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Why in news?

- Work on a 111-foot statue of 12th century social reformer Saint Basavanna is near completion at Basavagangotri near Kumbalgotu village, off the Bengaluru- Mysuru road, in Bengaluru.

The Virashaiva Tradition in Karnataka

- The 12th century witnessed the emergence of a new **movement in Karnataka, led by a Brahmana named Basavanna** (1106-68) (and his nephew, Channabasava), who was a minister in the court of a Kalachuri ruler.
- His **followers were known as Virashaivas** (heroes of Shiva) or **Lingayats** (wearers of the linga).
- Lingayats **worship Shiva in his manifestation as a linga**, and men usually wear a small linga in a silver case on a loop strung over the left shoulder.
- Those who are **revered include the jangama or wandering monks**.
- Lingayats believe that on death the devotee will be united with Shiva and **will not return to this world**.
- Therefore, they **do not practise funerary rites** such as cremation, prescribed in the Dharmashastras.
- Instead, they ceremonially **bury their dead**.
- The Lingayats **challenged the idea of caste and the "pollution"** attributed to certain groups by Brahmanas.
- They also **questioned the theory of rebirth**. These **won them followers amongst those who were marginalised** within the Brahmanical social order.
- The Lingayats also **encouraged certain practices disapproved in the Dharmashastras**, such as post-puberty marriage and the remarriage of widows.
- They were also **against all forms of ritual and idol worship**.
- They established their faith **after bitter disputes with the Jains**.
- They **rejected fasts, feasts, pilgrimages and sacrifices**.
- Our understanding of the Virashaiva tradition is derived from vachanas (literally, sayings) composed in Kannada by women and men who joined the movement.

Mahakal Temple in Ujjain and Jyotirlings

History, Art & Culture

Why in news?

- Mahakaleshwar Temple corridor development project to be inaugurated by Prime Minister of India.
- This project in the holy city of Ujjain, Madhya Pradesh is expected to significantly boost tourism in the State.

About the temple

- Mahakaleshwar is an important Hindu pilgrimage site in central India.
- According to Puranas, Lord Shiva pierced the world as an endless pillar of light, called the jyotirlinga.
- There are 12 jyotirlinga sites in India, considered a manifestation of Shiva. These include:
- Mahakal is the only jyotirlinga facing the south, while all the other jyotirlingas face east.
- This is because the direction of death is believed to be the south.
- In the 13th century, the temple complex was destroyed by Turk ruler Shams-ud-din Iltutmish during his raid on Ujjain.
- The present five-storeyed structure was built by the Maratha general Ranoji Shinde in 1734, in the Bhumiya, Chalukya and Maratha styles of architecture.
- The Mahakal temple finds a mention in several ancient Indian poetic texts.



Mahakaleshwar Jyotirlinga

Jyotirlinga List with Location		
No	Jyotirlinga	Location
1	Somnath Jyotirlinga	Saurashtra, Gujarat
2	Mahakaleshwar Jyotirlinga	Ujjain, Madhya Pradesh
3	Omkareshwar Jyotirlinga	Shivpuri, Madhya Pradesh
4	Mallikarjuna Jyotirlinga	Srisailem, Andhra Pradesh
5	Vajinath Jyotirlinga	Parli, Maharashtra
6	Kedarnath Jyotirlinga	Kedarnath, Uttarakhand
7	Nageshwar Jyotirlinga	Darukavanam, Gujarat
8	Trimbakeshwar Jyotirlinga	Nasik, Maharashtra
9	Bhimashankar Jyotirlinga	Pune, Maharashtra
10	Rameshwar Jyotirlinga	Rameshwaram, Tamil Nadu
11	Grishneshwar Jyotirlinga	Aurangabad, Maharashtra
12	Kashi Vishwanath Jyotirlinga	Varanasi, Uttar Pradesh

- In the early part of the Meghadutam (Purva Megha) composed in the 4th century, Kalidasa gives a description of the Mahakal temple.
- Kalidasa in his book Raghuvansam has described this temple as 'Niketana'.
- It is described as one with a stone foundation, with the ceiling on wooden pillars. There would be no shikharas or spires on the temples prior to the Gupta period.

Guru Ram Das

History, Art & Culture

Why in news?

- The country celebrated the birth anniversary or Parkash Purab of Guru Ram Das.

About Guru Ram Das

- Guru Ram Das, also called Bhāī Jethā, (1534-1581) was the fourth Sikh Guru (1574–81) and **founder of Amritsar**, the centre of Sikhism and the site of the Sikhs' principal place of worship—the Harmandir Sahib, or Golden Temple.
- Guru Ram Das continued the missionary endeavour begun by his predecessor, Amar Das.
- **On land given to him by the Mughal emperor Akbar**, he built a holy tank, or pool, and then, wishing to build a community around it, he invited merchants and traders to settle there.
- The town was first named Ramdaspur and then Amritsar.
- Shortly before his death, his son Arjan succeeded him as Guru.
- **Note: The Guru Granth Sahib was completed in 1604 and installed in the Golden Temple at the time of Guru Arjun (1563-1606), the fifth Sikh Guru.**

Navayana Buddhism and status of neo-Buddhists in India

History, Art & Culture

Why in news?

- Every year Dussehra is also celebrated as Ashoka Vijaya Dashami to commemorate Buddhist Conversion Day.
- On October 14, 1956, B. R. Ambedkar along with more than half a million followers had embraced Buddhism in Nagpur, Maharashtra.

About Navayana Buddhism

- On October 13, 1935, Ambedkar, as **president of the 'Yeola Conversion Conference'** near Nasik, announced his decision to renounce Hinduism, **as a path to contest the Hindu caste order.**
- He asked the assembled members from the depressed castes **to abandon struggles such as the temple-entry agitations** and advised them to leave Hinduism entirely and embrace another religion.
- However, the decision to adopt Buddhism was not announced then.
- During the next two decades, Ambedkar reached the conclusion that Buddhism is an appropriate choice as:
- it had challenged the Brahmanical caste-based social hierarchies in the past;
- it focused on modern ethical values and a scientific temperament and
- Preached peace and compassion for social coexistence.
- Ambedkar embraced Buddhism in a grand ceremony at Nagpur's Deekshabhoomi, where more than five lakh followers had assembled to follow his decision. **The event is marked as the renaissance of Buddhism in India.**
- In the post-event deliberation, **Ambedkar called his version of Buddhism Navayana (followers are called neo-Buddhists)**, differentiating it with the Mahayana and Vajrayana traditions of Buddhism.
- Every year in October, lakhs of people assemble at Nagpur's Deekshabhoomi to pay homage to Ambedkar and to celebrate the historic day.

National Maritime Heritage Complex (NMHC) at Lothal

History, Art & Culture

Why in news?

- Ministry of Ports, Shipping and Waterways plans to build a **National Maritime Heritage Complex (NMHC)** at the site of the Indus Valley civilisation in Lothal, Gujarat.
- A first of its kind complex in India, this centre will showcase India's rich and diverse maritime heritage.



Importance of Lothal as a site of Harappan settlement

- The city of **Lothal** stood beside river Bhogavo, a tributary of the Sabarmati, in **Gujarat**, close to the Gulf of Khambat.
- At **Lothal**, a brick structure has been identified as a **dockyard** meant for berthing ships and handling cargo.
- This suggests that Lothal was an important port and trading centre of the Harappan people.
- **Lothal** was **situated near areas where raw materials** such as semi-precious stones were easily available.
- It was **an important centre for making objects out of stone, shell and metal**.
- **Specialised drills** have been found at Chanhudaro, Lothal and more recently at Dholavira.
- The evidence of beadmakers' shops has been found at Chanhudaro and Lothal.
- Agriculture alongwith pastoralism (cattle-rearing) was the base of Harappan economy.
- The **granaries** discovered at sites like Harappa, Mohenjodaro and **Lothal served as the storehouses for grains**.
- Many seals and sealings (the impression of seals on clay) were found from the storehouse at Lothal.
- The **evidence for rice has come from Lothal and Rangpur** in the form of husks embedded in pottery.



Mangarh Dham and Monument of National Importance

History, Art & Culture

Why in news?

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

Analysis

- Mangarh Dham, situated near the Rajasthan-Gujarat border, is known for the massacre of tribals by the British Indian Army in 1913.
- About 1,500 Bhil tribals and forest dwellers were killed at Mangarh on November 17, 1913, when the British Indian Army opened fire on the protesters demanding abolition of bonded labour system and relaxation in heavy agricultural taxes imposed by the rulers of princely states.
- The tribals in the southern Rajasthan region were led by social reformer **Govind Guru**.

Monument of National Importance

- A monument is declared protected and of national importance by the Archaeological Survey of India (ASI).
- National Monuments Authority has been mandated to categorize all the protected monuments and protected areas declared as of National importance as per provision of 'The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010.'
- The Archaeological Survey of India (ASI), under the Ministry of Culture, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation.
- It regulates all archaeological activities in the country as per the **provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958**.
- According to the Ancient Monuments and Archaeological Sites and Remains Act, 1958, an "Ancient Monument means any structure, erection or monument, or any tumulus or place of interment, or any cave, rock-sculpture, inscription or monolith which is of historical, archaeological or artistic interest and **which has been in existence for not less than 100 years**."

National Monuments Authority

- National Monuments Authority is a statutory body under the Ministry of Culture.
- It has been established under the provisions of 'The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010'.
- One of its important functions is to consider the impact of large-scale development projects, including public projects and projects essential to the public which may be proposed in the regulated areas and make recommendations in respect thereof to the competent authority.

Why in news?

- The 19th Meeting of the Conference of the Parties (CoP 19) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was held at Panama City from 14th - 25th November to 2022.

India at Cop19 of CITES

- At CoP 19, India's proposal for induction of fresh water turtle Batagur kachuga earned wide support of the parties in **CoP 19 of CITES**.
- It also lauded operations such as those initiated by the **Wildlife Crime Control Bureau** namely **Operation Turtshield**, which resulted in nabbing many criminals involved in poaching and illegal trade of fresh water turtles and substantial seizures made by the agencies in different part of the country.
- India's proposal for transferring **Leith's Softshell Turtle** (*Nilssonia leithi*) from Appendix II to Appendix I of the CITES was adopted by the Cop to CITES in its 19th Meeting at Panama.
- India's proposal for inclusion of **Jeypore Hill Gecko** (*Cyrtodactylus jeyporensis*) in Appendix II and the transfer of **Red-Crowned Roofed Turtle** (*Batagur kachuga*) from Appendix II to Appendix I of CITES have also been adopted by the CoP in this meeting.

The red-crowned roofed turtle(Batagur kachuga)

- The red-crowned roofed turtle or Bengal roof turtle(*Batagur kachuga*) is a species of freshwater turtle endemic to South Asia.
- It was the type species of its former genus *Kachuga*. Females can grow to a shell length of 56 cm (22 in) and weigh 25 kilograms (55 lb), but males are considerably smaller.
- The turtles like to bask in the sun on land. In the breeding season, the heads and necks of male turtles exhibit bright red, yellow and blue coloration.
- The females excavate nests in which they lay clutches of up to thirty eggs.
- Historically, this turtle was found in central Nepal, northeastern India, Bangladesh and probably Burma, but it has suffered declines in population due to being harvested for meat and shells, drowned in fishing nets, water pollution, hydro-electric schemes and habitat loss.
- Fewer than four hundred adult females are thought to remain in the wild, with the International Union for Conservation of Nature rating this turtle as being "critically endangered". India has put conservation measures in place, and a captive breeding programme has been initiated.

National Disaster Mitigation Fund (NDMF)**Environment****Why in news?**

- The Union Home Minister, Shri Amit Shah approved the release of Rs. 488.00 crore as Central share of the **State Disaster Mitigation Fund (SDMF)** to the three States of Uttar Pradesh, Punjab and Goa for the year 2021-22, for undertaking mitigation activities as per guidelines issued by the Central Government.

About Mitigation Fund

- The 15th Finance Commission had recommended two funds:
 - State Disaster Risk Management Fund (SDRMF) and
 - National Disaster Risk Management Fund (NDRMF).
- SDRMF will consist of **two components viz. State Disaster Response Fund (SDRF) and State Disaster Mitigation Fund (SDMF)** with the allocation in the proportion of 80% and 20% respectively.
 - Similarly, NDRMF will also have **two components namely National Disaster Response Fund (NDRF) and National Disaster Mitigation Fund (NDMF)** with allocation in the same proportion.
- The Commission had also recommended that, within the SDRF/NDRF allocations of 80%, there would be **three sub-allocations** namely,
 - Response and Relief (40%),
 - Recovery and Reconstruction (30%) and
 - Preparedness and Capacity Building (10%).
- As such, SDRMF and NDRMF will **cover the entire cycle of disaster management** – prevention, preparedness, response, mitigation, recovery and reconstruction.

Why in news?

- India has been severely lagging in ensuring that at least 5% of coal used in thermal plants was mixed with biomass despite guidelines mandating them to do so. The Ministry of Power in October 2021 had decreed that all thermal power plants ensure 5% compliance by October 2022.

About co-firing

- Biomass co-firing is the practice of substituting a part of the fuel with biomass at coal thermal plants.
- Biomass pellets have the same calorific value as coal and mixing them with coal saves consumption as well as reportedly cuts emissions.
- Traditional pollutants such as SO_x and NO_x also decrease with the different properties and lower sulphur content of most biomass fuels
 - Biomass from stubble, which is often burned by farmers in open fields, can be used in coal plants to reduce pollution.
- Biomass co-firing offers enormous potential to reduce carbon-dioxide (CO₂) emissions from power plants.
 - Biomass can replace between 20% and 50% of the coal used in thermal power generation
 - Co-firing eliminates the need for new factories for processing biomass.**
 - Co-firing also eases the demand for coal.**
- The United Nations-backed Clean Development Mechanism (CDM) recognises biomass co-firing as a way to reduce emissions in developing countries.**
 - Co-firing reduces the amount of carbon dioxide & other greenhouse gases released by burning fossil fuels.**

Significance of Biomass cofiring

- Biomass co-firing is an **effective way to curb emissions from open burning of crop residue**, it also decarbonises the process of electricity generation using coal. Substituting 5-7 % of coal with biomass in coal-based power plants **can save 38 million tonnes of carbon dioxide emissions.**
- It can help cut emissions from combustion of fossil fuels**, address India's burgeoning problem of farm stubble burning to some extent, reduce waste burden while also creating jobs in rural areas. **India has large biomass availability as well as rapid growth in coal-fired capacity.**

Why in news?

- The Global Methane Assessment: 2030 Baseline Report was launched at the Climate and Clean Air Ministerial Meeting at COP27 to the United Nations Framework Convention on Climate Change (UNFCCC).

Key highlights of the report

- Report was prepared by the Climate and Clean Air Coalition and United Nations Environment Programme (UNEP).
- As per the report, **methane emissions can rise 5-13 per cent above 2020 levels by 2030** under a business-as-usual scenario.
- This represents an estimated increase of 20-50 million tonnes of methane per year above current levels.
- This greenhouse gas is responsible for nearly 45 percent of current net warming, the report underlined.
- The report evaluated the baseline, a scenario of **what would happen without efforts such as the Global Methane Pledge.**
- The Global Methane Pledge was announced last year at CoP26.** The goal is **to slash global methane emissions by at least 30 per cent from 2020 levels by 2030.**
- Achieving the pledge could eliminate over 0.2 degree Celsius of warming from 2040-2070.
- At CoP27, 150 nations joined the pledge. **India and China have not made the commitment yet.**
- Around 95 per cent of the Nationally Determined Contributions (NDC) now include methane or will include it in revised versions.
- Methane levels in the atmosphere in 2021 reached a record high of 1908 parts per billion. This is 262 per cent of the pre-industrial era levels.
- Agriculture, fossil fuels as well as solid waste and wastewater are the three major sources of methane.

- Human activities release 350-390 million tonnes of methane annually. Emissions from the agriculture and fossil fuel energy sectors are around 120-140 million tonnes per year, roughly twice that of the waste sector.
- Emissions are projected to rise by about 11 million tonnes annually by 2030 under a business-as-usual scenario from the agriculture sector.
- Emissions from fossil fuels and waste are estimated to go up by 10 million tonnes and 9 million tonnes respectively by the decade's end under the same scenario.
- But the world could reduce emissions from these sectors by roughly 180 million tonnes per year (45 per cent) by 2030 using currently available measures.
- It added that **the least-cost scenario requires reducing methane emissions by about 60 per cent from fossil fuels, 30-35 per cent from waste and 20-25 per cent from agriculture by 2030**, compared to 2020. This can help contain global warming to 1.5°C — the goal set by the Paris Agreement.
- The **report highlighted substantial uncertainties in tracing emissions to specific sub-sectors such as livestock or oil.**
- At CoP27, the UN launched the **Methane Alert and Response System (MARS) to track methane emissions.** It will go live in January 2023.
- These developments, according to the report, will guide mitigation efforts more effectively, while also helping track changes in emissions over time as methane reduction policies are implemented.

Kaduvur - India's first Slender Loris Sanctuary

Environment

Why in news?

- The Tamil Nadu government notified the **Kaduvur Slender Loris Sanctuary** covering Karur and Dindigul districts in Tamil Nadu. It is first such sanctuary dedicated for the protection of Slender Lorises in the country.

About the sanctuary

- Tamil Nadu is set to host India's first-ever Slender Loris Sanctuary.
- Protection Status: IUCN: Endangered, Wildlife (Protection) Act of India, 1972: Schedule I CITES: Appendix II
- Kaduvur Slender Loris Sanctuary, will span across 11,806 hectares in Karur and Dindigul districts.
- It will be covering areas of Kaduvur taluk in Karur and, Dindigul East, Veda sandur and Natham taluks in Dindigul.
- The government notified the establishment of the new sanctuary under Section 26 A(1)(b) of the Wildlife (Protection) Act, 1972.
- This is part of the Tamil Nadu government's ongoing efforts toward the conservation of endangered and vulnerable species in the state.
- Tamil Nadu government had notified India's first Dugong Conservation Reserve in Palk Bay, Nanjarayan Tank birds sanctuary in Tiruppur, and Kazhuveli bird sanctuary in Villupuram as well as the fifth elephant reserve of the state in elephant reserve at Agasthyamalai in Tirunelveli.
- Also, 13 wetlands across the State were declared as Ramsar sites.

Slender Loris

- Slender lorises are small **nocturnal mammals** commonly found in the **tropical rainforests, scrub forests**, tropical scrub and deciduous forests of **Southern India and Sri Lanka.**
- There are only two species of Slender Loris as they are the
- **only members of the genus 'Loris':**
 - Red Slender Loris
 - Grey Slender Loris
- **They are arboreal** as they **spend most of their life on trees.**
- They **prefer to inhabit thick, thorny bushes and bamboo clumps** where it can evade predators and also find insects, which is the main diet.
- Slender loris has a **wide range of ecological roles** in the terrestrial ecosystem.
 - They are also a **natural pest control**, as they extensively prey on grasshoppers, scorpions, other farm pests.
- Among their strange habits, is the **urine washing of their face and limbs**, which is thought to soothe or defend against the sting of the toxic insects they prefer to eat.



Why in news?

- World leaders at the 27th Conference of Parties (COP27) to the United Nations Framework Convention on Climate Change launched a water adaptation and resilience action plan.

Key highlights of the plan-

- The initiative will have **an Africa-first focus**, giving hope to drought-ravaged populations, **especially in the Horn of Africa**.
- The action plan, **Action on Water Adaptation or Resilience (AWARe)**, aims to foster political efforts in **establishing pan-African water hubs**.
- AWARe will **address water security as part of climate change adaptation and will focus on three priorities**:
- Decrease water losses worldwide and improve water supply.
- Propose and support implementing policies for cooperative water-related adaptation action and cooperation and
- Interlinkages between water and climate action.
- The multisectoral initiative was a result of **collaboration between** various stakeholders, including the **African Union (AU), Water and Climate Coalition Leaders, the World Meteorological Organization (WMO) and the African Ministers' Council on Water (AMCOW), among others**.
- One of the **critical goals of the initiative is to ensure there is 50 per cent less damage from floods and droughts by 2030**, even as reality paints a grim picture of the current situation.
- Early warning systems do not cover a third of the world's population, doubling the risk of the number of individuals exposed to floods and droughts due to climate change, according to the Intergovernmental Panel on Climate Change (IPCC).
- The action plan has six comprehensive data-driven solutions it recommends regional blocks or heads of governments to put in place to enable a quick transition from awareness to action.**
- The solutions described include** a set of global water information services like accurate hydrological data to help understand the scarcity and availability of water per region.
- It also has a **water and climate stock take** that integrates water and climate-related databases to inform decision-making.
- A cryosphere information mechanism that details data on frozen water parts of the earth, like waters that surround Antarctica and the Arctic and a new financing rationale focusing on areas of priority is also a part of it
- The plan calls for concerted efforts to stop pollution, manage wastewater, restore or preserve water towers and catchment areas, including glaciers and snow that are melting away, impacting sources of streams and rivers.

Eco-Sensitive Zones

Environment

Why in news?

- Supreme Court will take up Kerala's review petition of the Supreme Court's judgment to have a one-km eco-sensitive zone ringing protected forests, national parks and wildlife sanctuaries across the country along with a plea for clarification sought by the Centre.

About Eco-Sensitive Zones (ESZs)

- ESZs are notified by the Ministry of Environment, Forest, and Climate Change (MoEFCC) under **Environment (Protection) Act 1986**.
- Eco-Sensitive Zones or Ecologically Fragile Areas** are areas within 10 kms around National Parks and Wildlife Sanctuaries.
 - In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, even **area beyond 10 km width can also be included in the eco-sensitive zone**.
- The basic aim behind notifying ESZs is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

Activities in these Areas are categorized as 'Prohibited, Regulated and Permitted' Activities.

- Prohibited activities:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.

- **Regulated activities:** Felling of trees, establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.
- **Permitted activities:** Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, adoption of green technology for all activities.

SC judgment and kerala

- In June 2022, a three-judge bench of the Supreme Court directed all states to have a mandatory 1-km ESZ from the demarcated boundaries **of every protected forest land**, national park and wildlife sanctuary.
- It also stated that **no new permanent structure or mining will be permitted within the ESZ.**
- If the existing ESZ goes beyond 1-km buffer zone or if any statutory instrument prescribes a higher limit, **then such extended boundary shall prevail.**

New Climate Institute & Climate Action Network

Environment

Why in news?

- Germanwatch, NewClimate Institute & Climate Action Network released the Climate Change Performance Index 2023 (CCPI).

About the index-

- The CCPI evaluates 59 countries and the European Union, which together generate over 90 per cent of global greenhouse gas emissions.
- Using standardised criteria, the CCPI looks at four categories, with 14 indicators:
 1. Greenhouse Gas Emissions.
 2. Renewable Energy.
 3. Energy Use.
 4. Climate Policy.
- It tracks the **implementation of the Paris Agreement by various countries.**
- In the overall standings, no country ranked first, second or third on the index. Denmark, with a score of 79.61, ranked fourth, followed by Sweden with 73.28 points. India scored 67.35 points.
- The **worst performers in the overall ranking were Iran, Saudi Arabia and Kazakhstan.** They ranked particularly poorly in renewables and heavily reliant on oil.
- **Saudi Arabia was found to be the nation with the highest per capita GHG emissions among the G20 nations.**

India's rank

- **India rose two spots to rank eighth** out of 63 countries in the CCPI. **In the Greenhouse Gas Emissions and Energy Use categories, the country was rated "high".**
- In the **Climate Policy and Renewable Energy categories**, it earned a "medium" rating.
- The index said that the country is on track to meet its 2030 emissions targets (compatible with a well-below 2°C scenario).
- **India ranked at top in the grouping of top 10 emitter**, followed by Germany and Japan at 2 and 3 positions of this grouping
- In 2022 and 2021, India stood in the 10th spot. In 2020, it ranked ninth on the list.
- Since signing the Paris Agreement in 2015, India has updated its Nationally Determined Contribution (NDC).
- At the COP26 Summit in Glasgow, the country announced its commitment to achieving net zero carbon emissions by 2070.
- **In Greenhouse Gas Emissions, India ranked ninth. Under the category of Renewable Energy and Energy Use, it stood at the 24th and ninth spot**, respectively. And on **Climate Policy, India ranked eighth.**
- The report added that **India must adopt a carbon pricing mechanism and develop more capacities at the subnational level to improve its performance.** Also, a concrete action plan for achieving the targets must be determined.

Why in news?

- At least 10 children were killed and one more was missing in Cambodia after a boat that was ferrying them home from an English class sank in the Mekong river.

About the river

- The Mekong River is a **trans-boundary river** in East Asia and Southeast Asia.
- It starts from (source) the Plateau of Tibet and drains into (mouth) South China Sea.**
- Mekong is third longest river in Asia, only after the Yangtze (China) and Ganges (India) rivers.
 - Yangtze is the longest river in Asia. with its source in the Tibetan Plateau and drains into East China Sea. In its lower basin, Mekong's flow comes from rainfall, which fluctuates seasonally with the monsoon winds.
- A substantial majority of the people who live along the Mekong River are engaged in agriculture, **and rice is the major crop.**
- The heaviest population concentrations are in the Mekong delta (Shanghai) and on **the Khorat Plateau.**
- The Mekong river flows through **six** countries: **China, Myanmar, Thailand, Lao PDR, Cambodia and Viet Nam.**
- Mekong Region is known as the 'rice bowl' of Asia.
- It is also the world's largest inland fishery. It accounts for up to 25 percent of the global freshwater catch.
- It is second only to the Amazon River in terms of fish biodiversity. Important species in Mekong River
 - Irrawaddy dolphin
 - giant freshwater stingray
 - Mekong giant catfish: **This giant catfish can weigh up to 770 pounds and is the third largest freshwater fish on the planet.**

Mekong River Commission (MRC)

- The MRC is an **intergovernmental organisation** for regional dialogue and cooperation in the **Lower Mekong River Basin.**
- It was established in 1995 based on the **Mekong Agreement between Cambodia, Lao PDR, Thailand & Vietnam.**
- The organisation serves as a regional platform for water diplomacy and a knowledge hub of water resources management for the sustainable development of the region.
- The MRC supports a basin-wide planning process based on principles of Integrated Water Resources Management (IWRM).

Why in news?

- Neelakurinji has bloomed on a vast area on the Kallippara hills at Santhanpara in Idukki, Kerala.

About the flowers

- Neelakurinji**, a shrub belonging to the Strobilanthes genus, is known for synchronous flowering once in one to 16 years. It is found in shola forests of Karnataka, Tamil Nadu and Kerala. Some species of the shrub are also found in Goa.
- Since it has more than 45 species, the average blooming period of flowers varies from 8-15 years.
- Nilgiris Hills**, which means blue mountains owe their name from purplish blue flowers of **Neelakurinji.**
- The local tribal communities (**Hakki-Pikki tribe**) consider the shrub as goddess of forest. The Hakki-Pikkis are known for preparing oils for different ailments from forest produce.
- Kurinjimala Sanctuary of Kerala protects the kurinji in approximately 32 sqkm. Core habitat in Kootakamboor and vattavada villages in Idukki district.
- In Sangam literature of Tamil Nadu, the kurinji flowers stand for love. In Kannada literature, however, there is hardly any reference to the flower.

Why in news?

- The Tamil Nadu government has formed a **State Vulture conservation committee (SLVC)** to check the declining population of vultures in the state.

Tamil Nadu is home to four species of vultures

- White-rumped vulture (*Gyps bengalensis*)- Critically Endangered
- Long-billed vultures (*Gyps indicus*)- Critically Endangered
- Asian king-vulture (*Sarcogyps calvus*)-Critically Endangered
- Egyptian vulture (*Neophron percnopterus*)-Endangered

Vulture population:

- 96% of India's vulture population declined between 1993 and 2003.**
- Therefore, the Central government put into place two action plans to protect the species at the national level — the first in 2006 and the second, ongoing plan for 2020-2025.
- One of the important action points in this nationwide plan is the formation of State-level committees to save the critically endangered population of vultures.

Species of Vultures found in India and their Conservation Status:

- Indian Vulture or Long-billed vulture (*Gyps indicus*)-Critically Endangered
- Indian White-backed Vulture (*Gyps bengalensis*)-Critically Endangered
- Red-headed Vulture (*Sarcogyps calvus*)- Critically Endangered
- Slender-billed Vulture (*Gyps tenuirostris*)- Critically Endangered
- Egyptian Vulture (*Neophron percnopterus*)- Endangered
- Cinereous Vulture (*Aegypius monachus*)- Near Threatened
- Bearded Vulture (*Gypaetus barbatus*)-Near Threatened
- Himalayan Vulture (*Gyps himalayensis*)-Near Threatened
- Griffon Vulture (*Gyps fulvus*)- Least Concern

Steps taken by the government to protect Vultures

- The **Wild Life (Protection) Act of 1972** has moved the White-backed, Long-billed, and Slender-billed Vultures' protection status from **Schedule IV to Schedule I**.
- The **production of Diclofenac** for use on animals was **prohibited** by a Gazette Notification from the Ministry of Health on April 7, 2008.
- To conserve three vulture species, the State Governments have been advised to **establish vulture care facilities**.
- The Indian government created a **National Action Plan on Vulture Conservation in 2006**. The Action Plan outlines methods and measures for **ex-situ, in-situ vulture conservation to stop** the vulture population from declining.
- Through the Central Zoo Authority, captive breeding facilities have also been established at the zoos in Bhopal, Bhubaneswar, Junagadh, and Hyderabad.
- Additionally, the ministry has taken steps to **increase public education and awareness** of vulture protection.

Mangrove Alliance for Climate(MAC)

Environment

- Dubbing mangrove forests the "most productive ecosystems" of the world, India has recently joined the MAC at the 27th Summit of the Conference of Parties (COP27) at Sharm el-Sheikh in Egypt.

About Mangrove Alliance for Climate(MAC)

- Spearheaded by the United Arab Emirates (UAE) in partnership with Indonesia**, MAC was launched at the **COP27 Summit in Egypt** to scale up and accelerate the conservation and restoration of the mangrove forests.
- The alliance will **raise awareness about the role of mangroves** as a "**nature-based solution to climate change**".
- The **alliance will be amplified at the G20 Summit** that will be held between November 15 and 16 in Bali under the presidency of Indonesia.



- The MAC seeks to scale up, accelerate conservation, restoration and growing plantation efforts of mangrove ecosystems for the benefit of communities globally, and recognize the importance of these ecosystems for climate change mitigation and adaptation.

Global Mangrove Alliance-

- The Global Mangrove Alliance is an ambitious initiative that seeks to increase global mangrove cover by 20% by 2030.
- Launched in June 2017, the Alliance is an unprecedented collaboration that brings together NGOs, governments, industry, local communities and funders towards a common goal.
- The goal of the Global Mangrove Alliance is to increase the global area of mangrove habitat through conservation, restoration and equitable management.
- The Alliance endeavours to implement its Global Mangrove Strategy to achieve global priorities and actions.

New Basmathi Varieties

Environment

Why in news?

- Five new Basmati varieties, developed by a group of scientists from Indian Agriculture Research Institute (IARI), are all set to bring revolutionary changes in the way this type of paddy is cultivated in the country.

About new Varieties:

- New varieties are
 - **Pusa Basmati 1847,**
 - **Pusa Basmati 1885 and**
 - **Pusa Basmati 1886.**
- All these varieties have two genes to resist BLB and two genes to resist blast disease.
- The other two can save 35% of the water now required as the seeds can be directly sown, obviating the need for transplanting seedlings.
- These two seeds are resistant to herbicides too, helping the farmers control weeds more efficiently.
- In the next three years, all of the five seeds will have the combined qualities of disease and herbicide resistance.

Emissions Gap Report and United Nations Environment Programme

Environment

Why in news?

- Recently, **The Emissions Gap Report 2022: The Closing Window – Climate crisis** calls for rapid transformation of societies was released by the United Nations Environment Programme (UNEP).

About Emissions Gap Report

- The UNEP's Emissions Gap Report gives a yearly review of the difference between where greenhouse emissions are predicted to be in 2030 and where they should be to avoid the worst impacts of climate change.
- The annual report from UNEP measures the gap between anticipated emissions and levels consistent with the Paris Agreement goals of limiting global warming this century to well below 2°C and pursuing 1.5°C.

Highlights of the Emissions Gap Report 2022

- The report focused on the need for countries to take significant steps to reduce greenhouse gas emissions ahead of the United Nations Climate Change Conference 2022 (UNFCCC COP 27).
- According to the 2022 report, the national pledges taken by countries since last year only make a "negligible difference" to predicted 2030 emissions.
- These pledges or the Nationally Determined Contributions (NDC), only reduce the emissions by 1 per cent by the end of the decade.
- With the current policies, the global temperature is expected to rise by 2.8°C by the end of this century, and emissions should be cut down by 45 per cent globally to maintain the goal temperatures.
- It emphasised transformative solutions across sectors, including food systems.



United Nations Environment Programme (UNEP)

- The UNEP is a leading global environmental authority established in 1972 and Headquartered in Nairobi, Kenya.
- It sets the global environmental agenda, promotes the sustainable development within the United Nations system, and serves as an authoritative advocate for global environment protection.
- It sets the global environmental agenda, promotes sustainable development within the United Nations system, and serves as an authoritative advocate for global environment protection.
- The UNEP Publishes:
 - Emission Gap Report,
 - Global Environment Outlook,
 - Frontiers,
 - Invest into Healthy Planet.

About livestock emissions

- Emissions from livestock mainly include carbon dioxide (from urea), nitrous oxide (from livestock dung and urine), and methane (from belching) among others.
- They contribute towards the greenhouse effect as due to these gases, heat gets trapped around the surface of the earth and causes global warming.
- According to the Intergovernmental Panel on Climate Change (IPCC), the Global Warming Potential (GWP) of gases is a metric that helps measure "the radiative effect (determined by the ability to absorb energy) of each unit of gas" over a specific period of time such as 100 years, "as expressed relative to the radiative effect of carbon dioxide."
- Through GWP, we know gases such as nitrous oxide and methane produce more heat around the earth's surface than carbon dioxide or CO₂, which is taken as a reference.
- It absorbs more energy than CO₂ but stays in the atmosphere for a shorter duration.
- Over a 20-year-period, it has 80 times more GWP than that carbon dioxide.

National Centre of Excellence for Green Port & Shipping (NCoEGPS)

Environment

Why in news?

- The Union Minister of Ports, Shipping & Waterway (MoPSW), has announced India's first NCoEGPS during INMARCO 2022 in Mumbai.

About NCoEGPS

- The work undertaken by the NCoEGPS will provide the decision makers at a national and sub-national level with methodology and **framework to implement carbon neutrality measures**, to meet (and exceed) obligations under the Paris Accord through electrification of process, through renewable energy, carbon capture and storage, and other emerging alternate fuel technologies including green fuels.
- The scope of work carried out by NCoEGPS will also include training and capacity of different stakeholders for fast-tracking adoption of green measures identified through research.
- The **NCoEGPS will be working under the framework of the Sagarmala programme of the MoPSW.**
- The **main objective of the proposed NCoEGPS is to provide support to MoPSW in developing and maintaining a policy and regulatory framework for a green alternative technologies road map for the shipping sector in India for its transition to carbon neutrality and CE principles.**
- To achieve this objective, the NCoEGPS will focus on five broad areas:
 - Policy, Regulatory and Research.
 - Human Resource development.
 - Network- Key Partners and Strategic collaborators.
 - Explore- Area of work, outcomes, projects and resources.
 - Engage- Past events, upcoming events, dissemination.
- **NCoEGPS will act as a technological arm of MoPSW** for providing the needed support on Policy, Research and Cooperation on Green Shipping areas for Ports, DG Shipping, CSL and other institutions under the umbrella of MoPSW.

- The Center will be a host of several technological arms to support the port and shipping sector and will provide solutions to a variety of problems being faced in the industry through scientific research.
- It will also carry out valuable education, applied research and technology transfer in maritime transportation at the local, regional, national and International levels.
- It will focus on the following areas-
 - Energy Management – Energy management tools, waste energy recovery systems
 - Emission Management- Alternate, clean Energy/Fuel, emission control & monitoring.
 - Sustainable Maritime Operations – novel technologies and approaches
- **The specific objectives of the formation of NCoEGPS are defined as follows –**
 - To empower 'Make in India' in Port, Coastal and Inland water transport, and Engineering by developing state of art technologies and application products.
 - To enable fast-track innovations in order to provide most appropriate solutions to various challenges in these sectors.
 - To create a pool of competent manpower to the industry equipped with state of the art theoretical and practical knowhow.
 - Self-sufficiency in providing short term solutions through scientific studies technology development technical arm in identifying and analysing complex problems and solving issues
- The NCoEGPS faculty / scientists/ engineers will work towards an in-depth understanding of the problems being faced by the MoPSW and their associates in order to offer effective recommendations and position their R&D activities towards sustainable goals as and when required being dictated by day to day problems.
- **The Energy and Resources Institute (TERI) is the knowledge and implementation partner for this project.**
- This Centre will help in policy and regulatory support to the Ministry of Ports, Shipping and Waterways for developing regulatory framework and alternate technology adoption roadmap for Green Shipping to foster carbon neutrality and circular economy (CE) in the shipping sector in India.

Champions of the Earth Award-2022

Environment

Why in news?

- Indian wildlife biologist Dr Purnima Devi Barman is among the honourees of Champions of the Earth award-2022, the U.N.'s highest environmental honour.

About the award

- The annual 'Champions of the Earth' prize is awarded to outstanding leaders from government, civil society and the private sector whose actions have had a positive impact on the environment.
- Since its inception in 2005, the annual Champions of the Earth award has been awarded to trailblazers at the forefront of efforts to protect our natural world.
- **Champions of the Earth are celebrated in four categories:**
 - **Policy leadership** – individuals or organizations in the public sector leading global or national action for the environment. They shape dialogue, lead commitments and act for the good of the planet.
 - **Inspiration and action** – individuals or organizations taking bold steps to inspire positive change to protect our world. They lead by example, challenge behavior and inspire millions.
 - **Entrepreneurial vision** – individuals or organizations challenging the status quo to build a cleaner future. They build systems, create new technology and spearhead a groundbreaking vision.
 - **Science and innovation** – individuals or organizations who push the boundaries of technology for profound environmental benefit. They invent possibilities for a more sustainable world.
- It is the UN's highest environmental honour. To date, the award has recognised 111 laureates: 26 world leaders, 69 individuals and 16 organisations.

Dr Purnima Devi Barman

- Dr. Barman has been honoured with the UN Environment Programme's (UNEP) 2022 Champions of the Earth award in the Entrepreneurial Vision category.
- A wildlife biologist, Dr. Barman leads the "Hargila Army", an all-female grassroots conservation movement dedicated to protecting the Greater Adjutant Stork from extinction.
- The women create and sell textiles with motifs of the bird, helping to raise awareness about the species while building their own financial independence.



- Dr. Barman is also Senior Project Manager of the Avifauna Research and Conservation Division, Aaranyak.
- Barman's pioneering conservation work has empowered thousands of women, creating entrepreneurs and improving livelihoods while bringing the greater adjutant stork back from the brink of extinction.
- In order to protect the stork, Dr. Barman knew she had to change perceptions of the bird, known locally as "hargila" in Assamese (meaning "bone swallower") and mobilised a group of village women to help her.
- Today the "Hargila Army" consists of over 10,000 women. They protect nesting sites, rehabilitate injured storks which have fallen from their nests and arrange "baby showers" to celebrate the arrival of newborn chicks.

Greater Adjutant Stork

- The greater adjutant is a member of the stork family, Ciconiidae. Its genus includes the lesser adjutant of Asia and the marabou stork of Africa.
- Once found widely across southern Asia and mainland southeast Asia, the greater adjutant is now **restricted to a much smaller range with only three breeding populations; two in India, with the largest colony in Assam, a smaller one around Bhagalpur**; and another breeding population in Cambodia.
- They disperse widely after the breeding season. This large stork has a massive wedge-shaped bill, a bare head and a distinctive neck pouch.
- During the day, it soars in thermals along with vultures with whom it shares the habit of scavenging.
- They feed mainly on carrion and offal; however, they are opportunistic and will sometimes prey on vertebrates.
- IUCN status: Endangered.

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Why in news?

- NBDSA has recently fined a Hindi TV channel for turning a news debate on hijab into a "communal issue" and not adhering to guidelines.

About NBDSA-

- The NBDSA is an **independent body set up by the News Broadcasters & Digital Association (NBDA)**.
- It **serves as a representative of private television news, current affairs and digital broadcasters**.
- It describes itself as "the collective voice of the news, current affairs and digital broadcasters in India."
- Funded entirely by its members**, the NBDA has 26 news and current affairs broadcasters (comprising 119 news and current affairs channels) as its members.
- Various senior members of Indian media organisations serve on its Board of Directors.
- Apart from **presenting a unified front, it carries out activities to promote, protect and secure the interests including the right of freedom of speech** and expression of the news broadcasters, digital news media and other related entities.
- It shares developments in the industry with members, provides a space for achieving common goals and consensus and aims to protect all its members from persons carrying unfair and/or unethical practices or who discredit the television news broadcasters, digital news media and other related entities.
- Within this structure, the NBDSA has to **"lay-down and foster high standards, ethics and practices in news broadcasting**, including entertaining and deciding complaints against or in respect of broadcasters".
- These standards mention a focus on objectivity, impartiality, maintaining discretion when reporting on crime against women and children, not endangering national security, etc.
- The body includes a Chairperson who is to be an eminent jurist**, and other members such as news editors, and those experienced in the field of law, education, literature, public administration, etc. nominated by a majority of the Board.

Foreigners' Tribunals (FT)

Polity & Governance

Why in news?

- The Assam government has decided not to extend the term of members who were appointed for 200 additional **Foreigners' Tribunals (FT)** that were set up primarily to handle cases related to the **National Register of Citizens (NRC)**.

About Foreigners Tribunals

- Foreigners' Tribunals are quasi-judicial bodies established as per the Foreigners' Tribunal Order, 1964 and the Foreigners' Act, 1946. They are **applicable to the whole country**.
- It is for those who have been left out in the final National Register of Citizens (NRC) list or have been marked as 'D' meaning 'doubtful'. The ones falling under this category have the right to appeal to the Foreigners Tribunal.
 - D-Voters are a category of people struck off Assam's electoral rolls by the Election Commission on suspicion of being foreigners.**
 - The National Register of Citizens (NRC) is the list of Indian citizens of Assam.**
- Under the provisions of Foreigners' Act, 1946 and Foreigners Tribunal Order, 1964, **only Foreigner Tribunals have the right to declare a person as a foreigner.**
- Thus, non-inclusion of a person's name in the NRC does not by itself amount to him/her being declared a foreigner.

Appeal and Burden of Proof

- However, if declared a foreigner or placed under the doubtful category 'the burden of proof lies with the accused'.
- A person falling under such category will have the right to appeal (within 120 days) at the Foreigners Tribunal.

Powers of Tribunal

- In the Foreigners' Tribunal Order, 1964 the powers of the Tribunal have been laid down:
 - The Tribunal shall have the powers of a civil court while trying a suit under the Code of Civil Procedure, 1908.



- The Tribunal can summon and ask for the attendance of any person and examine him/her on oath.
- The Tribunal can ask anyone to produce the required documents,
- The Tribunal can commission examining any witness, as and when required.

Armed Forces (Special Powers) Act (AFSPA)

Polity & Governance

Why in news?

- The Ministry of Home Affairs (MHA) has extended the Armed Forces (Special Powers) Act (AFSPA) in parts of Arunachal Pradesh and Nagaland for another six months.

Current areas under Armed Forces (Special Powers) Act (AFSPA)

- The Act is effective in the whole/parts of **Nagaland, Assam, Manipur and Arunachal Pradesh**.
 - **Tripura, Meghalaya and Mizoram** are free from this Act.
- Currently, the Union Home Ministry issues periodic "disturbed area" notification to extend the AFSPA only for Nagaland and Arunachal Pradesh.
 - The notification for Manipur and Assam is issued by the State governments.
- **Jammu and Kashmir has a separate J&K Armed Forces (Special Powers) Act, 1990.**
 - The entire Union Territory of Jammu and Kashmir (excluding Ladakh) is a "disturbed area."
 - The power to notify the "disturbed areas" rested with the state government. Now with UT replacing the state, these powers automatically get transferred to the Centre".

Provisions

- Under Section 3, the Central Government or the Governor of the State or administrator of the Union Territory can declare the whole or part of the State or Union Territory as a disturbed area.
- An area can be disturbed due to differences or disputes between members of different religious, racial, language or regional groups or castes or communities.
- Section 4 gives the Army powers to search premises and make arrests without warrants, to use force even to the extent of causing death, destroy arms/ammunition dumps, fortifications/shelters/hideouts and to stop, search and seize any vehicle.
- Section 6 stipulates that arrested persons and the seized property are to be made over to the police with the least possible delay.
- Section 7 offers protection of persons acting in good faith in their official capacity. The prosecution is permitted only after the sanction of the Central Government.

Significance

- Armed Forces are deployed in counter-insurgency / terrorist operations when all other forces available to the State have failed to bring the situation under control.
- Armed forces operating in such an environment require certain special powers and protection in the form of an enabling law.
- Therefore, AFSPA is absolutely essential to combat insurgency in the country and protect the borders.

Criticism

- It provides absolute powers to the **security personnel without being accounted for**.
- This leads to **various atrocities and human rights** violations by security agencies.
- Critics say the undemocratic act has failed to contain terrorism and restore normalcy in disturbed areas, as the number of armed groups has gone up after the act was established.
- Many even hold it responsible for the spiralling violence in areas it is in force.
- It has been a controversial one, with **human rights groups opposing it as being aggressive**.
- Therefore it has been stated that the north-east needs to be freed from the net of AFSPA, as it has subsumed constitutional rights with impunity
- **Court's stand:** The Supreme Court of India passed an interim order recently on a petition filed by the wives of the commandos found guilty by the SIT.
- When the Extrajudicial Execution Victim Families' Association Manipur (EEVFAM) approached the top court in 2012 to have 1,528 cases of alleged fake encounters investigated through the Central Bureau of Investigation



(Extra Judicial Execution Victim Families Association (EEVFAM) vs Union of India & Anr.), it was found that **the first six cases investigated were indeed fake encounters**. This prompted the Court to conclude that the veracity of the allegations made by the Association was beyond suspicion. Having come under the scanner, the AFSPA drew critical comments from the Supreme Court.

- **Previous attempts to repeal AFSPA** : Efforts made in the past to rescind the law have met with failure. The iron lady of Manipur, Irom Chanu Sharmila, went on a 16-year long hunger strike starting from November 2000.
- The Justice **B.P. Jeevan Reddy Commission** that was tasked with reviewing the provisions of AFSPA submitted its report in 2005 with the recommendation that AFSPA be withdrawn.
- Surprisingly, it had suggested making amendments to the Unlawful Activities (Prevention) Act, 1967 (UAPA) to achieve the purpose of AFSPA. The report was subsequently shelved.
- **Former home secretary G K Pillai** too supported the repeal of AFSPA.
- Former **Union Home Minister P Chidambaram** was of the firm opinion that AFSPA should be withdrawn.

Draft National Credit Framework

Polity & Governance

Why in the news

- The draft of the National Credit Framework (NCrF) was released by the Union Minister of Education and Minister of Skill Development and Entrepreneurship Shri Dharmendra Pradhan.

Key points of the Draft National Credit Framework (NCrF)

- Taking forward the vision of the new National Education Policy (NEP), the Union Government has developed the National Credit Framework (NCrF).
- National Credit Framework is an umbrella framework for skilling, re-skilling, up-skilling, accreditation and evaluation in educational and skilling institutions and the workforce.
- The framework will promote Credits for knowledge acquisition, hands-on training, and positive social outcomes to achieve the target of 100% literacy in the next 2-3 years.
- NCrF will promote the integration of credits earned through school education, higher education and vocational and skill education by encompassing the National Higher Education Qualification Framework (NHEQF), National Skills Qualification Framework (NSQF) and National School Education Qualification Framework (NSEQF).

Objectives

- To allow students to move between educational institutions and enter and leave the program multiple times. The Framework is part of the National Education Policy (NEP) 2020.
- Provide Flexibility in the duration of study courses through provisions of multiple entries and exit/work options.
- Allow Institutions to maintain digital records of credits earned by students.
- Promote the integration of academic and vocational disciplines to ensure flexibility & mobility between the two.
- Students can choose to study at one institution for a year and then transfer to another institution the following year.
- Allows students to complete courses online and earn credits. Educational institutions have the flexibility to adopt it when they choose.
- To support dropped-out students to re-enter the education ecosystem.
- To introduce reforms to incentivize knowledge, skills and experience.

Expected outcome

- National Credit Framework (NCrF) will establish multidisciplinary and holistic education with flexible curricula.
- It will open numerous options for students by integrating school and higher education with vocational education and experiential learning to promote skilling and vocational education.
- It will remove the hard distinction between the education streams and allow for more than one award in the same period by removing the distinction between arts, science, social sciences, commerce, etc.
- It will bring about a unification of higher education institutions to promote multidisciplinary education, creating a diverse and rich student knowledge base.

- It will promote strong collaboration between institutions and make credit mechanisms simpler and uniform.
- It will Increase focus on research and innovation, and Promote digital learning, and open distance learning.
- It will increase the enrolment of students, helping the government to fulfil the national vision of transforming India into the Skill Capital of the World.
- It will make students more employable by providing a more holistic designed multi/ cross-sectoral skills to youth.

Singapore Convention on Mediation & the Mediation Bill, 2021

Polity & Governance

Why in news?

- The Parliamentary Standing Committee on Law and Justice has recently completed the review of the Mediation Bill, 2021. This was needed India **became signatory to the Singapore Convention on Mediation**, formally the United Nations Convention on International Settlement Agreements Resulting from Mediation.

Need of the Bill

- The ex-CJI, **N. V. Ramana** while giving a speech at the India-Singapore Mediation Summit emphasized the need for a law to be made on mediation. He stated, "Mediation should be made mandatory as a First Step in Dispute Resolution". The following are the significance of the bill"
- There was no separate law until now which dealt solely with mediation. The arbitration and conciliation act, of 1996 did not give enough emphasis to mediation. Hence, a separate law on mediation will help to reduce the backlog of cases, especially in commercial matters.

Features of the Mediation Bill, 2021

- **Pre-litigation mediation:** The bill mandates disputing parties to undergo mediation before approaching a court or tribunal.
- **Time limit:** It sets a timeline of 180 days to complete mediation which can be further extended by another 180 days.
- **Mediation Council of India:** A mediation council shall be established to register mediators.
- **Binding agreements:** It makes mediation agreements binding and enforceable
- **Disputes unfit for mediation:** It also lays out which disputes are not fit for mediation: These include disputes relating to claims against minors, disputes relating to claims against persons of unsound mind, disputes involving criminal prosecution, and disputes affecting the rights of third parties. This list is not exhaustive and Central Government has the power to amend it.
- **Appointment of mediators:** Mediators may be appointed by either the parties to the agreement or by a mediation service provider.
- **Agreement binding in nature:** Agreements formed out of mediation shall be considered final and binding and enforceable like a judgment of the court.
- **Applicability:** It applies to domestic as well as international mediation.
- **Community mediation:** where the dispute in question is likely to affect peace, harmony, and tranquility amongst the residents or families of any area or locality, community mediation may be resorted to. A panel of three mediators can be made comprising of people of standing and integrity who are respected in the community or representatives of resident welfare associations

About UNCITRAL

- The United Nations Commission on International Trade Law (UNCITRAL) is the core legal body of the United Nations system **in the field of international trade law**.
- In establishing the Commission, the General Assembly recognized that **disparities in national laws governing international trade created obstacles to the flow of trade, and it regarded the Commission as the vehicle by which the United Nations could play a more active role in reducing or removing these obstacles**.
- The members of the Commission are elected by the General Assembly for a term of **six years**, the term of half of the members expiring every three years.
- India was a founder member of UNCITRAL. UNCITRAL secretariat is located in Vienna, Austria.



Why in news?

- The Centre has appointed Justice Dinesh Kumar Sharma of the Delhi High Court as the presiding officer of the tribunal for the Unlawful Activities (Prevention) Act (UAPA).

About Unlawful Activities (Prevention) Amendment Act, 2019

- The Act **provides special procedures to deal with terrorist activities**, among other things.
- Under the Act, the central government may **designate an organisation as a terrorist organisation** if it:
 - commits or participates in acts of terrorism,
 - prepares for terrorism,
 - promotes terrorism, or
 - is otherwise involved in terrorism.
- The **Amendment Act** additionally empowers the government to **designate individuals as terrorists** on the same grounds.
 - Previously, only as organisation could be designated as one.
- The proposal to designate an individual as a terrorist will come from security agencies.
 - The proposal if approved will have to be signed by the Home Minister.
 - The individual can file an appeal with the Home Ministry which in turn will have to decide on the appeal in 45 days.
 - The individual will then have an option to appeal before an independent three-member review committee comprising sitting or retired High Court judges. The committee will also be appointed by MHA.

Approval for seizure of property by NIA

- Under the Act, an investigating officer is required to obtain the prior approval of the Director General of Police to seize properties that may be connected with terrorism.
- However, if the investigation is conducted by an officer of the National Investigation Agency (NIA), the approval of the Director General of NIA would be required for seizure of such property.

Investigation by NIA:

- Under the Act, investigation of cases may be conducted by officers of the rank of Deputy Superintendent or Assistant Commissioner of Police or above.
- The **Amendment Act** additionally empowers the officers of the NIA, of the rank of Inspector or above, to investigate cases.

Insertion to schedule of treaties:

- The Act defines terrorist acts to include acts committed within the scope of any of the treaties listed in the second schedule to the Act.
- The Schedule lists nine treaties,
 - Convention for the Suppression of Unlawful Seizure of Aircraft (1970);
 - Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation (1971);
 - Convention on the Prevention and Punishment of Crimes against Internationally Protected Persons, including Diplomatic Agents (1973);
 - International Convention against the Taking of Hostages (1979);
 - Convention on the Physical Protection of Nuclear Material (1980);
 - Protocol for the Suppression of Unlawful Acts of Violence at Airports Serving International Civil Aviation, supplementary to the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation (1988);
 - Convention for the Suppression of Unlawful Acts against the safety of Maritime Navigation (1988);
 - Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms located on the Continental Shelf (1988); and
 - International Convention for the Suppression of Terrorist Bombings (1997).
- The **Amendment Act adds another treaty to the list**. This is the **International Convention for Suppression of Acts of Nuclear Terrorism (2005)**.

Right to Reputation

- **Last year**, the Supreme Court asked the Union government to respond to petitions challenging its decision to amend the draconian Unlawful Activities (Prevention) Act giving it powers to categorise anyone as a terrorist.
- The petition said the right to reputation was an intrinsic part of fundamental right to life with dignity under Article 21 of the Constitution and tagging an individual as "terrorist" even before the commencement of trial or any application of judicial mind over it, did not amount to following the 'procedure established by law'.
- The right of dissent is a part and parcel of fundamental right to free speech and expression and therefore, cannot be abridged in any circumstances except for mentioned in Article 19 (2).
- The UAPA, 2019 empowers the ruling government, under the garb of curbing terrorism, to impose indirect restriction on right of dissent which is detrimental for our developing democratic society.

Model Code of Conduct (MCC)

Polity & Governance

Why in news?

- The Election Commission recently **proposed** that political parties should declare what the promises made in their manifestos would cost the exchequer and how they intended on paying for them, if elected to power.

Basics of MCC

- **Article 324 of the Constitution** mandates the Election Commission to hold free and fair elections to the Parliament and the State Legislatures.
- The MCC is a set of guidelines issued by the Election Commission **to regulate political parties and candidates prior to elections, to ensure free and fair elections.**
- Kerala was the **first state** to adopt a code of conduct for elections. The Election Commission decided to emulate Kerala's example and in 1974, just before the mid-term general elections, that the EC released a formal Model Code of Conduct.

Features of MCC

- The MCC is **operational from the date that the election schedule is announced till the date that results are announced.**
 - However, the Commission can't make its announcement more than three weeks ahead of issuing the formal notification of elections.
 - It was also agreed that the inauguration of any completed or new project would be done by civil servants, so that the MCC did not hurt the public interest.
- The MCC contains **eight provisions** dealing with general conduct, meetings, processions, polling day, polling booths, observers, **party in power**, and election manifestos.
- **The MCC is not enforceable by law.** However, certain provisions of the MCC may be enforced through invoking corresponding provisions in other statutes such as the Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Representation of the People Act, 1951.
- The MCC **is not a part of the Representation of the People Act, 1951** and the Commission usually uses moral sanction to get political parties and candidates to fall in line.
- **At the time of the Lok Sabha elections, both the Union and state governments are covered under the MCC.**

Controller General of Accounts (CGA)

Polity & Governance

Why in news?

- Ms Bharati Das took charge as the new Controller General of Accounts (CGA) in the Ministry of Finance.

About CGA

- The Indian Civil Accounts Organisation, **headed by the Controller General of Accounts (CGA)**, came into existence in 1976 as a result of separation of the auditing and accounting functions in civil matters of the Government of India.
- The Office of Controller General of Accounts (CGA) was established in the **Department of Expenditure, Ministry of Finance**, to shoulder the responsibility of administering the accounting system of the GOI **excluding the Ministers of Posts, Defence and Railways** which have their own accounting systems.



Mandate

- The Controller General of Accounts (CGA) derives his mandate from **Article 150 of the Indian Constitution**.
- The **duties and responsibilities of CGA** as incorporated in the Allocation of Business Rules, 1961, are as follows:
 - **Prescribe** general principles, systems and **form of Government accounts** relating to **Union and States**.
 - Effects the payment functions of the civil Ministries of Government and **arranges collection of receipts due to the Government**;
 - Oversee the maintenance of adequate standards of accounting in the civil Ministries;
 - Prepare monthly and annual accounts reflecting the receipts and disbursements;
 - **Prepare the annual receipts estimates in all civil Ministries**;
 - Review of **trends of revenue realization along with critical analysis of the expenditure**;
 - **Reconcile cash balances of union Government with the Reserve Bank of India** and oversee the banking arrangements for receipts and payments;
 - **Disbursement and accounting of pension payments** to Government employees of all civil Ministries as well as former Presidents / Vice-Presidents, retired Supreme Court / High Court Judges, members of parliament and Freedom Fighters;
 - Provides relevant inputs to the executives in the line Ministries in an endeavour **to optimize utilization of Government resources**.
- A **monthly review of the Central Government's revenues and expenditures analyzing key fiscal performance parameters** is submitted by the CGA to the Union Finance Minister, and to other decision makers within the Government.
- Since 1989, the Office of Controller General of Accounts (CGA) has been entrusted with the responsibility for **appraising and examining proposals relating to capital restructuring of central PSUs**.
- The CGA is also responsible for **coordination and monitoring the progress of submission of corrective/remedial action taken notes (ATNs)** on the recommendations contained in Public Accounts Committee's (PAC) reports as well as the Comptroller & Auditor General (CAG) reports.

Disqualifications of MPs & MLA's under the Constitution

Polity & Governance

Why in news?

- Samajwadi Party (SP) leader and 10-term MLA from Rampur, Azam Khan, was sentenced to three years in jail by an MP-MLA court in Rampur in a hate speech case filed against him in 2019 over comments made against Uttar Pradesh Chief Minister Yogi Adityanath.

Disqualifications of MPs under the Constitution

- Under the Constitution, a person shall be disqualified for being elected as a member of Parliament:
 1. if he holds any office of profit under the Union or state government (except that of a minister or any other office exempted by Parliament).
 2. if he is of unsound mind and stands so declared by a court.
 3. if he is an undischarged insolvent.
 4. if he is not a citizen of India or has voluntarily acquired the citizenship of a foreign state or is under any acknowledgement of allegiance to a foreign state; and
 5. if he is so disqualified under any law made by Parliament.

Disqualifications in the Representation of People Act (1951)

- The Parliament has laid down the following additional disqualifications in the Representation of People Act (1951):
 1. He must not have been found guilty of certain election offences or corrupt practices in the elections.
 2. He must not have been convicted for any offence resulting in imprisonment for two or more years. But, the detention of a person under a preventive detention law is not a disqualification.
 3. He must not have failed to lodge an account of his election expenses within the time.
 4. He must not have any interest in government contracts, works or services.
 5. He must not be a director or managing agent nor hold an office of profit in a corporation in which the government has at least 25 per cent share.
 6. He must not have been dismissed from government service for corruption or disloyalty to the State.



- 7. He must not have been convicted for promoting enmity between different groups or for the offence of bribery.
- 8. He must not have been punished for preaching and practising social crimes such as untouchability, dowry and sati.
- On the question whether a member is subject to any of the above disqualifications, the President's decision is final.
- However, he should obtain the opinion of the Election Commission and act accordingly.

Disqualification on Ground of Defection

- The Constitution also lays down that a person shall be disqualified from being a member of Parliament if he is so disqualified on the ground of defection under the provisions of the Tenth Schedule. A member incurs disqualification under the defection law:
 1. if he voluntarily gives up the membership of the political party on whose ticket he is elected to the House;
 2. if he votes or abstains from voting in the House contrary to any direction given by his political party;
 3. if any independently elected member joins any political party; and
 4. if any nominated member joins any political party after the expiry of six months.
- The question of disqualification under the Tenth Schedule is decided by the Chairman in the case of Rajya Sabha and Speaker in the case of Lok Sabha (and not by the president of India).
- In 1992, the Supreme Court ruled that the decision of the Chairman/ Speaker in this regard **is subject to judicial review**.

Women Involvement in Science and Engineering Research (WISER) Programme

Polity & Governance

Why in news?

- The first 11 awardees of the WISER programme were felicitated recently.

WISER programme-

- IGSTC-WISER intends to build scientific capacity, retain and promote women researchers in India/Germany by utilising complementary expertise in science, technology, innovation, and research partnerships.
- The Indo-German Science & Technology Centre (IGSTC) was established by the Department of Science & Technology (DST), Government of India and the Federal Ministry of Education and Research (BMBF), Government of Germany.
- This **scheme is designed for women researchers holding a regular/long-term research position in academia/research institute/industry in India or Germany.**
- **It is open to all areas of STEM.** It is a unique opportunity to be a part of an ongoing research project without applying for a fresh project grant.
- **The tenure of the grant is for 3 years** or till completion of the project whichever is earlier and will cover one visit per year for short stay up to 1 month.
- WISER programme has no age-limit (Preference to Early/Mid-career researchers).
- Through this scheme, women researchers/entrepreneurs holding a regular position in academic/research institutions/industrial research organisations in India/Germany may apply to be a part of an ongoing R&D project of interest with acceptance from the host team.
- Women holding regular/long-term research position in academia or research institute/industry can apply for this.

Tele Mental Health Assistance and Networking Across States (Tele-MANAS) Initiative

Polity & Governance

Why in news?

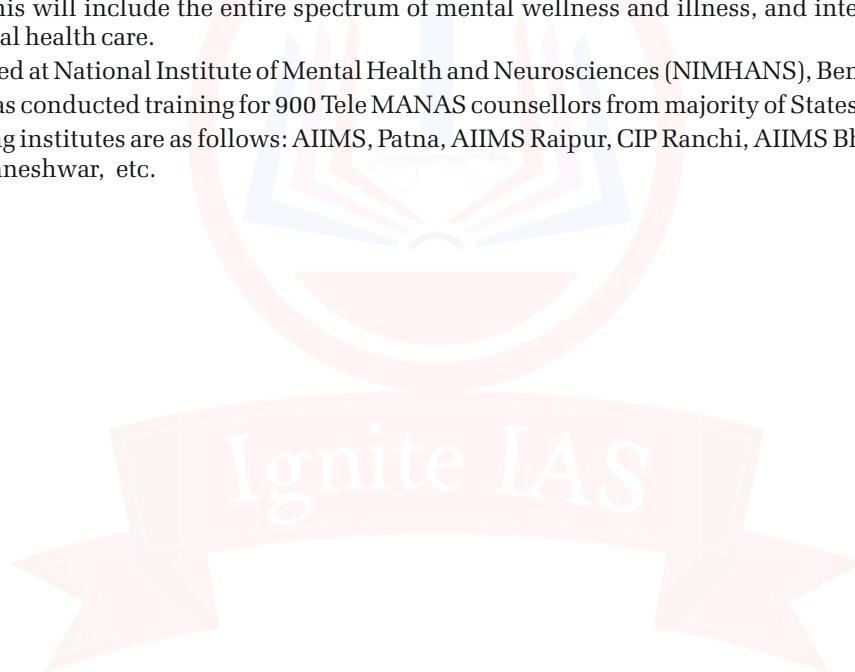
- On the World Mental Health Day, Tele Mental Health Assistance and Networking Across States (Tele-MANAS) initiative of the Union Ministry of Health & Family Welfare was launched.

About Tele-MANAS

- Tele-MANAS **aims to provide free tele-mental health services all over the country round the clock**, particularly catering to people in remote or under-served areas.



- The programme **includes a network of 23 tele-mental health centres of excellence, with NIMHANS being the nodal centre** and International Institute of Information Technology-Bangalore (IIITB) providing technology support.
- Indian Institute of Technology (IIT) Bengaluru and National Health Systems Resource Centre (NHRSC) will provide the technical support.
- The Union Government aims to open **at least one Tele-MANAS Cell in each State/UT**.
- **A toll-free, 24/7 helpline number** (14416) has been set up across the country allowing callers to select the language of choice for availing services.
- The calls would be routed to Tele-MANAS cells in the respective state and union territory.
- **Tele-MANAS will be organised in two tier system; Tier 1 comprises of state Tele-MANAS cells** which include trained counsellors and mental health specialists.
- Tier 2 will comprise of specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation and/or e-Sanjeevani for audio visual consultation.
- Presently there are 5 regional coordination centres along with 51 State/UT Tele MANAS cells.
- The initial rollout providing basic support and counselling through centralized Interactive Voice Response system (IVRS) is being customized for use across all States and UTs. This will not only help in providing immediate mental healthcare services, but also facilitate continuum of care.
- Specialised care is being envisioned through the programme by **linking Tele-MANAS with other services like National tele-consultation service, e-Sanjeevani, Ayushman Bharat Digital Mission**, mental health professionals, Ayushman Bharat health and wellness centres and emergency psychiatric facilities.
- Eventually, this will include the entire spectrum of mental wellness and illness, and integrate all systems that provide mental health care.
- It was launched at National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru.
- NIMHANS has conducted training for 900 Tele MANAS counsellors from majority of States/UTs.
- The mentoring institutes are as follows: AIIMS, Patna, AIIMS Raipur, CIP Ranchi, AIIMS Bhopal, AIIMS Kalyani, AIIMS Bhubaneswar, etc.



Why in news?

- The Prime Minister Shri Narendra Modi has recently kickstarted the distribution of PMJAY-MA Yojana Ayushman cards in Gujarat via video conferencing.

About the scheme-

- As the then Chief Minister of Gujarat, Prime Minister had started the '**Mukhyamantri Amrutam (MA)**' scheme in **2012** to shield poor citizens from the catastrophic costs of medical treatment and illness.
- In the year 2014, 'MA' Yojana was extended to cover families** with an annual income limit of Rs. 4 lakh.
- The scheme was further extended to several other groups as well and **later rebranded as Mukhyamantri Amrutam Vatsalya (MAV) Yojana**.
- Drawing from the experience of the success of this scheme, the Prime Minister launched the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) in 2018 – the largest health insurance scheme in the world** providing coverage of up to Rs. 5 lakh per family per year for **primary, secondary and tertiary care hospitalization without any cap on the family size and age**.
- With the launch of the AB-PMJAY, Gujarat integrated MA / MAV Yojana with the AB-PM-JAY scheme in 2019 with the name PMJAY-MA Yojana** and the beneficiaries under MA/MAV and AB-PMJAY became eligible for co-branded PMJAY-MA cards.

Why in news?

- The Union Cabinet has recently approved a new Scheme, Prime Minister's Development Initiative for North East Region (PM-DevINE) for the remaining four years of the 15th Finance Commission from 2022-23 to 2025-26.

Key features of the scheme-

- The new Scheme, PM-DevINE, is a **Central Sector Scheme with 100% Central funding**.
- The PM-DevINE Scheme will have an **outlay of Rs.6,600 crore for the four year period from 2022-23 to 2025-26**.
- The objectives of PM-DevINE are to:**
 - Fund infrastructure convergently, in the spirit of PM Gati Shakti.
 - Support social development projects based on felt needs of the NER.
 - Enable livelihood activities for youth and women.
- Fill the development gaps in various sectors.
- It will lead to **creation of infrastructure, support industries, social development projects** and create livelihood activities for youth and women, thus leading to employment generation.
- It will not be a substitute for existing Central and State Schemes.
- It will be **implemented by Ministry of DoNER through North Eastern Council or Central Ministries/agencies**.
- To limit construction risks of time and cost overrun, falling on the Government projects would be implemented on Engineering-procurement-Construction (EPC) basis, to the extent possible.
- There are other MDoNER Schemes for the development of North Eastern Region. The average size of projects under other MDoNER Schemes is about Rs.12 crore only.
- PM-DevINE will provide support to infrastructure and social development projects which may be larger in size** and will also provide an end-to-end development solution instead of isolated projects.
- PM-DevINE, was announced in the Union Budget 2022-23 to address development gaps in the North Eastern Region (NER).
- The justification for announcement of PM-DevINE is that the parameters of NE States in respect of Basic Minimum Services (BMS) are well below the national average and there are critical development gaps as per the BER District Sustainable Development Goal (SDG) Index 2021-22 prepared by NITI Aayog, UNDP and MDoNER.
- The new Scheme, PM-DevINE was announced to address these BMS shortfalls and development gaps.

Why in news?

- **Khadi and Village Industries Commission**, a Statutory Body under Ministry of MSME, is organizing a SFURTI Mela at Dilli Haat, INA, New Delhi from 1st October to 15th October, 2022.

About MELA

- SFURTI is a **cluster-based scheme of the Ministry of Micro, Small & Medium Enterprises**.
- The **Khadi and Village Industries Commission (KVIC)** is implementing this scheme.
- The **main objective** of the SFURTI scheme is to **organize the traditional industries and artisans into clusters**:
 - to make them competitive, and provide support for their long-term sustainability,
 - to provide sustained employment for traditional industry artisans & rural entrepreneurs,
 - to enhance marketability of products etc.
- The scheme provides **support in the form of three interventions** viz. Hard Interventions and Soft Interventions.
 - **Hard Interventions** include creation of Common Facility Centres (CFCs), Raw material banks (RMBs), Upgradation of production infrastructure, etc.
 - **Soft Interventions** include counselling, trust building, skill development and capacity building etc.
 - **Thematic Interventions**: including several clusters in the same sector with emphasis on both domestic and international markets. These will primarily include brand- building and promotion campaigns, new media marketing, e-Commerce initiatives and innovation.
- The scheme was revised in 2017-18. Under the revised scheme, **two types of clusters** are set up.
- The maximum financial assistance provided is Rs. 2.50 crore for a Regular Cluster (upto 500 artisans) and Rs. 5.00 crore for a Major Cluster (more than 500 artisans).

PM Gati Shakti - National Master Plan

Schemes

Why in news?

- Network Planning Group (NPG) constituted under the institutional framework of 'PM Gati Shakti' has recommended important road connectivity projects.

About the plan

- **PM Gati Shakti is a digital platform** for integrated planning and implementation of **infrastructure connectivity projects across the country**.
- It incorporates infrastructure schemes like Bharat mala, Sagar mala and inland waterways, dry/land ports, UDAN, among others.
- **Textile clusters, pharma clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones and other economic hubs** are covered under PM Gati Shakti to improve connectivity and make Indian businesses more competitive.
- **It will provide the entire data at one place with GIS based spatial planning** and analytical tools having 200+ layers, enabling better visibility to the executing agency.
- The multi-modal connectivity will provide integrated and seamless connectivity for **movement of people, goods and services** from one mode of transport to another.
- It will facilitate last-mile connectivity of infrastructure, **reduce travel time for people, cut down logistics costs, improve supply chains, and make local goods globally competitive**.
- It will also leverage technology extensively including spatial planning tools with ISRO imagery developed by **BiSAG-N (Bhaskaracharya National Institute for Space Applications and Geo informatics)**.
- **Institutional structure of PM Gati Shakti National Master Plan**
- The institutional framework of PM Gati Shakti National Master Plan is designed to have a **three-tier system** –
 - Empowered Group of Secretaries (EGOs)
 - Network Planning Group (NPG)
 - Technical Support Unit (TSU)

Empowered Group of Secretaries

- An Empowered Group of Secretaries (EGoS) **under the Chairmanship of Cabinet Secretary** has been constituted for monitoring the Master Plan and **for approving any changes in the Master Plan** to meet any emerging requirements.



- The EGoS also **looks at the interventions required to meet the demand side, in efficiently transporting bulk goods based on the requirements of various Ministries** like Steel, Coal, and Fertilizer etc.

Network Planning Group

- An Integrated Multimodal Network Planning Group (NPG) with heads of Network Planning Division of all connectivity infrastructure Ministries & Departments is **responsible for unified planning and integration of the proposals** and assist the EGOS in respect of its mandate.
- NPG **facilitates regular interactions between the stakeholders.**
- It **guides all the Departments/ Ministries** responsible for creation of economic zones and connectivity infrastructure during the planning phase itself.
- NPG's role will be to ensure:
 - integration of networks;
 - enhance optimization through modification/expansion/new network creation;
 - avoid duplication of works for holistic development of any region;
 - Reduction logistics costs through micro-plan detailing.

Emergency Credit Line Guarantee Scheme (ECLGS)

Schemes

Why in news?

- The Department of Financial Services (DFS), Ministry of Finance, has modified the Emergency Credit Line Guarantee Scheme (ECLGS) to give Civil Aviation sector necessary collateral-free liquidity at reasonable interest rates to tide over their present cash flow problems.

About schemes

- **Emergency Credit Line Guarantee Scheme (ECLGS)**
- India's Finance Ministry introduced the Emergency Credit Line Guarantee Scheme (ECLGS) in May 2020, intending to **provide financial assistance to this pandemic hit economy**. The Indian Government's aim through this scheme **was to provide Rs.3 lakh crore of unsecured loans to MSMEs and companies** across the country to mitigate the losses suffered due to COVID-19 induced lockdowns.

Purpose of Emergency Credit Line Guarantee Scheme (ECLGS)

- The Emergency Credit Line Guarantee Scheme was introduced as a part of the Indian Government's COVID-19 financial relief package. Under this scheme, financial institutions in India provide emergency loan facilities to various companies and MSMEs that have suffered during this pandemic. **This scheme can aid firms to meet their working capital needs and other operational costs as well.**

ECLGS 3.0

- Besides helping SMEs meet their working capital requirements, **ECLGS 3.0 will also extend financial assistance to companies from other sectors**. This includes sports, leisure, hospitality, travel and tourism, and sectors that have suffered severely during this lockdown.
- According to modified **ECLGS 3.0, an airline would be eligible for "100 per cent of their fund based or non-fund-based loan outstanding as on the reference dates or ₹1,500 crore, whichever is lower; and of the above, ₹500 crore shall be considered**, based on equity contribution by the owners." The modifications introduced are aimed to give necessary collateral-free liquidity at reasonable interest rates to tide over their present cash flow problems.

Budget 2022-23

- In the Budget 2022-23, the Emergency Credit Line Guarantee Scheme was extended up to March 2023.
- Guarantee cover under ECLGS has been expanded by **Rs 50000 Crore to total cover of Rs 5 Lakh Crore**, with the additional amount being earmarked exclusively for the hospitality and related enterprises (as they are yet to regain their pre-pandemic level of business).



Why in news?

- The **Department for Promotion of Industry and Internal Trade (DPIIT)**, Ministry of Commerce and Industry have notified the establishment of the Credit Guarantee Scheme for Startups (CGSS).

About CGSS

- It aims at **providing credit guarantees to loans** extended by:
 - Scheduled Commercial Banks,
 - Non-Banking Financial Companies and
 - Securities and Exchange Board of India (SEBI) registered Alternative Investment Funds (AIFs).
- The exposure to individual cases would be capped at Rs. 10 crore per case or the actual outstanding credit amount, whichever is less.
- With the **objective of mobilizing domestic capital for Indian startups**, CGSS will complement the existing **Schemes under Startup India initiative** viz. Fund of Funds for Startups and Startup India Seed Fund Scheme.

Why in news?

- The Ministry of Road Transport and Highways (MoRTH) has issued a draft notification to notify amendments in the rules governing Bharat (BH) series registration mark.

About the mark

- It would increase the scope of implementation of the **BH series vehicle registrations**.
- It would permit transfer of vehicles with BH series registration mark to other persons, who are eligible or ineligible for getting the series.
- It would allow vehicles having regular or currently prevalent state specific registration marks, be converted to BH series registration marks subject to payment of requisite tax.
- Application for registration of vehicle under BH series, shall be made to any registering authority of the state in which:
 - vehicle owner has either permanent residence or
 - place of work.

Bharat -BH series registration

- It aims to universalise and simplify the registration process of vehicles and bring a seamless system of maintaining vehicle records.
- Under section 47 of the Motor Vehicles Act, 1988, a person is allowed to keep the vehicle for not more than 12 months in any state other than the state where the vehicle is registered.
- Else a new registration with new state- registering authority has to be made within the stipulated time of 12 months.
- A passenger vehicle user takes the following steps to re-register a vehicle
 - No Objection Certificate from the Parent State for assignment of a new registration mark in another state.
 - Assignment of new registration mark after the road tax on prorata basis is paid in the new State
 - Application for refund of road tax in parent State on pro rata basis.
- Registration Mark Format in BH-series that will facilitate seamless transfer of vehicles is YY BH #### XX.
 - YY is the code for Year of 1st registration, BH is the code for Bharat Series, #### for 0000 to 9999, XX for Alphabets (AA to ZZ).
- A vehicle bearing this BH-series registration mark shall not require assignment of a new registration mark when the owner of the vehicle shifts from one State to another.
- This vehicle registration facility under "BH-series" will be available on voluntary basis to
 - Defense personnel,
 - Employees of Central & State Governments/ Central & State PSUs,
 - Employees of private sector companies/organizations, which have their offices in 4 or more States/UTs.
- The new system of allotting BH series registration to vehicles will be completely online.
- Vehicles registering under the BH system will be levied road tax for two years and in multiple of two thereafter, instead of the owner paying for the whole amount of 15 years' worth of road tax up front.
 - After completion of the fourteenth year, the motor vehicle tax shall be levied annually which shall be half of the amount which was charged earlier for that vehicle.

Why in news?

- Ministry of Women and Child Development (WCD) has extended the last date for the **Pradhan Mantri Rashtriya BAL Puraskar** from 30th September, 2022 to **31st October, 2022**.

About the puraskar

- Pradhan Mantri Rashtriya Bal Puraskar, instituted by the **Ministry of Women and Child Development (WCD)** to felicitate **meritorious children, individuals and institutions** of the country, is given under **two categories i.e., Bal Shakti Puraskar and Bal Kalyan Puraskar**.
 - The **Bal Shakti Puraskar (National Child Award)** aims to give recognition to children who have made extraordinary achievements in various fields including **innovation, scholastic, sports, art and culture, social service and bravery**, whereas,
 - The **Bal Kalyan Puraskar (National Child Welfare Awards)** is given as recognition to individuals and institutions, who have made an outstanding contribution towards service for children in the field of **child development, child protection and child welfare**.
- These awards are given by the President of India on the week preceding Republic Day every year.
- The Prime Minister also felicitates the awardees, who participate in Republic Day Parade on the 26th January at Rajpath in New Delhi.

Prime Minister's Development Initiative for North East Region (PM-DevINE) Scheme**Schemes****Why in news?**

- Recently in the Union Cabinet, chaired by the Indian Prime Minister has approved a Prime Minister's Development Initiative for North East Region (PM-DevINE) scheme for the remaining four years of the 15th Finance Commission from 2022-23 to 2025-26.

About the new PM-DevINE Scheme

- The new Scheme is a **Central Sector Scheme with 100% Central funding**.
- Implementing Ministry:** The scheme will be implemented by the **Ministry of Development of the North Eastern Region (DoNER)** through **North Eastern Council or Central Ministries/agencies**.
- Tenure:** The efforts will be made to complete PM-DevINE Scheme in the four-year period from 2022-23 to 2025-26 (remaining years of the 15th Finance Commission period), focusing:
 - In 2022-23 and 2023-24:** Front-loading of the sanctions.
 - In 2024-25 and 2025-26:** Expenditure would continue to be incurred but focused attention will be given to completing the sanctioned PM-DevINE projects.

Objectives of PM-DevINE

- Fund infrastructure convergently, in the spirit of PM Gati Shakti;
- Support social development projects based on felt needs of the NER;
- Enable livelihood activities for youth and women;
- Fill the development gaps in various sectors.

Gramin Udyami Skill Training Programme**Schemes****Why in news?**

- Union Minister addressed the Convocation of **Gramin Udyami Skill Training Programme (the Village Engineers Programme)** in Ranchi.

About the programme

- The Gramin Udyami Skill Training Programme targets **empowering the rural youth by providing them specific skilling opportunities**.
- The **pilot project covers five states** (Chhattisgarh, Gujarat, Rajasthan, Maharashtra, and Madhya Pradesh).
- Its **main objective** is to strengthen local village economies and limit migration as well as dependence on cities for livelihood opportunities.

- It **aims** to create new opportunities for employment/self-employment and entrepreneurship locally—so that tribal youth can start their own businesses, generating more livelihood opportunities for themselves as well as for others.

Digital Agriculture Mission (DAM)

Schemes

Why in news?

- Government is promoting adoption of smart farming methods through the use of technology and innovation in the agriculture sector in the country.

About DAM

- The Ministry of Agriculture & Farmers Welfare is implementing a
- **Digital Agriculture Mission (DAM)**, which includes:
 - India Digital Ecosystem of Agriculture (IDEA),
 - Farmers Database,
 - Unified Farmers Service Interface (UFSI),
 - Funding to the States on the new Technology (National E- Governance Plan in **Agriculture**, NeGPA),
 - Revamping Mahalanobis National Crop Forecast Centre (MNCFC),
 - Soil health, fertility and profile mapping.
- **Under the NeGPA programme**, funding is given to State Governments for Digital Agriculture projects using **emerging technologies like Artificial Intelligence and Machine Learning (AI/ML), Internet of Things (IOT), Block chain, Robotics etc.**

National Credit Framework (NCrF)

Schemes

Why in news?

- The Union **Ministry of Education** launched the draft of the first 'National Credit Framework' (NCrF).

About NCrF

- NCrF **integrates the credits earned through school education, higher education and vocational and skill education** by encompassing the:
 - National Higher Education Qualification Framework (NHEQF),
 - National Skills Qualification Framework (NSQF) and
 - National School Education Qualification Framework (NSEQF).
- It seeks to integrate academic and vocational domains **to ensure flexibility and mobility between the two.**
- According to the draft, **credits will be assigned on the basis of learning hours from class 5 to PhD level.**
- NCrF recognises **no hard separation between different areas of learning**, i.e. arts and sciences, vocational and academic streams, curricular and extra-curricular for the purpose of assignment of credits and credit levels.
 - It will remove the hard distinction between the various streams like arts, science, social sciences and commerce.
- It will **enable students who have dropped out of the mainstream education to re-enter the education ecosystem.**
- It also **supports educational acceleration for students with gifted learning abilities and recognition of prior learning for the workforce** that has acquired knowledge and skills informally through the traditional family inheritance, work experience or other methods.
- The NCrF **will be operationalised through the Academic Bank of Credits (ABC).**
 - The **University Grants Commission**, India's higher education regulator, last year **launched an ABC for higher education.**
 - The ABC works as a digital repository of credits earned by students. So far, it is limited to higher education.
- The NCrF will be launched as **a part of the implementation of the National Education Policy (NEP) 2020**, which advocates that there should be "no hard separations" between vocational and academic streams. The policy also states that at least 50% of learners through the school and higher education system shall have exposure to vocational education till 2025.



Why in news?

- President Draupadi Murmu launches 'herSTART' - a start-up platform of Gujarat University for women entrepreneurs

About:

- herSTART'** is the initiative of **Gujarat University Startup and Entrepreneurship Council** aims at supporting women-led startups.
- The platform has been launched with the aim that it will not only **boost innovation and start-up efforts of women entrepreneurs** but also help them connect with government as well as private enterprises.
- Through this platform, free resources and training modules free will be provided to aspiring women entrepreneurs. It will build a digital community and also a digital publication to spread their success stories.

Special Assistance to States for Capital Investment 2022-23

Why in the news?

- The government of India has launched a Scheme Special Assistance to States for Capital Investment for 2022-23.
- What is Special Assistance to States for Capital Investment 2022-23?
- Under the Scheme, financial assistance will be provided to the State Governments in the form of a 50-year interest-free loan for capital investment projects.
- The loan provided under the Scheme will be over and above the normal borrowing ceiling allowed to the States for the financial year 2022-23.

The scheme has seven parts:

- Part-I:** The amount has been allocated amongst States in proportion to their share of central taxes & duties as per the award of the 15th Finance Commission.
- Part-II (PM Gati Shakti related Expenditure):** It is aimed at facilitating **PM Gati Shakti** related investment-in the States
- Part-III (PMGSY):** This amount is meant for supplemental funding for priority segments of **PM Gram Sadak Yojana (PMGSY)** including support for the States share.
- Part-IV:** Incentivisation for digitization
- Part-V:** The amount will be available to states for capital projects on laying optical fiber networks.
- Part-VI (Urban Reforms):** The amount will be available to States as incentive for undertaking reforms related to Building Byelaws, Town Planning Schemes, Transit Oriented Development, and Transferable Development Rights.
- Part-VII (Disinvestment and Monetization):** It is aimed at providing incentives to State Governments for privatization/disinvestment of the **State Public Sector Enterprises (SPSEs)** and monetization/recycling of assets.

NHAI's InvIT

Why in the news?

- Road Transport and Highways Minister tweeted a video about the National Highways Infra Trust (NHAI InvIT) bonds, which he said will offer an effective return of 8.05% per annum.

About NHAI's InvIT

- NHAI InvIT is the infrastructure investment trust sponsored by the National Highways Authority of India (NHAI) to support the government's National Monetisation Pipeline (NMP).**
- NHAI's InvIT is a Trust established by NHAI under the **Indian Trusts Act, 1882 and SEBI (Security and Exchange Board of India) regulations.**
- The Union Cabinet chaired by Prime Minister Narendra Modi had approved the NHAI's Infrastructure Investment Trust (InvIT) in December 2019, and the company had started to meet investor groups the following year.

About InvITs

- Infrastructure investment trusts are institutions similar to mutual funds, which pool investments from various categories of investors and invest them into completed and revenue-generating infrastructure projects, thereby creating returns for the investor.

- The capital market regulator notified the SEBI (Infrastructure Investment Trusts) Regulations, 2014 on September 26, 2014, and these trusts are likely to help facilitate investment in the infrastructure sector.
- Structured like mutual funds, they have a trustee, sponsor(s), investment manager and project manager. While the trustee (certified by Sebi) has the responsibility of inspecting the performance of an InvIT, sponsor(s) are promoters of the company that set up the InvIT.
- In the case of Public-private partnership (PPP) projects, it refers to the infrastructure developer or a special purpose vehicle holding the concession.
- While the investment manager is entrusted with the task of supervising the assets and investments of the InvIT, the project manager is responsible for the execution of the project.

LEADS Report 2022

Economy

Why in news?

- The Gati Shakti National Master Plan completed one year. To mark the occasion, the Ministry of Commerce and Industry (MoCI) published the fourth edition of Logistics Ease Across Different States (LEADS) Report 2022.

LEADS Report

- The 'Logistics Ease Across Different States' (LEADS) Report was first launched in 2018.

Objective

- The Report is released every year with the main objective of ranking Indian states and UTs on the basis of the efficiency of their respective logistics ecosystems. The index is an indicator of the efficiency of logistical services necessary for promoting exports and economic growth.
- The index aims to boost the logistics performance across India, which is critical for reducing the cost of transactions and boosting international and domestic trade.
- It lists the various actions taken by each state to improve ease of storage and movement of goods, identifies the shortcomings in physical, regulatory and operational environment in each state and gives suggestions to each state on the way forward.
- It provides three performance categories – Achievers (states and UTs achieving 90 per cent or more), Fast Movers (states and UTs scoring between 80 and 90 per cent), and Aspirers (states and UTs with percentage scoring below 80 per cent).

Findings of the 2022 LEADS Report

- **Achievers:** States in the Achievers category are Assam, Chandigarh, Delhi, Haryana, Himachal Pradesh, Karnataka, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana, Uttar Pradesh and Uttarakhand.
- **Fast Movers:** States listed in the Fast Movers category include Madhya Pradesh, Rajasthan, Kerala, Puducherry, Sikkim and Tripura.
- **Aspirers category:** The Aspirers category of the ratings have states like Bihar, Chhattisgarh, Goa, Andaman and Nicobar Islands, Lakshadweep, Ladakh, Jammu and Kashmir, Arunachal Pradesh, Mizoram and Nagaland.

How was the 2022 LEADS Report different?

- For the 2022 Report, the survey was not virtual but a physical one wherein, apart from the public sector stakeholders, the ones from the private sector were also contacted.
- The private stakeholders included Shipper/Export/Importer, Logistics Service Providers (Freight forwarders, CHAs, Custom brokers etc), Transport Service Providers (Truck operators etc) and Transport Infrastructure Service Providers (ICD/CFS operators, port operators, warehouse operators etc.). The aim is to understand the enablers and impediments of the logistics ecosystem in the country.

Significance of LEADS Report

- The LEADS Report is an indicator of results of various initiatives for improving the logistics ecosystem throughout the country.
- The LEADS Report will assist in the implementation of the PM Gati Shakti National Master Plan (PMGS-NMP) and the National Logistics Policy (NLP) by identifying gaps in the existing logistics services, infrastructure and regulatory environment.



National Logistics Policy

- The proposed policy's objective is to boost the nation's economy and corporate competitiveness by establishing an integrated, seamless, effective, dependable, green, sustainable and cost-efficient logistics network that makes use of best-in-class tools, procedures and qualified personnel.
- The policy **aims to reduce the logistics cost**, which stands at 14% of GDP to 9-10%.
- The strategy will establish a **single-window e-logistics market** and emphasize developing skills, competitiveness and employment for MSMEs.

National Logistics Law

- A national logistics law has been drafted and is under consultation. Through a unified legal framework for the paradigm of **One Nation, One Contract, it would support the One Nation, One Market objective** and provide a flexible regulatory environment (single bill of lading across modes). The law's provisions will make it possible to assign a distinct logistics account number in place of cumbersome registration processes.

Logistics Master Plan

- This initiative takes a **geographical strategy as opposed to an industry approach**.
- Several projects and activities will be integrated into the plan to expand the mix of intermodal and/or multimodal transportation. Coordinated construction of relevant infrastructure (gas and utility pipelines, optical fibre cable networks) is planned to prevent problems in the future. An Inter-Ministerial Committee will be used to supervise the master plan's execution. The state and local logistics strategies will be created in coordination and cooperation with the federal plans.

National Multimodal Facilities and Warehousing

- In order to promote intermodal and Multimodal Logistics Parks (MMLPs) as a separate class of infrastructure and to encourage efforts with a **national registry of multimodal facilities will be formed**. It will enable price discovery, ensure optimal utilisation, and support planned development, the National Grid of Logistics Parks and Terminals. Furthermore, the government has begun to devise certain standards and guidelines that will be implemented for the development of warehousing. The government plans to optimise procedures for obtaining clearances that make the procedure of establishing warehouses more efficient, along with setting up a system for rating and certifying those warehouses for excellence.
- The Logistics division has designed a digitisation initiative to provide an integrated IT foundation that would boost productivity, reduce wasteful travel and provide a slick user experience. The standards for the National Logistics Platform (iLOG) are currently being finalised in conjunction with the Ministry of Electronics and Information Technology (MEiTY).
- The iLOG will work to **integrate a single platform for the various IT solutions** that have been developed by various stakeholders, including logistics service providers, purchasers, and central and state government agencies such as customs, Directorate General of Foreign Trade (DGFT), railways, ports, airports, inland waterways & coastal shipping.

National Logistics Workforce Strategy

- For the integrated skill development of professionals in the logistics sector, the government is developing a **national logistics workforce strategy**. Building on the framework of skill development centres already in place, which are currently based on modes of transportation, it is planned to **enable cross-sectoral exchange of ideas and best practices** as well as create a workforce of professionals who will be the primary force behind the development of logistics in the nation.
- The approaches include a **coordinated effort to analyse and address present and future skill needs, mainstreaming logistics education** and training in regular formal education from school through post-graduate level, and introduction of a Certified Logistics Professional (CLP) scheme, and to incentivise the engagement of such professionals. The Driver Employment and Empowerment Programme is one of the strategies, and it aims to lower logistics costs by making truck driving a desired career due to the severe scarcity of truck drivers.

Parivahan Portal

- Earlier, different states have different policies regarding the processing of basic documents like Registration Certificate (RC) and Driving License (DL). The Government wanted to standardize processes across **PAN-India** to make sure that correct data can easily be shared between systems irrespective of their location. Hence, the ministry launched two software – **SARATHI** for driving license processes and **VAHAN** for vehicle registration. SARATHI offers services like Common Service Centre (CSC), E-Payment Gateway & State Service Delivery Gateway (SSDG) and VAHAN offers services like fitness, permit taxes, and registration.
- All these services are offered in one mobile app called **mParivahan** which makes it easy to get information regarding RC, DL, etc. There is also an SMS alert service to constantly notify the user.

Introduction of E-Way Bill

- Basically, E-way bill is an electronic document, generated from the **E-way site**, that is required to be carried by a person carrying a **truckload** worth more than Rs. 50,000. The E-way bill is issued by **registered suppliers** transferring goods from one state to another. Its validity mainly depends upon the shipment distance.



- E-Way bill helps in the elimination of state boundary check posts and physical paperwork which facilitate vehicles' **movement across the states** and reduce their overall turnaround time. Over the last few years, it is proved to be one of the best initiatives taken by Indian Government.

Development of Multi-Modal Logistics Parks in India

- Multi-Modal Logistics Park (MMLP) is a freight-handling facility and to be constructed in a minimum area of **100 acres** providing access to different modes of transportation. MMLP also provides storage solutions like mechanized warehouses and cold storage with other services like customs clearance and quarantine zones.
- The Indian transport ministry is currently planning a network of **35 MMLPs** around different Indian states. These parks will help reduce freight & warehouse costs, and vehicle congestion.

PM Gati Shakti- Logistics division

- Prime Minister Narendra Modi launched the 100 lakh crore project, Gati Shakti NMP in October 2021 with the aim to achieve growth in the logistics sector by increasing the multimodal connectivity and decreasing logistics cost. In the logistics division, the focus is mainly on seamless transportation of goods by smoothing the process and supply chain connectivity that is driven by airports, roads, railways, mass transport, logistics infrastructure and waterways providing efficient and effective deliveries.

New warehouse policy

- The New Warehouse Policy is a Public Private Partnership initiative that focuses on ease of transportation, streamlining the process and logistics cost reduction by developing exclusive warehousing zones across the country in order to make the storage, supply and delivery of goods hassle free.

Gati Shakti Programme

- Taking its efforts toward improving the logistics sector, in 2021, the government introduced the PM Gati Shakti National Master Plan for Multi-Modal connectivity to various Economic Zones. The transformative approach toward economic development and sustainability is dependent on the railways, roads, ports, waterways, airports, mass transport, and logistics.
- The plan will achieve economic transformation, seamless multimodal connectivity, and logistics efficiency with technology adoption and speedier implementation.

Beta Testing of Open Network for Digital Commerce (ONDC)

Economy

Why in news?

- Open Network for Digital Commerce has started **beta testing** of its network with consumers in Bengaluru.

About Open Network for Digital Commerce

- 28 Incorporated in December 2021, Open Network for Digital Commerce (ONDC), a Section 8 company, is an initiative of the Department of Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce.
- It is envisioned to create a facilitative model to revolutionize digital commerce, **giving greater thrust to penetration of retail e-commerce in India.**
- ONDC **is not an application, platform, intermediary, or software, but a set of specifications** designed to foster open, unbundled, and interoperable open networks thereby **eliminating the dependency on a single platform.**

Major ONDC objectives are:

- Democratization and decentralization of ecommerce
- Inclusivity and access for sellers, especially small and medium enterprises as well as local businesses
- Increased choices and independency for consumers.

About Beta Testing

- In software development, a beta test is the **second phase** of software testing in which a sampling of the intended audience tries the product out.
- The **first phase, called alpha test**, includes unit testing, component testing, and system testing. Beta testing can be considered "pre-release testing."
- Beta testing is **also sometimes referred to as user acceptance testing (UAT) or end user testing.**
- In this phase of software development, applications are **subjected to real world testing** by the intended audience for the software.



- The experiences of the early users are forwarded back to the developers who make final changes before releasing the software commercially.
- Another purpose of making software widely available in this way is to provide a preview and possibly create some buzz for the final product.

Credit Default Swaps (CDS)

Economy

Why in news?

- Credit Suisse, an investment banking company, is facing rough times as the spreads on credit default swaps (CDS) on Credit Suisse debt have spiked to a 14-year high — the highest since the global financial crisis of 2008.

About Credit Suisse

- Credit Default Swap (CDS) is a **derivative product** which serves as a form of insurance against the default of an underlying borrower or debt instrument.
- If an investor (e.g. SBI) who has lent money to a firm (say Reliance) by buying its bonds, and is unsure about the firm's ability to repay, the investor can buy a CDS from a third company which is the **protection seller** (Credit Suisse).
- A CDS promises that if Reliance fails to pay back, the insurer (Credit Suisse) would pay the amount.
- In return, the insurance firm selling the CDS gets a certain interest. **This interest is called the spread of CDS.**
- When these spreads rise, they signal the rising probability that a particular bond will fail.
- Thus, **Credit default swaps (CDS) are a type of insurance against default risk (also known as credit event) by a particular company.**
- **Note:** If the credit event does not occur before the maturity of the loan, **the protection seller does not make any payment to the buyer.**
- In all such cases of CDS the risk of a credit event isn't eliminated. Rather, it is shifted to the CDS seller.

Significance of CDS

- **Reduces risk to lenders:** CDSs can be purchased by the lender, which acts as a form of insurance designed to protect the lender and pass the risk on to the issuer.
- **No underlying asset exposure:** You're not required to purchase underlying fixed-income assets.
- **Sellers can spread risk:** CDSs pass the risk of defaulting on payments to the issuer. They can also sell multiple swaps to spread risk further.

Issues with CDS

- **Can give lenders and investors a false sense of security:** Investment insurance makes investors feel they don't have any risk with the investment.
- **They Traded over-the-counter and have no regulator to monitor its issuance and trading:** While CDSs reduce risk, they are prone to additional risk because they are traded on OTC markets.
- **Seller inherits substantial risks:** The CDS seller inherits the risk of the borrower defaulting.

Telecom Technology Development Fund (TTDF) Scheme

Economy

Why in News?

- Universal Service Obligation Fund (USOF), a body under the Department of Telecommunications, officially launched Telecom Technology Development Fund (TTDF) Scheme.

About Telecom Technology Development Fund (TTDF) Scheme:

- The scheme is aligned with Prime Minister's clarion call of adding **Jan Anusandhaan in the new phase of Amrit Kaal.**
- 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.

What is the Universal Service Obligation Fund (USOF)?

- The Universal Service Obligation Fund (USOF) was established with the primary objective of providing access to 'Basic' telecom services to people in the remote and rural areas at reasonable and affordable prices.
- USOF ensures that there is universal non-discriminatory access to quality ICT (Information and Communications Technology) services at economically efficient prices to people in rural and remote areas.
- It was created under the Ministry of Communications in 2002.
- It is a non-lapsable fund, i.e., the unspent amount under a targeted financial year does not lapse and is accrued for next years' spending.
- All credits to this fund require parliamentary approval and it has statutory support under Indian Telegraph (Amendment) Act, 2003.
- Universal Service stands for universal, interdependent and intercommunicating, affording the opportunity for any subscriber to any exchange to communicate with any other subscriber of any other exchange.
- Subsequently, the scope was widened to provide subsidy support for enabling access to all types of telegraph services including mobile services, broadband connectivity, and creation of infrastructure like Optical Fiber Cable (OFC) in rural and remote areas.
- With access to affordable telecom services in remote and rural areas, the USOF is the right step towards stemming urban migration. This would ensure to generate employment opportunities in the rural areas which would help generate more income.

Revenue Deficit Grants and Concept of Grants in Aid

Economy

Why in news?

- Finance Ministry released Rs. 7183 Cr as monthly instalment of revenue deficit grant to 14 States.
- **The Fifteenth Finance Commission has recommended a total Post Devolution Revenue Deficit Grant of Rs. 86,201 crore to 14 States for the financial year 2022-23.**

About revenue deficit grants

- The Post Devolution Revenue Deficit Grants are **statutory grants provided to the States under Article 275 of the Constitution.**
- The grants are released to the States as per the recommendations of the successive Finance Commissions to meet the gap in Revenue Accounts of the States post-devolution.
- Revenue deficit grants **seek to eliminate revenue deficit suffered by particular states.**

Reason for giving Revenue Deficit Grants

- Post Devolution grant means after getting due share from central pool of taxes, some states are still unable to meet the expenses and have substantial revenue deficit.
- **It all happens because of faulty estimation by the Finance Commission** in the criteria used by the Commission to determine each state's share in central taxes, and the weight assigned to each criterion.
- The eligibility of states to receive this grant and the quantum of the grant was decided by the Commission based on the **gap between the assessment of revenue and expenditure of the State** after taking into account the assessed devolution in the previous financial year.
- **The States which have been recommended Post Devolution Revenue Deficit Grant by the Fifteenth Finance Commission during 2022-23 are:** Andhra Pradesh, Assam, Himachal Pradesh, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, Uttarakhand, and West Bengal.

Grants-in-Aid to the States

- Besides sharing of taxes between the Centre and the states, the Constitution provides for grants-in-aid to the states from the Central resources.
- There are two types of grants-in-aid namely
- Statutory grants
- Discretionary grants



Statutory Grants

- **Article 275** empowers the Parliament to make grants to the states which are in need of financial assistance and not to every state. Also, different sums may be fixed for different states.
- **These sums are charged on the Consolidated Fund of India every year.**
- Apart from this general provision, **the Constitution also provides for specific grants** for promoting the welfare of the scheduled tribes in a state or for raising the level of administration of the scheduled areas in a state including the State of Assam.
- **Note: The statutory grants under Article 275 (both general and specific) are given to the states on the recommendation of the Finance Commission.**

Discretionary Grants

- **Article 282** empowers **both the Centre and the states** to make any grants for any public purpose, even if it is not within their respective legislative competence.
- Under this provision the Centre only can make grants to the states.
- These grants are also known as discretionary grants, the reason being that the Centre is under no obligation to give these grants and the matter lies within its discretion.
- These grants have a two-fold purpose: to help the state financially to fulfil plan targets; and to give some leverage to the Centre to influence and coordinate state action to effectuate the national plan.

Global Food Security Platform

Economy

Why in news?

- World Bank's private sector investment arm, the International Finance Corp. (IFC) has launched its Global Food Security Platform to respond to the food security crisis.

About the platform-

- It is a **\$6 billion financing facility to strengthen the private sector's ability to respond to the crisis** and help support food production.
- IFC's Global Food Security Platform is **part of the World Bank Group's ongoing \$30 billion initiative to reduce food insecurity during the 2023.**
- IFC's public and private sector interventions are implemented in close coordination with the World Bank and MIGA.
- The **platform seeks to reduce volatility in food markets through emergency financing to farmers**, commodity traders, food and feed processors, and other private players that face restricted funding and sudden spikes in costs that are limiting their operations.
- IFC will also boost its provision of working capital and longer-term financing to clients in Ukraine, where it aims to restore crop production and the country's capacity for food storage, processing, and logistics.
- It will also **finance continued trade flows of vital food supplies to populations in need**, increase the availability of fertilizers and other critical supplies for farmers in vulnerable regions, and help private companies make new investments in longer-term solutions to the hunger crisis—with a focus on making local food systems in emerging markets more diversified, sustainable, and productive.

E-Rupee: Central Bank Digital Currency (CBDC)

Economy

Why 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.
- The RBI has been opposing private crypto currencies, stating that they are a threat to India's macroeconomic and financial stability.

About e-rupee

- E-rupee is similar to sovereign paper currency but takes a different form.
- It will be exchangeable at par with the existing currency and will be accepted as a medium of payment.
- It will be a valid legal tender and a safe store of value.
- The digital rupee would appear as a liability on a central bank's balance sheet.

Token Based vs Account based CBDC

- According to the RBI, **e-rupee can be structured as 'token based' or 'account-based'**.
 - A token-based CBDC is a bearer instrument like bank notes, meaning **whosoever holds the tokens** at a given point in time is **presumed to own them**.
 - In contrast, an account-based system would require maintenance of record of balances and transactions of all holders of the CBDC and indicate the ownership of the monetary balances.
- In a token-based CBDC, the person receiving a token will verify that his ownership of the token is genuine, **whereas in an account-based CBDC, an intermediary verifies the identity of an account holder**.
- A token-based CBDC is viewed as a preferred mode for CBDC-R as it would be closer to physical cash.
- An account-based CBDC may be considered for CBDC-W. CBDC-W is for the wholesale market for asset classes which are bilaterally or settled outside CCP arrangements – Commercial Papers and Cds.

Supplementary Budgetary Allocations

Economy

Why in the news?

- The Department of Economic Affairs sought proposals from Ministries by November 11 for the first batch of supplementary demands to be placed in the upcoming winter session of Parliament.

About Supplementary Grant

- It is granted when the amount authorised by the Parliament through the appropriation act for a particular service for the current financial year is **found to be insufficient for that year**.

Additional Grant

- It is granted when a need has arisen during the current financial year for additional expenditure upon some **new service not contemplated in the budget** for that year.

Excess Grant

- It is granted when **money has been spent on any service during a financial year in excess of the amount granted for that service** in the budget for that year.
 - It is **voted** by the Lok Sabha after the financial year.
 - Before the demands for excess grants are submitted to the Lok Sabha for voting, they must be approved by the

Vote of Credit

- **It is granted for meeting an unexpected demand upon the resources of India**, when on account of the magnitude or the indefinite character of the service, the demand cannot be stated with the details ordinarily given in a budget.
 - Hence, it is like a **blank cheque given to the Executive** by the Lok Sabha.

Exceptional Grant

- It is granted for **a special purpose and forms no part of the current service of any financial year**.

Token Grant

- It is granted **when funds to meet the proposed expenditure on a new service can be made available by reappropriation**.
 - A demand for the grant of a token sum (of Re 1) is submitted to the vote of the Lok Sabha and if assented, funds are made available.
 - Reappropriation involves transfer of funds from one head to another.
 - It does not involve any additional expenditure.
- **Supplementary, additional, excess and exceptional grants and vote of credit** are regulated by the same procedure which is applicable in the case of a regular budget.

World Economic Outlook

Economy

Why in news?

- The International Monetary Fund (IMF), in its latest World Economic Outlook report, has retained global growth hopes for 2022 at 3.2%, and lowered next year's projection to 2.7% from 2.9%.
- The year 2023 will feel like a recession for many people in the world, the Fund has cautioned, as 'the worst is yet to come' **amid tighter monetary policies to curb stubbornly high inflation and a spiralling energy and food crisis**.



Analysis

- The World Economic Outlook (WEO) is a report by the International Monetary Fund that analyzes key parts of the IMF's surveillance of economic developments and policies in its member countries.
- It also projects developments in the global financial markets and economic system.
- The WEO is usually prepared **twice a year** and is used in meetings of the International Monetary and Financial Committee.
- **Note: Global Financial Stability Report** is another important report published by the IMF.

Data Centre provided Infrastructure Status

Economy

Why in news?

- The Centre has accorded infrastructure status to data centres, according to a recent notification by Ministry of Finance.

About data centre

- Data centres that are "**housed in dedicated/centralised building for storage and processing of digital data applications with a minimum capacity of 5 MW of IT load**" are considered eligible for infrastructure status.
- The capacity of data centres is measured in terms of power they consume which reflects on the scale of the server they are hosting in their facilities.
- This infrastructure status tag will help data centre firms get easier access to credit at lower rates and attract foreign investments.
- This will enable these projects to avail the associated benefits such as **lower borrowing rates, tax concessions and increased flow of foreign and private capital**.
- It is a physical facility that organizations use to house their critical applications and data.
- A data center's design is based on a network of computing and storage resources that enable the delivery of shared applications and data.
- The key components of a data center design include routers, switches, firewalls, storage systems, servers, and application-delivery controllers.

Infrastructure status

- It is provided to all sectors/business included in **Harmonised Master List of Infrastructure sub-sectors**.
- Inclusion in this list provides easier access to concessional funds, promotion of projects and other government support measures for the specified sub-sectors.
- **This list is notified by the Ministry of Finance.**
- This list included following categories:
 - **Transport and Logistics:** Roads and bridges, Inland waterways, Airport, etc.
 - **Energy:** Electricity Generation, Electricity Transmission, etc.
 - **Water and Sanitation:** Solid Waste Management, Water treatment plants, etc.
 - **Communication:** Telecommunication, etc.
 - **Social and Commercial Infrastructure:** Education Institutions (capital stock), Sports Infrastructure, Hospitals (capital stock), Tourism infrastructure, etc.

International Monetary and Finance Committee (IMFC)

Economy

Why in news?

- Finance Minister Nirmala Sitharaman attended the Plenary Meeting of the International Monetary and Financial Committee (IMFC) of the Board of Governors of the International Monetary Fund (IMF) held in Washington D.C.

About IMFC

- The IMF is headed by a **Board of Governors**, each of whom represents one of the organization's now 190 member countries, **with the newest member, Andorra** joining the IMF in October 2020.
- The Governors, who are usually their countries' **finance ministers or central bank directors**, attend annual meetings on IMF issues.
- The fund's day-to-day operations are administered by an **Executive Board**, which consists of 24 executive directors who meet at least three times a week.



Composition of IMFC

- The IMFC usually meets twice a year. The size and the composition of the IMFC mirrors that of the Executive Board.
- The IMFC has 24 members who are central bank governors, ministers, or others of comparable rank and who are usually drawn from the governors of the Fund's now 190 member countries.
- Each member country and each group of member countries that elects an Executive Director appoints a member of the IMFC.

Functions of IMFC

- The IMFC advises & reports to the IMF Board of Governors on the supervision and management of the international monetary and financial system, **including on responses to unfolding events that may disrupt the system.**
- It also **considers proposals by the Executive Board to amend the Articles of Agreement.**
- Although the IMFC has **no formal decision-making powers**, in practice, it has become a key instrument for providing strategic direction to the work and policies of the Fund.
- The IMFC **operates by consensus**, including on the selection of its chair.
- A number of international institutions, including the **World Bank**, **participate as observers in the IMFC's meetings.**

Tokenisation of Credit/Debit Cards

Economy

Why in news?

- The Reserve Bank of India (RBI) has mandated the tokenisation of credit/debit cards for online merchants from October 1, 2022.
- This new mandate is only for the use of credit/debit cards online.
- For offline merchants, users would continue to swipe the cards on the POS machines as per previously existing guidelines

About tokenized Transactions

- Tokenisation is basically **masking of card details with a unique code (called the "token")** to hide the actual card information from merchants.
- **Note: This token number is only valid for that particular e-commerce website/app and that credit/debit card.**

Significance

- When we visit a restaurant, or even an ATM machine, it is possible for card thieves to clone the card with a skimmer.
 - Skimmer is a gadget that quietly reads the magnetic strip at the back of your card.
- Also, hackers can break into online websites and mobile apps that store credit card details.

Benefits of tokenisation

- Tokenised card transaction is safer as the actual card details are not shared with the merchant.
- This helps cut the chances of card information leakage.
- The token generated upon request for a specific merchant is unique to a specific card number **and is usable only on that particular site or mobile app.**
- The token is useless outside of that merchant's ecosystem.

Foreign Contribution Regulation Act (FCRA)

Economy

Why in news?

- The Union Home Ministry has cancelled the FCRA registration of two NGOs headed by former Congress president Sonia Gandhi owing to irregularities.
- The move makes the NGOs ineligible to receive foreign funds. Registration under the Foreign Contribution (Regulation) Act is mandatory to receive foreign funds. The cancellation makes the two NGOs ineligible to receive foreign funds.

About FCRA

- The FCRA is applicable to all associations, groups and NGOs which intend to receive foreign donations.
- Any NGO or association that intends to receive foreign funds has to compulsorily register under the Foreign



Contribution Regulation Act (FCRA), **monitored by the Ministry of Home Affairs (MHA).**

- Registered NGOs can receive foreign contribution **for five purposes** — social, educational, religious, economic and cultural.
- Under the Act, both the NGOs and the donors can be placed on a 'watch list' or in the 'prior permission' category, barring them from sending money to associations without the MHA's clearance.
- All the members and office bearers of an NGO will have to file an affidavit making it mandatory for it to report "any violation" of the FCRA provisions by the applicant organization.
- Filing of annual returns, on the lines of Income Tax, is compulsory.
- NGOs are required to give an undertaking that the acceptance of foreign funds is not likely to prejudicially affect the sovereignty and integrity of India or impact friendly relations with any foreign state and does not disrupt communal harmony.
- **The Foreign Contribution (Regulation) Amendment Act, 2020 has amended the Foreign Contribution (Regulation) Act, 2010.**
- It extends to the whole of India, and it shall also apply to—
 - (a) citizens of India outside India; and
 - (b) Associate branches or subsidiaries, **outside India**, of companies or bodies corporate, registered or incorporated in India.
- Every person who has been granted a certificate or given prior permission shall receive foreign contribution in a **single account** only through such **one of the branches** of a bank.
- No funds other than foreign contribution shall be received or deposited in such account or accounts.
 - However, such person may open one or more accounts in one or more banks for utilising the foreign contribution received by him.

Prohibition to accept foreign contribution.

- No foreign contribution shall be accepted by any—
 - (a) candidate for election;
 - (b) correspondent, columnist, cartoonist, editor, owner, printer or publisher of a registered newspaper;
 - (c) Judge, Government servant or employee of any corporation or any other body controlled or owned by the Government, **public servants** (as defined under the Indian Penal Code; added by the amendment in 2020);
 - (d) member of any Legislature;
 - (e) **political party or office-bearer thereof (this provision has been amended);**
 - (f) organisation of a political nature;
 - (g) Association or company engaged in the production or broadcast of audio news or audio-visual news or current affairs programmes through any electronic mode.
- However, in 2017 the Ministry of Home Affairs, through the Finance Bill route, amended the 1976-repealed FCRA law paving the way for political parties to receive funds from the Indian subsidiary of a foreign company or a foreign company in which an Indian holds 50% or more shares.
- Foreign contribution shall be utilized for the purpose for which it has been received and such contribution can be used for administrative expenses up to 20% of such contribution received in a financial year.

Transfer of foreign contribution

- Under the earlier 2010 Act, foreign contribution cannot be transferred to any other person unless such person is also registered to accept foreign contribution (or has obtained prior permission under the Act to obtain foreign contribution).
 - **The 2020 amendment has amended this to prohibit the transfer of foreign contribution to any other person.**
 - The term 'person' under the Act includes an individual, an association, or a registered company.

Aadhaar for registration

- The Amendment Act added that any person seeking prior permission, registration or renewal of registration must provide the Aadhaar number of all its office bearers, directors or key functionaries, as an identification document.
- The Amendment Act has also **reduced the use of foreign contribution for administrative purposes** to 20% from 50% earlier.

Single SBI branch for all FCRA accounts: Oct 2020

- The Union Home Ministry has asked all NGOs seeking foreign donations to open a designated FCRA account at the State Bank of India's New Delhi branch by March 31, 2021.



- The Ministry's order reiterated that NGOs registered under FCRA shall not receive any foreign donations in any other bank account from April 1, 2021.
 - In September, the Foreign Contribution (Regulation) Act, 2020 was amended by Parliament and a new provision that makes it mandatory for all non-government organisations and associations to receive foreign funds in a designated bank account at SBI's New Delhi branch was inserted.
- The order said an NGO will have to report the amount & source of foreign remittance received to the authorities.

November 2020: Home Ministry amends FCRA rules

- The Ministry of Home Affairs (MHA) has relaxed norms for **farmer, student, religious and other groups** who are not directly aligned to any political party to receive foreign funds if the groups are not involved in "active politics or party politics".
- The Ministry notified new rules under the **Foreign Contribution Regulation Act (FCRA), 2010** thereby amending the FCRA Rules, 2011, which deal with "guidelines for the declaration of an organization to be of a political nature, not being a political party."
 - **Clause V of Rule 3 (FCRA 2011)** qualified a political group as, "organizations of farmers, workers, students, youths based on caste, community, religion, language or otherwise, which is not directly aligned to any political party, but whose objectives as stated in the memorandum of association, or activities gathered through other material evidence, include steps towards advancement of political interests".
 - **Clause (VI)** qualified a group as political if the "organization by whatever name called habitually engages itself in or employs common methods of political action like rasta roko, jail bharo, rail roko, bandh or hartal in support of public causes".
- A new clause says that groups mentioned in Clause V and VI will only be considered a political group if they participate in "active politics or party politics".

Oct 2020: Foreign funds & NGOs

- The UN high commissioner for human rights has expressed concern that the Foreign Contribution Regulation Act (FCRA) was "being used to deter or punish NGOs for human rights reporting and advocacy" that was critical of the government.
- **India is a party to the UN Human Rights Committee** which oversees the implementation of the International Covenant on Civil and Political Rights.

Asian Infrastructure Investment Bank (AIIB)

Economy

Why in news?

- India asked Beijing-based Asian Infrastructure Investment Bank (AIIB) to scale up investments in areas like clean energy and infrastructure.

About AIIB

- The Asian Infrastructure Investment Bank (AIIB) is a multilateral development bank with a mission to improve social and economic outcomes in Asia.
- **Headquartered in Beijing**, it began operations in January 2016 and have now grown to approx. 103 approved members worldwide (April 2022).

Nature of AIIB's membership

- AIIB is open to shareholders who are dedicated to promoting economic and social development **across Asia and beyond**.
- Its membership is open to members of the International Bank for Reconstruction and Development or the Asian Development Bank.

Are there any specific features that differentiate AIIB from the other multilateral development banks (MDBs)?

- Projects can be based in any member shareholder, as long as the project will deliver benefits to the Asian region.
- All financings must meet the conditions set out in AIIB's Environmental and Social Framework (ESF), which ensures that all projects are contributing to sustainable development.
- AIIB has not put any hard limits on investments by sector as long as AIIB's risk exposure remains within allowed limits.

- The only hard limits it maintains on lending are:
 - 1) no single country exposure may be more than 50 percent of total available capital, and
 - 2) the sum of the top three country exposures may not account for more than 90 percent of total available capital.
- In terms of sectors, it expects investments will be made mainly in the **energy, transport and urban/water sectors**.
- AIIB is a **US Dollar-based institution** and its first public benchmark bond was issued in USD in May 2019.

Currencies are available for AIIB Local Currency Loans

- As of September 2019
 - **Indian Rupee**
 - Indonesian Rupiah
 - Thai Baht
 - Turkish Lira
 - Russian Ruble etc.
- AIIB will continue to add currencies, which will include both major non-USD hard currencies and local currencies based on AIIB's ability to fund itself in those currencies
- Some observers stubbornly perceive the AIIB as a crucial part of the Belt and Road Initiative, a rather strange conclusion given that AIIB projects are often not showcased as elements of BRI (India is the best example here).
- The **country with the biggest vote share** in the institution is China (26.65 percent), followed by India (7.65 percent), Russia (6.06 percent), Germany (4.2 percent), and South Korea (3.54 percent).

Board of Governors

- All powers of the Bank are vested in the Board of Governors, which is **the highest decision-making body** under the Articles of Agreement.
- The Board of Governors consists of **one Governor and one Alternate Governor** appointed by each member country.

Permanent Observer Status in the United Nations

- In 2018, AIIB was granted Permanent Observer status in the deliberations of both the United Nations General Assembly and the Economic and Social Council, the two development-focused principal organs of the global body.

Core values: Lean, Clean and Green.

- Any AIIB member can submit a proposal for funding.
- AIIB can also lend to members beyond Asia **if the project delivers a clear benefit to the region**.
- Reservations about environmental and ethical standards, China's motives in launching the bank, and the AIIB's potential to compete with the World Bank and the Asian Development Bank (ADB) **had dissuaded the U.S. and Japan from becoming founding members**.
- Although most of the shareholders were in Asia, Brazil, Egypt, and South Africa were quick to join.
- The U.K., which became a member in March 2015, was soon followed by other Western countries, notably Australia, France, Germany, Italy, and Spain.
- China announced the AIIB in 2015, with 57 countries as founding members.
- Canada's decision to join the bank in 2017 left the U.S. and Japan as the only Group of Seven (G7 - Canada, U.S., U.K., Italy, France, Germany and Japan) holdouts.
- Some notable western countries which are members of AIIB: U.K., Australia, France, Germany, Italy, Spain etc.
- Among the attractions for the founding members was the fact that the U.S. dollar was the currency of the AIIB, and the bank's business was to be conducted in the English language.
- India was among the AIIB's **57 founding members** (37 regional and 20 non regional) in 2016. India is also one of the largest recipients of funds from the multilateral agency, **both in the government sector and the private sector**.

PM PRANAM

Economy

- The Union government planning to launch a scheme — named **PM PRANAM** — **to reduce the use of chemical fertilizers by incentivising states**.

About the proposed scheme

- **PM PRANAM** is short for PM Promotion of Alternate Nutrients for Agriculture Management Yojana.
- The scheme aims to:



- to reduce the use of chemical fertilisers
- to bring down the subsidy burden on chemical fertilisers, which is estimated to reach Rs 2.25 lakh crore in 2022-23 — 39 per cent higher than last year's figure of Rs 1.62 lakh crore.
- The move is in line with the government's focus on promoting a balanced use of fertilisers or alternative fertilisers in the last few years.

Important Government Initiatives and Schemes

- **"One Nation One Fertiliser" scheme:** The scheme would be done by introducing a "Single Brand for Fertilisers and Logo" under the fertiliser subsidy scheme named "PradhanmantriBhartiyaJanurvarakPariyojna" (PMBJP).
- The scheme would extend to all four fertilisers – Urea, Di-Ammonium Phosphate, Muriate of Potash and complex NPK – with BHARAT pre-fixed.
- **Neem Coating of Urea:** The Department of Fertilizers (DoF) has made it mandatory for all the domestic producers to **produce 100% urea as Neem Coated Urea (NCU)**.
- **New Urea Policy (NUP) 2015:** Objectives of the policy are-
 - To maximize indigenous urea production.
 - To promote energy efficiency in the urea units.
 - To rationalize the subsidy burden on the Government of India.
- **Policy on Promotion of City Compost:** The Government of India approved a policy on promotion of City Compost, notified by the DoF in 2016 granting Market Development Assistance of Rs. 1500/- for scaling up production and consumption of city compost.
- **Nutrient Based Subsidy (NBS) Scheme:** It has been implemented from April 2010 by the DoF. Under NBS, a fixed amount of subsidy decided on an annual basis, is provided on each grade of subsidized **Phosphatic & Potassic (P&K) fertilizers depending on its nutrient content**.

Purple Revolution and other Revolutions in Indian Agriculture

Economy

Why in news?

- Union Minister Dr Jitendra Singh recently inaugurated the country's first 'Lavender Festival' at **Bhaderwah, in Jammu & Kashmir's Doda district, the birthplace of India's Purple (Lavender) Revolution**.

About purple revolution

- The Council of Scientific and Industrial Research (CSIR), under the Union Ministry of Science and Technology, launched the **Aroma Mission** in 2016, encouraging farmers whose livelihoods were affected by the climate emergency to grow **aromatic crops such as lavender, rosemary, damask rose, mushkmbala, marigold and lemongrass**, and medicinal plants such as ashwagandha, also known as Indian ginseng.
- It provides cuttings, helps in setting up distillation units for clusters of 50 farmers, tests oil quality and helps find buyers.
- Recently, CSIR announced the expansion of the Aroma Mission in other States so the purple blooms could soon become a common sight across India.

Lavender

- Lavender is a crop **native to Europe** but was introduced in the temperate regions of Jammu & Kashmir state by the CSIR Aroma Mission.
- Lavender is a small, perennial aromatic herb shrub used in the fragrance, specialty food, and alternative medicine industries.
- Lavender, a drought-resistant crop, can be grown on poor soil and likes lots of sun but needs little water.

Green Revolution (Wheat and Rice)
 White Revolution/Operation Flood (Milk)
 Blue Revolution (Fisheries)
 Red Revolution (Poultry Meat and Eggs)
 Gene Revolution (Cotton)
 Golden Revolution (Fruits and Vegetables)
 Yellow Revolution (Oilseeds)
 Brown Revolution (Leather / Cocoa / Non-Conventional Products)
 Golden Fiber Revolution (Jute)
 Silver Fiber Revolution (Cotton)
 Round Revolution (Potato)
 Grey Revolution (Fertilizers)
 Pink Revolution (Onion / Prawn)
 Silver Revolution (Eggs / Poultry)
 Protein Revolution (Higher Production in Agriculture)
 Evergreen Revolution (Overall Production in Agriculture)
 Sweet Revolution (Honey)
 Purple Revolution (Lavender)



Why in news?

- India hosted the 90th Interpol General Assembly meeting recently.

About the assembly

- It is **Interpol's supreme governing body** and **meets once a year** to take key decisions related to its functioning.
- It comprises representatives from each of our member countries.
- Each member country may be represented by one or several delegates who are typically chiefs of police and senior ministry officials.
- Its purpose is to ensure that INTERPOL's activities correspond to the needs of our member countries.
- The General Assembly takes decisions in the form of Resolutions. Each member country represented has one vote.
- The decision-making process is made by either a simple or two-thirds majority, depending on the subject matter.
- The Interpol General Assembly meeting took place in India after a gap of about 25 years – it was last held in 1997.
- Delegations from 195 countries have attended the four-day event.

About Interpol

- The Interpol, or International Criminal Police Organization**, is an inter-governmental organisation comprising 195 member countries, which helps police forces in all these countries to better coordinate their actions.
- Interpol will be celebrating 100 years of its inception in the year 2023.**
- It is run by a secretary general (currently Jurgen Stock of Germany, who has been Interpol's chief executive since 2014), with its headquarters in Lyon, France, with a global complex for innovation in Singapore, and several satellite offices in different regions.

Interpol's Structure:

- The organisation has four administrative departments:** General Assembly, General Secretariat, Executive Committee and National Central Bureaus.
- General Assembly:**
 - The General Assembly is the **governing body of Interpol**.
 - It is **responsible for taking all important decisions concerned with policies, finances**, working methods, resources and other activities and programs.
 - It **meets once a year** to take key decisions related to its functioning.
 - The meeting is taking place in India after a gap of 25 years since it was last held in 1997.
- General Secretariat:**
 - The General Secretariat coordinates Interpol's day-to-day activities to fight a range of crimes.
- Executive Committee:**
 - The Executive Committee consists of 13 members who are elected by the General Assembly.
 - It has one President, three vice presidents and nine delegates that cover different regions.
 - The Executive Committee is in charge of supervising the execution of the General Assembly's decisions and the administration and work of the General Secretariat. It meets three times a year.

Functions of Interpol-

- Interpol enables **cross-border cooperation between police forces** of 195 member countries.
- It enables them to **share and access data on crimes and criminals** and offers a range of technical and operational support.
- It **offers investigative support such as forensics, analysis**, and assistance in locating fugitives around the world.
- Interpol also **facilitates police to work directly with their counterparts, even between countries** which do not have diplomatic relations.
- Interpol **supports countries in their efforts in combating three major global issues terrorism, cybercrime and organized crime.**

Organization of the Petroleum Exporting Countries (OPEC) and OPEC plus

International Relations

Why in news?

- OPEC Plus announced its decision to cut production by 2 million barrels per day.

About OPEC

- OPEC Plus is an alliance between the Organization of the Petroleum Exporting Countries (OPEC) and other major oil producers.
- OPEC Plus refers to a group of 23 oil-producing countries that includes 13 members of OPEC (Saudi Arabia, the UAE, Iran, Iraq, Kuwait, Algeria, Angola, Equatorial Guinea, Gabon, Libya, Nigeria, the Republic of the Congo, and Venezuela) and 10 other oil-producing countries (Russia, Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, South Sudan and Sudan).
- Saudi Arabia is the largest oil producer among OPEC members. Russia, which produces more oil than even Saudi Arabia, plays a crucial role, along with OPEC, in influencing global crude oil prices.
- The world's largest energy producer, the U.S., is not part of the deal, nor is China or other leading Western producers such as the U.K., Canada and Norway.
- The new grouping was seen as a response by oil-producing countries to protect their interests amid the rise of the U.S. shale industry. U.S. shale oil producers had caused a steep drop in the price of oil by massively increasing U.S. energy supplies and put the finances of OPEC governments under a lot of strain.
- OPEC itself was formed in 1960 as a cartel to influence the global price of crude oil.

Makran Coast: Location and Significance

International Relation

Why in news?

- In a coordinated operation at sea, Narcotics Control Bureau (NCB) and Indian Navy apprehended a suspicious vessel carrying more than 200 kgs of narcotics.

About Coast

- Makran Coast is an about 1,000-km coastal region of Baluchistan in southeastern Iran and southwestern Pakistan along the Gulf of Oman.
- Two port cities – that is, Karachi, which is the capital city of Pakistan's Sindh province, and Iran's Bandar Abbas port city
- are located on the two ends of the Makran coastline.
- Within the Makran region there are two more Iranian and Pakistani ports, namely Chabahar and Gwadar ports, which are located in Iran's Sistan and Baluchestan and Pakistan's Balochistan provinces and have recently attracted attention of two regional rival powers, that is, India and China.
- China is building its first foreign naval base in Pakistan's Gwadar port so that it would be able to play its role as an emerging power in future developments of South Asia, the Middle East, and Central Asia.
- China formally opened its first overseas military base in 2017 in Djibouti in the Horn of Africa.
- According to China's plan, the Makran highway is to connect Gwadar port through Karakoram region to Kashghar, the capital city of China's Xinjiang province.

Male Declaration and Other Important Declarations

International Relations

Why in news?

- India is a signatory to the Malé Declaration in 2017 and has agreed to promote climate-resilient health-care facilities to be able to withstand any climatic event.

Male Declaration and Other Important Declarations

- In the context of "Green and Climate Resilient Healthcare Facilities", India is a signatory to the Malé Declaration in 2017 and has agreed to promote climate-resilient health-care facilities to be able to withstand any climatic event and ensure that essential services such as water sanitation, waste management, and electricity are functional during such events.

Kunming Declaration

- The Kunming Declaration, adopted by over 100 countries at the end of the **UN Biodiversity Conference** in 2021, which took place in Kunming, China, calls on the States Parties to **act urgently on biodiversity protection in decision-making and recognise the importance of conservation in protecting human health.**

Carbis Bay Declaration

- In June 2021, the G7 countries agreed upon the "Carbis Bay Declaration" — **a series of commitments to curb future pandemics after Covid-19.**

Ha Noi Declaration

- Ha Noi Declaration **on strengthening social work towards cohesive and responsive ASEAN community** was adopted on the 15th Anniversary of the East Asia Summit 2020.

Beijing Declaration

- The Beijing Declaration and Platform for Action of 1995 is a **visionary agenda for the empowerment of women.**
- It still remains today the most comprehensive global policy framework and blueprint for action, and is a current source of guidance and inspiration **to realize gender equality and the human rights of women and girls, everywhere.**

Panmunjom Declaration

- The **Panmunjom Declaration**, named after the truce village that hosted the talks **between North Korea and South Korea**, included promises to pursue phased arms reduction, cease hostile acts, transform their fortified border into a peace zone and seek multilateral talks with other countries, including the U.S.
- Land border between North Korea and South Korea is called **38th Parallel.**

Sirte Declaration

- India supports to the **Common African Position**, enshrined in the **Ezulwini Consensus and the Sirte Declaration**, and underscored the need to rectify the historical injustice done to the African continent.
- The **Ezulwini Consensus** is a position on international relations and **reform of the United Nations, agreed by the African Union. It calls for a more representative and democratic Security Council, in which Africa, like all other world regions, is represented.**
- In September 1999, the Heads of State and Government of the Organization of African Unity issued the **Sirte Declaration, calling for the establishment of an African Union.**

Namsai Declaration

- Assam Chief Minister and his Arunachal Pradesh counterpart signed the **Namsai Declaration** in July 2022 for minimising the inter-State boundary dispute involving 123 villages.

Mysuru Declaration

- **It is concerned with rolling out the Common Minimum Service delivery by Panchayats** across the country from April 1, 2022.

Crypto-Asset Reporting Framework (CARF)

International Relations

Why in news?

- The Organisation for Economic Cooperation and Development (OECD) has released a new global tax transparency framework, Crypto-Asset Reporting Framework (CARF).

Key highlights of the framework

- The **core of the framework is automatic exchange of information between countries and mandatory customer identification** as part of the due diligence process.
- This is in **response to an earlier proposal of G20** that the OECD develop a framework for the automatic exchange of information between countries on crypto-assets.
- The CARF was presented to G20 Finance Ministers and Central Bank Governors for discussion at their meeting on October 12-13 in Washington D.C.
- The CARF defines the relevant crypto assets in scope, transactions, and the intermediaries and other service providers that will be subject to reporting.
- The **CARF targets any digital representation of value that relies on a cryptographically secure distributed ledger** or a similar technology to validate and secure transactions.
- Carve-outs are foreseen for assets that cannot be used for payment or investment purposes and for assets already fully covered by the common reporting standard.



- Entities or individuals that provide services effectuating exchange transactions in crypto-assets for, or on behalf of customers would be obliged to report under the CARE.
- India has backed a global framework to ensure more effective monitoring of transactions in virtual assets.

Organisation for Economic Cooperation and Development(OECD)

- It is an **intergovernmental economic organisation** with 38 member countries, founded in 1961.
- It aims to stimulate economic progress and world trade.
- Generally, OECD members are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries.
- **It is an official United Nations observer.**
- In 1948, the OECD originated as the Organisation for European Economic Co-operation (OEEC), led by Robert Marjolin of France, to help administer the Marshall Plan (which was rejected by the Soviet Union and its satellite states).
- In 1961, the OEEC was reformed into the OECD and membership was extended to non-European states.
- **Its headquarters is in Paris, France.**
- The OECD is **funded by contributions from member countries** at varying rates.

Tigray Region

International Relations

Why in news?

- Recently, airstrikes hit the capital of Ethiopia's Tigray region in an ongoing internal armed conflict.

About the region

- Tigray is the northernmost regional state in Ethiopia. Capital and largest city is Mekelle
- Tigray is bordered by Eritrea to the north, Sudan to the west, the Amhara Region to the south and the Afar Region to the east and southeast.
- Tigray region is known for its mountainous terrains that have often helped the people protect their territory from invaders, such as the Greeks, the Turkish, and the Italians.
- The Tigray Region is the homeland of the Tigrayan, Irob and Kunama peoples.

UNWGIC 2022

International Relations

Why in news?

- The United Nations World Geospatial Information Congress (UNWGIC) 2022 was held in Hyderabad, India recently

About UNWGIC-2022

- **The United Nations Global Geospatial Information Management (UN-GGIM) convened** the conference on UNWGIC 2022 and was **organised by the United Nations Department of Economic and Social Affairs.**
- It was hosted by the ministry of science and technology of the government of India.
- The **convening of the UNWGIC arises out of the mandate from the United Nations Economic and Social Council (ECOSOC)** to the Committee of Experts to convene global forums to promote comprehensive dialogue on global geospatial information management with all relevant governments, international organizations and stakeholders.
- **The goal for 2022 is UNWGIC** is to promote a broad dialogue on global geospatial information management with all relevant governments, non-governmental organisations, academia, and the private sector.
- **The theme of UNWGIC 2022 is 'Geo-Enabling the Global Village: No one should be left behind'**, which focuses on building a community for human data and geography against the three pillars of sustainable development for a shared future and a better world, leaving no one behind within an inclusive and equitable global society.
- The congress addresses the development and strengthening of integrated geospatial information management, its capacities and capabilities, and demonstrates the importance of international cooperation and coordination for building a human data and geography community, against the three pillars of sustainable development, for a shared future and a better world, leaving no one behind within an inclusive and equitable global society.
- The inaugural UNWGIC was held in Deqing, Zhejiang Province from 19 to 21 November 2018.



Why in news?

- The 104 cm Sampurnanand Telescope (ST), a world-class telescope located near Nainital, at a workshop organised to commemorate the completion of 50 years of successful operations of the telescope

About the telescope-

- The 104-cm Sampurnanand Telescope, **situated at Aryabhata Research Institute of Observational Sciences (ARIES), Manora Peak in Nainital** is one of the the main observing facilities in optical domain.
- ARIES is functional under the Department of Science and Technology.
- It was installed in 1972 by Carl Zeiss**, Germany at the then UP State Observatory (UPSO).
- The telescope gets its **name after Dr Sampurnanand, educationist and former chief minister of Uttar Pradesh**.
- It has been extensively used for optical observations of comets, occultation by planets and asteroids, star-forming regions and star clusters, variable stars, transients, active galactic nuclei, etc.
- With improved computational support, Sampurnanand today generates about 50 to 100 Gigabytes (GB) of data per night of observations.
- Except during the monsoon season when they are safely parked, all telescopes owned by ARIES are operational around the year.
- This pristine site enjoys 200 days of clear sky viewing in a calendar year.

Viral Spillover Risk

Science & Technology

Why in news?

- According to newly published research, **warming climate could bring viruses in the Arctic into contact with new environments and hosts**, increasing the risk of "viral spillover".

Key findings

- As per the new study, climate change could shift the species range of certain viral vectors and reservoirs northwards, and the High Arctic zone could become fertile ground for emerging pandemics.
- To **study the possibility of a viral spillover**, researchers from the **University of Ottawa collected sediment and soil samples from Lake Hazen in Canada – the largest High Arctic lake by volume in the world**, and the region's largest freshwater ecosystem.
- Then they undertook **DNA and RNA sequencing** to reconstruct the lake area's virus composition.
- They estimated the spillover risk and found that the chances of a virus moving to a new host increases with runoff from glacier melt, treated by them as a proxy for climate change.
- As temperatures increase, the melting of glaciers increases as well, and there is a greater possibility for **previously ice-trapped viruses and bacteria to find new hosts**.
- In this study, while it was found that the risk of viral spillovers increases with changes in the environment at a particular location, driven by global warming, this by itself does not guarantee a higher possibility of a pandemic occurring via viruses here. "
- This is because there is another important link in the process. As long as viruses and their 'bridge vectors' – that act as hosts and lead to their spread – are not simultaneously present in the environment, the likelihood of dramatic events probably remains low.

One Health Joint Plan of Action(OHJPA)

Science & Technology

Why in news?

- The OHJPA was jointly launched by the the Food and Agriculture Organization (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO), and the World Organisation for Animal Health (WOAH).
- About the plan of action-
- The One Health Joint Plan of Action, developed through a participatory process, provided a set of activities that aim to strengthen collaboration, communication, capacity building and coordination. These will be equally applicable on across all sectors responsible for addressing health concerns.
- The plan is valid from 2022-2026 and is aimed at mitigate the health challenges at global, regional, and country levels.

- Six key areas were focused on in the plan are:
- One Health capacity for health systems.
- Emerging and re-emerging zoonotic epidemics.
- Endemic zoonotic.
- Neglected tropical and vector-borne diseases.
- Antimicrobial resistance and the environment.
- Food safety risks.
- Action Track 5 deals with curbing the silent pandemic of **Antimicrobial resistance (AMR)**, which is a major global threat affecting the human, animal, plant, food, and environmental sectors.
- It outlines the commitment of the **Quadripartite organizations (FAO, UNEP, WHO and WOA)** to collectively advocate and support the implementation of One Health.
- The plan has outlined joint action to preserve antimicrobial efficacy.
- It also focused on ensuring sustainable and equitable access to antimicrobials for responsible and prudent use in human, animal and plant health has been outlined for it.
- The concept of **One Health recognises the health of humans, domestic and wild animals, plants and the wider environment** (including ecosystems) are closely linked and interdependent.

Diethylene Glycol (DEG) and Ethylene Glycol

Science & Technology

Why in news?

- The World Health Organization (WHO) has issued an alert following the deaths of 66 children in **The Gambia** after they used cough syrups made by an Indian firm contaminated with diethylene glycol and ethylene glycol.

About DEG

- Diethylene glycol (DEG) and ethylene glycol (EG) are colourless and viscous liquids which have a sweetish taste.
- DEG and EG **are often found as contaminants in glycerin**, which is used as a sweetener in formulations of many pharmaceutical syrups ingested orally.
- DEG and EG have similar physical properties and both are often used in the adulteration process.

Harmful effects of these contaminants

- The contaminants can result in renal and neurological toxicity if ingested, which, in simple terms, means they affect the brain and kidney functions.
- Acute kidney injury is usually the main cause of death, which occurs anywhere between 8 and 24 hours after exposure if the dose is high.

Nobel Prize for Physics 2022

Science & Technology

Why in news?

- This year's Nobel Prize for physics awards yet another milestone in quantum physics.

About nobel physics prize

- Alain Aspect (France), John F. Clauser (the U.S.) and Anton Zeilinger (Austria) have been awarded this year's Nobel Prize for physics.
- **The common concept in their work is quantum entanglement.**
- This is a quirk of quantum mechanics which **allows two or more particles to exist in an 'entangled state' such that what happens to one particle affects the others immediately**, irrespective of how far they may be.
- Working independently, Clauser and Aspect proved this phenomenon can't be explained by the typical laws of physics, and Zeilinger demonstrated that **entanglement can "teleport" information between linked particles.**
- Their research **laid the groundwork for ultra-secure encrypted communications and complex computing**, and it **demonstrated that quantum mechanics**—the field that deals with the motion and interaction of the smallest particles—**is fundamentally weird.**
- Today, entangled quantum states between photons have been demonstrated when the photons have traversed tens of kilometres of optical fibres. Also, entangled states have been demonstrated between photons on earth and those on a satellite. It is likely that researchers will find ways of using this property which is both exotic and promising.



Nobel Prize 2022 Winners List		
Nobel Prize Category	Nobel Prize Laureates	Awarded For
Nobel Prize in Physics	1. Alain Aspect 2. John F Clauser 3. Anton Zeilinger	For their work on entangled photon experiments, proving the violation of Bell inequalities, and developing the field of quantum information science.
Nobel Prize in Chemistry	1. Carolyn Bertozzi 2. Morten Meldal 3. Barry Sharpless	For the establishment of the foundations of click chemistry & bioorthogonal chemistry and also took chemistry into the functionalism era.
Nobel Prize in Physiology or Medicine	Svante Paabo	For his research on the extinct hominid genomes and the evolution of humans.
Nobel Prize in Literature	Annie Ernaux	For the bravery and clinical acuity with which she reveals the origins, estrangements, and collective restrictions of personal memory.
Nobel Prize in Economics	1. Ben S. Bernanke 2. Douglas W. Diamond 3. Philip H. Dybvig	For research on financial crises and banks.
Nobel Peace Prize	1. Ales Bialiatski 2. Memorial Human Rights Organization (Russia) 3. Center for Civil Liberties Human Rights Organisation (Ukrainian)	For encouraging the right to criticise power and protect the citizen's fundamental rights.

The Outbreak of Legionellosis (DTE)

Science & Technology

Why in news?

- Argentina's mystery pneumonia outbreak, where 11 people have been infected and four have succumbed to the illness, has finally been identified as Legionellosis by the country's health ministry.

About Legionellosis disease

- Following an epidemic in 1976 among attendees of an American Legion convention in Philadelphia, Legionella was found.

Legionnaires' sickness.

- A deadly form of pneumonia (lung infection) brought on by the Legionella bacterium is called Legionnaires disease.
- Small water droplets can make people sick, as can unintentionally ingest water contaminated with Legionella into the lungs.
- Legionellosis, also known as Legionnaires' disease and Pontiac fever, is a condition brought on by Legionella.
- People do not typically transmit the legionnaires' disease to others.

Causes and Typical Infection Sources

- Lakes and streams are examples of freshwater habitats where Legionella bacteria naturally occur.
- When the bacteria multiply and proliferate in building water systems that were made by humans, such as:
 - faucets and showerheads
 - Towers for cooling
 - A hot tub
 - Water features and decorative fountains
 - heaters and hot water tanks
 - massive, intricate piping systems

Symptoms and Signs

- Cough, breathing difficulty, Fever, muscle pain, Headaches

Treatment

- Legionnaires' disease** cannot be prevented with a vaccination.
- Antibiotics are necessary for the treatment of legionnaires' disease, and the majority of cases can be cured



Why in news?

- The Genetic Engineering Appraisal Committee (GEAC) that functions under the Union Environment Ministry has yet again cleared the proposal for commercial cultivation of genetically modified (GM) mustard.
- The applicant should also develop and deposit the DNA fingerprints of the approved varieties to the ICAR.

About Genetically modified crops

- "Genetic modification" or "genetically modified" short for GM involves altering the genes of an organism, be it a **plant, animal or microorganism**.
- This can be done by:
 - altering an existing section of DNA, or
 - Inserting a gene from another organism.
- When a scientist performs genetic modification to a plant, they insert a foreign gene (called transgene) in the plant's own genes. This could be introduced from
 - one plant to another plant,
 - from a plant to an animal, or
 - From a microorganism to a plant.
- An organism that undergoes genetic engineering is considered to be a genetically modified organism (GMO).
- Genetic engineering can be applied to any organism, **from a virus to a sheep**.
- Bacteria and GM mice were the **first GMOs** generated in 1973 and 1974 respectively.
- In 1982, insulin-producing bacteria were the first to be commercialized and genetically modified food has been sold since 1994.

Altering genes

- Apart from genetic modification, there are other ways to alter genes.
- Chemicals, radiation, spontaneous changes and traditional processing can also alter the characteristics of an organism without targeting a specific gene.
- Spontaneous alteration most of the time have little-to-no effect on the genes and takes place naturally and is non-specific.
- It is not a reliable method if the intention is to bring about changes in specific gene.
- It can lead to the development of both positive as well as negative characteristics.

Golden Rice

- Crops can be genetically modified to contain additional nutrients that are lacking from the diets of many people in developing countries. One example is Golden Rice, which has been modified to have enhanced levels of β -carotene, in order to help to prevent vitamin A deficiency.
- Plants could be genetically modified to produce vaccines or other medicines. Potatoes have been modified to produce edible vaccines against E. coli bacteria which cause diarrhoea
- Crops that can withstand environmental stresses can be produced

GM Crops in India

- The approval of any new genetically modified crop is given on a case to case basis after thorough scientific evaluation of health and environment safety as per applicable guidelines made under **Environment (Protection) Act, 1986** and Rules, 1989.
- **Top five biotech crop growing States in India, in decreasing order of the area under biotech crops**, are Maharashtra, Gujarat, Telangana, Andhra Pradesh and Haryana.

BT cotton

- BT cotton has been genetically modified by the insertion of one or more genes from a common soil bacterium.
- BT cotton occupies greater than 95% of India's cotton acreage.
- While BT cotton wholly dominates India's GM crop acreage – this is not the case with major countries.
- For example, Brazil has millions of hectares under crops such as soyabean, maize and cotton.
- Bt. cotton is the only GM crop approved for commercial cultivation in the Country.

GM Mustard

- Transgenic mustard, which was recently in news, has been developed by the University of Delhi's Centre for Genetic Manipulation of Crop Plants (CGMCP).
- **If approved GM mustard would be the first transgenic food crop to be allowed for commercial cultivation in India.**
- BT cotton that was modified to produce an insecticide that could kill any invading pest, that's not the case with GM mustard **wherein modification has been effected to simplify the breeding process.**
- It uses a system of genes from soil bacterium that makes mustard –a self-pollinating plant, to better adapt it to hybridization than the current Indian gene pool.

BT brinjal

- Brinjal has been **genetically modified by inserting a protein gene from the soil bacterium** *Bacillus thuringiensis* to give **protection against certain pests especially the fruit and shoot borer (FSB).**
- Brinjal is prone to attack from insect pests and diseases, the most serious and destructive of which is the fruit and shoot borer (FSB) *Leucinodes orbonalis*.
- FSB feeds predominantly on brinjal and is prevalent in all brinjal producing states.
- BT brinjal has been developed in India by Maharashtra-based seed company Mahyco.
- It **was on the verge of becoming India's first GM food crop**, when the Genetic Engineering Appraisal Committee (GEAC) cleared it for commercialisation in 2009, before doubts about the long-term impact on consumer health and plant biodiversity led then-Environment Minister Jairam Ramesh to slap an indefinite moratorium on the crop.
- If found safe, GM mustard has much to offer. India is hugely deficient in edible oils; over 60 per cent of its requirement is imported. It is claimed that GM mustard has yields that are 25- 30 per cent higher than the best current varieties, which will help close the demand-supply gap.

Brinjal

- India is the second largest producer of Brinjal after China.
- Brinjal, being a hardy crop that yields well even under drought conditions, is grown in almost all parts of the country.
- Major brinjal producing states include: West Bengal (30% production share), Orissa (20%), and Gujarat and Bihar (around 10% each).
- **'Matti or Mattu Gulla' from Karnataka** has been awarded a geographical indication (GI) tag. **It is a type of brinjal, rich in iron.**

Genetic Engineering Approval Committee (GEAC)

- The GM food imports require approvals under two laws:
 - the Environment Protection Act of 1986 and
 - The Food Safety and Standards Act of 2006.
- While the former covers environmental impacts of the food products, the latter assesses the food's impact on human health.
- Since no regulation has been finalised for GM products, it is still banned in the country.
- The Genetic Engineering Appraisal Committee (GEAC), under the Ministry of Environment, Forests and Climate Change, is **the apex body that allows for commercial release of GM crops.**
- After GEAC approval, FSSAI conducts the risk assessment before clearing it for consumption.
- GECA 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.
- The committee or any persons authorized by it has powers to take punitive action under the **Environment Protection Act.**
- GEAC is chaired by the Special Secretary/Additional Secretary of MoEF&CC and co-chaired by a representative from the Department of Biotechnology (DBT).

Why in news?

- Bird flu confirmed in Haripad municipal area of Kerala, thousands of ducks dead.

About avian influenza

- Avian influenza (or "bird flu") is a highly contagious viral disease caused by **avian (bird) influenza (flu) Type A viruses** which generally affects poultry birds such as chickens and turkeys.
- There are many strains of the virus – some of them are mild and may merely cause a low egg production or other mild symptoms among chickens, while others are severe and lethal.

How does the bird flu spread?

- **Wild aquatic birds such as ducks and geese are the natural reservoir of Influenza A viruses.**
- Many birds carry the flu without developing sickness, and shed it in their droppings.
- Since migratory birds excrete even while flying, they provide "a nice aerosol of influenza virus, shedding it all over the world" and thus further spreading it to poultry and terrestrial birds.
- Sometimes, the virus jumps over to mammals such as pigs, horses, cats and dogs.

When and how did the bird flu start infecting humans?

- Bird flu outbreaks have been affecting poultry around the globe for decades, and culling of infected birds has been a common measure to contain the spread.
- But it was in 1997 when humans are first known to have contracted bird flu following an outbreak in a live bird market of Hong Kong. **It was the H5N1 strain of the virus.**
- Movement of infected poultry and migratory birds, and an illegal bird trade are believed to be the causes of the spread. Some mammals such as cats and lions were also infected.
- **Subsequently, several other strains of the virus such as**
- **H5N2 and H5N8 jumped from animals to humans, thus becoming a global public health concern.**

Why in news?

- India has a rapidly growing Web3 ecosystem with more than 450 active start-ups, which cumulatively raised \$1.3 billion in funding till April.

About Ecosystem

- The model, **a decentralised internet to be run on blockchain technology**, would be different from the versions in use, Web 1.0 and Web 2.0.
- Of the earlier versions, Web 1.0 was mostly static where users would go to a website and read and interact with static information; The differentiating characteristic of Web 2.0, which we use now, is that users can create content.
- In Web 2.0, most of the data in the internet and the internet traffic are owned or handled by a few large companies creating issues of data privacy, data security and abuse of data. Web3 offers a solution to these problems.

Significance

- **Web3 enables peer to peer (seller to buyer) transaction by eliminating the role of the intermediary.**
 - Currently if a seller has to make a business to the buyer, both the buyer and seller need to be registered on a "shop" or "platform" like Amazon or Ebay or any such e-commerce portal.
 - What this "platform" currently does is that it authenticates that the buyer and seller are genuine parties for the transaction. Web3 tries to remove the role of the "platform".
 - For the buyer to be authenticated, the usual proofs aided by block chain technology will be used. The same goes for the seller. With block chain, the time and place of transaction are recorded permanently.
- This concept can be extended to other transactions also.
 - Consider a social media application where you want to share pictures with your followers. It could be a broadcast operation from you aided by blockchain and you don't need social media accounts for all the participants to be able to perform this.

- The key concepts in Web3 seen so far are peer to peer transaction and block chain.
- The spirit of Web3 is **Decentralized Autonomous Organization (DAO)** which is that all the business rules and governing rules in any transaction are transparently available for anyone to see and software will be written conforming to these rules.
 - Crypto-currency and block chain are technologies that follow the DAO principle.
 - With DAO, there is **no need for a central authority to authenticate or validate.**

Study on self-reliance in arms production: SIPRI

Science & Technology

Why in news?

- India ranks fourth among 12 Indo-Pacific nations in self-reliant arms production capabilities, according to a study released this month by the Stockholm International Peace Research Institute (SIPRI).

About:

- The 12 countries in the study were selected because they have the highest military spending in the region — Australia, China, India, Indonesia, Japan, South Korea, Malaysia, Pakistan, Singapore, Taiwan, Thailand and Vietnam.
- The study, which measures self-reliance until 2020, is based on three indicators of self-reliance in each country:
 - Arms procurement
 - Arms industry
 - Uncrewed maritime vehicles

China

- China was the world's fifth largest arms importer in 2016-20.
- Its self-reliance policies, and its high economic growth in that period meant that the Chinese arms industry now increasingly fulfills the requirements of the People's Liberation Army (PLA).
- Its high volume of imports in absolute terms accounts for only 8 per cent of total procurement for the period, the lowest share for any of the 12 governments.

India

- India is ranked as the second largest importer of arms for its armed forces in 2016-20. India is highly dependent on imports of complete foreign major arms, including many produced under licence or as components for its domestic production.
- Of India's total volume of procurement in 2016–20, 84 per cent was of foreign origin. Domestic arms companies provide only 16 per cent of its total procurement.
- Hindustan Aeronautics Ltd, Indian Ordnance Factories, Bharat Electronics, Mazagaon Docks and Cochin Shipyard are among the major Indian arms servicing companies. Ashok Leyland, one of the largest suppliers of trucks to the Indian Army, is the only company ranked in the top 50 in the Indo-Pacific.
- India has seven Uncrewed Maritime Vessel projects ongoing. In the private sector, Larsen & Toubro has been developing AUV prototypes on its own and in collaboration with foreign partners, such as Italy's EdgeLab.

Stockholm International Peace Research Institute (SIPRI)

- SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament.
- It was established on the basis of a decision by the **Swedish Parliament** and receives a substantial part of its funding in the form of an annual grant from the Swedish Government.

Popular Programming Languages

Science & Technology

Why in news?

- Programming languages are a must to create smart contracts in cryptocurrencies

About C++

- It is a programming language associated with Bitcoin. It is also one of the most used programming languages, playing a role in the development of operating systems, gaming devices and platforms, search engines, and even machine learning.



About programming language

- A **programming language is a computer language that is used by programmers (developers) to communicate with computers.** It is a set of instructions written in any specific language (C, C++, Java, Python) to perform a specific task **in a language that the computer understands.**
- Just as many human-based languages exist, there are an array of computer programming languages that programmers can use to communicate with a computer.
- The portion of the language that a computer can understand is called a "binary."
 - Translating programming language into binary is known as "compiling."
- Early computer codes date back to the early 1800s, and since then, we've created nearly 9000 different programming languages.
- **However, many modern programming languages have their roots in Ada Lovelace's first machine algorithm,** developed for Charles Babbage's Difference Machine in 1843.
- **Programming languages act as an intermediary between human language and the language of computers (binary).**
- Different programming languages are used for the various functions that computers can perform.

Rustom-2 Indigenous UAV

Science & Technology

Why in news?

- The indigenous medium altitude long endurance (MALE) unmanned aerial vehicle (UAV) Rustom-2 developed by the Defence Research and Development Organisation (DRDO) is expected to complete all user trials by August 2023.

About Drones

- Rustom-2, **also known as Tapas-BH (Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon 201),** has been designed and developed by the Aeronautical Development Establishment (ADE), an arm of DRDO.

Objectives

- Rustom-2 is being developed **to carry out surveillance and reconnaissance (ISR) roles** and is **capable of auto landing**, among others.

Major features

- Rustom-2 **is capable of carrying different combinations of payloads** depending on the mission objectives including synthetic aperture radar (SAR), electronic intelligence (ELINT) systems and situational awareness systems.
- It has a satellite communications (SATCOM) link to relay **real time battlefield information.**
- The drone **can loiter autonomously at high altitudes** performing real-time, high-resolution intelligence, surveillance and reconnaissance (ISR) with its SAR and Electro-Optical/Infrared (EO/IR) sensors.
- In December 2021, Rustom-2 had crossed a milestone by reaching an altitude of 25,000 feet and an endurance of 10 hours. The target is to reach an altitude of 30,000 feet with an endurance of 20 hours endurance.
 - High endurance UAVs are a priority requirement for the Indian armed forces especially in view of the stand-off with China in eastern Ladakh.

Vyommitra and Gaganyaan Mission

Science & Technology

Why in news?

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

About 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.

High Throughput Satellites (HTS) Service

Science & Technology

Why in news?

- Hughes Communications India (HCI), a satellite internet service provider recently **launched India's first high throughput satellite (HTS) broadband service** powered by ISRO satellites.

About High Throughput Satellites (HTS) Service

- HTS **provides more throughput than conventional communication satellites or Fixed Satellite Service.**
 - **Higher-throughput refers to** higher data processing and transfer capacity than conventional satellites, while using the same amount of orbital spectrum.
- The one **fundamental difference** compared to the conventional satellites is the **use of multiple 'spot beams'** to cover a desired area than a wider area.
- By employing powerful and focused spot beams instead of wide beams, **HTS satellites achieve a 10 to 100 times higher throughput** (up to 100 Gbit/s) compared to conventional satellites.
- **These spot beams bring a two-fold benefit:**
 - **Higher transmit/Receive gain:** higher rate of data transmission per unit of orbital spectrum.
 - **Frequency re-use:** several beams can reuse the same frequency band and polarization.
- HTS satellites can be used in Geostationary Satellite Orbit (GSO), Medium Earth Orbit (MEO) and also in Low Earth Orbit (LEO).
 - A variety of HTS constellation approaches offer connectivity ranging from fibre replacement services, private wide area networks and consumer broadband.
- HTS systems utilise **concentrated spot beams, wideband payloads, increased frequency re-use and higher frequency bands** to

Applications of HTS

- HTS networks **are operating on a global basis** and can provide broadband service to endusers with speeds in excess of 100 Mbit/s.
- These systems **can support a wide variety of applications**, including broadcast and multicast distribution of content, and aid towards bridging the digital divide by offering high speed, high capacity, anywhere, anytime services.
- HTS systems can be deployed in many spectrum bands, but **are mainly found in the Ku-band (lower) and the Ka-band (higher) bands.**
- High throughput Satellites are going to cater to **the segments which have high bandwidth demand** like Broadband, Mobility, Defence and Government, Enterprise and Cellular Backhaul.
- In addition to the massive increase in bandwidth, **the affordability of the bits per second or cost of throughput with HTS is significantly lower** than that with conventional wide-beam satellites.

Low Earth Orbit and Satellite Internet: Project Kuiper, Starlink, Loon and Athena

Science & Technology

Why in news?

- Amazon will launch its first two satellite prototypes for Project Kuiper next year, in competition with **SpaceX's Starlink.**
- The satellites will be launched on rockets built by **United Launch Alliance**, a Boeing and Lockheed Martin joint venture.

About project

- **Project Kuiper is an initiative to launch a constellation of Low Earth Orbit satellites that will provide low-latency, high-speed broadband connectivity** to unserved and underserved communities around the world.



Other Competitors

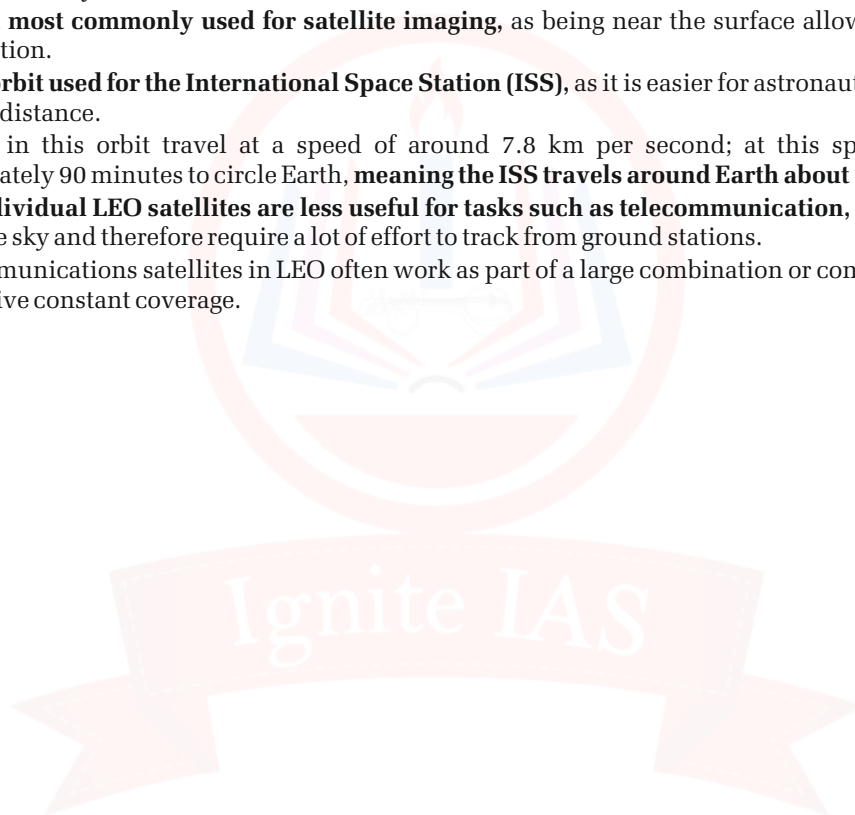
- Google may be messing around with balloons (**Project Loon**), but Facebook is developing a satellite in house named "**Athena**" specifically **to offer internet service to underdeveloped areas**.

Low Earth orbit (LEO)

- A low Earth orbit (LEO) is normally at an altitude of less than 1000 km but could be as low as 160 km above Earth – which is low compared to other orbits, but still very far above Earth's surface.
- By comparison, most commercial aeroplanes do not fly at altitudes much greater than approximately 14 km, so even the lowest LEO is more than ten times higher than that.
- Unlike satellites in geostationary orbit (GEO) that must always orbit along Earth's equator, **LEO satellites do not always have to follow a particular path around Earth** in the same way – **their plane can be tilted**.
 - **This means there are more available routes for satellites in LEO**, which is one of the reasons why LEO is a very commonly used orbit.

Advantages of LEO

- LEO's close proximity to Earth makes it useful for several reasons.
- It is the orbit **most commonly used for satellite imaging**, as being near the surface allows it to take images of higher resolution.
- It is also **the orbit used for the International Space Station (ISS)**, as it is easier for astronauts to travel to and from it at a shorter distance.
 - Satellites in this orbit travel at a speed of around 7.8 km per second; at this speed, a satellite takes approximately 90 minutes to circle Earth, **meaning the ISS travels around Earth about 16 times a day**.
- However, **individual LEO satellites are less useful for tasks such as telecommunication**, because they move so fast across the sky and therefore require a lot of effort to track from ground stations.
- Instead, communications satellites in LEO often work as part of a large combination or constellation, of multiple satellites to give constant coverage.



Why in news?

- India successfully test-fired indigenously-developed new generation medium-range ballistic missile **Agni Prime** from the Integrated Test Range missile testing facility is located at APJ Abdul Kalam Island.

About Agni prime

- Agni Prime is a **nuclear-capable** two-stage solid-fuelled missile.
- Its strike range is between 1,000 km and 2,000 km.
- It weighs 50 per cent less than the Agni 3 missile and has new guidance and propulsion systems.**
- It is a two-stage canisterised missile and can be launched from rail or road.**
- It can be stored for longer periods and can be transported as per operational requirements.**

Integrated Guided Missile Development Programme (IGMDP)

- Integrated Guided Missile Development Programme (IGMDP) was started in 1983 and completed in March 2012.
- It was conceived by Dr. A P J Abdul Kalam to enable India attain self-sufficiency in the field of missile technology.
- Dr. Kalam played a major role in the development and operationalisation of Agni and Prithvi missiles.
- The 5 missiles developed under this program are: (Remember it as P-A-T-N-A)
 - Prithvi**: Short Range **surface to surface** ballistic missile.
 - Agni**: Intermediate Range **surface to surface** ballistic missile
 - Trishul**: Short range **low level surface to air** missile.
 - Nag**: 3rd generation **anti-tank** missile.
 - Akash**: Medium range **surface to air** missile.

Agni Series

- Agni V is **India's first inter-continental ballistic missile (ICBM)**, with high road mobility, fast-reaction ability and a strike range of over 5,000 km.
 - Agni V missile has many **new indigenously developed technologies**, including the very high accuracy **Ring Laser Gyro based Inertial Navigation System (RINS)** and the most modern and accurate **Micro Navigation System (MINS)** which improves the accuracy of the missile.
 - The '**Circular Error Probable**' on board the surface to surface Agni V missile, makes the missile more effective in the following ways:
 - It makes it one of the most accurate strategic ballistic missile of its range class in the world.
 - It allows the use of smaller yield nuclear warheads while increasing the lethality of the strike.
- Agni IV** was developed to strike targets within a similar range as of Agni III but with a significantly shorter flight time of 20 minutes.
 - Agni IV is an Intermediate Range Ballistic Missile with a range of around 4,000 km.**
 - Developed by Defence Research and Development Organisation (DRDO), **it can carry a 1,000-kg payload** and can go as high as 900 km.
 - It is two stage missiles using solid fuel as propellant.**
- Agni III is an intermediate-range ballistic missile (IRBM) with a range of 3,000 – 3,500 km.
- Agni II is a medium-range ballistic missile (MRBM) with a range of over 2,000 km.
 - It is a two-stage, solid-fuelled missile
- Note:** Agni Series are nuclear capable missiles and **can carry both conventional as well as nuclear warheads.**

Sriharikota Vs Wheeler Island

- Sriharikota Island is **located in Pulicat Lake (Andhra Pradesh)**. It houses India's satellite launch centre, Satish Dhawan Space Centre
- Abdul Kalam Island is **located in Bay of Bengal**, off the coast of Odisha. Formerly known as Wheeler Island, missile test facility for the most of Indian missiles including long range ones is available here.

Why in news?

- The Government appointed the former Eastern Army Commander Lt. Gen. Anil Chauhan as the next Chief of Defence Staff (CDS), nine months after the untimely death of India's first CDS, Gen. Bipin Rawat in December 2021.

About Chief of Defence Staff (CDS)

The duties and functions of the Chief of Defence Staff (CDS) include the following:

- To **head the Department of Military Affairs** in Ministry of Defence and **function as its Secretary**.
- To **act as the Principal Military Advisor to the Union Defence Minister** on all Tri-Service matters.
- To function (military role) as the **Permanent Chairman of the Chiefs of Staff Committee**, which has the three service chiefs as members.
- To administer the Tri-Service organizations/agencies/commands.
- To be **a member of Defence Acquisition Council**
- chaired by **Union Defence Minister**.
- To function as the **Military Advisor to the Nuclear Command Authority**.
- To bring about jointness in operation, logistics, transport, training, support services, communications, repairs and maintenance, etc. of the three Services.
- To ensure optimal utilisation of infrastructure and rationalise it through jointness among the Services.
- To implement Five-Year Defence Capital Acquisition Plan and Two-Year roll-on Annual Acquisition Plans, as a follow up of Integrated Capability Development Plan.
- To assign inter-services prioritisation to capital acquisition proposals based on the anticipated budget.
- To bring about reforms in the functioning of three Services with the aim to augment combat capabilities of the Armed Forces by reducing wasteful expenditure.

NavIC (Navigation with Indian Constellation)**Defence & Security****Why in news?**

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

About NavIC

- NavIC (Navigation with Indian Constellation), or the Indian Regional Navigation Satellite System (IRNSS), is a constellation of seven satellites akin to the U.S. GPS, the European Galileo and the Russian GLONASS, and can be used to track location.
- Though available for use in mainland India and within 1,500 km around it, the system is not in wide regular use in India **primarily because mobile phones have not been made compatible to process its signals**.
- The Indian government has been pressing manufacturers to add compatibility and has set a deadline of January 2023, but media reports suggest this is unlikely before 2025.

C295 Aircraft: Role and Significance**Defence & Security****Why in news?**

- The Prime Minister of India has 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).

Significant features of the deal

- 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.
- 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.

About C295 aircraft

- The C295MW is a transport aircraft with 5 to 10-tonne capacity and a maximum speed of 480 kmph.
- It has a rear ramp door for quick reaction and para-dropping of troops and cargo.
- Short take-off and landing from semi-prepared surfaces are some other features.

Roles that the C295 can perform

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

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