Tech companies. Payments in Web 3.0 use token-based authentication, thus personal data does not need to be shared with third-party intermediaries. Once smart contracts are deployed, they execute as written without the need for an intermediary.
- Artificial Intelligence and Machine Learning: Web 3.0 is based on Natural Language Processing (NLP) which allows the web to analyze and derive the meaning of spoken and written words. Thus, web tech is improved to create, share, and connect content through search and analysis, based on comprehension not key words.
- Ubiquity: Web 3.0 envisions that systems are available anywhere and everywhere because of the use of decentralized servers, thus reducing the dependency on Big Tech that exists with Web 2.0.
- 3D graphics and spatial web: Web 3.0 is also set to transition from 2D to 3D systems coupled with NLP and machine learning. Web 3.0 will see the merging of reality with virtual worlds using sensors, smart glasses, and AR/VR technologies.
- Open – It's 'open' in the sense that it's made with open-source software developed by an open and available community of developers and accomplished in full view of the public.
- Trustless – The network offers freedom to users to interact publicly and privately without an intermediary exposing them to risks, hence "trustless" data.
- Permissionless – Anyone, including users and providers, can engage without the need for permission from a controlling organization.

- Artificial Intelligence & Machine Learning - Artificial intelligence and machine learning algorithms have advanced to make valuable, and sometimes life-saving, predictions and acts.
- When built on top of emerging decentralized data structures that provide access to a plethora of data that today's tech titans desire, the possible applications extend far beyond targeted advertising into areas such as:
 1. Precision materials
 2. Medication creation
 3. Climate modeling

Although Web 2.0 has similar capabilities, it is still primarily human-based, allowing for corrupt behaviors such as biased product evaluations, rigged ratings, human errors, etc.

Web 3.0 strengths

- Since information can be accessed from all ends of the web spectrum, it makes data interoperable across different platforms and IoT devices.
- Use of permission less block chains thus reducing limitations that exist due to wealth, geographic location, gender, or other demographics.
- Removal of a central authority leading to self-governance and distributed ownership.
- Improved security because of the distribution, decentralization, and use of blockchain technologies.
- Reduced dependence on the Big Tech companies.
- No need to share personal information with third parties when making payments.

	Web 1.0	Web 2.0	Web 3.0
Know as	Read-only web	Read-write or social web	Read-write-own
Timeline	From 1989 to 2005	From 2005 to present	Upcoming
Content	Content is owned by the creator only	Content is shared by creators and users	Content is consolidated by creators and users
Focus	More focus on companies	More focus on community	More focus on individuals
Earnings	Earning is through page views	Earning is through cost per click	Earnings are obtained through user engagement
Advertise	Advertising is banner based	Advertising is interactive	Advertising is behavioral
User Data	User data was not focused	User data is controlled by central authorities	User data is personalized and decentralized without the use of central authority
Usage	Mostly visual, static web with no user-to-server communication	Mostly programmable web with improved user interaction	Linked data web with intelligent, web-based functionalities and applications
Examples	Examples are home pages and WebForms	Examples are blogs, wikis, and web applications	Examples are live streams, waves, and smart applications

Image Courtesy by creative-tim.com

VYOMMITRA:

In News:

‘Vyommitra’, is undergoing pre-flight ground tests at the ISRO Inertial Systems Unit (IISU).

Analysis of Background:

Vyommitra:

- ISRO has also developed a female half humanoid robot named Vyommitra, a combination of two Sanskrit words Vyoma (space) and Mitra (friend), which will be sent on the first unmanned Gaganyaan flight.
- Vyommitra will help in simulating human functions in space and will also interact with the environment control life support system.
- Vyommitra has been designed to speak in Hindi and English, can act as a companion to the astronauts, converse with them, and also respond to their queries.
- IISU has successfully integrated it with a computer ‘brain’ which enables it to ‘read’ control panels aboard the unmanned test flights and communicate with the ISRO ground stations.

- The AI-enabled robot, which can withstand vibrations and shock during the flight, has been designed to resemble a human with facial expressions and speech and sight capabilities.

DMH (Dhara Mustard Hybrid)-11

In News:

The Genetic Engineering Appraisal Committee (GEAC) has recommended the environmental release of the genetically modified (GM) mustard variety DMH (Dhara Mustard Hybrid)-11, paving the way for the commercialisation of the country's first GM food crop.

Analysis of Background:

What is hybrid mustard?

- A hybrid crop is produced by the cross-breeding of two genetically different varieties that can be even from the same species. The first-generation (F1) offspring produced with this technique usually have higher yields than existing varieties.
- This hybridisation is difficult in mustard as its flowers have both female (pistil) and male (stamen) reproductive organs, which makes the plant self-pollinating. Thus developing hybrids for mustard has its limits.
- But scientists did it through genetic modification. They crossed a popular Indian mustard variety 'Varuna' (the barnase line) with an East European 'Early Heera-2' mutant (barstar) to develop DMH-11.

Benefits:

- DMH-11 is claimed to have an average 28 per cent yield increase over Varun.
- DMH-11 has been shown to deliver 30 per cent higher yields than other existing varieties. The average yield of existing mustard varieties is around 1,000-1,200 kilograms per hectare, while the global average is over 2,000-2,200 kgs.

Approval by GEAC:

- GEAC has approved the supervised environmental release of GM mustard and to conduct field demonstration studies on its effects, if any, on honey bees and other pollinators.
- **India has only approved one GM crop, Bt cotton, for commercial cultivation so far.**

Significance:

- The GM mustard represents a step towards the goal of developing robust, high-yielding hybrids while at the same time trying to reduce the environmental footprint of agriculture.
- Supporters say it will lead to greater food security due to increased yields, reduced costs for food production, reduced need for pesticides and resistance to pests and disease.

Concerns:

- Data from (Directorate of) Rapeseed Mustard Research (DRMR), Bharatpur shows that the claim DMH-11 GM mustard would increase yield by 26 per cent is deceptive and misleading as there are several existing hybrid varieties that outperform the transgenic variety DMH-11.
- Some experts have also expressed concerns over the DMH-11 mustard variety being herbicide tolerant, which allows the farmers to kill the surrounding weeds without harming the crop. They fear excess use of the herbicide on GM crops would increase toxic chemicals in food and soil.

GEAC

- The GEAC is India's apex biotechnology regulatory body. It regulates the use, manufacture, storage, export and import of hazardous microorganisms or genetically-engineered organisms and cells in India. The Genetic Engineering Appraisal Committee (GEAC) functions under the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- The Genetic Engineering Appraisal Committee (GEAC) is the statutory committee constituted under the "Rules for the Manufacture, Use/Import/Export and Storage of Hazardous Micro Organisms/Genetically Engineered Organisms or Cells (Rules, 1989)" framed under Environment (Protection) Act, 1986.
- As per 1989 Rules, it is responsible for appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.

- The committee is also responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into the environment including experimental field trials.

SASTRA Ramanujan Prize for 2022

In News:

The SASTRA Ramanujan Prize for 2022 will be awarded to Yunqing Tang, Assistant Professor with the University of California, Berkeley, U.S.A.

Analysis of Background:

- The award, was instituted by the Shanmugha Arts, Science, Technology & Research Academy (SASTRA) in 2005.
- It has a cash prize of \$10,000, is presented annually to individuals aged 32 and below, who made outstanding contributions in the field of mathematics, influenced by Srinivasa Ramanujan in a broad sense.

NOBEL PRIZE

Physics:

- The Nobel Prize for Physics 2022 is being shared by three scientists, Alain Aspect, John F Clauser and Anton Zeilinger, for their work on quantum mechanics.
- The three conducted a series of experiments on something called entangled quantum states, where two separate particles behave like a single unit. Their pathbreaking results will have implications in the fields of quantum computers, quantum networks and secure quantum encrypted communication. Put simply, quantum computers use quantum mechanics to solve problems too complex for regular computers.

Chemistry:

- This year's Nobel Prize in Chemistry has gone to three scientists who, through their work, have made a strong case for adopting an alternative approach to producing new complex molecules in the laboratory or industry, which minimises waste and increases overall efficiency.
- 'Click Chemistry' demonstrates its vast potential in the pharmaceutical and other industries.

Physiology:

- Swedish scientist Svante Paabo won the 2022 Nobel Prize in Physiology or Medicine for discoveries “concerning the genomes of extinct hominins and human evolution.
- The winner has been credited with transforming the study of human origins after developing approaches to allow for the examination of DNA sequences from archaeological and paleontological remains.
- Key achievements include sequencing an entire Neanderthal genome to reveal the link between extinct people and modern humans.
- The winner also brought to light the existence of a previously unknown human species called the Denisovans, from a 40,000-year-old fragment of a finger bone discovered in Siberia.

TELECOM TECHNOLOGY DEVELOPMENT FUND (TTDF) SCHEME

In News:

Recently, Universal Service Obligation Fund (USOF), a body under the Department of Telecommunications, officially launched Telecom Technology Development Fund (TTDF) Scheme. The scheme is aligned with Prime Minister, Shri. Narendra Modi’s clarion call of adding Jan Anusandhaan in the new phase of Amrit Kaal.

Analysis of Background:

- Telecom Technology Development Fund (TTDF) aims to fund R&D in rural-specific communication technology applications and form synergies among academia, start-ups, research institutes, and the industry to build and develop the telecom ecosystem.
- Additionally, the Scheme aims to promote technology ownership and indigenous manufacturing, create a culture of technology co-innovation, reduce imports, boost export opportunities and creation of Intellectual Property.
- Under the scheme, USOF is also targeting to develop standards to meet countrywide requirements and create the ecosystem for research, design, prototyping, use cases, pilots, and proof of concept testing, among others.
- The scheme entails grants to Indian entities to encourage and induct indigenous technologies tailor-made to meet domestic needs.

ZHURONG ROVER

In News:

China's first Mars rover will be named Zhurong after a traditional fire god.

Analysis of Background:**Zhurong Rover:**

- Zhurong Rover is aboard the Tianwen-1 probe that arrived in Mars orbit on February 24 and is due to land to look for evidence of life.
- It is part of Chinese space plans that include launching a crewed orbital station and landing a human on the moon.
- China in 2019 became the first country to land a space probe on the little-explored far side of the moon and in December returned lunar rocks to Earth for the first time since the 1970s.
- The rover's title fits with the Chinese name for Mars — "Huo Xing," or fire star. The name signifies igniting the flame of China's planetary exploration.
- China would become the third country after the former Soviet Union and the United States to put a robot rover on Mars.

TOPIC: ENVIRONMENT**CENTRE RESTRICTS USE OF COMMON WEEDICIDE GLYPHOSATE:****In News:**

The Union Ministry of Agriculture and Farmers Welfare issued a notice restricting the use of glyphosate, a widely used herbicide, citing health hazards for humans and animals. Only authorised Pest Control Operators are allowed to use it.

Analysis of Background:

- The notification was based on a 2019 report by the Government of Kerala on prohibiting the distribution, sale and use of glyphosate and its derivatives.
- Earlier, state governments of Maharashtra, Telangana, Punjab and Andhra Pradesh have tried similar steps but failed.

Use in India:

- In India, glyphosate has been approved for use only in tea plantations and non-plantation areas accompanying the tea crop. Use of the substance anywhere else is illegal.
- However, a 2020 study by PAN India on the state of glyphosate use in the country had worrying findings.
- Glyphosate was being used in more than 20 crop fields, it was found

- Pesticide Action Network (PAN) India believes stricter action is needed.

Glyphosate

- It was developed in 1970, and its scientific name is N-(phosphonomethyl) glycine under the International Union of Pure and Applied Chemistry (IUPAC) system of nomenclature
- Its molecular formula is C₃H₈NO₅P
- Glyphosate is an active ingredient in weed killer products and is an odourless white
- It is applied to the leaves of plants to kill weeds.
- It was first registered for use by the United States Environmental Protection Agency in 1974
- This herbicide is used in agriculture, forestry on lawns and gardens, and for weeds in industrial areas.

Herbicides

- Herbicide is an agent, usually chemical, for killing or inhibiting the growth of unwanted plants, such as residential or agricultural weeds and invasive species.

GREAT INDIAN BUSTARD

In News:

The recent sighting of three Great Indian Bustards (GIBs) deep in Pakistan's Cholistan desert has given rise to speculation that the endangered birds might have flown across the international border from India's Desert National Park (DNP).

Analysis of Background:

- **The GIB — the State bird of Rajasthan — is considered India's most critically endangered bird and is protected under the Wildlife Protection Act.**
- Its population of about 150 in Rajasthan accounts for 95% of its total world population.
- The captive breeding of GIBs was taken up in the DNP through a project executed by the Dehradun-based Wildlife Institute of India in 2019. As many as 24 GIB chicks are being reared in DNP by a team supported by the International Fund for Houbara Conservation of United Arab Emirates.
- As Rajasthan shares the international border with Pakistan's Sindh and Punjab provinces, it is suspected that the GIBs might have flown across to the neighbouring country's desert amid fears that they could become easy prey for the poachers there.

Great Indian Bustard (GIB):

- GIB is one of the most critically threatened species in India, with less than 150 birds left in the wild.
- GIBs are one of the heaviest flying birds in India.
- Experts say only two districts in Rajasthan — Jaisalmer and Barmer — have a breeding GIB population in the wild.
- The bird can also be found in very small numbers in Gujarat, Madhya Pradesh, Karnataka, Maharashtra and Andhra Pradesh.

Steps taken by the Government for protection of Great Indian Bustards in the country:

- A site for establishment of a Conservation Breeding Centre for the Great Indian Bustard has been identified at Kota District, Rajasthan, under the project 'Habitat Improvement and Conservation Breeding of Great Indian Bustard-an integrated approach'.
- A satellite conservation breeding facility with incubator, hatcher, chick rearing and housing for captive birds has been set up at Sam, Jaisalmer, Rajasthan.
- The Great Indian Bustard is listed in Schedule-I of the Wild Life (Protection) Act, 1972, thereby, according it highest degree of legal protection from hunting.
- Important habitats of Great Indian Bustards are designated as National Parks/Sanctuaries for their better protection.
- The species has been identified for conservation efforts under the component 'Species Recovery Programme' of the Centrally Sponsored Scheme (CSS)-Development of Wildlife Habitat.
- The Ministry with financial support from National Authority for Compensatory Afforestation Funds has sanctioned an outlay of Rs. 33.85 crores for the duration of five years for the programme 'Habitat Improvement and Conservation Breeding of Great Indian Bustard-an integrated approach' to build up captive population of Great Indian Bustard.
- Ministry has also constituted a Task Force for suggesting Eco- friendly measures to mitigate impacts of power transmission lines and other power transmission infrastructures on wildlife including the Great Indian Bustard.
- The Great Indian Bustard has been included in the Appendix I of Convention on Migratory Species (CMS) of the basis of proposal submitted by India. It was also the mascot of the prestigious 13th CMS Conference of Parties held in Gandhinagar giving wider publicity for the conservation of the species.

INDIAN BISONS

In News:

Sri Lanka recently asks India to translocate 6 Indian bisons or gaur to reintroduce them in the island after three centuries.

Analysis of Background:

- Close on the heels of the project that translocated cheetahs from Namibia, the Indian government is considering a **proposal from Colombo to export a number of gaur, or Indian bisons, to Sri Lanka to revive the population of gaur that have been extinct in the island since the end of the 17th century.**
- If the project is cleared, it would be the first such agreement between India and Sri Lanka, and part of a global trend of “wildlife or zoological diplomacy”

About Indian Bison:

- Indian Bisons are one of the largest extant bovines. It is one of the largest species among the wild cattle, reaching a shoulder height of up to 220 cm.
- The Indian gaur, a reclusive beast that lives in the wild, is the largest wild bovine that is a protected species and included in Schedule I of the Wild Life Protection Act, 1972 and listed as vulnerable in the International Union for Conservation of Nature (IUCN) Red List.
- They are found on the forested hills and grassy areas of south to south east Asia.
- There are about 13,000 to 30,000 gaur in the world with approximately 85% of the population present in India. It is also found in Burma and Thailand.
- The Western Ghats in southern India constitute one of the most extensive extant strongholds of gaur, in particular in the Wayanad – Nagarhole – Mudumalai – Bandipur complex.
- The first-ever population estimation exercise of the Indian gaur carried out in the Nilgiris Forest Division in February 2020 estimated around 2,000 Indian gaur to be inhabiting the division.
- **The gaur is the State Animal of Goa and Bihar.**
- It is a protected species and included **in Schedule I of the Wild Life Protection Act, 1972**
- Listed as “**vulnerable**” in the **International Union for Conservation of Nature (IUCN) Red List.**

- It is listed in CITES Appendix I.
- Zoological Diplomacy: means the translocation and reintroduction of a species, particularly between neighbouring countries with similar eco-systems. It is considered as a potent tool in
- For example, American bison herds were supplemented with animals from Canada after the U.S. herds were almost all wiped out
- The U.K. has recently introduced the European bison (Wisent) after an estimated 10,000 years in June 2022
- Israel has for decades pursued reintroductions, including of Persian fallow deer.
- Arabian oryx and other species have been released into the Negev desert, and South Africa has recently used the export of cheetahs to other African countries as a diplomatic tool during the post-apartheid era.
- More recently, Cambodia has requested translocating tigers from India, which is under consideration.

GLOBAL EMISSIONS REPORT 2022

In News:

The UNEP report released, titled 'Emissions Gap Report 2022: The Closing Window — Climate Crisis Calls For Rapid Transformation of Societies', has found that in India and six other top emitters, emissions have rebounded and increased after the pandemic.

Analysis of Background:

- Ahead of the 2022 United Nations Climate Change Conference, also known as COP27, scheduled to take place in the Egyptian city of Sharm El Sheikh next month, the United Nations Environment Programme (UNEP) said that the world is falling short of the goals set forth in the Paris Climate Agreement adopted in 2015, and that no credible pathway is currently in place to restrict global warming to under 1.5 degrees Celsius above pre-industrial levels.
- The UNEP report has found that in India and six other top emitters, emissions have rebounded and increased after the pandemic.
- The top seven emitters (China, the EU27, India, Indonesia, Brazil, the Russian Federation and the United States of America) plus international transport accounted for 55 per cent of global GHG (greenhouse gas) emissions in 2020. Collectively, G20 members are responsible for 75 per cent of global GHG emissions

- The global average per capita GHG emissions was 6.3 tonnes of CO₂ equivalent (tCO₂e) in 2020. The US remains far above this level at 14 tCO₂e, followed by Russia at 13 tCO₂e, China at 9.7 tCO₂e, Brazil and Indonesia at about 7.5 tCO₂e, and the European Union at 7.2 tCO₂e.
- India remains far below the world average at 2.4 tCO₂e.
- For most major emitters, including China, India, the Russian Federation, Brazil and Indonesia, GHG emissions (excluding land use and forestry sectors) rebounded in 2021, exceeding pre-pandemic 2019 levels,” the report said.
- UNEP said that the G20 countries have just started to work on meeting their new targets, and collectively, are expected to fall short of their promises for 2030.
- “Policies currently in place, without further strengthening, suggest a 2.8°C hike... To get on track to meet the Paris Agreement goal, the world needs to reduce greenhouse gases by unprecedented levels over the next eight years,” the UNEP said.
- Unconditional and conditional NDCs are estimated to reduce global emissions in 2030 by five and 10 per cent respectively, compared with emissions based on policies currently in place.
- To get on a least-cost pathway to limiting global warming to 2°C or 1.5°C, these percentages must reach 30 per cent and 45 per cent respectively. Emissions must continue to decline rapidly after 2030 to avoid exhausting the remaining atmospheric carbon budget.

United Nations Environment Programme (UNEP):

- It is a leading global environmental authority established on 5th June 1972.
- It sets the global environmental agenda, promotes sustainable development within the United Nations system, and serves as an authoritative advocate for global environment protection.
- Headquarters: Nairobi, Kenya.
- **Major Reports: Emission Gap Report, Adaptation Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.**
- Major Campaigns: Beat Pollution, UN75, World Environment Day, Wild for Life.

Emissions Gap Report: It assesses the gap between anticipated emissions in 2030 and levels consistent with the 1.5°C and 2°C targets of the Paris Agreement. Every year, the report features ways to bridge the gap.

BLUE FLAG BEACHES

In News:

International eco-label "Blue Flag", has been accorded to two new Indian beaches; Minicoy Thundi Beach and Kadmat Beach- both in Lakshadweep, with this the number of beaches certified under the Blue Flag certification increased to 12 in India.

Analysis of Background:

BLUE FLAG

- It is an internationally recognized eco-label that is accorded based on 33 criteria. These criteria are divided into 4 major heads namely; Environmental education and information, Bathing water quality, Environmental management, and Conservation and safety services on the beaches.
- Blue Flag beaches are considered the cleanest beaches in the world.
- It is accorded by the international jury composed of eminent members - United Nations Environment Programme (UNEP), United Nations World Tourism Organization (UNWTO), and Denmark-based NGO Foundation for Environmental Education (FEE) and International Union for Conservation of Nature (IUCN).
- The mission of Blue Flag is to promote sustainability in the tourism sector, through environmental education, environmental protection and other sustainable development practices.



BEAMS program

- Under the Integrated Coastal Zone Management Project, the Ministry of Environment, Forest & Climate Change (MoEFCC) has piloted the Beach Environment & Aesthetic Management Service (BEAMS) Programme.
- The objective of the BEAMS program is to abate pollution in coastal waters, promote sustainable development of beach facilities, protect & conserve coastal ecosystems & natural resources, and seriously challenge local authorities & stakeholders to strive and maintain high standards of cleanliness, hygiene & safety for beachgoers in accordance with coastal environment & regulations.
- Under this programme, various activities related to pollution abatement, beach awareness, aesthetics, safety, surveillances services and environmental education, etc., have been done at identified beaches aimed to achieve international standards for Blue Flag Beach Certification.
- A total of 12 beaches situated in 6 States and 4 Union Territories have been developed at par with the best international beaches with safe and ecologically sustainable infrastructure, acceptable bathing water quality, self-sustaining energy supply and environmentally sound services/management measures.
- Beaches that have been conferred with internationally recognized Blue Flag Certification are;
 1. Shivrajpur, Devbhumi Dwarka District, Gujarat
 2. Ghoghla (Diu) Dadara Nagar Haveli and Daman & Diu
 3. Padubidri, Udupi District, Karnataka
 4. Kasarkod, Karwar District, Karnataka
 5. Kappad, Kozhikode District, Kerala
 6. Kovalam, Kanchipuram District, Tamil Nadu
 7. Eden, Puducherry District, Puducherry
 8. Rushikonda, Vishakhapatnam District, Andhra Pradesh
 9. Golden, Puri District, Odisha
 10. Radhanagar (Havelock), Andaman & Nicobar Islands
 11. Minicoy Thundi Beach in Lakshadweep
 12. Kadmat Beach in Lakshadweep

GREEN CRACKERS

In News:

Only green firecrackers will be sold in the Delhi for Diwali, in accordance with the Supreme Court (SC) orders. Details:

Analysis of Background:

- Green crackers are low-emission crackers, free of harmful chemicals such as sulphur, nitrates, arsenic, magnesium, sodium, lead, and barium, which reduce the emission of up to 30%.
- Emit noise in the range of 100-130 deciBels.
- Come with a green logo and Quick Response (QR) code to differentiate from conventional firecrackers.

How does one identify and differentiate them?

- One should look for green crackers falling only in these three categories- SWAS, SAFAL and STAR: the crackers developed by the Council of Scientific and Industrial Research (CSIR).
- SWAS that is “safe water releaser” should have a small water pocket/droplets which get released when burst, in the form of vapour.
- SWAS is safe water releaser, which suppresses the dust released by releasing water vapour in the air. It does not comprise potassium nitrate and sulphur and the particulate dust released will reduce approximately by 30 per cent.
- Similarly, STAR is the safe thermite cracker, which does not comprise potassium nitrate and sulphur, emits reduced particulate matter disposal and reduced sound intensity.
- SAFAL is safe minimal aluminium which has minimum usage of aluminium, and used magnesium instead. It ensures reduction in sound in comparison to traditional crackers said.

Conventional firecrackers:

- Composed of charcoal or thermite in combination with oxidizing agents such as nitrates or chlorates, sulfur agents, and coloring agents.
- Include salts of strontium, sodium, barium, calcium, and copper as well as white metals, which produce more particulate matter (PM).
- Emit sound between 160-200 deciBels.

What is the difference between green crackers and traditional crackers?

- Both green crackers and traditional crackers cause pollution and people should refrain from using either.
- However, the only difference is that green crackers cause 30 per cent less air pollution as compared to traditional ones.
- Green crackers reduce emissions substantially and absorb dust and don't contain hazardous elements like barium nitrate.
- Toxic metals in traditional crackers are replaced with less hazardous compounds.
- According to the National Green Tribunal (NGT), green crackers are permitted only in cities and towns where air quality is moderate or poor.
- There is reduction in emission of sound as well in green crackers.

What are the toxic metals that traditional crackers release?

- Crackers release several toxic metals that can be harmful for health.
- The white color emitted through crackers is aluminium, magnesium and titanium, while the orange colour is carbon or iron.
- Similarly, yellow agents are sodium compounds while blue and red are copper compounds and strontium carbonates.
- The green agent is barium mono chloride salts or barium nitrate or barium chlorate.
- Lead in crackers impact the nervous system while copper triggers respiratory tract irritation, sodium causes skin issues and magnesium leads to mental fume fever.
- Cadmium not just causes anemia but also damages the kidney while nitrate is the most harmful that causes mental impairment.
- The presence of nitrite causes irritation in mucous membrane, eyes and skin.

SPIDER SPECIES

In News:

Arachnologists from the Centre for Animal Taxonomy and Ecology (CATE), Christ College, Irinjalakuda in Kerala have recently discovered six new species of spiders from across the country.

Analysis of Background:

- The new species of spiders were found from the Garo hills in Meghalaya, the Thar desert of Rajasthan, Wayanad Wildlife Sanctuary, Kottappara hills near Kothamangalam, Thumboormuzhi butterfly garden near Athirappilly, and the University of Calicut campus.

Siamspinops garoensis:

- Studies conducted on the Garo hills of Meghalaya resulted in the first spotting of the genus Siamspinops from India with a new species Siamspinops garoensis.
- This belongs to the family of flat spiders, Selenopidae.
- This spider lives in the crevices of rocks on hills.
- The yellowish brown spider measures about 10 mm in length.
- There is a black circle around its eyes and black patches on the abdomen.

Jumping spiders:

- Two new species of spiders coming under the family of jumping spiders (Salticidae) were discovered from the Thar desert of Rajasthan and the Kurichiyad forest ranges of the Wayanad Wildlife Sanctuary.
- *Afraflacilla miajlarensis*, the Thar species, is characterised by white fine hairs on a black head and black horizontal lines on the abdomen. This spider stays among dry leaf blades.
- *Afraflacilla kurichiadensis*, the Wayanad species, is characterised by red patches around the eyes and white hairs on the abdomen. The bulged first pair of legs are also a special feature of this species. This spider lives in the moist deciduous forest of Kurichiyad.

Feather- legged spiders:

- The next spider species lacks a venom gland and belongs to the family of feather-legged spiders (Uloboridae).
- This new species has been named as *Philoponella rostralis*, due to the presence of a beak like structure on the male reproductive organ.

Spiny-legged spiders:

- Two new species of spiders belonging to the family of spiny-legged spiders (Oxyopidae) have been discovered from the Thumboormuzhi butterfly garden, near the Athirappilly waterfalls, and on the Calicut University campus.

BASMATI RICE

In News:

Indian Agriculture Research Institute (IARI) developed five varieties of Basmati Rice seeds in 2020 and 2021. These are now ready to be used in fields after all trials. These paddy seeds can resist diseases and herbicides.

Analysis of Background:

- Over a period of time, as the area of cultivation increased, traditional varieties of Basmati have become susceptible to two major diseases — bacterial leaf blight (BLB) and blast (leaf and collar) diseases caused by the fungus *Magnaporthe oryzae*.
- Pesticides and fungicides used against these diseases increased the residue levels permitted in developed countries.
- Recently, the export to EU countries faced certain hurdles due to the increase in the pesticide residue levels in the rice from India.
- Achieving the permitted levels is very difficult if pesticides are used for controlling pests. The only way is to bring in genetic resistance.

The new varieties:

- Researchers developed genetically resistant varieties- Pusa Basmati 1885; Pusa Basmati 1847; Pusa Basmati 1886. All these varieties have two genes to resist BLB and two genes to resist blast disease.
- Also, the IARI developed Pusa Basmati 1979 and Pusa Basmati 1985 as herbicide tolerant rice. These two varieties can save 35% of water as the method of Direct Sowing of Rice (DSR) can be used to raise them.

Basmati Rice:

- Basmati, is a variety of long, slender-grained aromatic rice which is traditionally grown in India, Pakistan, and Nepal.
- India is known for its Basmati rice, with seven States — Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Uttar Pradesh and Uttarakhand — earmarked for geographical indication.
- The largest area under Basmati rice is in the state of Haryana (60%) followed by Uttar Pradesh (17.1%) and Punjab (16.1%).
- According to the Indian Government agency Agricultural and Processed Food Products Export Development Authority (APEDA), a rice variety is eligible to be called basmati if it has a minimum average precooked milled rice length of 6.61 mm (0.260 in) and average precooked milled rice breadth of up to 2 mm (0.079 in), among other parameters.

Exports:

- Basmati, has a market abroad and brings about ₹30,000 crore foreign exchange every year.
- In 2019, India accounted for 65% of the international trade in basmati rice, while Pakistan accounted for the remaining 35%.
- While 75% of the export is to West Asian countries, European Union countries also import Indian Basmati.

KALANAMAK RICE

In News:

Indian Agriculture Research Institute has successfully tested two new dwarf varieties — Pusa Narendra Kalanamak 1638 and Pusa Narendra Kalanamak 1652 — in Uttar Pradesh that give double the yield.

Analysis of Background:

About Kalanamak:

- Kalanamak is a scented rice of Nepal and India.
- Kalanamak rice is a non-basmati rice with medium slender grain length.
- It is a traditional variety of paddy with a black husk and a strong fragrance.
- It is considered a gift from Lord Buddha to the people of the Sravasti when he visited the region after enlightenment. Thus, this variety has been in cultivation since the original Buddhist period (600 BC).
- It is popular in Himalayan Tarai of Nepal i.e., Kapilvastu, and eastern Uttar Pradesh, where it is known as the scented black pearl.
- The four varieties of Kalanamak are KN 3, Dwarf Kalanamak 101, Dwarf Kalanamak 102 and Kalanamak Kiran.

- Kalanamak rice was granted the Geographical Indication (GI) Tag in 2012 by the Government of India.

Health Benefits:

- Kalanamak rice is rich in micronutrients such as Iron and Zinc. Therefore, this rice is said to prevent diseases borne out of nutrient deficiencies. Regular intake of Kalanamak rice is said to prevent Alzheimer's disease.
- It has 11% protein, almost double that of common rice varieties. It has low Glycemic Index (49% to 52%) making it relatively sugar Free and suitable for diabetics.
- It also contains antioxidants such as anthocynin which is useful in preventing heart disease and also helps in improving the health of the skin. It has also been found helpful in regulating blood pressure and blood-related problems.
- Promotion
- The government of India came out with its Nutri-Farm scheme in 2013, with the aim to promote food crops that offer critical micronutrients to improve nutrition status of the vulnerable section of society. Kalanamak rice was one of the nutri-crop selected for this scheme.

Problem of Low acreage

- Until the 1990s, the variety made up more than 10% of total rice cultivation area in Siddharthanagar. However, acreage growing this variety in this district declined to <0.5% of total rice cultivation during 2002.
- Acreage under this variety has declined sharply, pushing it towards extinction, for reasons including:
 - Panicle blast epidemics in 1998 and 1999.
 - Tall stature of the crop causing lodging.
 - Long-time harvest (6 to 7 months).
 - Poor quality seeds and research support.
- Kalanamak Rice has been prone to lodging, a reason for its low yield. Lodging is a condition in which the top of the plant becomes heavy because of grain formation, the stem becomes weak, and the plant falls on the ground.

New Varieties:

To address the problem of lodging, the Indian Agriculture Research Institute (IARI) has successfully developed two dwarf varieties of Kalanamak rice. They have been named Pusa Narendra Kalanamak 1638 and Pusa Narendra Kalanamak 1652.

- For the old variety, the length of the plant is 140 centimetres, and for the new variety it is between 95-100 centimetres. The problem with the traditional variety of Kalanamak paddy is that it's tall and prone to lodging, which badly impacted grain filling and quality. The yield, as a result, fell drastically, and the market for the rice dwindled, too. New Dwarf varieties will address the issue.
- The yield of the new varieties is double that of the traditional variety. Productivity has gone up to 4.5 to five tonnes per hectare as against 2.5 tonnes in the case of traditional Kalanamak.
- Another issue was attack of blight bacterial disease. It has also been addressed by inducing blight tolerant genes.
- The aroma of the new breed is higher and nutritional qualities are also excellent.

IARI:

- The Indian Agricultural Research Institute (IARI), commonly known as the Pusa Institute, is India's national institute for agricultural research, education and extension. The name Pusa Institute is derived from the fact that the institute was originally located in Pusa, Bihar as the Imperial Institute of Agricultural Research in 1911.
- It was then renamed as the Imperial Agricultural Research Institute in 1919 and following a major earthquake in Pusa, it was relocated to Delhi in 1936. The current institute in Delhi is financed and administered by the Indian Council of Agricultural Research (ICAR). The IARI was responsible for the research leading to the "Green Revolution in India" of the 1970s.

ICAR:

- The Indian Council of Agricultural Research (ICAR) is an autonomous body responsible for co-ordinating agricultural education and research in India. It reports to the Department of Agricultural Research and Education, Ministry of Agriculture. The Union Minister of Agriculture serves as its president. It is the largest network of agricultural research and education institutes in the world.

- Presently, regulation of agricultural education is the mandate of ICAR, Veterinary Council of India (Veterinary sub-discipline) and Indian Council of Forestry Research and Education (Forestry sub-discipline).
- ICAR provides accreditation to agriculture universities, colleges and programmes, through its accreditation unit, National Agricultural Education Accreditation Board (NAEAB). The board was established in 1996 and given its current name in 2017. The accreditation serves only as a badge of quality assurance. It is not mandatory, is not a form of affiliation or recognition and does not give approval to open an institute or a program.

GRAP

In News:

The Commission for Air Quality Management (CAQM) said that measures under 'Stage-1' of the Graded Response Action Plan (GRAP) will be enforced in the NCR with immediate effect. The order came after Delhi's AQI deteriorated to be in the 'poor' category. Other parts of the NCR, including Gurgaon, Noida and Greater Noida, also recorded 'poor' air quality.

Analysis of Background:

About Graded Response Action Plan:

- GRAP is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold.
- Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300), and On Wednesday, for instance, the AQI in Delhi was 211.
- The second, third and fourth stages will be activated three days ahead of the AQI reaching the 'very poor' category (301 to 400), 'severe' category (401 to 450) and 'severe +' category (above 450) respectively. For this, the CAQM is relying on air quality and meteorological forecasts by the Indian Institute of Tropical Meteorology (IITM) and the India Meteorological Department (IMD).
- Measures being imposed under the previous categories will continue even when the subsequent category is activated, that is, if measures under Stage-2 are activated, measures under Stage-1 will continue to remain in place.

How is the GRAP different this year?

- The CAQM revised the Graded Response Action Plan earlier this year.
- The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change.
- This was based on a plan that was submitted by the Central Pollution Control Board (CPCB) in November 2016.
- According to the notification, the task of implementing the GRAP fell on the now dissolved Environment Pollution (Prevention and Control) Authority for the NCR. From 2021 onwards, the GRAP is being implemented by the CAQM.
- In the version of the GRAP that was notified in 2017, measures kicked in after pollution concentrations reached a certain level.
- This year, measures are pre-emptive and will kick in based on forecasts in an attempt to prevent the AQI from deteriorating further. The older version of the GRAP was enforced based only on the concentration of PM2.5 and PM10.
- This year, GRAP is being enforced based on the AQI, which takes other pollutants also into account, such as ozone, sulphur dioxide and oxides of nitrogen.

What are the measures that will be enforced this year?

- Some of the measures in the revised GRAP are also different this year. For the first time, it specifies that State governments in the NCR may impose restrictions on BS-III petrol and BS-IV diesel four wheelers under Stage-3, or when the AQI is likely to reach the 'severe' category.
- In the 'severe +' category, GRAP imposes a ban on plying of four-wheelers in Delhi and NCR districts bordering Delhi, except for BS-VI vehicles and those plying for emergency or essential services. Under this category, there will also be a ban on the movement of Delhi registered, diesel-operated medium and heavy goods vehicles in Delhi, with exceptions for those carrying essential commodities or providing essential services.
- Restrictions on some construction activities will also set in earlier in the revised GRAP. A ban on construction activities (except for those involving railways, projects of national security, hospitals, metro services, and linear public projects like highways, roads) will be imposed under the 'severe' category. In the previous plan, the construction ban was implemented only in the 'severe +' category.
- Construction activities on linear public projects like highways, roads, flyovers, pipelines and power transmission, will be banned under the 'severe +' category this year.

- Under the 'severe +' category, State governments may consider additional emergency measures like the closure of schools, plying of vehicles on an odd-even basis, and decide on allowing public, municipal and private offices to work on 50% strength and the rest to work from home.
- The revised GRAP also has a set of measures for the public to follow – under the 'poor' category, this includes keeping vehicle engines tuned, ensuring PUC certificates are updated and switching off vehicle engines at red lights. Under the 'very poor' category, it is suggested that citizens use public transport and replace air filters in their automobiles.
- Under the 'severe' category, a recommendation is made to work from home if possible, and not use coal and wood for heating. Under the 'severe +' category, GRAP advises people with chronic diseases and children and the elderly to avoid outdoor activities.

Who will implement and enforce the GRAP?

- The CAQM has constituted a sub-committee for the operationalization of the GRAP.
- This body includes officials from the CAQM, member secretaries of pollution control boards of Uttar Pradesh, Delhi, Haryana, Rajasthan, the Central Pollution Control Board, a scientist from the IMD and one from the IITM, and Dr T K Joshi, Health Advisor, Centre for Occupational and Environmental Health, Maulana Azad Medical College.
- The sub-committee is required to meet frequently to issue orders to invoke the GRAP.
- The orders and directions of the CAQM will prevail in case of any conflict between directions issued by the State governments and the CAQM.
- Measures under the different categories of the plan are to be enforced by the pollution control boards of the NCR states and the concerned departments and agencies, including the traffic police, the Transport Department and road owning and construction agencies.
- Actions under Stages II, III and IV will be invoked three days in advance of the AQI reaching the projected level

Stage 1 (AQI 'Poor' – 201 to 300)

(1) Stopping all construction and demolition activities with plot size of 500 square metres or more which have not been registered on dust mitigation monitoring portals

- (2) mechanised sweeping, water sprinkling on roads
- (3) enforcing guidelines on use of anti-smog guns at construction sites
- (4) enforcing ban on open burning of waste and PUC (pollution under control norms) for vehicles
- (5) DISCOMs to minimise power supply interruptions in NCR
- (6) Encourage offices to start unified commute for employees to reduce traffic

Stage 2 (AQI 'Very poor' – 301 to 400)

- (1) Not allowing coal/firewood in tandoors at hotels
- (2) stopping use of diesel generator sets except for essential and emergency services (hospitals, railways, metro services, airports, water pumping stations, "projects of national importance")
- (3) enhance parking fees to discourage private transport
- (4) augment CNG/ electric bus and metro services by procuring additional fleet and increasing the frequency of service

Stage 3 (AQI 'Severe' – 401 to 450)

- (1) Ban on construction and demolition activities except railway, metro, hospitals, sanitation projects etc, linear public projects like highways, roads, flyovers
- (2) closure of industries that have PNG supply and are not running on approved fuels. In industrial areas that don't have PNG supply, industries not running on approved fuels will operate only for five days a week
- (3) State governments in NCR may impose restrictions on BS III petrol and BS IV diesel four wheelers

Stage 4 (AQI 'Severe +' – more than 450)

- (1) Stop entry of truck traffic into Delhi (except for essentials, CNG and electric trucks)
- (2) Ban on plying of Delhi registered diesel medium and heavy goods vehicles in Delhi, except for essentials
- (3) Ban on plying of 4-wheeler diesel vehicles in Delhi and districts of NCR bordering Delhi, except BS-VI vehicles and vehicles used for essential or emergency services
- (4) State Governments may consider additional emergency measures like closure of schools, plying of vehicles on odd-even basis

(5) NCR State governments to decide on allowing public, municipal and private offices to work on 50% strength and the rest to work from home

(6) Ban C&D activities in linear public projects such as highways, roads, flyovers

MADHAV NATIONAL PARK

In News:

The National Green Tribunal (NGT) has called for halting mining in the ecologically sensitive zone (ESZ) of Madhav National Park in Shivpuri, Madhya Pradesh.

Analysis of Background:

- Annexure II of the ESZ notification contains a list of villages falling within ESZ and Majhera is one of those villages.
- Majhera village was called the village of widows owing to the high death rate of male members on account of silicosis and tuberculosis caused by stone mining in the area.
- The village was home to 25 families of Sahariya tribe — a category of a particularly vulnerable tribal group — residing within a kilometre range of the mining area. The tribe was prone to adverse effects of mining.
- Advertisements were published for leasing out mining sites that fall within a two-kilometre range from the ESZ of the park.
- Mining had previously taken place at the sites and there was overburden in the area, the NGT said. In mining, overburden is the material that lies above an area that lends itself to economical exploitation.
- Pits were created due to mining activity and rainwater had accumulated in the same.

SIMBEX-22

In News:

The Indian Navy is hosting the 29th edition of the Singapore-India Maritime Bilateral Exercise (SIMBEX) from 26 to 30 October, 2022 at Visakhapatnam.

Analysis of Background:

- SIMBEX-2022 is being conducted in two phases – Harbour Phase at Visakhapatnam from 26 to 27 October 2022 followed by the Sea Phase in Bay of Bengal from 28 to 30 October 2022.
- Two ships from Republic of Singapore Navy, RSS Stalwart (a Formidable Class Frigate) and RSS Vigilance (a Victory Class Corvette) arrived Visakhapatnam on 25 October 2022 for participation in the exercise.
- SIMBEX series of exercises began in 1994 and were initially known as Exercise Lion King.
- The scope and complexity of the exercise has risen substantially over the past two decades to include advanced naval drills covering a wide spectrum of maritime operations.
- The exercise exemplifies the high level of cooperation between India and Singapore in the maritime domain.
- It also highlights the commitment and contribution of the two nations towards enhancing maritime security in the Indian Ocean Region.

C-295 AIRCRAFT

In News:

Prime Minister laid the foundation stone of a C295 aircraft manufacturing plant in Vadodara, Gujarat, of the Tata-Airbus consortium that will manufacture the transport aircraft for the Indian Air Force (IAF). It is the first project of its kind in which a military aircraft will be manufactured in India by a private company. It is also the first time that the C295 aircraft will be manufactured outside of Europe. The manufacturing unit will cater to the export of the transport aircraft and for additional orders by the IAF.

Analysis of Background:

Where is the C295 produced and by whom?

- The C295 was originally produced by a Spanish aircraft manufacturer named Construcciones Aeronauticas SA.

- **This company is now part of Airbus and the aircraft's manufacturing takes place at Airbus's plant in Spain.**
- In September 2021, India signed a Rs 21,935 crore deal with Airbus Defence and Space to procure 56 C295 aircraft to replace the IAF's ageing Avro-748 planes, which entered service in the early 1960s.
- Under the agreement, Airbus will deliver the first 16 aircraft in 'fly-away' condition from its final assembly line in Seville, Spain within four years, and the subsequent 40 aircraft will be manufactured by Tata Advanced Systems Ltd (TASL) in India as part of an industrial partnership between the two companies.
- The 16 fly-away aircraft are scheduled to be delivered to the IAF between September 2023 and August 2025.
- The first Made-in-India aircraft will be rolled out of the manufacturing facility in September 2026 and the remaining 39 will have to be produced by August 2031.
- After the completion of the delivery of 56 aircraft to the IAF, Airbus Defence and Space will be allowed to sell the aircraft manufactured in India to civil operators and export to countries which are cleared by the Government of India.

C-295MW:

- C-295MW is a transport aircraft of 5-10 tonne capacity with contemporary technology that will replace the ageing Avro aircraft of IAF.
- It can carry around 40-45 paratroopers or around 70 passengers.
- Short take-off/land from semi-prepared surfaces is another of its features.
- The aircraft will strengthen the logistic capabilities of the IAF.
- As per Airbus, the C295 operates in the Brazilian jungles and Columbian mountains in South America, the deserts of Algeria and Jordan in the middle east and the cold climates of Poland and Finland in Europe. The aircraft has also flown in military operations in Chad, Iraq and Afghanistan.
- As a tactical transport aircraft, the C295 can carry troops and logistical supplies from main airfields to forward operating airfields of the country.
- It can also operate on short unprepared airstrips as it is capable of Short Take-off and Landing (STOL).
- It can operate from short airstrips just 2,200 feet long and can fly low-level operations for tactical missions flying at a low speed of 110 knots, says Airbus.

- The aircraft can additionally be used for casualty or medical evacuation, performing special missions, disaster response and maritime patrol duties.

RUSTOM-2

In News:

The indigenous medium altitude long endurance (MALE) unmanned aerial vehicle (UAV) is expected to complete all user trials by August 2023

Analysis of Background:

- It has been designed and developed by the Aeronautical Development Establishment (ADE), Bengaluru, with the production partners being Hindustan Aeronautics Ltd. (HAL) and Bharat Electronics Ltd.
- It is powered by a small turbofan engine. The engine is Russian TRDD-50MT originally designed for cruise missiles.
- It is being developed to carry out surveillance and reconnaissance (ISR) roles and is capable of carrying different combinations of advanced payload and capable of auto landing, among others.
- Its navigation was done using GAGAN satellites through the onboard SATCOM system.
- High endurance UAVs are a priority requirement for the Indian armed forces especially in view of the stand-off with China in eastern Ladakh.
- Rustom-2 is also known as Tapas-BH(Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon 201).

OPERATION GARUDA

In News:

The Central Bureau of Investigation (CBI) has launched a multi-phase Operation GARUDA to dismantle drug networks with international linkages.

Analysis of Background:

- The CBI is doing this in close coordination with enforcement actions across international jurisdictions through INTERPOL and Narcotics Control Bureau with special focus on Indian Ocean Region.
- Operation GARUDA seeks to target drug networks with international footprints for action against handlers, operatives, production zones and support elements.
- During the Operation, searches, seizures and arrests were carried out across multiple states and UTs in the country.

- Apart from CBI and NCB, eight states and UT Police including Punjab, Himachal Pradesh, Gujarat, Maharashtra, Tamil Nadu, Delhi and Manipur have also participated in this Operation.

M777 ULTRA LIGHT HOWITZER

In News:

The Indian Army is inducting the M777 Ultra Light Howitzer on the northern borders.

Analysis of Background:

- In the next five years, the Army's Regiment of Artillery will see major force accretion with the induction of several guns, including indigenous ones.
- It includes the Dhanush, Sharang, M777 Ultra Light Howitzer (ULH), additional K9-Vajra howitzers and the Advanced Towed Artillery Gun System (ATAGS).
- The M777s are a key component of the army's field artillery rationalisation plan (FARP), cleared in 1999.
- The 155 mm/39-caliber M777 howitzers have a range of up to 30km, but it is capable of striking targets at ranges of more than 40 km in some areas where the geography allows the shells to fly in rarefied air.
- Built with titanium and aluminum alloys, the howitzers weigh 4,218 kg. In contrast, 155mm towed guns weigh twice as much.
- The Indian Air Force's CH-47F Chinook helicopters can carry the howitzers as underslung load for swift deployment in high-altitude areas.

TOPIC: INFRASTRUCTURE

VANDE BHARAT EXPRESS

In News:

Prime Minister Narendra Modi on Friday flagged off Vande Bharat Express train between Gandhinagar and Mumbai.

Analysis of Background:

Vande Bharat Express

- The Vande Bharat Express offers a myriad of superior amenities which will provide passengers with aircraft like travelling experience.

- Features
- Advanced state-of-the-art safety features including Kavach technology - an indigenously developed Train Collision Avoidance System.
- The train has been provided with bogies having fully suspended traction motors for 160 kmph operational speed along with the advanced state-of-the-art suspension system ensuring a smooth and safe journey and enhanced riding comfort for passengers.
- The train has been designed to increase Indian Railways' Green footprint by dispensing with the power cars and saving about 30 per cent of electricity with the advanced regenerative braking system.
- In any emergency situation, loco pilot and train guard can easily communicate with each other as well as passengers, the loco pilot of the Vande Bharat Express.
- The new Vande Bharat trains would have improved features including reclining seats, automatic fire sensors, CCTV cameras, on-demand content with wifi Facility, three-hour battery backup and GPS systems to make travelling safer and more comfortable.
- It also has a photocatalytic ultraviolet air purification system in the roof-mounted package unit (RMPU) for air purification.
- The weight of the train has been reduced by 38 tonnes to 392 tonnes and it can continue functioning even with two feet of flood waters on the tracks. These are made of stainless steel. Due to less weight, the passengers would feel extra comfortable even at high speed.



GLOBAL MULTIDIMENSIONAL POVERTY INDEX

In News:

According to the Global Multidimensional Poverty Index (MPI), Poverty in India during the 15 years between 2005-06 and 2019-21 declined by nearly 41.5 crores.

Analysis of Background:

- **The Global Multidimensional Poverty Index (MPI) was released by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).**
- The report highlighted that the poverty rate in India declined from 55.1% in 2005-06 to 16.4% in 2019-21.
- MPI Improvement for India has resulted in a reduction in poverty in South Asia.
- The highest number of poor people was recorded in Sub-Saharan Africa.
- The report doesn't fully consider the effects of the COVID-19 pandemic on poverty in India.
 - For MPI, Nearly 71% of the data taken from the National Family Health Survey-5 (2019- 2021) were collected before the pandemic.
- The global MPI makes a deprivation profile of each household and person based on 10 indicators ranging from Health, Education and Standard of living.
 - All indicators are equally weighted within each dimension.
 - The global MPI identifies people as multi-dimensionally poor if their deprivation score is 1/3 or higher.
- Bihar, the poorest State in 2015-2016, saw the quickest reduction in MPI value.
- Poverty fell from 77.4% in 2005-2006 to 34.7% in 2019-2021.
- According to the report, India still has the largest number of poor people worldwide at 22.8 crores, followed by Nigeria at 9.6 crores.

Reasons behind Poverty in India

- **Illiteracy and lack of quality education:** Despite more than 15 million graduates being produced every year, there are no jobs available for them due to the lack of quality education. Most of these graduates are studying outdated educational syllabi and hence cannot be productively employed anywhere.

- A vicious trap of poverty: Prevalence of massive malnourishment, stunting and wasting amongst children which negatively impact their physical and mental potential pushing them deeper into the vicious trap of poverty for the rest of their lives.
- Sub-standard health outcomes: More than 60% of the household incomes in many families are devoted towards health expenditure. This out-of-pocket expenditure on healthcare is one of the biggest pull factors for poverty.
- Administrative Bottleneck: Certain government policies favour one sector over the other. Also, there is a lack of rule of law and enforcement of laws such as the Minimum Wages Act.
- Income Inequality: According to Oxfam, the top 10% of the Indian population holds 77% of the total national wealth. 73% of the wealth generated in 2017 went to the richest 1%, while 67 million Indians who comprise the poorest half of the population saw only a 1% increase in their wealth.
- Discrimination: Discrimination and poverty go hand in hand. Discrimination can both cause poverty and be a hurdle in alleviating poverty. Ex: Discrimination against women, SC, ST, Disabled, Old age people etc is one of the major causes of poverty among them.
- Nature of job: Approximately 56% of the total working population is in the agricultural sector. Which is marked by poor landholding, low productivity and disguised unemployment.
- The issue of low employment growth within industrial and service sectors has contributed to stagnant or declining standards of living.
- Inadequate public infrastructure: Lack of accessibility to primary health care centres, quality public schools, research institutions, roads, waterways, rural markets, etc. act complementary for the rise and sustenance of poverty in India.
- Poor policy structure: Given the vicious cycle of poverty, government hand-holding is needed to support those above the poverty lines to prevent them from slipping below the line.

World Energy Outlook 2022

In News:

A Report titled “World Energy Outlook 2022” has been released by the IEA (International Energy Agency).

Analysis of Background:

- **The annual World Energy Outlook is the International Energy Agency's flagship publication, widely recognised as the most authoritative source for global energy projections and analysis. It appears every year since 1998.**
- WEO presents detailed projections of energy demand, production, trade and investment, fuel by fuel and region by region.
- Its research and objective data offer crucial insights into the world's energy demand and supply under various scenarios, as well as the implications for energy security, climatic goals, and economic growth.

2022 Report:

India:

- Talking specifically about India, the Report stated that the primary challenge for the country is going to be about meeting its rising electricity demand.
- It said India will have to find out ways to meet this increasing demand with renewables and nuclear on a scale that is large enough to reduce the use of “unabated coal-fired generation”, which provides nearly three-quarters of electricity supply currently.
- It revealed that India became the world's second-largest coal producer in 2021 (in energy terms), overtaking Australia and Indonesia. India plans to increase domestic production by more than 100 million tonnes of coal equivalent (Mtce) by 2025 from the current levels. At present, India accounts for just over 10 percent of global coal consumption, after China which accounts for 55 percent. Coal demand in India rose rapidly between 2010 and 2019, mainly as increases in electricity demand were largely met through coal-fired power. Coal use in India dropped by 7 percent in 2020 due to the pandemic, but increased by 13 percent in 2021, therefore already surpassing the 2019 levels.
- India becomes the world's most populous country by 2025 and, combined with the twin forces of urbanisation and industrialisation, this underpins rapid growth in energy

demand, which rises by more than 3 percent per year in the stated policies scenario (STEPS) from 2021 to 2030. The Report sees the largest increase in energy demand of any country.

World

- Russia's invasion of Ukraine has sparked a global energy crisis.
- Prices for spot purchases of natural gas have reached levels never seen before, regularly exceeding the equivalent of USD 250 for a barrel of oil. Coal prices have also hit record levels, while oil rose well above USD 100 per barrel in mid-2022 before falling back. High gas and coal prices account for 90% of the upward pressure on electricity costs around the world.
- The crisis has stoked inflationary pressures and created a looming risk of recession, as well as a huge USD 2 trillion windfall for fossil fuel producers above their 2021 net income.
- Higher energy prices are also increasing food insecurity in many developing economies, with the heaviest burden falling on poorer households where a larger share of income is spent on energy and food. Some 75 million people who recently gained access to electricity are likely to lose the ability to pay for it, meaning the total number of people worldwide without electricity access has started to rise.
- And almost 100 million people may be pushed back into reliance on firewood for cooking instead of cleaner, healthier solutions.

IEA

- The International Energy Agency (IEA) is a Paris-based autonomous intergovernmental organisation, established in 1974, that provides policy recommendations, analysis and data on the entire global energy sector, with a recent focus on curbing carbon emissions and reaching global climate targets, including the Paris Agreement.
- The 31 member countries and 11 association countries of the IEA represent 75% of global energy demand.
- The IEA was set up under the framework of the Organisation for Economic Co-operation and Development (OECD) in the aftermath of the 1973 oil crisis to respond to physical disruptions in global oil supplies.
- India became an Associate member of IEA in March 2017.

MISCELLANEOUS:

Topic: Health:

TB

In News:

An estimated 10.6 million people fell ill with tuberculosis (TB) in 2021, an increase of 4.5% from 2020, and 1.6 million people died from TB - World Health Organization's 2022 Global TB report.

Analysis of Background:

- This is the first time in many years an increase has been reported in the number of people falling ill with TB and drug resistant TB.
- TB services are among many others disrupted by the COVID-19 pandemic in 2021, but its impact on the TB response has been particularly severe. Ongoing conflicts across Eastern Europe, Africa and the Middle East have further exacerbated the situation for vulnerable populations.
- Many people with TB were not diagnosed and treated. The reported number of people newly diagnosed with TB fell from 7.1 million in 2019 to 5.8 million in 2020. There was a partial recovery to 6.4 million in 2021, but this was still well below pre-pandemic levels.
- Reductions in the reported number of people diagnosed with TB suggest that the number of people with undiagnosed and untreated TB has grown, resulting first in an increased number of TB deaths and more community transmission of infection and then, with some lag-time, increased numbers of people developing TB.
- The number of people provided with treatment for RR-TB and multidrug-resistant TB (MDR-TB) has also declined between 2019 and 2020.
- The report notes a decline in global spending on essential TB services from US\$6 billion in 2019 to US\$5.4 billion in 2021, which is less than half of the global target of US\$13 billion annually by 2022.

About Tuberculosis (TB):

- Tuberculosis (TB) is a potentially serious infectious disease that mainly affects the lungs.
- The 'Mycobacterium tuberculosis' bacteria that cause TB are spread when an infected person coughs or sneezes.

- Most people infected with the bacteria that cause tuberculosis don't have symptoms. When symptoms do occur, they usually include a cough (sometimes blood-tinged), weight loss, night sweats and fever.
- Treatment isn't always required for those without symptoms. Patients with active symptoms will require a long course of treatment involving multiple antibiotics.
- As in the previous 10 years, most of the funding used in 2021 (79%) was from domestic sources. In other low- and middle-income countries, international donor funding remains crucial. The main source is the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund). The United States Government is the largest contributor of funding to the Global Fund and is also the largest bilateral donor; overall, it contributes close to 50% of international donor funding for TB.

Present Status of TB in India

- Tuberculosis is one of India's major public health problems. According to World Health Organisation (WHO) estimates, India has the world's largest tuberculosis epidemic.
- In 2020, India accounted for 26% of the incident TB cases across the globe.
- India has an incidence rate of 192 cases per 100,000 of population.
- India accounted for 38% of global TB deaths among HIV-negative people and for 34% of the combined total number of TB deaths in HIV-negative and HIV-positive people.
- Further in 2020, India accounted for 24% of the global gap between estimated TB incidence and the number of people newly diagnosed with TB and reported.

Global TB targets

- In 2014 and 2015, all Member States of WHO and the UN adopted the UN Sustainable Development Goals (SDGs) and WHO's End TB Strategy. The SDGs and End TB Strategy both include targets and milestones for large reductions in TB incidence, TB deaths and costs faced by TB patients and their households.
- In 2018, countries convened at the United Nations (UN) high-level meeting on TB committed to speed up work towards ambitious targets to treat an additional 40 million people with TB and provide preventive treatment to at least 30 million people at risk of developing the disease by 2022.

Steps taken by the Government:

- In 2020, the Indian government made statements to eliminate tuberculosis from the country by 2025 through its National TB Elimination Program.

- Interventions in this program include major investment in health care.
- Providing supplemental nutrition credit through the Nikshay Poshan Yojana.
- Organizing a national epidemiological survey for tuberculosis.
- Organizing a national campaign to tie together the Indian government and private health infrastructure for the goal of eliminating the disease.
- The ministry's commitment to eliminating tuberculosis in the country by 2025.
 - As part of its efforts to eliminate tuberculosis, the Union Government changed the name of Revised National Tuberculosis Control Program (RNTCP) to National Tuberculosis Elimination Program (NTEP) in December 2019.

Challenges in implementing the Scheme

- Studies on the scheme since its inception highlight several hurdles in the DBT process. One 2018 paper in the Indian Journal of Tuberculosis, found that “non-availability of bank accounts and unlinked bank accounts were some challenges faced by both health providers and patients.”
- Another 2020 study published in the Journal of Family Medicine and Primary Care underlines lack of communication, stigma, illiteracy and the multi-step approval process as key hurdles.
- States have their own nutritional support schemes, but caveats remain here too; for instance, some schemes are only for patients showing resistance to TB drugs.

Concern

- **India has set a target to eliminate TB by 2025. Experts believe that to reach this goal, the country must go beyond the medical aspects.**
- Undernutrition is a major risk factor that drives TB, acknowledges the World Health Organization. The condition accounts for nearly 34 per cent of all cases.