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Science and Technology

Cryptocurrency Fan Tokens

Why in News?

Footballer Lionel Messi's signing on fee at Ligue 1 French club Paris St Germain (PSG) includes some of the PSG's cryptocurrency 'fan tokens'.

- Fan Tokens are a type of non-fungible token (NFT), a digital-only asset.
- Like Bitcoin and similar digital currencies, fan tokens are volatile assets, they can be traded on exchanges and their value can drastically change overnight.
- Fans can purchase said crypto tokens with real-world money to gain access to exclusive content and augmented-reality games.
- These fan tokens are created by a crypto platform called Socios.
- **Voting** - Among other rewards and perks, the fan token holders also get to vote on mostly minor decisions related to their clubs.
- More tokens a fan has, more votes they get in the polls. Ultimately though, the polls are decided upon by the clubs.

What are Non-Fungible Tokens(NFTs)?

- Non-Fungible Tokens(NFTs) are unique cryptographic tokens that exist on a blockchain and cannot be replicated.
- They are one-of-a-kind assets in the digital world that can be bought and sold like any other piece of property, but they have no tangible form of their own.
- The digital tokens can be thought of as certificates of ownership for virtual or physical assets.

Protein-based Vaccine

Why in News?

Researchers have developed a protein-based vaccine that mimics shape of coronavirus. This can be used to create immunity that lasts for long time.

Explanation: -

- This vaccine was developed with nanoparticles that mimic SARS-CoV-2 by displaying multiple copies of receptor binding domain (RBD) antigen.
- The surface-decorated nanoparticles generated neutralising antibodies that prevented SARS-CoV-2 infection in cells.

Eutelsat Quantum Satellite

Why in News?

French Guiana launched the world's first commercial and fully re-programmable satellite on Friday, July 30, 2021.

Explanation: -

- This is the world's first commercial fully reprogrammable satellite launched by the European Space Agency (ESA) from French Guiana.
- Eutelsat Quantum, developed under an ESA partnership project with satellite operator Eutelsat and prime manufacturer Airbus, is the world's first commercial fully flexible software-defined satellite.
- Eutelsat Quantum weighs 3.5 tonnes and consists of eight communication beams. Each of the beams can be modified to make changes to the coverage area and its telecommunications signal.
- **Benefits** - As the changes can be done in minutes, this satellite can be used in providing mobile coverage in moving objects successfully.
- Satellite can detect and characterise any rogue emission, enabling it to respond dynamically to accidental interference or intentional jamming.
- The Eutelsat Quantum will be covering the geographical area from West Africa to Asia in a 15 years period of time.

Reprogrammable Satellite

- These satellites allow the user to change the communications as per need, in real time.

- Even while orbiting in a fixed position at 35,000 kms above Earth, the satellite can be reprogrammed.
- Because it can be reprogrammed in orbit, it can respond to changing demands for data transmission and secure communications during its 15-year lifetime.

IAC-1 Vikrant

Why in News?

The Indigenous Aircraft Carrier (IAC) 1, which will be called INS Vikrant once it enters service with the Indian Navy about a year from now, **started sea trials** — one of the last phases of trials

Explanation: -

- Indigenous Aircraft Carrier (IAC) ‘Vikrant’ is the 1st aircraft carrier designed and built in India. It is designed by Indian Navy's Directorate of Naval Design.
- It is an example of ‘Atma Nirbhar Bharat’ with more than 76% indigenous content.
- The ship has,
 1. A very high degree of automation for machinery operation, ship navigation and survivability,
 2. Propulsion and Power Generation equipment/ systems,
 3. An incomparable military instrument with its ability to project Air Power over long distances.

Boeing’s Starline

Why in News? The launch of Boeing’s uncrewed Starliner Orbital Flight Test-2 (OFT-2) or the Crew Space Transportation-100 (CST-100) has been postponed.

Explanation: -

- This spacecraft is part of an uncrewed test flight to the International Space Station. The mission is part of NASA’s Commercial Crew Program.

- **Purpose** - Starliner has been designed to accommodate seven passengers or a mix of crew and cargo for missions to low-Earth orbit.
- It has an innovative, weldless structure and is reusable up to 10 times with a 6-month turnaround time.

NASA's Commercial Crew Program

- The main objective of this program is to make access to space easier in terms of its cost, so that cargo and crew can be easily transported to and from the ISS, enabling greater scientific research.
- NASA selected Boeing and SpaceX as commercial partners for this program in September 2014 to develop transportation systems for transferring crew from the US to the ISS.
- It plans to lower its costs by sharing them with commercial partners.
- It gives the private companies incentive to design and build the Commercial Orbital Transportation Services.

Gamma Irradiation Technology

Explanation: -

- Presently, there are 26 Gamma Radiation Processing Plants operational in India in private, semi government and government sector.
- Gamma Irradiation technology is used for **food preservation/shelf-life extension** by applying pre-determined radiation doses, as it
 1. Inhibits sprouting in bulbs and tubers,
 2. Insect disinfestation of cereals, pulses and grains,
 3. Microbial decontamination (hygienization) of dry spices etc.
- Setting of food irradiation facilities in the PPP mode mitigates the huge quantum of post-harvest and storage losses of agricultural produce and food that results in national saving.

Food irradiation

- It is the process of exposing food and food packaging to ionizing radiation, such as from gamma rays, x-rays, or electron beams, without direct contact to the food product.

- When ionizing radiation passes through a food product, some energy is absorbed by some chemical bonds.
- Some bonds rupture and produce free radicals which are highly reactive and unstable. They instantaneously rejoin with neighbouring compounds and the results are called radiolytic compounds.
- Food irradiation is used to improve food safety by
 1. Extending product shelf life (preservation),
 2. Reducing the risk of food-borne illness,
 3. Delaying or eliminating sprouting or ripening,
 4. Sterilization of foods, and
- It is used as a means of controlling insects and invasive pests.

Sampling Process of Perseverance Rover

Explanation: -

- According to data sent to Earth by the NASA's Perseverance Rover, no rock samples were collected during the first attempt.
- Perseverance Rover will spend one Mars year (two years on Earth) on the planet during which time it will explore the landing site region i.e. Jezero Crater and collect its first rock samples.
 - The rover is carrying MOXIE and Ingenuity.
- **Sampling process** - The rover carries 43 titanium sample tubes and is supposed to collect samples (rock and regolith) from the Jezero Crater.
- Perseverance's sampling process is autonomous - its sampling and caching system uses a hollow coring bit and percussive drill that is fixed at the end of its 7-feet-long robotic arm.

Fourth Sero Survey

Why in News?

The fourth round of ICMR's national serosurvey found that seropositivity for covid was highest in Madhya Pradesh and lowest in Kerala.

Explanation: -

- This survey conducted across India found that on an average 67.6% of the population has been infected i.e. **seroprevalence**. Over 25% of people have been vaccinated with one dose.
- **Not a representative survey** - Scientists from ICMR have clarified that this survey is not representative of the whole country.
- They have called for state level, preferably district level, surveys across the country using standardised methodology. But conducting the district level survey is not feasible during a pandemic period.
- **Anti-bodies Unknown** - It is not known for how long the antibodies last either after infection or vaccination (i.e., induced immunity).
- Tests employed in the surveys only identify antibodies to two viral proteins (nucleocapsid and spike) but do not measure the ability of those antibodies to neutralise the virus.
- However, some protection is likely from the non-Spike-directed immune defences, if not the spike protein-directed immune defences.
- Some of those who tested positive for antibodies, especially children, may have cross-reactive antibodies generated by other corona viruses.
- We may also have 'false negatives' of persons in whom antibody levels may have fallen some months after infection but still may have immunity from memory T cells and other forms of cellular immunity.
- Studies have shown a diminished neutralisation efficacy of antibodies produced by previous infections against the Delta variant.
- So, definitive conclusions about individual or herd immunity should not be drawn from antibody surveys.
- By adopting strong containment measures everywhere, the susceptible persons can be protected against current and new variants.

Waning of Antibodies

- People who were infected early during the pandemic would have a greater chance of testing negative during surveys due to the waning of antibodies over time.
- The time taken for such disappearance varies between 3 and 6 months.
- There would be a great deal of individual variation, based on
 1. Dose of viral exposure,

2. Severity of the infection,
3. Nature of the variant,
4. Age of the infected person,
5. Associated health conditions and
6. Use of steroids or other immunosuppressive drugs for treatment during the illness.

Soft Robotic Actuators

Why in News?

Indian scientists have developed soft robotic actuators with enhanced photomechanical capacity, using highly Porous Carbon Nanoparticles (PCN) from waste onion peels.

Explanation: -

- Soft robotic Actuators consisting of rubber-like polymer with embedded nanomaterials can act as efficient traps for the illuminating low-power near-infrared (NIR) light.
- Actuators can convert the control signal (source of energy) into mechanical motion with bioengineering applications.
- Generation of predesigned motion is facilitated by their flexibility, affordability, and easy customization.
- High thermal conductivity of the nanoforms results in rapid distribution of the heat generated locally by thermal and photo-thermal stimuli.
- Specific surface area of PCNs were efficient traps for the illuminating NIR light resulting in the film comprising PCNs and PDMS achieving large magnitude (multi-mm) actuation with sub-second responses.
- With an additional ultrathin (30 nm) gold layer, the magnitude of actuation could be more than doubled, and bidirectional photo-controlled face-sensitive movement realized.
- **Applications** - Actuators can be used for bio-medical applications (drug delivery, wearable and assistive devices, prostheses and artificial organs), military, and remote space operations.

Polity and Social Issues

National Population Policy 2000

Explanation: -

- The first National Population Policy (NPP) was framed by the Union Ministry of Health and Family Planning in 1976.
- It suggested a wide spectrum of programmes including raising the statutory age of marriage, introducing monetary incentives, paying special attention to improving female literacy, etc.
- Introduced in 2000, NPP 2000 provided a comprehensive framework to provide the reproductive and health needs of the people of India upto 2010.
- **Immediate objective** of the NPP is to address the unmet needs for contraception, health care infrastructure, and health personnel.
- It also aims to provide integrated service delivery for basic reproductive and child health care.
- **Medium-term objective** is to bring the Total fertility Rate (TFR) to replacement levels (TFR of 2.1) by 2010, by implementing inter-sectoral operational strategies.
- **Long-term objective** is to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development, and environmental protection.

What is the Total Fertility Rate?

- Total Fertility Rate (TFR) is defined as the average number of live births per woman. The current TFR in India is 2.24. States like Bihar, Madhya Pradesh, Rajasthan, Jharkhand, and Uttar Pradesh have the highest TFRs in India.

National Commission for Minorities

Why in News?

Recently, the Delhi High Court has directed the Centre **to fill up the vacant posts of chairperson and five other members of the National Commission for Minorities (NCM)** by 31st July 2021.

Explanation: -

- It is a forum for appeal, set up by the Government to safeguard the rights and interests of India's minority communities.

- It was set up under the National Commission for Minorities Act, 1992 as the first Statutory NCM was set up in 1993.
- Section 2 (c) of NCM Act, 1992 stipulates that ‘Minority’ for the purposes of the Act, means a community notified as such by the Central Government.
- NCM consists of a Chairperson, a Vice-Chairperson and five members and all of them shall be from amongst the minority communities.
- **Functions** of the Commission as laid down in Section 9(1) of the Act are related to the six notified minority communities i.e. Jain, Parsi, Sikh, Christian, Buddhist and Muslim.
- The functions of NCM broadly include
 1. Evaluate the progress of the development of minorities under the Union and States;
 2. Monitor the working of the safeguards provided in the Constitution and in laws enacted by Parliament and the State Legislatures;
 3. Make recommendations for effective implementation of safeguards for the protection of the interests of minorities by the Central Government or the State Governments;
 4. Look into complaints on deprivation of rights and safeguards of minorities and take up such matters with appropriate authorities;
 5. Cause studies to be undertaken into problems arising out of any discrimination against minorities and recommend measures for their removal;
 6. Conduct studies, research and analysis on the issues relating to socio-economic and educational development of minorities;
 7. Suggest appropriate measures in respect of any minority to be undertaken by the Central Government or the State Governments;
 8. Make periodical or special reports to the Central Government on any matter pertaining to minorities and in particular difficulties confronted by them; and

Result of New Family Planning Policy

Why in News?

Government’s initiatives for controlling the Population.

Explanation: -

- India's Total Fertility Rate (TFR) has declined from 2.9 (2005) to 2.2 (2018), as per Sample Registration System (SRS).
- 28 out of 36 States/UTs have already achieved the replacement level fertility of 2.1 or less,
- Crude Birth Rate (CBR) declined from 23.8 (2005) to 20.0 (2018)
 - To get the CBR, the ratio of Number of live births during the year to the Mid-year population must be multiplied by 1000.
- Decadal growth rate declined from 21.54% (1990-2000) to 17.64% (2001-2011),
- India's Wanted Fertility Rate has declined from 1.9 (NFHS-3) to 1.8 (NFHS-4).

New Family Planning Policy

- India was the world's first country to have launched a National Programme for Family Planning in 1952.
- Under the programme, the public health sector provides various family planning services at various levels of health system.
- The Government has been implementing this programme in line with the policy framework of population stabilization as envisaged in the National Population Policy (NPP-2000).
 - This is done by creating a robust service delivery and demand side mechanism to address the unmet needs for family planning.
- Family Planning programme got a further boost through comprehensive and holistic planning after the National Health Mission (2005).
- National Health Policy (NHP) 2017 provides policy guidance and sets out indicative, quantitative goals and objectives for population stabilization.

Mission Parivar Vikas

- This Mission was launched by the Government in 2017 to improve access to contraceptives through promotional schemes, awareness generation activities, capacity building and intensive monitoring.
- It was launched in 146 high fertility districts with TFR of 3 and above of 7 high-focus states (UP, Bihar, Rajasthan, MP, Chhattisgarh, Jharkhand and Assam).

Fast Track Special Courts

Why in News?

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved the continuation of 1023 Fast Track Special Court (FTSCs) including 389 exclusive POCSO Courts as a Centrally Sponsored Scheme (CSS)

Explanation: -

- The Union Cabinet has approved the continuation of Fast Track Special Court (FTSCs) including exclusive POCSO Courts from 2021 to 2023.
- The Central Share is to be funded from Nirbhaya Fund.
- The enactment of Criminal Law (Amendment) Act, 2018 by the Central Government led to the establishment of FTSCs in 2019 as Centrally Sponsored Scheme.
- FTSCs are dedicated courts that ensure swift dispensation of justice and, it strengthens the deterrence framework for sexual offenders.
- Currently covering 28 States, it is proposed to be expanded to cover all 31 states which are eligible to join the Scheme.

Nirbhaya fund

- Nirbhaya fund was created in 2013 in the aftermath of December 2012 Delhi gangrape and murder case. Giving in to popular sentiments, the government announced a separate fund for meeting expenditures to ensure the safety of women.
- The government proposed an allocation of Rs 10,000 crore under the Nirbhaya Fund to ensure the safety of women
- Under the Nirbhaya Fund, the Centre gives money to the states, which in turn spend it on programmes meant for ensuring women's safety.
- Nodal agency: The Women and Child Development Ministry is the nodal agency for expenditure from the Nirbhaya Fund. Earlier, it was the one releasing the funds but now it examines the programmes submitted to it by the states under the Nirbhaya scheme, approves them and recommends to the Department of Economic affairs for allocating funds.

What is the POCSO Act?

- The Protection of Children from Sexual Offences Act (POCSO Act) enacted in 2012 and amended in 2019.
- The Act was formulated to effectively address sexual abuse and sexual exploitation of children and pornography.
- **Salient provisions of the Act:**
 - The Act defines Child as any person below eighteen. The Act also defines different forms of sexual abuses.
 - The Act provides for relief and rehabilitation as soon as the complaint is made to the Special Juvenile Police Unit or the local police.
 - The Act prescribes a maximum punishment of life imprisonment or the death penalty. The Act provides a mandatory minimum punishment of three years.
 - The Act provides for the establishment of Special Courts for the trial of offences under the Act.

Oxfam's Report

Why in News?

Oxfam has recently released a new report titled "Tightening the Net".

Explanation: -

- It said that 'net-zero' carbon targets announced by many countries may be a dangerous distraction from the priority of cutting carbon emissions.
- It says that if the challenge of change is tackled only by way of planting more trees, about 1.6 billion hectares of new forests would be required to remove the world's excess carbon emissions by 2050.
- To limit global warming below 1.5°C and prevent irreversible damage from climate change, the world should cut emissions by 45% by 2030 from 2010 levels, with the sharpest being made by the biggest emitters.
- Currently, countries' plans to cut emissions will only lead to a 1% reduction by 2030.
- Oxfam's report estimates that if only land-based methods to deal with climate change are used, food rises are expected to rise by 80% by 2050.

- If the entire energy sector were to set similar 'net-zero' targets, it would require a land area nearly the size of the Amazon rainforest, equivalent to a third of all farmland worldwide.

National Commission for Women

Explanation: -

- The Central Government nominated the Chairperson of the National Commission for Women (NCW), as per the Section 3 of NCW Act, 1990,
 1. For another term of 3 years or
 2. Till the age of 65 years or
 3. Until further orders, whichever is the earliest.
- NCW is a statutory body in 1992 under the NCW Act, 1990, based on the recommendations of the Committee on Status of Women in India (1974).
- Its functions are to:
 1. Review the constitutional and legal safeguards for women.
 2. Recommend remedial legislative measures.
 3. Facilitate redressal of grievances.
 4. Advise the Government on all policy matters affecting women.
- NCW publishes a monthly newsletter, Rashtra Mahila, in both Hindi and English.
- Subjects of their campaigns have included dowry, politics, religion, equal representation for women in jobs, and exploitation of women for labour.

IPCC's Sixth Assessment Report

Why in News?

Recently, the Inter-governmental Panel on Climate Change (IPCC) has released the 6th Assessment Report.

Explanation: -

- This report said that the 1.5 degree Celsius warming was inevitable even in the best case scenario, and has been shown to be closer than thought.
- This is the first time that the IPCC is saying that the rise in global temperatures was a direct result of human activities.

- The most ambitious emission pathways would lead to the 1.5 degree C warming be achieved in the 2030s, overshoot to 1.6 degree C, before the temperatures drop back again to 1.4 degree C by the end of the century.
- **Net-zero targets** - For India, the report would make a case by increasing the pressure to agree to a net-zero target.
 - A net-zero target is a deadline by which it should be able to bring down its emissions to a level that equals the absorptions made by its carbon sinks.
- Immediate emission cuts and a steady pathway to net-zero is expected to bring better benefits than a business-as-usual scenario and a sudden drop in emissions towards the end to meet the target.
- Even the countries that have pledged a net-zero target, the substantial part of their emission cuts is planned only for 2035 and beyond. They will be put under pressure to reconsider their pathways.
- **NDCs** - The IPCC report could also lead to renewed demands that all countries update their climate action plans called nationally-determined contributions (NDCs) of the Paris Agreement.
- Every country has submitted an NDC by listing the climate actions they would take by 2025 or 2030 - To be updated every 5 years from 2025.
- 110 countries have updated their NDCs, but not China, India or South Africa.

Impacts

- The impacts projected at 2°C of warming would be present at 1.5°C as well, and are being witnessed even now.
 - a. Every additional half degree of warming will increase the intensity and frequency of hot extremes, heavy precipitation and drought.
 - b. At 2 degree C of global warming, heat extremes would reach critical tolerance thresholds for agriculture and human health.
 - c. For each additional degree C of global warming, extreme daily rainfall events would intensify by about 7%.
- The 6th Assessment Report suggested that the results of emission reductions might begin to show over time scales of 10 to 20 years.

Definition of Minority

Why in News?

Recently, the Supreme Court has sought the Central government's response on a Public Interest Litigation (PIL) challenging provisions of the National Commission for Minority Education Institution (NCMEI) Act, 2004.

Explanation: -

- The Central Government notifies minority communities at the national level under the National Commission for Minorities (NCM) Act, 1992.
 - The Government has enacted the NCM Act, 1992 to constitute a National Commission for Minorities.
- The term "minority" is not defined in the Indian Constitution. However, the Constitution recognises religious and linguistic minorities.

Religious Minorities

- Six communities notified as minorities under the Section 2 (c) of NCM Act are Christians, Sikhs, Muslims, Buddhists, Parsis and Jains.
- Notification of any community specific to a State as minority community within a State comes under the purview of the State concerned.
- **Article 25 (1)** - People's freedom of conscience and right to freely profess, practise and propagate religion.
- **Article 26** - Right of every religion or any section to establish and maintain institutions for religious and charitable purposes, manage its own religious affairs, and own, acquire and administer property.
- **Article 28** - People's freedom to attend religious instruction or religious worship in educational institutions.

Linguistic Minorities

- As per the Commissioner for linguistic minorities, Linguistic Minorities are group of people residing in the territory of India or any part thereof having a distinct language or script of their own.
- The language of the minority group need not be one of the 22 languages mentioned in the Eighth Schedule of the Constitution.

- In other words, linguistic minorities,
 - At the State level mean any group of people whose mother tongues are different from the principal language of the State, and
 - At the district and taluka/tehsil levels, different from the principal language of the district or taluka/tehsil concerned.
- Linguistic minorities are identified by the respective States/UTs.
- **Article 350-B** inserted by the 7th Constitutional (Amendment) Act 1956 to provide for a Special Officer for Linguistic Minorities appointed by the President of India.
- This Special Officer would investigate all matters relating to the safeguards provided for linguistic minorities under the Constitution.

Common Provisions

- **Article 29** - Right of any section of the citizens residing in India with a distinct language, script or culture of its own to conserve it.
- It grants protection to both religious minorities as well as linguistic minorities.
- Also, the Supreme Court held that the scope of this article includes minorities as well as the majority, as the word 'section of citizens' is used.
- **Article 30** - All minorities shall have the right to establish and administer educational institutions of their choice.
- The protection under Article 30 is confined only to minorities and does not extend to any section of citizens (as under Article 29).

E-Prisons Project

Explanation: -

- The e-Prisons have been operationalised in all States and Union Territories.
- E-Prisons Project, which aims at computerization of the functioning of prisons in the country, is assisted financially by the Home Ministry.
- e-Prisons data has been integrated with Police and Court system under the Inter-operable Criminal Justice System (ICJS).
- **3 components of the e-Prisons Project**
 1. e-Prison Management Information System (MIS) is used at the prisons for their day to day regular activities.

2. National Prisons Information Portal (NPIP) is a citizen centric portal maintained by States and UTs. It shows statistical data of various prisons in the country.
 - It can be accessed through NIC network, exclusively by authorized officials of Law Enforcement Agencies and Prisons, through ICJS.
3. Kara Bazaar Portal showcases and sells the products manufactured in various prisons of the country by inmates.

Inter-operable Criminal Justice System

- It is a common platform for information exchange and analytics of all the pillars of criminal justice system - Police, Forensics, Prosecution, Courts, Prisons, etc.
- It aims to reduce errors and time taken in sharing of the information.
- Invested under the Crime and Criminal Tracking Network & Systems (CCTNS) project of the MHA, the ICJS enables a nationwide search on police, prisons & courts databases across all States/ UTs in India.

Geography and Agriculture

Near-surface Shear Layer

Why in News?

Astronomers from Aryabhata Research Institute of Observational Sciences (ARIES), and IISc, Bangalore, have given the explanation of the existence of a near-surface shear layer (NSSL) in the Sun.

Explanation: -

- NSSL is a layer in the Sun, where the internal rotation profile of the Sun changes sharply. This layer exists very close to the solar surface, where there is an outward decrease in angular velocity.
- In this study, **Thermal wind balance equation** was used.
- This equation explains how the slight difference in temperature between solar poles and equator, called thermal wind term, is balanced by the centrifugal force appearing due to solar differential rotation.
- It was thought that this condition is true only in the interior of the Sun.

- However, in the study, this belief actually holds true near the surface as well.
- If this condition is true near the solar surface, it can explain the existence of NSSL, which is inferred in helioseismology (technique of using sound waves to peek inside the Sun) based observation.
- **Significance** - Understanding NSSL is crucial for the study of several solar phenomena like sunspot formation, solar cycle, and it will also help in understanding such phenomena in other stars.

Solar Differential Rotation

- This phenomenon is caused because different parts of the Sun rotate at different speeds.
- The Sun's rotation period varies with latitude on the Sun since it is made of gas. The Sun's equator spins faster than the poles.
 - a. Equatorial regions (latitude = 0 degrees) rotate in about 25.6 days.
 - b. Regions at 60 degrees latitude rotate in about 30.9 days.
 - c. Polar Regions rotate in about 36 days.
- The Sun rotates around an axis that is roughly perpendicular to the plane of the ecliptic; the Sun's rotational axis is tilted by 7.25° from perpendicular to the ecliptic.
- It rotates in the counter-clockwise direction (when viewed from the north), the same direction that the planets rotate.

Agriculture Export Policy 2018

Explanation: -

- This Policy was framed with a focus on agriculture export oriented production, export promotion, better farmer realization and synchronization within policies and programmes of Indian Government.
- The Central Government has notified the guidelines of the Central Sector Scheme for implementation of Agriculture Export Policy in 2020.
- The Policy aims to **double agricultural exports** from present value to ~US\$ 60+ Billion by 2022 and reach US\$ 100 Billion after that.
- It aims to diversify the export basket, destinations and boost high value- and value-added agricultural exports **including the perishables**.

- **Strategic Recommendations** - Structural changes required to boost agricultural exports include general and commodity specific measures.
- Presence of robust infrastructure like Mega Food Parks, state-of-the-art testing laboratories and Integrated Cold Chains is critical component of a strong agricultural value chain.
- This involves pre-harvest and post-harvest handling facilities, storage & distribution, processing facilities, roads and world class exit point infrastructure at ports facilitating swift trade.
- Greater involvement of State Governments in Agriculture Exports
- **Operational Recommendations** - Involvement of small and medium farmers for entire value chain as group enterprises within cluster of villages at the block level for select produces.
- Marketing and promotion of 'Brand India'. Attract private investments in export oriented activities and infrastructure.
- Agricultural R&D led by private industry along with higher infrastructure spends by the government will boost agricultural exports.
- Entrepreneurs to be supported to start a new Agri export venture during their initial period of establishment by the Agri-start-up fund.

Compound Events

Why in News?

It is a new element of discussion in the sixth Assessment report.

Explanation: -

- It is defined as two or more climate change-induced events happening back to back, triggering each other, or occurring simultaneously.
 - Example - Glacial lake bursts, a familiar occurrence in the Himalayan region, accompanied with heavy rainfall and flooding.
- If occurring together, they feed into each other, aggravating each other's impacts.
- If occurring one after the other, they give little time for communities to recover, thus making them much more vulnerable.

Cyclones over Arabian Sea More Frequent - IMD Study

Why in News?

- IMD Study based on 50-year dataset (1970-2019) of extreme weather events has shown that there has been an increased occurrence of extreme weather events, including severe cyclonic storms in recent decades.

Explanation: -

- There has been a significant rise in mean temperature across the globe, which is expected to trigger more intense meteorological events.
- Analysing the past data of cyclones over the North Indian Ocean (Bay of Bengal and Arabian Sea) during the period 1891–2020 shows that the frequency of extremely severe cyclonic storms has
 1. Increased in recent few years over the Arabian Sea since 1990, and
 2. Remained the same over the Bay of Bengal.

Atlantic Meridional Overturning Circulation (AMOC)

Why in News?

A new study suggests a link between Atlantic Meridional Overturning Circulation (AMOC) and the Indian Ocean and the rising temperatures in the Indian Ocean can help to boost the AMOC and delay slow down.

Explanation: -

- This major ocean current, to which also the Gulf stream belongs, may have been losing dynamic stability in the course of the last century.
 - AMOC transports warm water masses from the tropics northward at the ocean surface and cold water southward at the ocean bottom.
- As AMOC influences weather systems worldwide, a potential collapse of this ocean current system could have severe consequences.
- It is known from Earth's paleoclimate proxy records that the AMOC can exhibit a substantially weaker mode of operation (in addition to the currently attained strong mode).

- This **bi-stability** implies that abrupt transitions between the two circulation modes are in principle possible.
- The AMOC is currently at its weakest in more than 1000 years.
- Because the loss of dynamical stability would imply that the AMOC has approached its critical threshold, beyond which a substantial and in practice likely irreversible transition to the weak mode could occur.
- The fingerprints that AMOC left in sea-surface temperature and salinity patterns of the Atlantic ocean also suggests that the AMOC weakening during the last century may be associated with a loss of stability.
- This loss of the dynamic stability is caused due to many factors like global warming; freshwater inflow from the melting of the Greenland ice sheet, melting sea-ice, increasing precipitation and river run-off; etc.
- Freshwater is lighter than saltwater and reduces the tendency of the water to sink from the surface to greater depths, which is one of the drivers of the overturning.

No-patrol Zones

Why in News?

Recently, as Indian and Chinese troops disengage from **Patrolling Point (PP) 17A near Gogra Post**.

Explanation: -

- The details of a temporary no-patrol zone along the Line of Actual Control (LAC) between India and China differ from location to location.
- The new face-offs will be prevented by creating the 'no-patrolling zones' in which troops from neither side are allowed for a certain length of time.
- **Origin** - The idea of no-patrolling zone can be traced back to the border war of 1962 when China created a sort of buffer zone extending from where its forces were to where the LAC was.
- Again, it was used by India in 2013. Patrolling was suspended temporarily in 2014, again in Chumar, to resolve another standoff.

- **Zones** - Since 2020, patrolling point 17A (PP17A) will become the third region where Indian troops used to patrol before the standoff began in May 2020, and will temporarily not do so.
- The first such no-patrol zone had come up in Galwan Valley (PP14).
- These no-patrol zones cannot be kept fixed. It is guided by what infrastructure you have at any point of time.
- Replication of the zones could not be done blindly, as at a particular point either side could have a traditional permanent structure within the range decided for another point, beyond which they would not go.
- **Only Temporary** -The suspension of patrolling is not permanent. However, patrolling has been suspended till the standoff throughout eastern Ladakh is resolved.
- This means not only disengaging from the friction points, but also de-escalation.
 - De-escalation means both sides will pull back the additional troops that have been stationed in the region since last year.

Environment and Biodiversity

IPCC Sixth Assessment Report

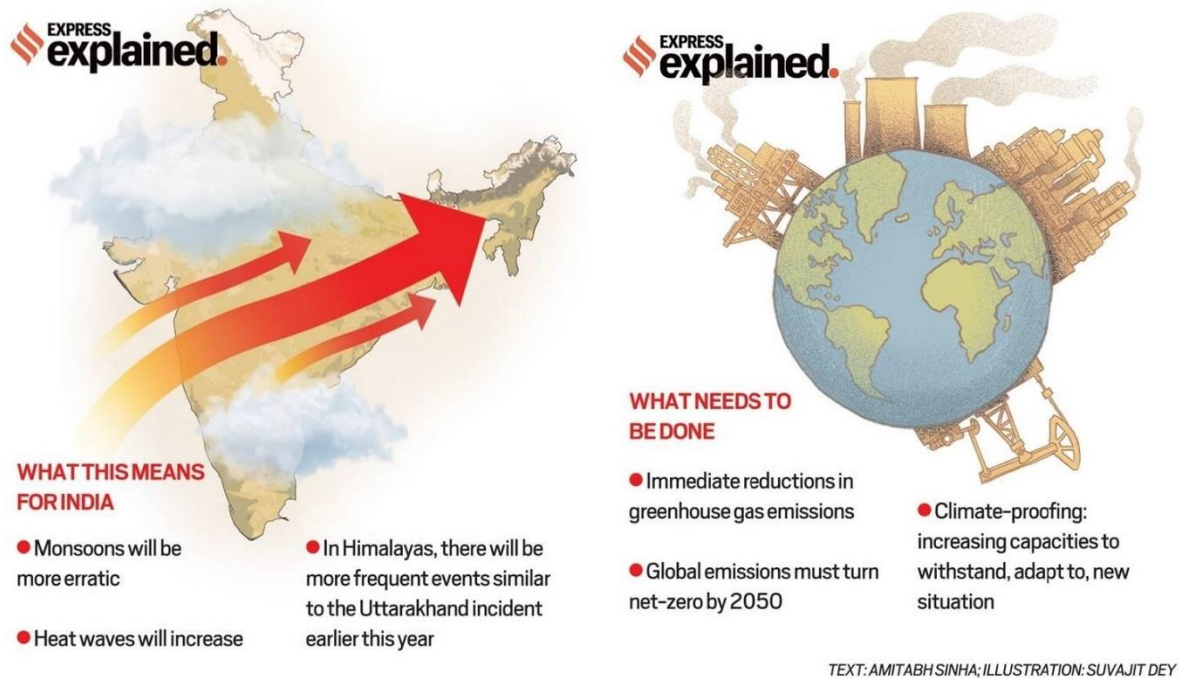
Why in News?

Inter-governmental Panel on Climate Change (IPCC) has released the 6th Assessment Report titled 'Climate Change 2021: The Physical Science Basis'.

Explanation: -

- This is the first part of the three-part report, which was prepared by the scientists of Working Group-I. (Other two parts to be released in 2022).
- It noted that global net-zero by 2050 was the minimum required to keep the temperature rise to 1.5 degree Celsius.
- It sets the stage for the Conference of Parties (CoP) 26 conference in November 2021.
- CO2 Concentrations are the highest in at least two million years.
- Most of the CO2 emitted by humans (2,400 billion tonnes of CO2 was emitted by humans since the late 1800s) can be attributed to the burning of fossil fuels.

- Heat waves and humid heat stress will become more intense and frequent over Southeast Asia during the 21st century.



- Both summer and annual monsoon precipitation will increase, with enhanced inter annual variability over Southeast Asia.

IPCC Report's Findings about India

- Indian Ocean is warming faster than the global average.
- Sea surface temperature over Indian Ocean may increase by 1 to 2 °C when there is 1.5°C to 2°C global warming. This higher rate of sea temperature than other areas may influence other regions.
- Changes in monsoon precipitation are also expected, with both annual and summer monsoon precipitation projected to increase.
- South West Monsoon has declined over the past few decades because of the increase of aerosols, but once this reduces, we will experience heavy monsoon rainfall.
- Global Warming will have a serious impact on mountain ranges across the world, including the Himalayas.
- The snowlines are retreating, and this can cause a change in the water cycle, the precipitation patterns, increased floods as well as an increased scarcity of water in the future in the states across the Himalayas.

Intergovernmental Panel on Climate Change

- It is an international body set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with
 - a. Regular assessments of the scientific basis of climate change
 - b. Impacts and future risks associated with Climate Change
 - c. Options for adaptation and mitigation for Climate Change
- Membership of the IPCC is open to all members of WMO and UNEP.
- Assessment Reports is prepared by 3 working groups (WG) of scientists.
 - a. WG -I - To deals climate change on a scientific basis.
 - b. WG-2 - To look at the likely impacts, vulnerabilities and adaptation issues.
 - c. WG-3 - To look into actions to be taken to combat climate change.

Tigers in the Mountains

Why in News?

- Uttarakhand government highlighted the expanse of the state's tiger map from Corbett National Park to Kedarnath Wildlife Sanctuary.

Explanation: -

- **Range** - Between the terai and the mountains, the tiger range is from an elevation of 1,181 ft (360 m) to 12,073 ft (3680 m) - a testimony of Uttarakhand's success in tiger conservation.
- Because, tiger's usual range is less than 6,000 ft. That makes its presence above 12,000 ft rare. But tigers have shown up before a strategically placed motion-triggered camera at higher altitudes.
- Since 2016, multiple records of tigers above 10,000 feet have been recorded in India.
- **Causes for concern** - Records of high-altitude tigers getting somewhat routine is alarming, as it signifies that warming induced by climate change is making the higher mountains tolerable for tigers.
- But the fact that tigers are found roaming the snow indicates that their upward movement is not deterred by the cold.

- Like Siberian tigers do not actually live in Siberia (but in temperate broadleaf-mixed-pine and pure deciduous forests), it is unlikely that tigers spotted in the snow have settled down there.
- Their survival still depends on the forests below. There can be no trade-off between traditional tiger habitat and these new heights of feline interest.

Prevention of River Pollution

Why in News?

The Central Pollution Control Board (CPCB) Study 2018 identified 351 polluted river stretches in India.

Explanation: -

- Under **National Water Quality Monitoring Programme**, Central Pollution Control Board (CPCB) along with the PCBs/Committees in different States/UTs is monitoring water quality of water bodies.
- As per the latest CPCB report of September 2018, 351 polluted stretches were identified on 323 rivers.
- **Problems** - Rivers in the country are polluted mainly due to,
 1. Discharge of untreated sewage from cities/towns and industrial effluents in their respective catchments,
 2. Problems in operation and maintenance of sewage treatment plants, lack of dilution and other non-point sources of pollution,
 3. Rapid urbanization and industrialization.
- **Cleaning of rivers** is an ongoing process. It is the duty of States/UTs and local bodies to ensure treatment of sewage and industrial effluents to the prescribed norms before discharging into water bodies or land.
- National River Conservation Plan (explained below) provides financial and technical assistance for abatement of pollution in identified stretches of rivers, excluding River Ganga and its tributaries.
- The Central Government has notified General Discharge Standards and also industry specific effluent discharge standards under **Environment (Protection) Rules, 1986**.
- These standards should be complied by the industrial units, STPs and/or the CETPs for prevention and control of pollution in water bodies.

National River Conservation Plan

Why in News?

There is inordinate delay in completion of projects to control pollution in two rivers Tapi and Sabarmathi in Gujarat, which is part of the National River Conservation Plan.

Explanation: -

- It is a **Centrally Sponsored Scheme** of the Jal Shakti Ministry. The plan aims to prevent pollution of rivers and improving water quality.
- The activities under National River Conservation Plan include,
 1. Sewage treatment plants for treating the diverted sewage,
 2. Low cost sanitation works to prevent the open defecation on riverbanks,
 3. Public awareness and public participation,
 4. Electric crematoria to ensure proper cremation of the bodies brought to burning Ghats.
- It is implemented by National River Conservation Directorate (NRCD).
- NRCD only provides financial assistance to the States/ local bodies to set up infrastructure for pollution abatement of rivers in identified polluted river stretches based on proposals received from the States/ local bodies.

Net Zero Carbon Targets

Why in News?

Recently, a report (Tightening the Net) published by Oxfam International has said that announcing Net Zero Carbon Targets may be a dangerous distraction from the priority of cutting carbon emissions.

Explanation: -

- Net-zero or carbon-neutrality does not mean that a country would bring down its emissions to zero. That would be **gross-zero**, which means reaching a state where there are no emissions at all.
- So, net-zero is a state in which a country's emissions are compensated by absorption and removal of greenhouse gases from the atmosphere.
- One way by which carbon can be absorbed is by creating **carbon sinks**.

- Until recently, Amazon Rainforests (world's largest tropical forests), were carbon sinks. But eastern parts of the forests have started emitting CO₂ instead of absorbing them due to deforestation.
- It is also possible for a country to have negative emissions, if the absorption and removal exceed the actual emissions. (e.g.): Bhutan.

Net-zero Targets of Countries

- US - launched a bipartisan organisation called **World War Zero** to reach net-zero carbon emissions in the country by 2050.
- China - announced that it would become net-zero by 2060 and it would not allow its emissions to peak beyond what they are in 2030.
- European Commission - asked all of its members to cut emissions by 55% below 1990 levels by 2030, through the EU's "Fit for 55" plan.

Using Magnets to Produce Hydrogen

Why in News?

- Indian researchers have come up with a new hydrogen manufacture route that involves electrolysis of water to produce hydrogen (H₂) in the presence of an external magnetic field i.e. **magneto-electrocatalysis**.

Explanation: -

- In this method, the same existing system that produces 1 ml of H₂ gas require 19% lower energy to produce 3 ml of hydrogen in the same time.
- This is achieved by synergistically coupling the electric and magnetic fields at the catalytic site.
- The electrocatalytic materials - cobalt-oxide nanocubes - are dispersed over hard-carbon based nanostructured carbon florets.
 - This material was developed with the support of the Department of Science & Technology's Material for Energy Storage program.

- **Advantages** - This route forms a system that doesn't require the constant presence of the external magnetic field and is able to sustain the magnetisation for prolonged time periods.
- The enhancements achieved are 650% increase in current density, 19% lowering of energy required and a 3-fold increase in volumetric hydrogen production rate.
- This route can be directly adopted in existing electrolyzers with external magnets without any change in design or mode of operation.
- [Electrolyzers use electricity to break water into hydrogen and oxygen.]
- One-time exposure of magnetic field for 10 minutes is enough to achieve the high rate of hydrogen production for over 45 minutes.

Ineffectiveness of Electric Vehicles Subsidy

Explanation: -

- Electric Vehicles are powered through self-contained battery, solar panels or an electric generator to convert fuel to electricity.
- They use one or more electric motors or traction motors for propulsion.
- Currently, the Central government and five state governments (Delhi, Maharashtra, Gujarat, Karnataka and Meghalaya) provide subsidies for EVs.
- Together, these subsidies add up to Rs 5 lakh per car, which would benefit only a small population of car owners.
- Such a high subsidy to E vehicles would have been justified if there is no **alternative to electricity for replacing fossil fuels** in the transport sector.
- But there are alternatives - ethanol and methanol - whose superior quality and greater safety has made them the preferred.
- Though there are limitations to ethanol as the sole alternative to gasoline, there is no such limit for methanol, which can be produced from any biomass waste from crop residues to municipal solid waste.
- Another area of greater promise for India is **gasification** because simple, air-blown gasifiers are already in use in food processing.
- They can convert rice and wheat straw into a lean fuel gas that can generate electricity.
- Biochar, a by-product of this process, is also valuable because it can replace imported coking coal in blast furnaces and can be used as a feedstock for producing transport fuels even more easily than municipal solid waste.

- **Other challenges of EV Industry** include Technological challenges, infrastructural challenges, lack of a stable policy for production, lack of availability of skilled workers and materials for domestic production.

IPCC's Assessment Report

Why in News?

The Geneva-based Intergovernmental Panel on Climate Change (IPCC) will release the 1st part of its Sixth Assessment Report.

Explanation: -

- This report presents the latest scientific understanding of the climate system, how and why is it changing, the impact of human activities on this Process. And the actions required to prevent the worst impacts.
- IPCC's Assessment Reports are the periodic status check, which has become the most widely accepted scientific view of the state of Earth's climate.
- The five previous assessment reports that have come out since the IPCC was established in 1988 have formed the basis of international climate change negotiations, and the actions taken by the governments.
- **Significance** - IPCC assessment reports have been extremely influential in directing the dialogue and action on climate change.
 - a. First Assessment Report - Led to the setting up of the UN Framework Convention on Climate Change (UNFCCC).
 - b. Second Assessment Report - Basis for 1997 Kyoto Protocol that ran till last year.
 - c. Fifth Assessment Report - **Guided the Paris Agreement**, which replaced the Kyoto Protocol from this year.

Wildfires

Why in News?

A massive wildfire continues to burn on the northern tip of Greece's second-largest island called Evia, which is close to the mainland.

Explanation: -

- Wildfires or forest fires (or bushfires in Australia) are unplanned fires that burn through natural areas such as forests, grasslands or prairies.
- They occur during hot and dry seasons, as dry leaves, shrubs, grass and deadwood are easily combustible and easily ignite.
 - Ignition can either happen naturally, such as through lightning strikes, or triggered accidentally or intentionally.
- Such fires typically come to an end when there is no more vegetation to burn or because of rain.
- **Impacts** - As the fires burn through vegetation or forests, smoke and carbon are released into the atmosphere.
- But the fires also release nutrients into the soil and are an important part of ecological succession, plant germination, and soil enhancement.
- **Factors** - The size of a wildfire depends on the amount of vegetation available and also the strength and direction of the wind.
- Some of the other factors that influence the wildfires are weather events such as frequent heatwaves, extreme rainfalls and rising sea levels.

Emission Control Measures By Thermal Plants

Explanation: -

- In 2020, the Government of India made rules for use of coal by thermal power plants, without stipulations of ash content or distance.
- **Technology Solution for emission norms** - Compliance of specified emission norms for Particulate Matter, as per the notifications of Central Pollution Control Board, issued from time to time.
- In case of washeries, Middling and rejects to be utilized in Fluidised Bed Combustion (FBC) technology based thermal power plants.
- **Ash Ponds** - Thermal plants must comply with the Fly Ash notification, without being entitled to extra power generation capacity of fly ash pond on ground of switching from washed to unwashed coal.
- Segregation of ash may be done at the Electro-Static Precipitator stage to ensure maximum utilization of fly ash.

- **Coal Transportation** may be undertaken by Railway wagon (covered by tarpaulin or other means) or covered conveyer beyond the mine area.
- However, road transportation may be undertaken in covered trucks, if Rail transport/conveyer infrastructure is not available.
- With advancement in pollution control technologies, thermal plants are better equipped to capture fly-ash generated in combustion process and unwashed coal can be used more efficiently and economically.

Fluidised Bed Combustion Technology

- It is a combustion technology used to **burn solid fuels** (types of coal, coal waste and woody biomass) at high efficiency and without the necessity for expensive fuel preparation.
- Fuel particles are suspended in a hot, bubbling fluidity bed of ash and other particulate materials (sand, limestone etc).
- Through this suspension, jets of air are blown to provide the oxygen required for combustion or gasification.
- The resultant fast and intimate mixing of gas and solids promotes rapid heat transfer and chemical reactions within the bed.
- For any given thermal duty, FBCs are smaller than the conventional furnace, so they offer advantages in terms of cost and flexibility.
- **Reduced Emissions** - FBC reduces the amount of SO_x, NO_x emitted.

Other Options

Various technology options for regulating the emission standards in coal-fired power plants include,

1. Flue Gas Desulfurization System,
2. Spray Dryer Absorber (SDA),
3. Circulating Dry Scrubber (CDS),
4. Limestone-based Wet FGD,
5. Selective Non Catalytic Reduction,
6. Electrostatic Precipitator,
7. Bag House Dust Collector.

Economy

e-RUPI

Why in News?

The Indian government is going to launch an electronic voucher based digital payment system **e-RUPI**.

What is e-RUPI?

- e-RUPI is a digital solution launched by the Hon'ble PM via video conferencing to allow cashless payment solution for COVID-19 vaccination. The digital payment solution has been developed with the support of DFS (Department of Financial Services) and NHA (National Health Authority) and is powered by National Payments Corporation of India (NPCI).
- It will be India's electronic voucher based digital payment system. It will be a person-specific and purpose-specific digital payments system.
- It has been developed by the National Payments Corporation of India (NPCI), Department of Financial Services, Ministry of Health and Family Welfare and the National Health Authority.

How the e-RUPI Works?

- This digital Payments medium will be delivered to mobile phones of beneficiaries in form of an SMS-string or a QR code.
- This e-voucher will be redeemable at specific accepting centres without any credit or debit card, a mobile app or internet banking.
- e-RUPI will connect the sponsors of the services with the beneficiaries and service providers in a digital manner without any physical interface.

What are the issues?

- The system has been built by the NPCI on its UPI platform, and has on-boarded banks that will be the issuing entities.
- Any corporate or government agency will have to approach the partner banks (both private and public), with the details of specific persons and the purpose for which payments have to be made.

- Beneficiaries will be identified using their mobile number and a voucher allocated by a bank to the service provider in the name of a given person would only be delivered to that person.
- **Use cases** - e-RUPI will ensure a leak-proof delivery of welfare services. Even the private sector can leverage these digital vouchers as part of their employee welfare and corporate social responsibility programmes.
- **CBDC** - The RBI had said that it has been working towards a phased implementation strategy for a Central Bank Digital Currency (CBDC).

How is e-RUPI different from digital currencies?

- While the introduction of e-RUPI is the first step towards having a digital currency in India, it in itself is not a digital currency but rather a social service voucher system, to ensure the reach of particular benefits to the eligible beneficiaries without any discrepancies and delay.
- This is different from cryptocurrencies that let you buy goods and services, or trade them for profit.
- More importantly, it is government-regulated. The prepaid voucher that is paid for by the government will largely be utilised, at least initially, to provide welfare subsidies.
- However, regarding the introduction of digital currency in India, the Reserve Bank of India (RBI) in January this year announced that it is exploring the need for a central bank digital currency in India as a measure to enhance financial inclusion.

Kandla SEZ

Why in News?

Kandla SEZ (KASEZ) became the first green SEZ to achieve the IGBC Green Cities Platinum Rating for Existing Cities after it was awarded the IGBC Platinum Rating.

Explanation: -

- Situated on the Gulf of Kutch on the west coast of Gujarat, it is Asia's first Export Processing Zone (EPZ) and it is India's largest multi-product functional SEZ.
- It is the first Green SEZ to achieve the Indian Green Building Council (IGBC) Green Cities Platinum Rating for Existing Cities.

Indian Green Building Council.

- The IGBC Green SEZ Rating System (Pilot version) is an extension of the Green SEZ guidelines.
- The Indian Green Building Council along with Ministry of Commerce & Industry has prepared the Green SEZ guidelines.
- The rating system encourages the projects to surpass the requirements of many codes and standards.
- The rating programme is a tool which enables the designer to apply green concepts and criteria, so as to reduce the environmental impacts, which are measurable.
- The programme covers methodologies to cover diverse climatic zones and changing lifestyles.

Why is IGBC Platinum rating awarded?

- CII's Indian Green Building Council awards the IGBC Platinum rating for policy initiatives, green master planning and implementation of green infrastructures.
- This recognition will inspire all the other SEZs in the country to emulate the efforts and green initiative that has been achieved by Kandla SEZ.

Reverse Merger

Why in News?

Ujjivan Small Finance Bank is likely to apply to the Reserve Bank of India for reverse merger with Ujjivan Financial Services

Explanation: -

- Stocks of certain small finance banks (SFBs) and their holding companies skyrocketed after the RBI permitted these SFBs to apply for a reverse merger with their holding companies.
- **Merger** is a corporate action where two companies decide to bring together their assets and liabilities to create a single entity that are bigger and better than either of them. It is usually proposed between equals.
- **Reverse merger** is a combination where a smaller company merges into a larger one, or a loss-making company merges into a profitable one.

- In the case of SFBs, the holding company is merged into the subsidiary bank. This type of merger is also referred to as downstream merger.
- **Importance** - Reverse merger proposal has made SFBs a better bet for investors. It could help investors unlock value by
 1. Eliminating dual listing of the SFBs and their holding companies.
 2. Warding off equity dilution on account of the mandated reduction in promoter holding.
- Downstream mergers could help dilute promoter stakes in these SFBs.

What Reverse Merger?

- A merger usually takes place when a smaller company folds into a larger one through exchange of shares or cash. But when the tables are turned and the acquiring company is weaker or smaller than the one being gobbled up, this is termed a reverse merger.
- Typically, reverse mergers take place through a parent company merging into a subsidiary, or a profit-making firm merging into a loss-making one.
- In the case of Cairn India and Vedanta, the latter is the larger parent company, making this a simple merger.
- Reverse mergers are quite commonplace in the US, but are few and far between in India. One example of a reverse merger was when ICICI merged with its arm ICICI Bank in 2002.

RBI Monetary Policy 2021

Why in News?

The Monetary Policy Committee (MPC) met on 4th, 5th and 6th August 2021.

Explanation: -

- The 6-member Monetary Policy Committee (MPC) panel of RBI, headed by RBI Governor, voted in favour keeping key policy rates unchanged.
 1. Repo rate (RBI's lending rate to banks) has been kept unchanged at 4% under the Liquidity Adjustment Facility (LAF). Repo rate has been kept unchanged for the seventh time in a row.
 2. Reverse repo rate (RBI's borrowing rate from banks) at 3.35%,

3. Marginal Standing Facility (MSF) rate and the Bank Rate at 4.25%.

- The panel has raised the inflation target for fiscal year 2021-22 to 5.7% from 5.1% projected earlier (This target is below the RBI's upper band of inflation target of 6%).
- **Inflation** may remain close to the upper tolerance band up to Q2 of 2021-22, but these pressures should ebb in Q3 of 2021-22 on account of kharif harvest arrivals and as supply side measures take effect.
- CPI inflation is now projected at 5.9% in Q2, 5.3% in Q3 and 5.8% in Q4 of 2021-22, with risks broadly balanced. Retail inflation for Q1 of 2022-23 is projected at 5.1%
- **Real GDP growth** has been retained at 9.5% in 2021-22. This growth for Q1 of 2022-23 is projected at 17.2%.
- **Auctions** - The RBI has decided to conduct fortnightly variable reverse repo rate (VRRR) auctions.

1. These auctions will absorb the surplus liquidity from the banking system that has pushed the overnight rates way below the RRR.

- The RBI will continue with its overnight fixed-rate reverse repo auction.
- It also proposes to conduct two more auctions of Rs 25,000 crore each under Government Security Acquisition Programme (G-SAP) 2.0.

Current Economic Situation

- Input prices are rising across manufacturing and services sectors and weak demand and efforts towards cost cutting are tempering the pass-through to output prices and core inflation.
- This rise in price across manufacturing and services sectors is due to,
 1. Elevated prices of industrial raw materials,
 2. High pump prices of petrol and diesel, and
 3. Logistics costs.
- Domestic economic activity has started normalising with the ebbing of the second wave of the virus and the phased reopening of the economy.
- High-frequency indicators suggest that consumption (both private and Government), investment and external demand are all on the path of regaining traction.

Sovereign Right to Taxation

Why in News?

Finance Minister recently mentioned in Rajya Sabha about “keeping the sovereign right of India to tax absolutely intact.”

Explanation: -

- The Constitution of India gives the government the right to levy taxes on individuals and organisations.
- It also makes it clear that no one has the right to levy or charge taxes except by the authority of law.
- Any tax being charged has to be backed by a law passed by the legislature or Parliament.
- This aspect is known as sovereign right to taxation.
- Taxes in India come under a 3-tier system - Central, State and local governments.
- VII Schedule of the Constitution puts separate heads of taxation under the Union and State list.
- There is **no separate head under the Concurrent list**, meaning Union and the States have no concurrent power of taxation.

Context of FM’s Statement

- The government recently decided to withdraw the retrospective taxation amendment in the I-T Act introduced in March 2012, by the then UPA government.
- This move is believed to provide clarity to investors by removing a ambiguity on taxation laws.
- However, the government has stressed the need to establish its “sovereign right to taxation”.

The Ministry of Statistics and Programme Implementation defines tax as a “pecuniary burden laid upon individuals or property owners to support the government, a payment exacted by legislative authority”, and that a tax is “not a voluntary payment or donation, but an enforced contribution, exacted pursuant to legislative authority”.

Art and Culture Amagarh Fort

Why in News?

A fort in Jaipur is at the centre of a conflict between the tribal Meena community and local Hindu groups.

Explanation: -

- This fort in Jaipur is at the centre of a conflict between the tribal Meena community and local Hindu groups.
- **Dispute** - Members of the Meena community say the Amargarh Fort was built by a Meena ruler predating Rajput rule in Jaipur, and this has been their holy site for centuries where they worship Amba Mata.
- Meena (Meos or Mewati) community members accused Hindu groups of trying to appropriate tribal symbols into the Hindutva fold, and of changing the name of Amba Mata to Ambika Bhawani.
- [Like other tribal groups, Meenas too worship ancestors. Amba Mata was such an ancestor, and not a god. Amba Mata is not related to Ambika Bhawani or Durga.]
- **History** - The present form of the Amargarh Fort was given in the 18th century by Maharaja Sawai Jai Singh II, founder of Jaipur.
- Prior to Rajput rule by the Kachhwaha dynasty, Jaipur and its nearby regions were ruled by Meenas, who had political control.
- It is believed that the fort was built by a Meena Sardar. Sardars from the Meena community ruled large parts of Rajasthan till around 1100 AD.

International Relations IR

India-Sweden Collaborative Industrial Research & Development Programme

Why in News?

Applications are invited for the India-Sweden Collaborative Industrial Research & Development Programme 2021 by DST.

Explanation: -

- There is a call for Global Scientific Collaboration for bringing “Ease of Living” for common man.

- Recently, Prime Ministers of India and Sweden signed the India-Sweden Collaborative Industrial Research & Development Programme.
- The program aims to foster and support the development of collaborative R&D projects that bring together companies, and other collaborators from both countries for the joint development of innovative products or processes in the following technology sectors:
 1. Smart and sustainable cities and transport systems
 2. Clean technologies, IoT and digitalization
- This may include, but is not limited to:
 1. Transport & Mobility; Electrical vehicles, Autonomous vehicles, Traffic safety, Mobility as a service, Reduction in traffic congestion, Digital solutions, etc.
 2. Environmental technologies (Eco-system services, clean water and air, Waste management, Renewable energy, etc.)
 3. Circular and bio-based economy (Bio-based materials, Bio-fuels, Resource efficiency in consumption and production, Waste-to-wealth, etc.)
 4. Energy (Reduced energy consumption and CO2 emissions, Alternative fuels, Renewable energy, Energy storage, etc.)
- City planning (ICT for urban technical supply, Geodata, tools for dialogue with citizens, etc.)

Progress of Indo-US Nuclear Deal

Why in News?

Recently, the former foreign secretary of India, Vijay Gokhale in his book claimed that the Left parties in India were influenced by China in their decision to oppose the Indo-US nuclear deal.

Explanation: -

- This deal, also known as the 123 Agreement or the US-India Civil Nuclear Agreement, was signed between the USA and India in 2005.
- **India** - Under the agreement, India agreed to separate its civilian and military nuclear activities.
- It also agreed to open up the civilian part to inspection by the International Atomic Energy Agency (IAEA).

- **US** - In return, the US offered to resume full nuclear trade i.e selling of reactors, Transfer of Technology, Uranium sale with India.
- The deal went through several complex stages including:
 - Amendment of U.S. domestic law (Atomic Energy Act of 1954),
 - Civil-military nuclear Separation Plan in India,
 - India-IAEA safeguards agreement.
- It enabled American companies to build nuclear power reactors in India.
- However, other than the imported Russian-built reactor-based project in Tamil Nadu, which is grandfathered under an earlier 1998 agreement, there has been no progress of greenfield projects since the Indo-US nuclear deal.

Gilgit-Baltistan

Why in News?

Pakistan's Law and Justice Ministry has finalised draft legislation to incorporate Gilgit-Baltistan

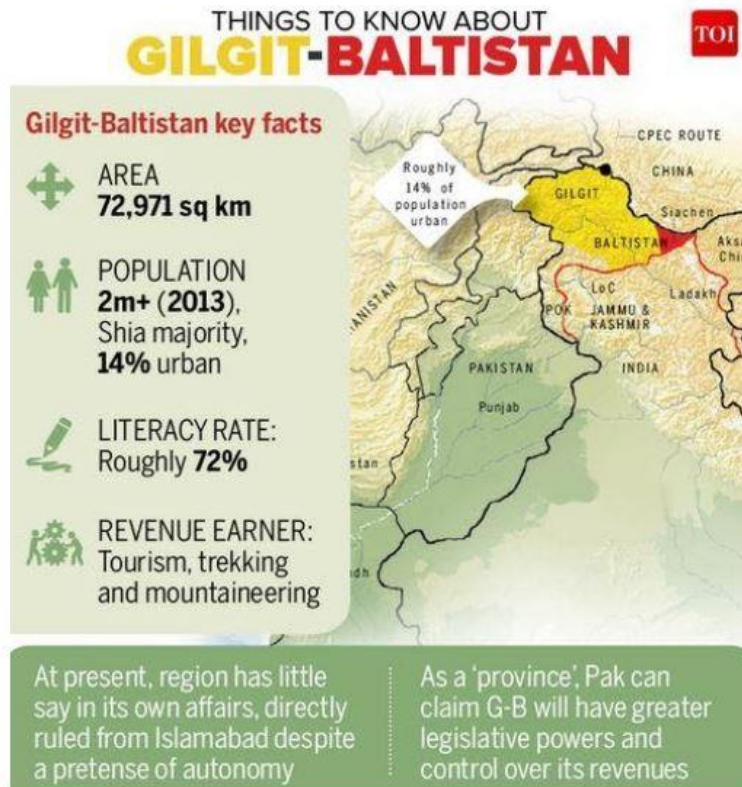
Explanation: -

- Pakistan has finalised its 26th Constitutional Amendment Bill to incorporate Gilgit-Baltistan as its province, the region known before 2009 as Northern Areas.
- Due to Gilgit-Baltistan's status as part of the unresolved Kashmir issue, it will be given 'Provisional Provincial Status' by amending Article 1 of the Constitution.
- It provides for representation of the region in National Assembly and Senate.
- India has asserted that Gilgit-Baltistan is a part of India by virtue of the legal and irrevocable accession of J&K to the Indian Union in 1947.

History of the region: -

- Gilgit was part of the princely state of Jammu & Kashmir, but was ruled directly by the British, who had taken it on lease from Hari Singh, the Hindu ruler of the Muslim-majority state.
- When Hari Singh acceded to India on October 26, 1947, the Gilgit Scouts rose in rebellion, led by their British commander Major William Alexander Brown.

- The Gilgit Scouts also moved to take over Baltistan, which was then part of Ladakh, and captured Skardu, Kargil and Dras. In battles thereafter, Indian forces retook Kargil and Dras in August 1948.



Border Fencing

Why in News?

All gaps on India's border fences will be covered by 2022 to ensure comprehensive security.

Explanation: -

- It is being erected on Indo-Pakistan border, Indo-Bangladesh border and Indo-Myanmar border by the Ministry of Home Affairs (MHA).
- So far, 5187 km length of International border has been fenced. Fencing lengths along Indo-Pakistan and Indo-Bangladesh Border are 2041 km and 3141 km respectively.
- Unfenced area includes non-feasible stretches, where fencing could not be constructed due to riverine and marshy land, are being covered through technological solution.

Schemes/Policies/Programme

National Social Assistance Programme

Why in News?

The Parliamentary Standing Committee on Rural Development has slammed the Centre's meagre pension allocations under National Social Assistance Programme (NSAP).

Explanation: -

- During the COVID time, the Government paid ex-gratia of Rs. 1000 (in two instalments) to the old aged, widows and divyangjan beneficiaries of NSAP under Pradhan Mantri Garib Kalyan Yojana Package (PMGKYP).
- NSAP is a social security and welfare programme that supports aged persons, widows, disabled persons and bereaved families on death of primary bread winner, belonging to **below poverty line** households.
- This program is implemented by the Ministry of Rural Development. It is implemented in rural areas as well as urban areas.
- It was brought within the umbrella of 'Core of Core' scheme in 2016.
- **Components** - NSAP at its inception in 1995 had three components,
 - a. National Old Age Pension Scheme (NOAPS),
 - b. National Family Benefit Scheme (NFBS) and
 - c. National Maternity Benefit Scheme (NMBS).
- **Schemes under NSAP** - Presently NSAP comprises of five schemes.
- **NFBS** (National Family Benefit Scheme) provides a one-time lump-sum amount of Rs.20,000/- is paid to a bereaved family, on the death of primary breadwinner, aged between 18-60 years.
- **Annapurna Scheme** - Launched in 2000, this scheme provides food security to meet the requirement of those senior citizens who, though eligible, have remained uncovered under the IGNOAPS.
 - a. Under the Annapurna Scheme, 10 kgs of food grains (wheat or rice) is given p.m. per beneficiary.
- For the first three schemes (IGNOAPS, IGNWPS and IGNDPS), the amount of pension is increased to Rs. 500/- p.m in respect of these beneficiaries on reaching the age of 80 years and above.

National Programme for Family Planning

Why in News?

The Government has been implementing the National Family Planning Program which provides voluntary and informed choices to the beneficiaries through a target free approach with the objective of checking population increase in the country.

Explanation: -

- India was the first country in the world to have launched a National Programme for Family Planning in 1952.
- National Programme for Family Planning has undergone transformation in terms of policy and actual programme implementation.
- Under this Programme, various initiatives have been taken providing broad range of services mentioned as given below,
- **Mission Parivar Vikas** has been introduced in 2017 for substantially increasing access to contraceptives and family planning services in 146 high fertility districts in 7 high focus states.
- **Expanded Contraceptive Choices** - Contraceptive's basket has been expanded by including new contraceptives namely Injectable contraceptive (Antara programme) and Centchroman (Chhaya).
 - This basket already has contraceptives like condoms, Combined oral contraceptive pills, Emergency contraceptive pills, Intrauterine contraceptive uterine device (IUCD) and Sterilization.
- **Compensation scheme for sterilization acceptors** provides compensation for loss of wages to the beneficiary and also to the service provider team for conducting sterilisation.
- **PPIUCD** (Post-partum Intrauterine contraceptive device) services are provided post-delivery.
- **FP-LMIS** (Family Planning Logistics Management Information System) is dedicated software that ensures smooth forecasting, procurement and distribution of family planning commodities across all levels of health facilities.

Achievement of the above initiatives

- TFR has declined from 2.9 (2005) to 2.2 (2018). 28 out of 36 States/UTs have achieved the replacement level fertility of 2.1 or less.
- Crude Birth Rate has declined from 23.8 (2005) to 20.0 (2018).
- India's Wanted Fertility Rate has declined from 1.9 (NFHS III) to 1.8 (NFHS IV).

National Child Labour Project

Why in News?

- In 2020-21, over 58,000 children were rescued across India from work, rehabilitated and mainstreamed under the Central Sector Scheme National Child Labour Project (NCLP).

Explanation: -

- The District Project Societies (DPS) are set up at the district level under the Chairmanship of the Collector/District Magistrate for overseeing the implementation of this NCLP scheme.
- Under this Scheme, children in the age group of 5-8 years are directly linked to formal education system through a close coordination with the Sarva Shiksha Abhiyan.
- Children in the age group of 9-14 years are withdrawn from work and put into NCLP Special Training Centres.
- In these Centres, the children are provided with bridge education, vocational training, mid-day meal, stipend, health care etc. before being mainstreamed into formal education system.
- Under this Scheme, funds are provided directly to the DPS who in turn engage and allocate the funds to NGOs/Civil Societies Organisation etc. for running of Special Training Centres.

PENCiL Portal

Explanation: -

- PENCiL (Platform for Effective Enforcement for No Child Labour) portal is an electronic platform developed for the implementation of Child Labour Act and NCLP Scheme by ensuring the timely disposal of work.

- It aims at involving Centre, State, District, Governments, civil society and the general public in achieving the target of child labour free society.
- It has five components- Child Tracking System, Complaint Corner, State Government, National Child Labour Project and Convergence.
- This portal is administered by the Ministry of Labour & Employment.

National Policy on Marine Fisheries, 2017

Why in News?

- The Government has notified National Policy on Marine Fisheries, 2017 (NPMF, 2017) to encourage marine fishing in the Indian waters.

Explanation: -

- NPMF provides guidance for promoting 'Blue Growth Initiative', which focuses on ushering 'Blue Revolution'.
- It aims to ensure the health and ecological integrity of marine living resources of India's Exclusive Economic Zone (EEZ) through sustainable harvests for the benefit of present and future generations of the nation.
- Strategy of NPMF is based on 7 pillars - Sustainable development, socio-economic upliftment of fishers, principle of subsidiarity, partnership, inter-generational equity, gender justice and precautionary approach.

Pradhan Mantri Matsya Sampada Yojana

Why in News?

Explanation: -

- Department of Fisheries is implementing this flagship scheme for 5 years period from financial year 2020-21 to 2024-25 in all States/UTs.
- Welfare-related activities supported under PMMSY primarily include,
 1. Insurance cover for fishers, fish farmers, fish workers, fishing vessels,
 2. Livelihood support and nutritional support for socio-economically backward active traditional fishers during fishing ban/lean period,

3. Supply of boats and nets to traditional fishermen, and safety kits for traditional and motorized fishing vessels, etc

- **Pradhan Mantri Matsya Sampada Yojana**

- The Pradhan Mantri Matsya Sampada Yojana. (PMMSY) is designed to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernisation and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers' welfare.
- The PMMSY is an umbrella scheme with two separate Components namely (a) Central Sector Scheme (CS) and (b) Centrally Sponsored Scheme (CSS).
- The Centrally Sponsored Scheme (CSS) Component is further segregated into non-beneficiary oriented and beneficiary orientated subcomponents/activities under the following three broad heads:
 - Enhancement of Production and Productivity
 - Infrastructure and Post-harvest Management
 - Fisheries Management and Regulatory Framework

Compliance Information Portal

Why in News?

The Central Board for Indirect Taxes & Customs (CBIC) launched the Indian Customs Compliance Information Portal (CIP).

Explanation: -

- CIP provides free access to information on all Customs procedures and regulatory compliance for nearly 12,000 Customs Tariff Items.
- It would provide complete knowledge of all import and export related requirements for all items covered under the Customs Tariff thereby improving the ease of doing cross border trade.
- Another important feature of CIP is a pan India map showing all the Customs seaports, airports, land customs stations etc.

PM-DAKSH

Why in News?

Recently, the Ministry of Social Justice and Empowerment (MoSJ&E), in collaboration with NeGD, developed the 'PM-DAKSH' Portal and Mobile App to make the skill development schemes accessible to target groups.

Explanation: -

- Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi (PM-DAKSH) Yojana is being implemented by the MoSJ&E from 2020-21.
- It is a National Action Plan for the marginalized persons of SC, OBC, Economically BC (EBC), Senior Citizens, De-notified Tribes (DNTs), Safai karamcharies including waste pickers, and women.
- Through this scheme, MoSJ&E empowers the socially, educationally and economically marginalized sections of the society, by providing skill development training programmes to the eligible target groups on,
 1. Up-skilling/Re-skilling,
 2. Short Term and Long Term Training Programmes, and
 3. Entrepreneurship Development Program (EDP).
- These training programs are being implemented through Government Training Institutes, Sector Skill Councils constituted by the Ministry of Skill Development and Entrepreneurship and other credible institutions.
- The following Apex Corporations functioning under the MoSJ&E provide loans at concessional interest rates and skill development training to the above target groups for self-employment,
 1. National Scheduled Castes Finance and Development Corporation,
 2. National Backward Classes Finance and Development Corporation,
 3. National Safai Karamchari Finance and Development Corporation.

Emergency Credit Line Guarantee Scheme (ECLGS)

Why in News?

This Scheme was announced as part of the Atma Nirbhar Bharat Package in 2020 to help businesses including MSMEs to meet their operational liabilities and resume businesses after the COVID-19 crisis.

Explanation: -

- It provides Member Lending Institutions (MLIs), 100% guarantee against any losses suffered by them due to non-repayment of the ECLGS funding by borrowers.
- The eligibility criteria for availing credit under ECLGS are,
 1. ECLGS 0 - MSME units, Business Enterprises, Mudra Borrower and individual loans for business purpose having loan outstanding upto Rs.50 crore and days past due upto 60 days as on 29.02.2020.
 2. ECLGS 0 - Borrower belonging to 26 stressed sectors identified by Kamath Committee & Healthcare sector with loan outstanding above Rs.50 crore and upto Rs.500 crore and 60 days past due.
 3. ECLGS 0 - Borrower belonging to Hospitality, Travel & Tourism, Leisure & Sporting and Civil Aviation sector having days past due upto 60 days.
 4. ECLGS 0 - Hospitals/Nursing Homes/Clinics/Medical Colleges/ units engaged in manufacturing of liquid oxygen, etc. having credit facility with a lending institution with days past due upto 90 days.
- The overall ceiling initially announced for ECLGS was Rs 3 lakh crore which was later enhanced to Rs 4.5 lakh crore.
- But, ECLGS being a demand driven scheme, sanctions/disbursements are made by lending institutions based on assessment of borrower's requirement and their eligibility.
- ECLGS is under the Department of Financial Services (DFS), the operational domain of Ministry of Finance.
- To ensure easy repayment terms on the credit extended to the MSME sector, Government has capped the interest rate under ECLGS scheme at
 1. 9.25% for Banks and Financial Institutions and
 2. 14% for Non-Banking Financial Institutions.
- This scheme also offers a one year moratorium on payment of principle component.
- To know more about the Emergency Credit Line Guarantee Scheme (ECLGS),

Pradhan Mantri Suraksha Bima Yojana (PMSBY) - Accidental Death Insurance

Explanation: -

- PMSBY is a Finance Ministry's **accident insurance scheme** that provides insurance cover to people, especially poor and the under-privileged sections of the society.
- **Eligibility** - Age group 18 to 70 years with bank account.
- **Premium** - Rs.12/annum will be auto-debited from the subscribers' bank account before 1st June of each annual coverage period.
- **Risk Coverage**
 - a. Accidental Death of insured person - Rs 2 Lakh
 - b. Total irrecoverable loss of both eyes or loss of use of both hands or feet - Rs 2 Lakh (Full Disability)
 - c. Total irrecoverable loss of sight of one eye or loss of use of one hand or foot - Rs.1 Lakh (Partial Disability)
- **Terms of Risk Coverage** - A person has to opt for the scheme every year. S/he can also prefer to give a long-term option of continuing in which case his/her account will be auto-debited every year by the bank.
- **Implementation** - The scheme will be offered by all Public Sector General Insurance Companies and all other insurers who are willing to join the scheme and tie-up with banks for this purpose.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) - Life Insurance Cover

Explanation: -

- It is Finance Ministry's scheme for **Life Insurance Cover**.
- **Eligibility** - Available to people in the age group of 18 to 50 and having a bank account.
- People who join the scheme before completing 50 years can continue to have the risk of life cover up to the age of 55 years subject to payment of premium.
- **Premium** - Rs.330 per annum will be auto-debited in one instalment.
- The payment of premium will be directly auto-debited by the bank from the subscribers account.
- **Risk Coverage** - Rs.2 Lakh in case of death for any reason.
- **Terms of Risk Coverage** - A person has to opt for the scheme every year. He can also prefer to give a long-term option of continuing, in which case his account will be auto-debited every year by the bank.

- **Implementation** - The scheme will be offered by Life Insurance Corporation (LIC) and all other life insurers who are willing to join the scheme and tie-up with banks for this purpose.

Vivad Se Vishwas Scheme

Explanation: -

- This scheme is a voluntary scheme for **resolving pending direct tax disputes** amicably with the taxpayers in various appellate forums i.e. Commissioner (Appeals), ITAT, High Court and Supreme Court.
 - This scheme is modelled on the lines of Sabka Vishwas Scheme, which closed numerous litigations in indirect tax demands.
- The entities who opt for the scheme have to pay a requisite tax following which all litigation against them are closed by the tax department and penal proceedings dropped.
- A taxpayer would be required to pay only the amount of the disputed taxes and will get a complete waiver of interest and penalty provided he pays by 31st March 2020.
- Those who avail this scheme after this date will have to pay extra.
- The scheme also applies to all case appeals that are pending at any level.

National Policy on Bio-fuels 2018

Why in News?

The Ministry of New and Renewable Energy envisages the creation of a National Biomass Repository through its National Policy on Bio-Fuels 2018.

Explanation: -

- This would be done by conducting appraisal of biomass across the Country.
- The policy is aimed at taking forward the indicative target of achieving 20% blending of biofuels with fossil-based fuels by 2030.
 - a. Target of 20% blending of ethanol in petrol and
 - b. Target of 5% blending of biodiesel in diesel.
- [The percentage of the same currently stands at around 2% for petrol and less than 0.1% for diesel.]
- It categorises biofuels as following to enable extension of appropriate financial and fiscal incentives under each category,

- a. **Basic Biofuels** - First Generation (1G) bio-ethanol & biodiesel
- b. **Advanced Biofuels** - Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc.
- The Policy expands the scope of raw material for ethanol production by allowing use of the following for ethanol production,
 - a. Sugar-containing materials like B grade molasses, sugarcane juice, sugar beet, sweet sorghum,
 - b. Starch-containing materials like corn, cassava,
 - c. Damaged food grains like wheat, broken rice, rotten potatoes, unfit for human consumption.
- The Policy allows use of surplus food grains for production of ethanol for blending with the approval of National Biofuel Coordination Committee.
- One of the expected benefits is that the Used Cooking Oil can be used as potential feedstock for biodiesel and its use for making biodiesel will prevent diversion of used cooking oil in the food industry.

Achievements under National AIDS Control Programme (NACP)

Explanation: -

- As a result of sustained efforts being made under the NACP-IV and its extension phase (2012-21), HIV in India continues to be low nationally, with an estimated adult (15-49 yrs.) prevalence of 0.22% in 2020.
- Estimated annual new HIV infections in India have declined by 48% (2010-2020) in comparison to the global average of 31%.
- Estimated annual AIDS-related mortalities have declined by 82% (2010- 2020) in comparison to the global average of 42%.

National AIDS Control Programme

- Launched in 1992, NACP is being implemented as a comprehensive programme for prevention and control of HIV/ AIDS in India.
- Over time, the focus has shifted from a national response to a more decentralized response and to increasing involvement of NGOs and networks of People living with HIV (PLHIV).

- NACPI (1992) had an objective of slowing down the spread of HIV infections to reduce morbidity, mortality and impact of AIDS in India.
- NACP II (1999) aimed to reduce the spread of HIV infection in India, and to increase India's capacity to respond to AIDS on a long-term basis.
- NACP III (2007) was launched with the goal of Halting and Reversing the Epidemic over its 5-year period.

National AIDS Control Programme - IV

- Launched in 2012, NACP IV aims to accelerate the process of reversal and further strengthen the epidemic response in India through a cautious and well defined integration process over 5 years period.
- Objectives of NACP - IV
 - a. Reduce new infections by 50% (2007 Baseline of NACP III)
 - b. Provide comprehensive care and support to all persons living with HIV/AIDS and treatment services for all those who require it.
- **Key strategies** - Intensifying and consolidating prevention services, with a focus on High Risk Groups (HRGs) and vulnerable population.
- Expanding Information Education and Communication (IEC) services for general population and HRGs with a focus on behaviour change and demand generation.
- Targeted Prevention Interventions for HRGs and Bridge Population (Female Sex Workers, Men who have Sex with Men, Transgenders/ Hijras, Injecting Drug Users (IDU), Truckers & Migrants)
- Needle-Syringe Exchange Programme (NSEP) and Opioid Substitution Therapy (OST) for IDUs

Janani Suraksha Yojana (JSY)

Why in News?

JSY has made significant impact in last one decade by increasing institutional delivery from 38.7% in NHFS-3 to 78.9% in NFHS-4.

Explanation: -

- It was launched in 2005 by modifying the National Maternity Benefit Scheme (NMBS), a component of National Social Assistance Program.

- JSY is a safe motherhood intervention under the National Rural Health Mission (NHM).
- This 100 % centrally sponsored scheme is implemented by the Department of Health & Family Welfare in all states and UTs, with a special focus on Low Performing States (LPS).
- **Objective** - Reducing maternal and infant mortality by promoting institutional delivery among pregnant women.
- It integrates cash assistance with delivery and post-delivery care.
- **Target Group** - The scheme focuses on poor pregnant woman with a special dispensation for states that have low institutional delivery rates.
- States with low institutional delivery rates - Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Assam, Rajasthan, Orissa, and Jammu and Kashmir.
- While these states have been named Low Performing States (LPS), the remaining states have been named High Performing states (HPS).
- The scheme provides performance based incentives to women health volunteers or Accredited Social Health Activists (ASHAs) for promoting institutional delivery among pregnant women.
- **Benefits** - Cash assistance is given for both the institutional delivery and home delivery.
 - Institutional delivery - In both LPS & HPS, BPL/SC/ST women are entitled for cash assistance in accredited private institutions.
 - Home delivery - BPL pregnant women, who prefer to deliver at home, are entitled to a cash assistance of Rs. 500 per delivery regardless of the age of pregnant women and number of children.
- Eligible mothers get JSY benefit regardless of any age and number of children. They get benefit directly into their bank accounts.

Schemes for Women Farmers

Explanation: -

- **30% expenditure** - The guidelines of the Ministry of Agriculture & Farmers Welfare mandated that States and other Implementing Agencies of various beneficiary oriented schemes to incur at least 30% expenditure on women farmers.

- The schemes include
 1. Support to State Extension Programmes for Extension Reforms,
 2. National Food Security Mission,
 3. National Mission on Oilseed & Oil Palm,
 4. National Mission on Sustainable Agriculture,
 5. Sub-Mission for Seed and Planting Material,
 6. Sub-Mission on Agricultural Mechanization &
 7. Mission for Integrated Development of Horticulture.
- **MKSP** - Ministry of Rural Development launched a scheme namely 'Mahila Kisan Sashaktikaran Pariyojana (MKSP)', as a sub component of DAY-NRLM.
- This scheme is being implemented since 2011 with the objective to empower women by making systematic investments to enhance their participation and productivity, as also create sustainable livelihoods for rural women.
- **Training** - In order to familiarize women with the latest techniques in agriculture and allied sectors, trainings are being imparted to women farmers under schemes of DA&FW and DAY-NRLM.
- **Other Initiatives**
 1. supporting farm women's food security groups,
 2. undertaking macro/micro level studies in critical thrust area related to women in agriculture,
 3. delivery of Gender Sensitization Module on Gender Learning through training programmes,
 4. compilation and documentation of gender friendly tools/technologies;
 5. Farm Women Friendly Handbook and compilation of best practices/success stories of the women farmers.

National Health Mission (NHM)

Explanation: -

- Launched in 2005, the NHM envisages achievement of universal access to equitable, affordable & quality health care services that are accountable and responsive to people's needs.

- This Mission encompasses its two Sub-Missions,
 - a. National Rural Health Mission (NRHM) and
 - b. National Urban Health Mission (NUHM).
- The main programmatic components of NHM include,
 - a. Strengthening of the Health System,
 - b. Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A), and
 - c. Communicable and Non-Communicable Diseases.
- Features of NHM,
 - a. NHM is principle vehicle for Universal Health Coverage (UHC),
 - b. Goals/targets are aligned with National Health Policy, 2017 and SDG-3,
 - c. NHM will integrate with the proposed National Health Protection Mission under Ayushman Bharat.
 - d. It will facilitate horizontal integration of all vertical disease programs to ensure integrated approach to health and wellness.
 - e. The following table depicts the goals of the NHM.

Science and Technology

Global Navigation Satellite System (GNSS)

Why in News?

Explanation

- This general term describes any **satellite constellation** that provides positioning, navigation, and timing (PNT) services on global or regional basis.
- GNSS is a network of satellites broadcasting timing and orbital information used for navigation and positioning measurements.
 1. Global Navigation Satellite Systems - GPS, GLONASS, BeiDou & Galileo
 2. Regional Navigation Satellite Systems - NavIC and QZSS

Quasi-Zenith Satellite System

- It is a regional GNSS owned by Japan and operated by QZS System Service Inc. (QSS).

- QZSS complements GPS to improve coverage in East Asia and Oceania.
- Japan plans to have an operational constellation of 4 satellites by 2018 and expand it to 7 satellites for autonomous capability by 2023.

Merging of 3 Super-massive Black Holes

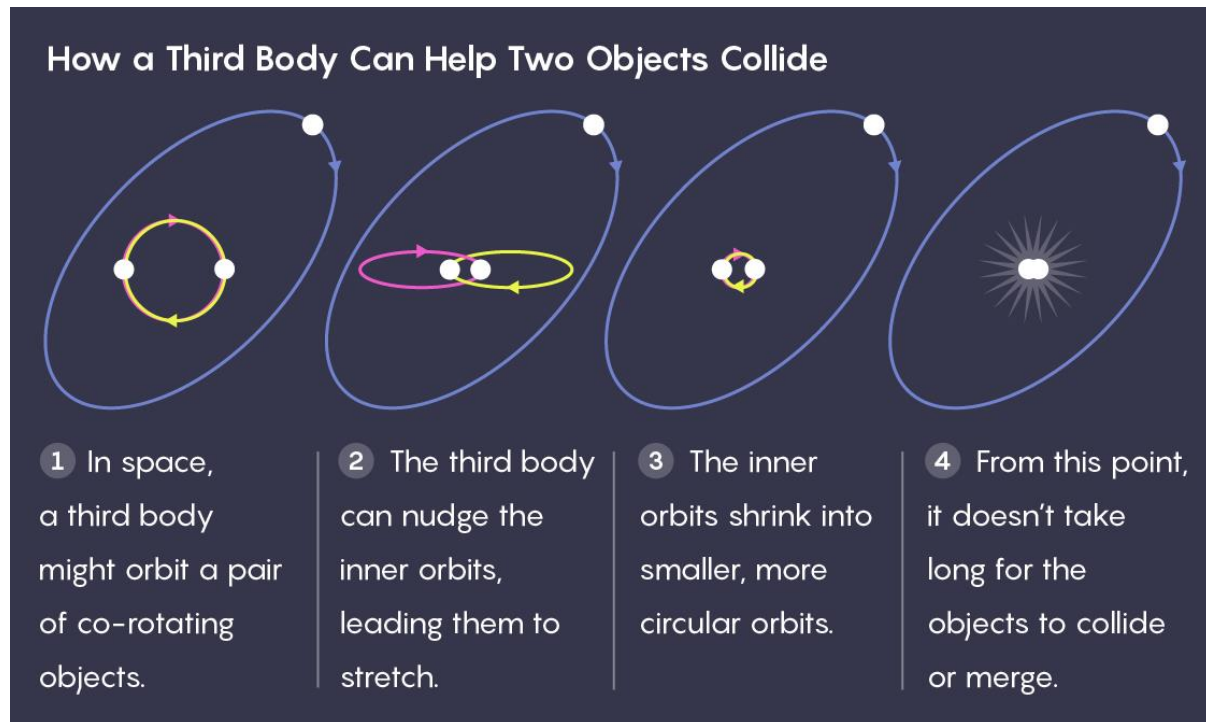
Indian researchers have discovered 3 supermassive black holes from 3 galaxies merging together to form a triple active galactic nucleus.

A galactic nucleus is a compact region at the center of a newly discovered galaxy that has a much-higher-than-normal luminosity.

- This is a rare occurrence in our nearby Universe.
- These small merging groups are ideal to study and detect multiple accreting supermassive black holes.
- While studying a known interacting galaxy pair (NGC7733 & NGC7734), the researchers detected unusual emissions from the centre of NGC7734 and a large, bright clump along the northern arm of NGC7733.
- Each of the galaxies hosts an active supermassive black hole in their nucleus and hence forms a very rare triple active galactic nuclei (AGN) system.

Merging Process

- Galaxy interactions happen when galaxies move close by each other and exert tremendous gravitational forces on each other.
- During such galaxy interactions, the respective supermassive black holes can get near each other.
- The dual black holes start consuming gas from their surroundings and become dual AGN.
- If two galaxies collide, their black hole will also come closer by transferring the kinetic energy to the surrounding gas.
- The distance between the blackholes decreases with time until the separation is around a parsec (3.26 light-years).



Wilful Control of Dopamine

Why in News?

A new study reveals that impulses of dopamine chemical can be wilfully controlled.

Explanation

- **Dopamine** is the neurological messenger or neurotransmitter that carries signals between brain cells.
- It has been popularly described as the "feel good" chemical of the brain related to reward and pleasure.
- It is involved in multiple aspects of cognitive processing - unique human ability to think and plan.
- Previously, dopamine was thought to occur only when presented with pleasurable or reward-based expectations.
- In the study, the mice learned to anticipate and wilfully act upon a portion of the dopamine.
- Mice learned to reliably elicit dopamine impulses prior to receiving a reward. These effects reversed when the reward was removed.

Junk DNA

Why in News?

A Study has identified the NTR2-1 DNA region (Junk DNA) that appears to drive the activity of the telomerase gene.

Explanation

- Knowing how the telomerase gene is regulated and activated and why it is only active in certain cell types could be the key to understanding how humans age and how to stop the spread of cancer.
- The study describes that one of the 'junk DNA' units enhances the activity of the telomerase gene.
- Their finding is based on a series of experiments that found that deleting the DNA sequence from cancer cells caused telomeres to shorten, cells to age, and tumors to stop growing.
- The length of the sequence ranged from as short as 53 repeats or copies of the DNA to as long as 160 repeats.
- The study actually shows that the telomerase gene is more active in people with a longer sequence.
- But, having a shorter sequence doesn't necessarily mean shorter lifespan.
- It means the telomerase gene is less active and your telomere length may be shorter, which could make you less likely to develop cancer.
- These findings tell that this VNTR2-1 sequence contributes to the genetic diversity of how we age and how we get cancer.
- About 50% of our genome has repetitive DNA that doesn't code for protein. These are called 'junk DNA' or dark matters of genome.

Telomerase Gene

- This gene controls the activity of the telomerase enzyme, which helps produce telomeres, the caps at the end of each strand of DNA that protect the chromosomes within our cells.
- In normal cells, the length of telomeres gets a little bit shorter every time cells duplicate their DNA before they divide.

- When telomeres get too short, cells can no longer reproduce, causing them to age and die.
- However, in certain cell types - reproductive cells and cancer cells - the activity of the telomerase gene ensures that telomeres are reset to the same length when DNA is copied.

This is what restarts the aging clock in new offspring but is also the reason why cancer cells can continue to multiply and form tumours.

Blood Clotting - Root Cause of Long Covid

Why in News?

A new study has reported evidence that patients with long Covid syndrome continue to have higher measures of blood clotting.

Explanation

- This evidence helps to explain their persistent symptoms, such as breathlessness, reduced fitness and fatigue.
- In long Covid syndrome, symptoms can last weeks to months after the initial infection has been resolved.
- Even though markers of inflammation had all returned to normal levels, increased clotting potential was still present in long COVID patients who required hospitalisation.
- But, they also found that even those who were able to manage their illness at home still had persistent clotting.
- **Significance** - Understanding the root cause of a disease (clotting) is the first step towards developing effective treatments.

Nuclear Fusion

Why in News?

An experiment carried out in National Ignition Facility (California) has made a breakthrough in nuclear fusion research.

Explanation

- **Nuclear fusion** is defined as the combining of many small nuclei into a large nucleus with the subsequent release of huge amounts of energy.
- It powers our sun and harnessing this fusion energy could provide an unlimited amount of renewable energy.
- Nuclear fusion energy is a good choice as the base load energy in the future as it has many advantages.
- Advantages - Inexhaustibility of resources, inherent safety, no long-lived radioactive wastes, and almost no CO₂ emissions.
- In the experiment, lasers were used to heat a small fuel pellets, having deuterium and tritium, in the **inertial confinement fusion** process.
- Base load energy refers to the minimum amount of electric power needed to be supplied to the electrical grid at any given time.
- This pressurised the fuel pellets at conditions similar to that at the centre of the Sun. This triggered the fusion reactions.
- These reactions released alpha particles (positively charged), which in turn heated the surrounding plasma.
- [At high temperatures, electrons are ripped from atom's nuclei and become plasma or the 4th state of matter or an ionised state of matter.]
- Heated plasma released alpha particles and a self-sustaining reaction called ignition took place. Ignition amplifies the energy output.
- **Significance** - This could help provide clean energy for the future.
- Reproducing the conditions at the centre of the Sun will help studying the states of matter we were unable to create in the lab before.

QSim Toolkit

Why in News?

Quantum Computer Simulator (QSim) Toolkit was launched by the Ministry of Electronics & Information Technology (MeitY).

Explanation

- QSim is a first-of-its-kind indigenously developed toolkit that helps in learning and understanding the practical aspects of programming using Quantum Computers.

- It is an outcome of the ‘Design and Development of Quantum Computer Toolkit (Simulator, Workbench) & Capacity Building’ project.
 - This project is being executed collaboratively by IISc Bangalore, IIT Roorkee and C-DAC with the support of MeitY.
- QSim provides a platform to acquire the skills of ‘**programming**’ (Quantum Code) as well as ‘**designing**’ real Quantum Hardware.
- It enables the researchers and students to carryout research in Quantum computing in a cost effective manner.
- **Features** - QSim offers a QC Simulator integrated with a GUI based Workbench allowing people to create Quantum programs.
- QSim helps simulate Quantum circuits with and without noise and test how well various algorithms work with imperfect quantum components.
- It has pre-loaded Quantum programs and algorithms providing a head start to the users.
- Quantum simulations performed on HPC resources will allow multiple users to submit jobs simultaneously with different QuBit configurations.
- **QSim - Offering Models**
 1. PARAM SHAVAK QSim - Standalone system with Quantum Simulator in a box
 2. PARAM QSim Cloud - Available on cloud using HPC infrastructure PARAM SIDDHI AI (developed under NSM program).

Polity and Social Issues

History of Indian Flag

Why in News?

The first national flag (with 3 horizontal stripes of red, yellow and green) was hoisted on August 7, 1906, at the Parsee Bagan Square, Calcutta.

Explanation

- In 1921, Pingali Venkayya met Mahatma Gandhi and proposed a basic design of the flag, consisting of two red and green bands.
- After undergoing several changes, the Tricolour was adopted as our national flag at a Congress Committee meeting in Karachi (1931).

- The Indian flag in its present form was adopted during a meeting of the Constituent Assembly held on July 22, 1947.
- The earliest rules for the display of the national flag were governed by,
 1. Emblems and Names (Prevention of Improper Use) Act, 1950 and
 2. Prevention of Insults to National Honour Act, 1971.

Prevention of Insults to National Honour Act, 1971

- This Act prohibits desecration of or insult to the national symbols - National flag, national anthem, Indian map and the Constitution.
- It punishes those who disrespect or bring in contempt to National Flag or Constitution of India with upto 3 years imprisonment, or fine, or both.
- Among the other acts which are considered to be of disrespect to the national flag are,
 1. Dipping the Tricolour in salute to any person or thing,
 2. Waving it at half-mast except on specific occasions, or
 3. Using it as a drapery in any form, except in state funerals or for the last rites of armed forces or other paramilitary forces,
- Putting any kind of inscription upon the flag, using it to cover a statue, a monument or platform, is considered disrespect to the Tricolour.
- The flag shouldn't be allowed to touch the ground or trail in water, or be put up in an inverted manner.

Flag Code of India 2002

- This Code allowed the unrestricted display of the Tricolour as long as the honour and dignity of the flag were being respected.
- Flag Code did not replace the pre-existing rules.
- But, it brings together all previous laws, conventions and practices.
- **Restrictions** - The Code has rules on display of the flag by public and private bodies and educational institutions, and rules for display of the flag by governments and government bodies.
- There will be no restriction on the display of flag by public and private bodies and educational institutions except to the extent as laid down in the above two laws (Acts).

- The Code mentions that the tricolour cannot be used for commercial purposes, and cannot be dipped in salute to any person or thing.
- It further states that whenever the flag is displayed, it should be distinctly placed and should “occupy the position of honour”.
- Damaged flag should be destroyed in private, preferably by burning or by any other method consistent with the dignity of the Flag.
- For official display, only flags that conform to the specifications of the Bureau of Indian Standards and bearing their mark can be used.

Narsinh Mehta

Why in News?

A documentary called ‘Gandhi’s Song’ sheds new light on the saint who inspired the Mahatma Gandhi.

Explanation

- Mahatma Gandhi’s favourite bhajan, ‘Vaishnav jan to’, was written by Narsinh Mehta or Narsi Mehta or Narsi Bhagat (1414-1480).
- He is a 15th Century poet-philosopher of the Vaishnava sect, from the Bhakti era who hailed from Junagadh, Gujarat.
- Born in an upper-caste family, Narsinh has angered his community by mingling with everyone and considering all humanity as equal.
- Narsinh wrote in ecstasy about Krishna, and he is known as an ‘Adi Kavi’ or ‘the primary poet’ of Gujarat.
- He is known for his literary forms called "pada (verse)", "Akhyana" and "Prabhatiya" (morning devotional songs).

Vaishnav Jan to

- This bhajan was first introduced by Gandhi to fellow residents of the Phoenix Settlement and Tolstoy Farm in South Africa around 1907.
- This bhajan was played in all his prayer meetings and was Gandhi’s moral weapon. It is at the epicentre of his Ahimsa philosophy.

AERA (Amendment) Bill, 2021

Why in News?

Airports Economic Regulatory Authority of India (AERA) (Amendment) Bill, 2021 that seeks to amend the AERA Act, 2008 was passed by the Parliament.

Explanation: -

- This bill would help in monetising airports in tier-2 and tier-3 cities.
- **Major airports** - The AERA regulates tariffs and other charges for aeronautical services rendered at ‘major’ airports.
- Under the AERA Act, 2008, a major airport is,
 1. One that has, or is designated to have, passenger throughput in excess of 3½ million per annum or
 2. Any other airport as the Central Government may specify, by notification.
- This Bill will broaden the category of airports for which the AERA can determine tariff by amending the definition of major airports - to include “a group of airports” after the words “any other airport”.
- The Bill adds that the central government may group airports and notify the group as a major airport.
- **Profitable Clubbing** - The Bill seeks to club profitable airports with non-profitable ones and offer them as a package for development in public-private partnership mode to expand connectivity.

Airports Economic Regulatory Authority of India

- It is a statutory body constituted under the AERA Act, 2008.
- Head-quartered at Delhi, AERA was set up by the Government in 2009.
- AERA seeks to determine the following for the major airports,
 1. Tariff for the aeronautical services,
 2. Airport Development Fees, and
 3. Passengers Service Fee (levied under Aircraft Act, 1934).

E-Shram Portal

Why in News?

Ministry of Labour and Employment launched the E-Shram portal.

Explanation: -

- E-Shram Portal will be the National Database of Unorganised workers (Shram Yogis).
- The portal will do the targeted identification of the unorganized workers, and will help take social security schemes to their doorstep.
- The database will include construction workers, migrant workers, gig and platform workers, street vendors, domestic workers, agriculture workers, migrant workers and similar other unorganised workers.
- Workers can register themselves on the portal, and they will be provided with an e-SHRAM card that will have a 12 digit unique number.
- This move will integrate the Centre's social security schemes.

Geography and Agriculture

Agro-Automatic Weather Stationsa

Why in News?

India Meteorological Department (IMD) has undertaken installation of Agro-Automatic Weather Stations (Agro-AWS).

Explanation

- These stations will provide exact weather forecast to the people, especially the farmers.
- Agro-AWS are installed at 200 District Agromet Units (DAMUs) located in the Krishi Vigyan Kendras (KVKs) under Indian Council of Agricultural Research (ICAR) network.
- They are installed at DAMUs to augment block level Agromet Advisory Services (AAS) under Gramin Krishi Mausam Sewa (GKMS) scheme.

Gramin Krishi Mausam Sewa

- Under this scheme, weather-based operational AAS will be rendered by IMD jointly with ICAR and State Agricultural Universities.
- **Ministry** - Ministry of Earth Science
- This is a step towards weather-based crop and livestock management strategies and operations for the benefit of farming community.
- Based on the **medium range weather forecast** at district and block level generated under the scheme, Agromet Advisories are prepared.
- These **Agromet Advisories** are communicated by Agromet Field Units (AMFUs) co-located with State Agricultural Universities, and DAMUs at KVKs to the farmers on every Tuesday and Friday.
- IMD also monitors rainfall situation & weather aberrations and issues alerts & warnings to the farmers and the State Department of Agriculture from time to time under GKMS scheme.
- SMS-based alerts for extreme weather events and suitable remedial measures are issued to take timely operations by the farmers.
- Agromet Advisories are communicated to the farmers through multichannel dissemination system including SMS through,
 1. Kisan Portal launched by Agriculture Ministry and
 2. Private companies under Public Private Partnership (PPP) mode.

Meghdoot

- It is a mobile App launched by the Ministries of Earth Sciences and Agriculture.
- It was developed by Indian Institute of Tropical Meteorology, IMD and ICAR.
- It will provide location, and crop and livestock-specific weather-based agromet advisories to farmers in local languages.

Drought in Colorado River Basin

Why in News?

The US government has declared the 1st water shortage for the Colorado River basin due to a historic drought.

Explanation

- This will lead to water cuts in some south-western US states and some parts of north-western Mexico starting October 2021.
- Due to this historic drought, the release of water from Lake Mead and Lake Powell will be affected that will impact the entire Colorado basin.
- But even with a great water storing capacity, over the years the demand for water from the basin has increased whereas supply is restricted.
- Governors of 10 western US states have requested the US President to declare a Federal Emergency Management Agency (FEMA) drought disaster in these states.
- This will provide more assistance to thousands of farmers in these states.

Flow of Colorado River

- The Colorado River flows from the Rocky Mountains and it is fed by snowmelt from the Rocky and Wasatch mountains.
- It flows a distance of over 2,250 km across 7 south-western states and into Mexico.
- Because of its intensive development it is often referred to as the “Lifeline of the Southwest.”
- The Colorado River Basin is divided into,
 1. Upper Basins (Wyoming, Colorado, New Mexico, Utah and northern Arizona) and
 2. Lower Basins (parts of Nevada, Arizona, California, south-western Utah and western New Mexico).
- In the Lower Basin, the Hoover Dam, Davis Dam, Parker Dam and the Imperial Dam controls floods and regulates water delivery and storage.

July 2021 - Hottest Month Ever

Why in News?

The US National Oceanic and Atmospheric Administration’s (NOAA’s) National Centers for Environmental Information has released a report on global climate.

Explanation

- This report has said that July 2021 was the hottest month on Earth since 1880.
- It says that the global land-only surface temperature for July 2021 was 1.40 degrees Celsius above the 20th-century average.

- The previous record was held by Julys in 2017 and 2020.
- The warmth across the global land surfaces was driven by higher than normal temperatures across much of the Northern Hemisphere land.
- In July 2021, Arctic sea ice extent was 18.8% below the 1981-2010 average levels.
 - NOAA said that 2021 will be in the list of the 10 warmest years on record.

Fortification of Rice

Why in News?

Emphasising that malnutrition is a hurdle in the development of women and children, Prime Minister announced fortification of rice distributed under various government schemes by 2024.

Explanation

- This announcement is important as the government distributes rice under various schemes - TPDS, MDM and ICDS - covered under the National Food Security Act, 2013.
- Fortification is defined by FSSAI as deliberately increasing the content of essential micronutrients in a food so as to improve the nutritional quality of food and to provide public health benefit with minimal risk to health.
- [Food Safety and Standards Authority of India (FSSAI) sets standards for food items in the country.]
- According to the FSSAI norms, 1-kg fortified rice shall contain iron (28mg-42.5mg), folic acid (75-125 mg) and Vitamin B-12 (0.75-1.25 mg).
- In addition, rice may also be fortified with micronutrients, singly or in combination, with zinc, and Vitamins A, B1, B2, B3 and B6.

Fortification of Rice and its Distribution Under PDS

- Ministry of Consumer Affairs had launched a pilot scheme on “Fortification of Rice and its Distribution under Public Distribution System (PDS)” for a period of 3 years beginning 2019-20.
- This centrally sponsored scheme focuses on 15 districts in 15 states - AP, Kerala, Karnataka, Maharashtra, Odisha, Gujarat, UP, Assam, TN, Telangana, Punjab, Chhattisgarh, Jharkhand, Uttarakhand and MP.

- Under the scheme, the blending of rice is done at the milling stage.
- The Scheme is funded by the Government of India in the ratio of,
 - a. 90:10 in respect of North Eastern, hilly and island states and
 - b. 75:25 in respect of the rest of the states and UTs.

Mission Poshan 2.0

- It was announced the Union Budget 2021-22 to strengthen nutritional content, delivery, outreach, and outcome.
- It was launched after merging the Supplementary Nutrition Programme and the Poshan Abhiyan.

Earthquakes in Haiti

Why in News?

Earthquake that occurred along the Enriquillo-Plantain Garden fault zone in Haiti has wreaked havoc.

Explanation

- This fault zone cuts across Haiti's south-western Tiburon Peninsula. It's the same fault zone along which the 2010 earthquake occurred.
- **Reason** - Haiti sits near the intersection of 2 tectonic plates that make up the Earth's crust - North American plate and Caribbean plate.
- There are many fault lines between those plates cut through or near the island of Hispaniola, which Haiti shares with the Dominican Republic.
- Also, Haiti is densely populated.
- Many of its buildings are designed to withstand hurricanes, not earthquakes. They are vulnerable to collapse when the ground shakes.
- Construction of more earthquake-resistant buildings remains a challenge in Haiti, which is the poorest nation in the Western Hemisphere.

Earthquakes

- Earthquakes are the result of the tectonic plates slowly moving against each other and creating friction over time.
- That friction builds up and eventually the strain that's stored there overcomes the friction. That's when the fault moves suddenly and cause earthquake.
- Earthquakes can cause similar-sized earthquakes on the next portion of the fault.
- Seismic waves are the vibrations that are generated from earthquakes that travel through the Earth and are recorded on seismographs.

Environment and Biodiversity

River Pollution in Africa

Why in News?

A new report has found that rivers in some African countries are turning the colour of ink, and fast fashion is behind it.

Explanation

- The report claimed that the untreated or partially treated effluent from textile factories (blue or indigo in colour) is killing the African rivers.
- Trade agreements, tax incentives and cheap labour have spurred rapid growth of the industry, mainly in Tanzania, Ethiopia, Lesotho and Madagascar.
- The report flagged two major problems,
 1. Production of cotton and leather as inputs - that extensively use chemical, insecticides and fertiliser - pose significant water risks.
 2. Lack of transparency on who sources and manages these raw materials.
- Producing cotton burdens water resources and leads to salinisation, soil erosion and degradation.
- Other stages of production entail many water-polluting activities like,
 1. Unsafe management of solid waste and sludge,
 2. Unsafe handling of chemicals used,
 3. Shipping of products causing water pollution on the waterways,
 4. Release of microplastic in water,

5. Fast-fashion, which makes most of our collection disposable.

Ramsar Sites

Why in News?

Four wetlands are recognised from the Ramsar Secretariat as Ramsar sites - Sultanpur & Bhindawas (Haryana) and Thol & Wadhvana (Gujarat).

Explanation

- With this, the number of Ramsar sites in India is 46 and the surface area covered by these sites is now 1,083,322 hectares.
- **Bhindawas Wildlife Sanctuary** is the largest wetland in Haryana.
- It is a human-made freshwater wetland.
- Over 250 bird species use the sanctuary throughout the year as a resting and roosting site.
- Globally threatened species found here are endangered Egyptian Vulture, Steppe Eagle, Pallas's Fish Eagle, and Black-bellied Tern.
- **Sultanpur National Park** supports more than 220 species of resident, winter migratory and local migratory water birds at critical stages of their life cycles.
- Species found here are,
 1. Critically endangered sociable lapwing, and
 2. Endangered Egyptian Vulture, Saker Falcon, Pallas's Fish Eagle and Black-bellied Tern.
- **Thol Lake Wildlife Sanctuary** lies on the Central Asian Flyway.
- It supports the threatened waterbird species,
 1. Critically endangered White-rumped Vulture, Sociable Lapwing,
 2. Vulnerable Sarus Crane, Common Pochard and Lesser White-fronted Goose.
- **Wadhvana Wetland** provides wintering ground to migratory waterbirds, including the species that migrate on the Central Asian Flyway.
- Threatened or near-threatened species found here are,
 1. Endangered Pallas's fish-Eagle,
 2. Vulnerable Common Pochard, and
 3. Near-threatened Dalmatian Pelican, Grey-headed Fish-eagle and Ferruginous Duck.

Kigali Amendment

Why in News?

Recently, India has ratified the Kigali Amendment to the 1989 Montreal Protocol for protection of the ozone layer.

Explanation

- Despite being one of the main architects of the Kigali Amendment, India was the last major country to announce its decision to ratify it.
- Kigali Amendment, negotiated in Rwanda (2016), to the Montreal Protocol is for phasing out hydrofluorocarbons (HFCs) - A greenhouse gas.
- Under this amendment, countries agreed to include HFCs in the list of controlled substances under Montreal Protocol.
- **Target** - Under the Kigali Amendment, current HFC use has to be curtailed by 85% before 2050.
- India has to achieve this target by 2047 while the developed countries have to do it by 2036. China has a target of 2045.
- While the reductions for the rich countries have to begin immediately, India has to begin cutting their HFC use only from 2031.
- **Significance** - If implemented successfully, the Kigali Amendment may prevent about 0.5°C rise in global warming by 2100.
- It is crucial to achieve Paris Agreement target of restricting temperature rise to within 2°C from pre-industrial times.

Montreal Protocol

- It aims to protect the ozone layer by taking measures to control total global production and consumption of substances that deplete it.
- The protocol's objective is to eliminate Ozone Depleting Substances (ODS) on the basis of developments in scientific knowledge and technological information.
- It mandated the complete phase-out of CFCs and other ODSs, which it has successfully did in the last 3 decades.

- Their phase-out has already avoided an estimated 135 billion tonnes of CO₂ equivalent emissions between 1990 and 2010.
- The UNEP estimates that, with Kigali Amendment, the avoided emissions could touch 420 billion tonnes of CO₂ equivalent by 2100.

Hydrofluorocarbons

- HFCs are a family of chemicals used extensively in the air-conditioning, refrigeration and furnishing foam industry.
- HFCs, though benign to the ozone layer, were powerful greenhouse gases.
- They are known to be much worse than CO₂ in causing global warming.
- According to the UNEP, the average global warming potential of 22 of the most used HFCs is about 2,500 times that of CO₂.
- CFCs were gradually replaced, first by hydrochlorofluorocarbons (HCFCs), and eventually by HFCs.
- The transition from HCFCs to HFCs is still happening, particularly in the developing world.

India Cooling Action Plan

- The 20-year India Cooling Action Plan (ICAP) was released by Ozone Cell of the Environment Ministry in 2019.
- The ICAP aims to bring down the refrigerant demand by 25 to 30% in the next 20 years.
- It aims to recognize “cooling and related areas” as a thrust area of research under the National S&T Programme.
- It describes cooling as a “developmental need” and seeks to address the rising demand in cooling, from buildings to transport to cold-chains, through sustainable actions.
- The plan estimates that the national cooling demand would grow 8 times in the next 20 years, which would result in a corresponding 5 to 8-fold rise in the demand for refrigerants that involve the use of HFCs.
- As part of the ICAP, the government has also announced targeted R&D efforts aimed at developing low-cost alternatives to HFCs.
- Such efforts are already underway at the Hyderabad-based Indian Institute of Chemical Technology and IIT Bombay.

- **Other objectives** - It will assess the cooling requirements across sectors and the associated refrigerant demand and energy use.
- The goals emerging from the suggested interventions stated in ICAP are,

Goals	Targets
Reduction of cooling demand across sectors	20% to 25 % by 2037-38
Reduction of refrigerant demand	25% to 30% by 2037-38
Reduction of cooling energy requirements	25% to 40% by 2037-38
Skilling and certifying 100,000 Refrigeration and AC servicing sector technicians, in synergy with Skill India Mission	2022-23

Leaded Petrol

Why in News?

According to UNEP, World has completely eradicated the use of Leaded Petrol.

Explanation

- Globally, automotive fuel is completely lead-free now. Not a single fuel outlet sells leaded petrol anymore anywhere.
- Algeria was the last country to use the fuel.
- This feat is achieved after UNEP-led global Partnership for Clean Fuels and Vehicles (PCFV) began its campaign in 2002 to eliminate lead in petrol.
- Fumes from leaded petrol vehicles have been a significant source of lead exposure to humans.
- It affects emissions control systems of vehicles particularly catalytic converters.
- **India and Leaded Petrol** - It started its phase down in 1994 and completed in 2000.
- Initially, low-leaded petrol was introduced in Delhi, Mumbai, Calcutta and Chennai in 1994, followed by unleaded petrol in 1995.

Partnership for Clean Fuels and Vehicles (PCFV)

- It was setup at the World Summit on Sustainable Development, 2002.
- UNEP hosted the Secretariat.
- Its aim is to eliminate leaded petrol globally and provided support to many countries and regional initiatives.
- At the time, 117 countries world-wide were still using leaded petrol with 86 countries supported to phase out leaded petrol.
- In 2006, the first major success was achieved – Sub-Saharan Africa went unleaded.

Animal Discovery 2020

Why in News?

Recently, Animal Discovery 2020 was prepared by the Zoological Survey of India (ZSI) and released by the Environment Ministry.

- It reveals that India has added 557 new species to its fauna. Now, there are 1,02,718 faunal species in India.
- It shows that India is positioned 8th in mega biodiversity countries in the world with 0.46 BioD index. Around 23.39% of India's geographical area under forest and tree cover.
- Animal Discoveries are the only authentic source of faunal discoveries of India. It is published by the ZSI since 2009 every year.
- It is a document on new species and new records of fauna.

Zoological Survey of India

- Set up by British zoologist Thomas Nelson Annandale in 1916, the ZSI is India's apex organization on animal taxonomy.
- It is a subordinate organization of the Environment Ministry.
- Headquartered in Kolkata, the ZSI BSI has 16 regional circles at different regions of the country.
- ZSI promotes **survey, exploration and research** leading to the advancement of knowledge on many aspects of exceptionally rich faunal diversity of India.
- It has been declared as designated repository for **National Zoological Collection** under the National Biodiversity Act, 2002.

Deepor Beel Wildlife Sanctuary

Why in News?

Environment Ministry has notified that the Deepor Beel Wildlife Sanctuary, Assam as an eco-sensitive zone.

- Deepor Beel is a permanent freshwater lake in a former channel of the Brahmaputra River, to the south of the main river.
- It is Assam's only Ramsar site besides being an Important Bird Area.
- It has for decades been threatened by a railway track, a garbage dump, and encroachment from human habitation and commercial units.
- The sanctuary's "guardian village" is Chakardeo.

Swinhoe's Softshell Turtle

Why in News?

It is the world's most endangered turtle that is fighting a chance to survive.

Explanation: -

- Also known as giant Yangtze soft shell turtle, it is the largest freshwater turtle in the world.
- It is known as the Hoan Kiem turtle in Vietnam, as it is believed to have emerged from the Hoan Kiem Lake or Lake of the Returned Sword.
- They are found in the wetlands and large lakes of China and Vietnam.
- **Ecological role** - This species is important to the seafloor biosystem, where they contribute by enriching soil nutrients and facilitating seed dispersion.
- **Threats** - Habitat destruction, water pollution, riverbed abrasion, overexploitation for food and illegal trade.
- **Conservation**
 1. IUCN Status - Critically Endangered
 2. CITES - Appendix II

Slender Loris

Why in News?

Some people suggest that the Tamil Nadu government must declare the Kadavur Reserve Forest a sanctuary for the slender loris.

Explanation: -

- Slender loris (*Loris tardigradus*) is a shy, secretive and reclusive species of primate, and has nocturnal habits.
- **Habit** - They are usually solitary but sometimes found in pairs.
- It usually travels from the canopy of one tree to another. At times, it comes down to the bushes at the ground level to feed.
- It sleeps by day in the foliage or in a hole or crevice. It comes out at dusk in search of prey.
- **Location** - It is native to Southern India and Sri Lanka.
- It is commonly found in the tropical scrubs, deciduous forests and scrubs as well as the dense hedgerow plantations bordering farmlands.
- **Food** - It eats lantana berries, insects, lizards, small birds, tree frogs, tender leaves and buds.
- It plays a key role in controlling agricultural crop pests in organic farms.
- **Threats** - Habitat loss, electrocution of live wires, road accidents and illegal smuggling.
- **Conservation**
 1. IUCN - Endangered
 2. CITES - Appendix II
 3. Wild Life Protection Act, 1972 - Schedule I to provide the highest level of legal protection

Kadavur Reserve Forest

- It is located in Tamil Nadu. It consists of hills and dense dry areas.
- Indian bison, spotted deer, mouse deer, slender loris, jackal, mongoose, black naped hare, wild boar, porcupine, monitor lizard, pangolin, monkeys, pythons, etc are found in the forests.
- Many parts of this forest has been afforested under the Tamil Nadu Afforestation Project (TAP) program aided by Japanese government.

Economy

Sugarcane Price being Static in Punjab

Why in News?

Price of sugarcane in Punjab, which is decided by Punjab government under its State Agreed Price (SAP) policy, has not been hiked since 2017-18.

Explanation

- This despite the fact that the input cost for growing cane has gone up manifolds in these years.
- The neighbouring states like Haryana, Uttarkhand and UP have fixed prices higher than Punjab.
- Even the Fair and Remunerative Price (FRP), decided by the government of India, is increasing to some extent every year or in a couple of years but there is no hike in SAP in the state for the past four years.
- Punjab farmers are now demanding an increase in the SAP before the beginning of crushing.
- If the price of the cane is not increased this year the area under sugarcane will go down further in the coming planting season which is a big challenge for the much needed diversification in the state.

Fair and Remunerative Price

- FRP, which is fixed under sugarcane control order, 1966, is the Minimum price that sugar mills are supposed to pay to the farmers.
 - But main cane growing states determine their own SAP which is generally higher than the FRP.
- The FRP has been determined on the basis of recommendations of Commission for Agricultural Costs and Prices (CACP) and after consultation with State Governments and other stake-holders.
- It is used in sugarcane industry and is fixed by the government but is paid by the mill owner.
- Recommended FRP has been arrived at by taking into account various factors such as
 - Cost of production,

- Overall demand-supply situation,
- Domestic and international prices,
- Inter-crop price parity,
- Terms of trade prices of primary by-products
- Likely impact of FRP on general price level and resource use efficiency.

Recapitalisation Bonds

Why in News?

These bonds issued by the Central government in 2017 will come up for redemption between 2028 and 2035.

Explanation

- The money collected by the government goes to banks in the form of equity capital as the government increases its share of equity holding, thereby shoring up banks' capital reserves.
- The money invested by banks in recapitalisation bonds is **classified as an investment** which earns them an interest.
- This instrument does not impact the fiscal deficit, with only interest payment being reflected in deficit calculations.
- Banks once obtained funds, can write-off the bad assets (loans) by using the fund from recapitalisation.
- These recapitalisation bonds will come up for redemption between 2028 and 2035.
- This instrument does not impact the fiscal deficit, with only interest payment being reflected in deficit calculations.
- The government so far has issued recapitalisation bonds to public sector banks and EXIM Bank, IDBI Bank and IIFCL.

Oil Bonds

Why in News?

Finance Minister has said that it cannot reduce taxes on petrol and diesel as it has to bear the burden of payments in lieu of oil bonds issued by the previous government to subsidise fuel prices in 2012-13.

Explanation

- Oil bonds are issued by the government to compensate oil marketing companies (OMCs) to offset losses that they suffer to shield consumers from rising crude oil prices.
- Before fuel prices were deregulated, petrol, diesel, cooking gas and kerosene were sold at subsidised rates.
- Instead of paying subsidy directly to oil marketing companies, the then government issued oil bonds (Rs 1.34 lakh crore) to the state-fuel retailers in a bid to contain the fiscal deficit.

Reasons for Deregulating Oil Prices

- Fuel price decontrol has been a step-by-step exercise.
 - The government freed up prices of aviation turbine fuel in 2002, petrol in 2010, and diesel in 2014.
- Prior to that, the government would intervene in fixing the price at which retailers were to sell diesel or petrol.
- This led to under-recoveries for oil marketing companies, which the government had to compensate for.
- The oil prices were deregulated to,
 - Make the prices **market-linked** i.e. linked to global crude prices,
 - Unburden the government from subsidising prices, and
 - Allow consumers to benefit from lower rates when global crude oil prices tumble.
- Price decontrol essentially offers fuel retailers (Indian Oil, HPCL or BPCL), the freedom to fix prices based on calculations of their own cost and profits.

Factors Driving up Sensex

Why in News?

The Sensex crossed the 55,000 mark and hit a record high on sustained buying support by retail investors and mutual funds in intra-day trading.

Explanation

- So, the retail investors must be extra vigilant and avoid putting money in stocks when valuations are high.
- **Factors powering the Sensex** - Retail investors are buying stocks without any serious consideration for value.
 - When this increase ends, the new retail investors who have flocked to the market recently will be hit hard.
- Also, aided by new fund offers and bullish stock markets, equity mutual funds saw record inflows in the recent months. This money is also flowing into the stock markets.
- Further, the recent rally was not a broad-based rally as heavy profit booking was seen in midcap and smallcap stocks, while selling pressure appears to have eased now.
- The market rally is supported by the ample liquidity in the system and hopes of a sustained economic recovery.
- If the fund flow to the stock market continues, the rally will get further momentum.

New Rules on Poultry Farms

Why in News?

Department of Animal Husbandry, Dairying and Fisheries under Union Ministry of Agriculture has released a set of new guidelines for poultries.

Explanation

- It classifies poultry farmers based on the number of birds in the farm
 1. Small - 5,000-25,000 birds
 2. Medium - 25,000 – 1 lakh birds
 3. Large – more than 1 lakh birds
- **Restriction on location** - A farm should be set up
 1. 500m away from a residential area,
 2. 100m from rivers, lakes, canals and drinking water sources,
 3. 100m from national highways and
 4. 10-15m from village footpaths and rural roads.
- **Certificate of Consent** - In 2015, Central Pollution Control Boards has classified Poultry, hatchery and piggery as “Green” sector and exempted them from air, water and environmental protection laws.

- In the new guideline, a farmer of medium-sized poultry farm will have to obtain a certificate of Consent from State Pollution Control Board under the Water Act, 1974 and the Air Act, 1981.
- The permission will be valid for 15 years.

Anti-Dumping Duty

Why in News?

The Union government revoked anti-dumping duty on viscose staple fibre originating in or imported from China and Indonesia.

Explanation

- ADD is imposed with the rationale that the products have the potential to undercut local businesses and the local economy.
- In India, ADD is levied and collected by the Directorate General of Trade Remedies.
- ADD is levied over and above the normal customs duty.
- It is valid for 5 years from the date of imposition unless revoked earlier.

Sunset review

- If dumping continues even after the 5 years of ADD, the industry can apply for a sunset review/ expiry review for a further period of 5 years.
- Globally, once a sunset review is applied for, the ADD is extended for 1 year pending investigation.
- It can be initiated suo moto or on the basis of a duly substantiated request received from or on behalf of the domestic industry.

About Viscose

- It is a **semi-synthetic material** or manufactured fiber used in clothes, upholstery and other bedding materials.
- It's one of the three types of **rayon** - modal, lyocell, and viscose.

- It is made from natural materials like wood pulp, which is treated and spun into yarns to make fabric.
- Viscose was manufactured as an affordable alternative to natural silk, hence known as **artificial silk**.
- In India, it is largely used to make apparel for women and children.
- Viscose products are seen as easy to maintain too and viscose consumption in India has witnessed 11% CAGR for the last 5 to 6 years.

One District One Product Scheme

Why in News?

Under Phase 1 of the scheme, a number of export-potential products from various districts have been selected.

Explanation

- The objective of the scheme is to convert each district of the country into an export hub.
- It aims to improve market accessibility of the chosen product by identifying and solving problems in its respective supply chain to make it globally competitive.
- A dedicated team has been established to identify products from 739 districts.
- It will create a comprehensive plan on each product including product branding & scheme awareness, trade facilitation, e-commerce on boarding, and to create forward & backward market linkages.
- Director General of Foreign Trade is engaging with State/UT Governments to implement the initiative in a phased manner.
- District Export Promotion Committee (DEPC) is constituted in all Districts of India, except districts of the state of West Bengal.
- It is operationally merged with 'Districts as Export Hub' initiative.
- A number of products from several districts have been selected for the phase 1 of the scheme.

List of Products

- **Jamnagari Bandhani** – A handloomed textile product from Gujarat dating back to 6th Century AD.
- The **Kolhapuri Chappals** from Karnataka and Maharashtra dating back to 12th CAD rule of King Bijjal of Bidar.
- **Naga Mircha** - One of the world's hottest chillies from Nagaland
- **Lakadong Turmeric** – It is the world's finest turmeric from the State of Meghalaya with the average curcumin content of a high 7%.
- Blue Pottery from Jaipur
- Markhana Marbels from Nagaur, Rajasthan
- Kashmiri Papier Mâche designed by Sakhta Artisans
- Machine parts from Tamil Nadu and
- Pharmaceutical produce from Andhra Pradesh

Resolution Framework 2.0

Why in News?

According to the Crisil Ratings report, barely 1% of eligible corporates have opted for or are looking for debt restructuring under the RBI's Resolution Framework 2.0.

Explanation

- This shift is due to the fact that there is a **recovery in demand** after moderation during the 2nd Covid-19 wave and there is a growing confidence in **economic growth**.
- The more localised and less stringent nature of restrictions during the 2nd wave has meant relatively lower disruption in business activities compared to the first wave.
- The RBI's Resolution Framework 2.0 was announced for borrowers, including individuals, small businesses, and MSMEs with an aggregate exposure of up to Rs. 50 crore, with some caveats.
- These borrowers should not have availed any restructuring to be eligible under Resolution Framework 2.0.
- For individuals and small businesses who have availed restructuring of loans under Resolution Framework 1.0, lending institutions can now extend residual tenure up to a total period of 2 years.

Ubharte Sitaare Fund

Why in News?

Finance Minister has launched the 'Ubharte Sitaare Fund' to support the export-oriented Micro, Small and Medium Enterprises (MSMEs).

Explanation

- The 'Ubharte Sitaare Fund' is an Alternative Investment Fund set up by Exim Bank and SIDBI.
- Ubharte Sitaare Fund will facilitate debt and equity funding to export-oriented MSMEs.
- Its objective is to identify and invest in small and mid-size ventures in manufacturing and service industries with good export potential, which are underperforming or unable to tap their hidden potential to grow.
 - Accordingly, India Exim Bank identifies these Indian companies.
- The fund is a mix of structured support (both financial and advisory services) to the Indian companies through,
 1. Investments in equity or equity like instruments, debt (funded and non-funded) and
 2. Technical assistance (advisory services, grants and soft loans).
- It will also have a Greenshoe Option of Rs 250 crore.
- 'Ubharte Sitaare Fund' will be helpful, especially for the entrepreneurs working under the One District, One Product (ODOP) scheme.

National Monetisation Pipeline (NMP)

Why in News?

This asset monetisation pipeline of Central ministries and public sector entities has been launched by the Ministry of Finance.

Explanation

- NMP aims to enable **'Infrastructure Creation through Monetisation'** wherein the public and private sector collaborate to deliver socio-economic growth and quality of life to the citizens.

- It will serve as a medium-term roadmap to identify monetisation-ready projects, across different infrastructure sectors.
- It has been developed by NITI Aayog, in consultation with infrastructure line ministries, based on the mandate for ‘Asset Monetisation’ under Union Budget 2021-22.
- Objectives: - To **unlock the value of investments in brown-field public sector assets** by tapping institutional and long-term patient capital, which can be leveraged for further public investments.
- Such unlocking can be done by way of structured contractual partnership as against privatization or slump sale of assets.
- **Instruments** - Assets and transactions identified under the NMP are expected to be rolled out through a range of instruments.
- These include direct contractual instruments such as
 - Public private partnership concessions and
 - Capital market instruments like Infrastructure Investment Trusts (InvIT).
- Choice of instrument will be determined by the sector, nature of asset, timing of transactions, target investor profile and level of operational/ investment control envisaged to be retained by the asset owner etc.

Art and Culture

Ancient Dagger Found in Tamil Nadu

Why in News?

As a part of an excavation effort that seeks to shine a light on the Keeladi civilization, a rusted iron dagger preserved in a burial urn was discovered in Konthagai village, Tamil Nadu.

Explanation

- Konthagai is considered as a burial site for the Keeladi civilization, as burial urns filled with bones, weapons and other objects were discovered.
- This type of weapon was used by warriors during the Sangam period (3rd century BCE - 3rd century CE).

- Based on the archaeological evidence, some researchers now say the Sangam period began earlier than previously thought, around 600 B.C.E.

Keeladi Civilization

- It is also referred to as the Vaigai civilization, named after a nearby river Vaigai.
- **Came from IVC** - Discoveries at Keeladi suggest that the people who lived there may have travelled south from the Harappan or Indus Valley civilization (as it declined) to start new lives.
- The civilization was an indigenous, well developed self-sustaining urban culture with an industry and Tamil-Brahmi script, indicating that the people of that era were highly literate.
- Evidence of ancient industrial production are spinning and weaving tools, cloth dyeing operations, brick kilns, and ceramic workshops.
- **Second urbanization** - Discoveries date to around 500 B.C., when an agricultural surplus allowed people to build urban centers in what's known as the subcontinent's "second urbanization."
- [The name reflects a contrast with the much earlier "first urbanization" of the Indus Valley civilization that began 2500 BCE.]
- Previously, it was believed that the second urbanization happened along the Central Ganges Plain in northern India.
- But, new evidence suggests a similar phenomenon occurred in the south as well.

International Relations IR

Forum of Election Management Bodies of South Asia (FEMBoSA)

Why in News?

Chief Election Commissioner of India (Chairman of FEMBoSA) inaugurated the 11th Annual meeting of the FEMBoSA for the year 2021.

Explanation

- Election Commission of India (ECI) handed over Chair FEMBoSA role to Election Commission of Bhutan for 2021-22.
- **Thimphu Resolution** was unanimously adopted by the FEMBoSA members to extend tenure of chairmanship to 2 years during the current pandemic situation.
- FEMBoSA is a regional cooperation association of Election Management Bodies (EMBs).
- It was established at the 3rd Conference of Heads of EMBs of South Asian Association for Regional Cooperation (SAARC) Countries in 2012.
- Objectives of FEMBoSA are,
 1. To promote contact among the Election Management Bodies of the SAARC countries;
 2. To share experiences with a view to learning from each other and
 3. To cooperate with one another in enhancing capabilities of the Election Management Bodies towards conducting free and fair elections.
- FEMBoSA has 8 Member EMBs from Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

Greater Malé Connectivity Project

Why in News?

Maldives government signed an agreement with Indian company AFCONS, for the construction of the Greater Malé Connectivity Project by 2023.

Explanation

- This is a follow-up agreement worth of 500 million US Dollar signed by India and Maldives in 2019.
- This project was funded by India in a grant of \$100 million, with a line of credit of \$400 million.
- This infrastructure project is the largest-ever by India in the Maldives, and also the biggest infrastructure project in the Maldives overall.
- It involves the construction of a 6.74-km-long bridge and causeway link that will connect the Maldives capital Malé with the neighbouring islands of Villingli, Gulhifalhu and Thilafushi.

- Line of Credit is not a grant but a 'soft loan' provided on concessional interest rates to developing countries, which must be repaid by the borrowing government.
- This project is significant because it facilitates inter-island connectivity in the country.

Schemes/Policies/Programme

Ujjwala 2.0

Why in News?

Prime Minister launched the 2nd phase of Pradhan Mantri Ujjwala Yojana (PMUY) or Ujjwala 2.0 Scheme.

Explanation

- Ujjwala 2.0 will provide maximum benefit to the inter-state migrants by providing only "Self Declaration" as address proof to avail the benefit.
- Along with a deposit-free LPG connection, Ujjwala 2.0 will provide the first refill and a hotplate free of cost to the beneficiaries.

Pradhan Mantri Ujjwala Yojana

- PMUY was launched in 2016 by the Ministry of Petroleum and Natural Gas (MoPNG) as a flagship scheme.
- It was launched with an objective to make clean cooking fuel such as LPG available to the rural and deprived households which were otherwise using traditional cooking fuels like firewood, coal, etc.
- The scheme provides a financial support of Rs 1600 for each LPG connection to the women of the Below Poverty Line (BPL) families.
- Ujjwala 1.0 targeted to distribute 50 million (5 crore) LPG connections.
- In 2018, women from 7 other categories were brought under the purview of the PMUY:
 1. SC/ST, those under the Pradhan Mantri Awas Yojana (PMAY),
 2. Beneficiaries of the Antyodaya Anna Yojana (AAY),
 3. Forest Dwellers,
 4. Most backward classes,

5. Tea gardens and
6. Islands.

Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)

Why in News?

Explanation

- This Central Sector Umbrella Scheme is implemented by the Ministry of Food Processing industries (MoFPI) since 2016-17.
- The implementation period of the scheme is 2016-2020 co-terminus with the 14th Finance Commission cycle.
- It aims to supplement agriculture, modernize processing and decrease Agriculture waste.
- It aims for overall growth and development of food processing sector, including processing of agro- products.
- This scheme is not region or state-specific but demand-driven.
- Component schemes of PMKSY,
 1. Mega Food Park,
 2. Integrated Cold Chain and Value Addition Infrastructure,
 3. Creation /Expansion of Food Processing & Preservation Capacities,
 4. Infrastructure for Agro-Processing Clusters,
 5. Creation of Backward & Forward linkages,
 6. Food Safety and Quality Assurance Infrastructure,
 7. Human Resource and Institutions,
 8. Operation Greens.
- Under the PMKSY, MoFPI provides mostly credit-linked financial assistance (capital subsidy) in the form of grants-in-aid to entrepreneurs for setting up of food processing / preservation industries.

Central Sector Scheme for Industrial Development of J&K

Why in News?

Department for Promotion of Industry and Internal Trade has notified this new Scheme for J&K and is effective from April, 2021 to March, 2037.

Explanation

- The scheme aims to take industrial development to the block level in UT of J&K, which is the 1st time in any Industrial Incentive Scheme of India.
- **Applicability** - The scheme is made attractive for both smaller and larger industrial units. It is applicable for,
 1. Any eligible industrial (manufacturing) entity or
 2. Any eligible service sector enterprise other than those run departmentally by Government, which is registered business enterprise under Goods and Service Tax (GST).
- **Non-Applicability** - Units availing benefits under other Government of India schemes won't be eligible for similar incentives under this Scheme.
- The scheme shall not apply to the units which manufacture the products listed in the negative list.
- **Key Features** - The purpose of the scheme is to generate employment which directly leads to socio-economic development in J&K.
- Smaller units with an investment in plant and machinery upto Rs. 50 crore will get a capital incentive upto Rs. 7.5 crore and get capital interest subvention at the rate of 6% for a maximum of 7 years.
- The scheme has a proper checks and balances by having an independent audit agency before the claims are approved.
- The scheme offers 4 incentives namely,
 1. **Capital Investment Incentive** is given at 30% in Zone-A and 50% in Zone-B on investment on plant and machinery (in manufacturing), or construction of building and other durable physical assets (in service sector).
 2. is provided for investment in plant and machinery for 7 years up to Rs. 500 crore loan, or construction in building and all other durable physical assets for 10 years.
 3. **300% GST Linked Incentive** - It is not a reimbursement or refund of GST. Gross GST is used to measure eligibility for industrial incentive to offset the disadvantages that the UT of J&K faces.
 4. **Working Capital Interest Subvention** will provide all existing units incentive at the annual rate of 5% for maximum 5 years. Maximum limit of incentive is Rs. 1 crore.

SAMRIDH Scheme

Why in News?

Start-up Accelerators of MeitY for pProduct Innovation, Development and growth (SAMRIDH) programme was launched by the Ministry of Electronics & Information Technology (MeitY).

Explanation: -

- SAMRIDH will create a conducive platform to growing Indian Software Product start-ups that are ready for acceleration stage to enhance their products and secure investments for scaling their business.
- It will provide them with funding support, mentorship and other supports that are required by startups at this stage.
- The programme is being implemented by MeitY Start-up Hub (MSH).
- SAMRIDH will accelerate 300 **early-stage start-ups** that are close to the product development stage over a period of time.
 - This acceleration will be done by providing customer connect, investor connect, and international immersion in the next 3 years.
- The government has invited existing startup accelerators to partner with and will provide funding of up to Rs.40 lakh to them.
 1. Only accelerators that have been in the incubation business for at least 3 years and supported more than 50 startups, with at least 10 having a non-public business will be able to apply for the scheme.
 2. They must also have operations in India and the necessary space and infrastructure to be eligible.
- The Scheme will facilitate equal matching investment by the accelerator / investor.

