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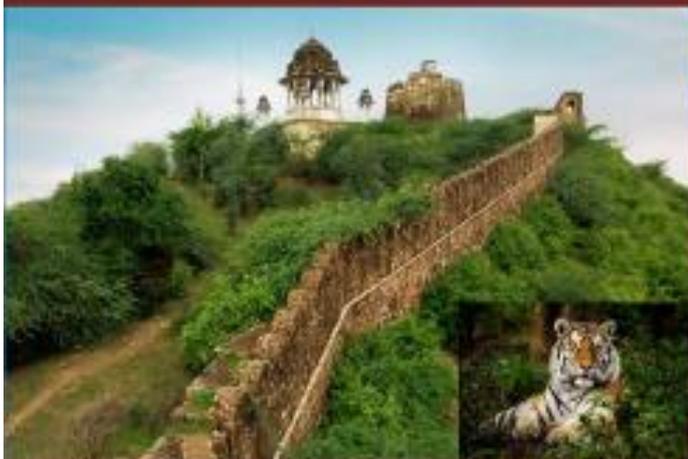
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atmosphere

terrestrial
biota

ice
sheet

sea ice

open ocean   coastal seas

marine biota

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ATMOSPHERE : NCEP GFS
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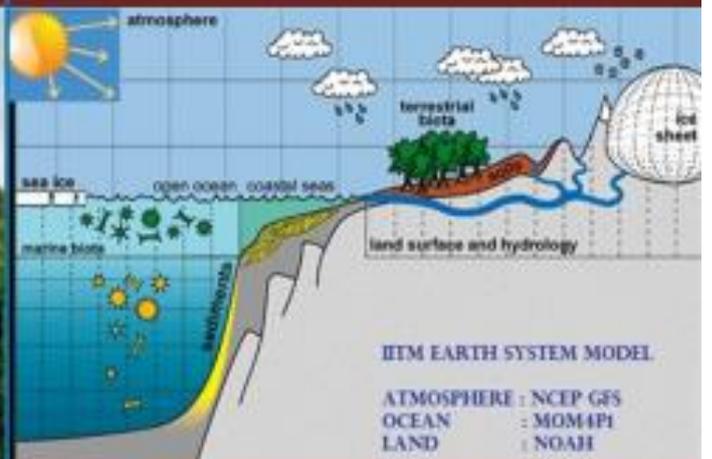
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Director's Message

Dear Aspirants,

The monsoon session of the Parliament which commenced on 30th July 2021 was marred by disruptions by opposition parties over various contentious issues such as the Pegasus snooping row and Farm laws and was adjourned sine die two days ahead of the schedule. The opposition parties pointed out that the foundation of Indian democracy laid on the principle wherein the parliamentarians should be the voice of the people and discuss the issues of national importance but the government is not allowing the opposition to do this work. The opposition insisted on letting them talk about inflation, farmers and Pegasus. The oppositions' persistent demand that Prime Minister and Home Minister make a statement in the House on the Pegasus scandal elicited no response from the Government. In turn, the opposition also did not yield to the government's outreach to allow discussion on other issues including the Covid situation and issues plaguing the agriculture sector.

In response to the allegations by opposition parties about Pegasus spyware, the Indian government denied the allegations, with Home Minister saying that they were aimed to "humiliate India at the world stage" and "derail India´s development trajectory". The government said that any surveillance is done in accordance with strict rules and oversight in response to the allegation that it has licensed the spyware from NSO.

The parliamentary process of discussion and debate had been under attack during this monsoon session. The disruptions witnessed during the session reflected a fractious polity. Rajya Sabha Chairperson M Venkaiah Naidu broke down over the ruckus in the House and equated the act of some opposition MPs to "sacrilege in temple of democracy" and Lok Sabha Speaker Om Birla said he was "extremely hurt" by continuous disruptions in the House. On the unruly behaviour of parliamentarians in the Rajya Sabha, former Prime Minister of India Sh Deve Gowda said, "I am disgusted with the behaviour of the ruling party, as well as the members of the opposition... People danced on the table in the well of the house. In my 30 years as a parliamentarian, I have never witnessed any incident like this."

This session was the least productive with Lok Sabha recording a productivity of 15.75 per cent and Rajya Sabha 20.61 per cent. However, the government managed to pass 20 bills in Lok Sabha and 19 in Rajya Sabha, majority of them without any discussion or being referred to parliamentary committees for scrutiny. However, the Constitution (127th Amendment) bill, which seeks to restore the power of states and union territories to identify and notify their own list of Other Backward Class (OBC), was debated for over five hours in both the Houses before it was passed.

The thing that stood out in this session was the aggression on both the sides. The opposition refused to back down and let the House function till the government accepted its demand to discuss issues including the Pegasus snooping controversy, repeal of farm laws, etc. and on the other hand, the government managed to pass record number of bills without discussion and debate which have been the pillars of democracy. The performance of both the Houses of the Parliament leaves much to be desired in this session.

With the 'D' Day fast approaching, I am sure you are putting in your best efforts and revising your syllabus thoroughly. As the proverb goes, practice makes a man perfect and hence the need to continuously practice answering the past questions papers as well as the ones provided by the EXCEL CIVILS ACADEMY. More the practice, greater will be your knowledge assimilation and confidence levels. Needless to mention that Prelims examination throws up a greater challenge and hence the need for meticulous preparation, understanding the questions, speed and accuracy in answering.

Best wishes

K. Rajendra Kumar IPS (Retd.)

1. NATIONAL

1.38 **Protection Officers in addressing Domestic Violence**

- The National Commission for Women (NCW) in collaboration with Lal Bahadur Shastri National Academy of Administration (LBSNAA) has launched a Training Programme of Protection Officers in addressing Domestic Violence.

Aim:

- The training aims to focus on the role of different stakeholders/service providers under the Act including police, legal aid services, health system, service providers, shelter services, one stop centres etc.

Who are protections Officers?

- Under the Domestic Violence Act, protection officers are appointed. They act as facilitators between the aggrieved women and the Court.

Functions:

- The Protection Officer aids the aggrieved woman in filing of complaints and application before the Magistrate to obtain the necessary relief and also assists to obtain medical aid, legal aid, counselling, safe shelter and other required assistance.

Eligibility:

- According to the rules prescribed under the Act, state governments must appoint at least one protection officer in the jurisdiction of every judicial magistrate.

- Protection officers can be members of either government or non-governmental organisations, with at least three years of experience in the social sector, but they must preferably be women. Challenges/problems with the functioning of Protection Officers:

- The Domestic Violence Act may have been introduced 12 years ago, but the implementation of its provisions was not taken up uniformly across the country.

- In many States, Protection Officers were not appointed even years after the Act came into force.

- Today, everything from their qualifications to the nature of their appointments can differ from state to state.

- The number of POs [protection officers] also depends from state to state. Some have very few POs while other states have too many people given that responsibility.

- Under the Domestic Violence Act, Protection Officers are meant to be full-time workers, but Delhi is not the only state where this rule is flouted.

- In many states, existing government officials are burdened with the additional charge of being protection officers.

- Most people are not even aware of the existence of protection officers.

- Some protection officers are themselves not clear about the procedures under the law.

1.39 Saral Sanchar portal

- Wireless Planning and Coordination Wing (WPC) of Department of Telecommunications (DoT) has launched the initiative to facilitate online licensing through Saral Sanchar portal for use of Spectrum to conduct Experiments, Demonstrations, etc..

Key updates-

- The initiative will encourage spectrum based applications for experiments, demonstration, and testing requirements.

- The scope of the existing portal wherein applications for Access Services, Internet Services, and other licenses are being received has been expanded for receipt, processing and grant of licenses for demonstration, testing, manufacturing, etc…

- The approval process through Saral Sanchar will be faceless, transparent, and time bound.

- The permission granted will include clearance for possessing wireless equipment, import of necessary modules & subsystems, and demonstration of R&D products.

- The new measures will facilitate Indian companies to strengthen the R & D and manufacturing ecosystem for creating Indian IPRs and Global solutions.

The key features include-

i. Self-declaration (instant issue of licenses) for Indoor Experimentation (R&D), Indoor Demonstration and Manufacturing.

ii. Just One license including all the licensing requirements of the user – Use of Spectrum, Import of related products and sub- assemblies, demonstration, possession of wireless equipment etc.

iii. Deemed approval within 6 to 8 weeks from the date of application for all outdoor radiating licenses.

iv. The Spectrum is offered on "Non-interference and non- protection basis" and on "No commercial services".

About the portal-

- SARAL SANCHAR (Simplified Application For Registration and Licenses) a Web based Portal, for issuing of various types of Licenses and Registration certificates.

- The Portal in its present form covers receipt of applications from applicants for issue of new Unified Licenses and Other Service Providers (OSP) registrations.

- The portal envisages that applicants get prompts and alerts at various stages of application submission so that all necessary requirements are complied before submitting the application.

- It has links for accessing the existing online activities of the WPC(Wireless Planning and Coordination) wing.

1.40 **Freight Smart Cities**

- Commerce Ministry's Logistics Division unveils plans for 'Freight Smart Cities' to improve the efficiency of urban freight and create an opportunity for reduction in the logistics costs.

- Under the Freight Smart Cities initiative, city-level logistics committees would be formed.

- These committees would have related government departments and agencies at the local level, state and from the reacted central ministries and agencies.

- These would also include private sector from the logistics services and also users of logistics services.

- These committees would co-create City Logistics Plans to implement performance improvement measures locally.

- On the Freight smart city initiatives, the Logistics Division is working closely with GIZ (Germany) under Indo-German Development Cooperation, Rocky Mountain Institute (RMI) and RMI India.

- This is all the more relevant as the demand for urban freight is expected to grow by 140 per cent over the next 10 years.

- Final-mile freight movement in Indian cities is currently responsible for 50 per cent of total logistics costs in India's growing e-commerce supply chains.

1.41 **Appointment and removal of Chief Minister**

- With the six-month window for him to get elected to the Assembly closing and increasing uncertainties, Uttarakhand Chief Minister Tirath Singh Rawat has resigned.

What are the issues?

- The Election Commission (EC) was yet to take a call on holding bypolls for vacant Assembly seats, which would have given Mr.Rawat a way to carry on as Chief Minister.

- As per the Constitution, he had six months, till September 10, to become a member of the Uttarakhand Assembly in order to continue in the post.

- Representation of the People Act, 1951, mandates that a byelection for any vacancy should be held within six months of that vacancy arising, provided the remainder of the term is not less than one year or the EC and the Centre do not certify that holding the bypoll in that time frame is difficult.

- The term of current assembly elected in 2017 will expire on 23 March 2022- General elections in the State are less than a year away.

Appointment of CM:

- The Chief Minister is appointed by the governor.

- 164 of the Constitution provide that there shall be a Council of Ministers with the Chief Minister at its hand to aid and advice the governor.

Who can be a Chief Minister?

- After general election to the State Legislative Assembly, the party or coalition group which secures majority in this House, elects its leader and communicates his name to the Governor. The Governor then formally appoints him as the Chief Minister and asks him to form his Council of Ministers.

- When no party gets a clear majority in the State Legislative Assembly, the Governor normally asks the leader of the single largest party to form the government.

Tenure:

- Theoretically, the Chief Minister holds office during the pleasure of the Governor. However, in actual practice the Chief Minister remains in office so long as he continues to be the leader of the majority in the State Legislative Assembly.

- The Governor can dismiss him in case he loses his majority support.

- The State Legislative Assembly can also remove him by passing a vote of no-confidence against him.

Powers and Functions of the Chief Minister:

- To aid and advice the Governor.

- The Chief Minister is at the Head of the Council of Ministers.

- He is the Leader of the House.

- He has to communicate to the Governor all the decisions of the council of ministers relating to the administration of the states.

- All the policies are announced by him on the floor of the house.

- He recommends dissolution of legislative assembly to the Governor.

- He advises the Governor regarding summoning, proroguing the sessions of State Legislative Assembly from time to time.

1.42 **Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021**

Provisions of the law

- Defines 'Exploitation' as: The exploitation of the prostitution of others or other forms of sexual exploitation including pornography, any act of physical exploitation, forced labour or services, slavery or practices similar to slavery, servitude or forced removal of organs, illegal clinical drug trials or illegal bio-medical research.

- Offenders will also include defence personnel and government servants, doctors and paramedical staff or anyone in a position of authority.

- A minimum of seven years which can go up to an imprisonment of 10 years and a fine of Rs 5 lakh in most cases of child trafficking.

- Property bought via such income as well as used for trafficking can now be forfeited with provisions set in place, similar to that of the money laundering Act.
- The National Investigation Agency (NIA) shall act as the national investigating and coordinating agency responsible for prevention and combating of trafficking in persons.
- Once the law is enacted, the Centre will notify and establish a National Anti-Human Trafficking Committee, for ensuring overall effective implementation of the provisions of this law.

Where would the law apply?

- The Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021 extends to all citizens inside as well as outside India. It also applies to:
- Persons on any ship or aircraft registered in India,
- A foreign national or a stateless person who has his or her residence in India.
- The law will apply to every offence of trafficking in persons with cross-border implications.
- It extends beyond the protection of women and children as victims to now include transgenders as well as any person who may be a victim of trafficking.

International Conventions, Protocols and Campaigns

- Protocol to Prevent, Suppress and Punish Trafficking in Persons, especially Women and Children in 2000 as a part of the UN Convention Against Transnational Organised Crime.
- The United Nations Office on Drugs and Crime (UNODC) offers practical help to states with drafting laws, creating comprehensive national anti-trafficking strategies, and assisting with resources to implement the UN Convention Against Transnational Organised Crime. The Blue Heart Campaign is an international anti-trafficking program started by the UNODC.
- Protocol against the Smuggling of Migrants by Land, Sea and Air supplements the UN Convention Against Transnational Organised Crime and is aimed at the protection of rights of migrants and the reduction of the power and influence of organized criminal groups that abuse migrants.
- Universal Declaration of Human Rights (1948) is a non-binding declaration that establishes the right of every human to live with dignity and prohibits slavery.

1.43 **Project BOLD**

- The project was launched by Khadi and Village Industries Commission (KVIC) & BSF have launched Project BOLD in Jaisalmer to Prevent Desertification and Support Rural Economy. Under this, they have planted 1000 bamboo saplings
- Under this, 5000 saplings of special bamboo species – BambusaTulda and BambusaPolymorpha specially brought from Assam – were planted in vacant arid Gram Panchayat land.
- With this, KVIC created a world record of planting the highest number of bamboo saplings on a single day at one location.

About the Project BOLD:

- BOLD stands for Bamboo Oasis on Lands in Drought.

- Launched by Khadi and Village Industries Commission (KVIC).

- The initiative has been launched as part of KVIC's "Khadi Bamboo Festival" to celebrate 75 years of independence "Azadika Amrit Mahotsav".

- Objectives: To create bamboo-based green patches in arid and semi-arid land zones, To reduce desertification and provide livelihood and multi-disciplinary rural industry support.

Why Bamboo was chosen?

- Bamboos grow very fast and in about three years' time, they could be harvested. Bamboos are also known for conserving water and reducing evaporation of water from the land surface, which is an important feature in arid and drought-prone regions.

Khadi and Village Industries Commission:

- KVIC is a statutory body established under the Khadi and Village Industries Commission Act, 1956.

- The KVIC is charged with the planning, promotion, organisation and implementation of programmes for the development of Khadi and other village industries in the rural areas in coordination with other agencies engaged in rural development wherever necessary.

- It functions under the Ministry of Micro, Small and Medium Enterprises.

1.44 **NIPUN Bharat Programme**

- National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat Programme is undertaken by Department of School Education and Literacy.

- It will ensure that every child in India necessarily attains foundational literacy and numeracy (FLN) by the end of Grade 3, by 2026-27.

About:

- It aims to cover the learning needs of children in the age group of 3 to 9.

- This National Mission, which has been launched under the aegis of the centrally sponsored scheme of Samagra Shiksha, will focus on:

- Providing access and retaining children in foundational years of schooling; Tracking the progress of each child in achieving learning outcomes;

- Teacher capacity building; and

- Development of high quality and diversified Student and Teacher Resources/Learning Materials.

- The goals of the Mission are set in the form of Lakshya Soochi or Targets for Foundational Literacy and Numeracy.

- To generate greater awareness among the parents, community, etc. the Lakshyas has been developed from Balvatika (preparatory class that a child will take prior to age 5) to Grade 3.
- The Laskhyas are based on the learning outcomes developed by the NCERT and international research and ORF studies.
- A special package for foundational literacy and Numeracy under NISHTHA is being developed by NCERT. Around 25 lakh teachers at pre-primary to primary grade will be trained this year on FLN.
- Implementing agency - NIPUN Bharat initiative will be implemented by school education department of Union government.
- A 5-tier implementation mechanism will be set up at national, State, District, Block, and School levels across all states and Union territories.

Key components and expected outcomes of NIPUN Bharat Mission:

1. Foundational skills enable to keep children in class thereby reducing the dropouts and improve transition rate from primary to upper primary and secondary stages.
2. Activity based learning and a conducive learning environment will improve the quality of education.
3. Innovative pedagogies such as toy-based and experiential learning will be used in classroom transactions thereby making learning a joyful and engaging activity.
4. Intensive capacity building of teachers will make them empowered and provide greater autonomy for choosing the pedagogy.

1.45 **New IT rules:**

- The Centre has told the Delhi High Court that social media giant Twitter Inc has failed to comply with India's new IT Rules (Came into force on 26th May), which is law of the land and is mandatorily required to be complied with.

Implications:

- Any non-compliance amounts to breach of provisions of IT Rules, leading to Twitter losing its immunity as an "intermediary".
- A loss of its intermediary status, which provides its immunity from liabilities over any third-party data hosted by it, makes it liable for criminal action in case of complaints.

What the rules say?

- Twitter Inc is admittedly an 'intermediary' within the meaning of Section 2(1)(w) of IT Act, 2000, and an SSMI (Significant Social Media Intermediary) under the IT Rules 2021.
- SSMIs are required to appoint a chief compliance officer, a nodal officer, and a grievance officer — all whom are required to be residents of India, according to the IT rules.

Background:

- On February 25, the Centre framed the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021, in the exercise of powers under section 87 (2) of the Information Technology Act, 2000 and in supersession of the earlier Information Technology (Intermediary Guidelines) Rules 2011, which will come into effect from May 26.

Overview of the new rules:

- It mandates a grievance redressal system for over the top (OTT) and digital portals in the country. This is necessary for the users of social media to raise their grievance against the misuse of social media.

- Significant social media firms have to appoint a chief compliance officer and have a nodal contact person who can be in touch with law enforcement agencies 24/7.

- A grievance officer: Social media platforms will also have to name a grievance officer who shall register the grievance within 24 hours and dispose of it in 15 days.

- Removal of content: If there are complaints against the dignity of users, particularly women – about exposed private parts of individuals or nudity or sexual act or impersonation etc – social media platforms will be required to remove that within 24 hours after a complaint is made.

- A monthly report: They also will have to publish a monthly report about the number of complaints received and the status of redressal.

- There will be three levels of regulation for news publishers — self-regulation, a self-regulatory body, headed by a retired judge or an eminent person, and oversight from the Information and Broadcasting Ministry, including codes of practices and a grievance committee.

1.46 **Section 66A of IT Act**

- Six years after it struck down Section 66A of the Information Technology Act, 2000, the Supreme Court earlier this month termed its continued use by law enforcement agencies of various states as "a shocking state of affairs" and sought a response from the Centre.

- The Centre has now written to states, asking them not to register cases under the repealed provision and withdraw any such case that may have been filed.

- In 2015, the apex court struck down the law in the landmark case ShreyaSinghal v. Union of India, calling it "open-ended and unconstitutionally vague", and thus expanded the contours of free speech to the Internet.

What did Section 66A do?

- Introduced by the then government in 2008, the amendment to the IT Act, 2000, gave the government power to arrest and imprison an individual for allegedly "offensive and menacing" online posts, and was passed without discussion in Parliament.

- Section 66A empowered police to make arrests over what policemen, in terms of their subjective discretion, could construe as "offensive" or "menacing" or for the purposes of causing annoyance, inconvenience, etc.

- It prescribed the punishment for sending messages through a computer or any other communication device like a mobile phone or a tablet, and a conviction could fetch a maximum of three years in jail.

- Why was the law criticised?

- The problem was with the vagueness about what is "offensive". The word having a very wide connotation, was open to distinctive, varied interpretations.

- It was seen as subjective, and what might have been innocuous for one person, could lead to a complaint from someone else and, consequently, an arrest under Section 66A if the police prima facie accepted the latter person's view.

1.47 <u>West Bengal to set up Legislative Council</u>

- The West Bengal Assembly has passed a resolution to set up Legislative Council with a two-thirds majority.

What is a State Legislative Council?

- The SLC is the upper house in those states of India that have a bicameral state legislature; the lower house being the State Legislative Assembly.

- As of Jan 2020, 6 out of 28 states have a State Legislative Council. These are Andhra Pradesh, Karnataka, Telangana, Maharashtra, Bihar, and Uttar Pradesh The latest state to have a council is Telangana.

Why need another house?

- The Legislative Council has three main functions: to represent the people, to legislate and to scrutinise the executive government as a 'House of review'.

- The Legislative Council provides an alternative and complementary system of representation to that of the Legislative Assembly.

- Creation and abolition

- According to Article 169, the Parliament can create or abolish the SLC of a state if that state's legislature passes a resolution for that with a special majority.

- The existence of an SLC has proven politically controversial.

- A number of states that have had their LCs abolished have subsequently requested its re-establishment; conversely, proposals for the re-establishment of the LC for a State have also met with opposition.

Its composition:

- The size of the SLC cannot be more than one-third of the membership of the State Legislative Assembly.

- However, its size cannot be less than 40 members.

- These members elect the Chairman and Deputy Chairman from the Council.

MLCs are chosen in the following manner:

- One third are elected by the members of local bodies such as municipalities, gram panchayats, Panchayat samitis and District Councils.

- One third are elected by the members of the Legislative Assembly of the State from among the persons who are not members of the State Legislative Assembly.

- One sixth are nominated by the Governor from persons having knowledge or practical experience in fields such as literature, science, arts, the co-operative movement and social services.

- One twelfth are elected by graduates of three years' standing residing in that state.

- One twelfth are elected by teachers who had spent at least three years in teaching in educational institutions within the state not lower than secondary schools, including colleges and universities.

1.48 Draft Cinematograph (Amendment) Bill 2021

- The Standing Committee on Information and Technology has conveyed its discontent to the Ministry of Information and Broadcasting on the "super censorship" clause introduced in the draft Cinematograph (Amendment) Bill 2021.

Cause of concern:

- In the draft, there is a provision which allows the government to order recertification for a film already certified by the Central Board of Film Certification (CBFC).

- The government says the clause would only be invoked if the content of a film impinged on security and integrity of the nation.

Key Provisions in the draft bill:

- Age-based certification: It seeks to introduce age-based categorisation and classification. It proposes to divide the existing categories (U, U/A and A) into further age-based groups: U/A 7+, U/A 13+ and U/A 16+.

- Provision against piracy: At present, there are no enabling provisions to check film piracy. Violation shall be punishable with imprisonment and fine.

- Eternal certificate: It proposes to certify films for perpetuity. Currently a certificate issued by the CBFC is valid only for 10 years.

1.49 **Review implementation of forest rights:**

- The ministry of environment (MoEFCC) and ministry of tribal affairs (MoTA) have jointly issued a circular to chief secretaries of all states, giving the responsibility of implementing the Forest Rights Act 2006 to State governments.

- The circular asks states to undertake a review of the implementation of the Act and intimate the Government of India about any clarifications that are needed to smoothen the process.

Areas of concern:

- Despite a considerable lapse of time since it came into force, the process of recognition of the rights of forest dwellers is yet to be completed.

- Operationalisation of section 5 of the Act is also an area of concern. Section 5 deals with the duties of recognised forest dwellers such as, protecting wildlife, forest and biodiversity; ensuring that catchments area, water sources and other ecological sensitive areas are adequately protected etc.

- Section 3(1) (i) of the Act provides for rights to protect, regenerate, conserve or manage any community forest resource but there is lax implementation of the provision.

About the Forest Rights Act:

- The Act passed in 2006 grants legal recognition to the rights of traditional forest dwelling communities.

Rights under the Act:

- Title rights – i.e. ownership – to land that is being farmed by tribals or forest dwellers as on 13 December 2005, subject to a maximum of 4 hectares; ownership is only for land that is actually being cultivated by the concerned family as on that date, meaning that no new lands are granted.

- **Use rights** – to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.

- **Relief and development rights** – to rehabilitation in case of illegal eviction or forced displacement; and to basic amenities, subject to restrictions for forest protection.

- **Forest management rights** – to protect forests and wildlife.

Eligibility criteria:

- According to Section 2(c) of Forest Rights Act (FRA), to qualify as Forest Dwelling Scheduled Tribe (FDST) and be eligible for recognition of rights under FRA, three conditions must be satisfied by the applicant/s, who could be "members or community":

- Must be a Scheduled Tribe in the area where the right is claimed; and

- Primarily resided in forest or forests land prior to 13-12-2005; and

- Depend on the forest or forests land for bonafide livelihood needs.

- And to qualify as Other Traditional Forest Dweller (OTFD) and be eligible for recognition of rights under FRA, two conditions need to be fulfilled:

- Primarily resided in forest or forests land for three generations (75 years) prior to 13-12-2005.

- Depend on the forest or forests land for bonafide livelihood needs.

- Process of recognition of rights:

- The gram sabha, or village assembly, will initially pass a resolution recommending whose rights to which resources should be recognised.

- This resolution is then screened and approved at the level of the sub-division (or taluka) and subsequently at the district level.

- The screening committees consist of three government officials (Forest, Revenue and Tribal Welfare departments) and three elected members of the local body at that level. These committees also hear appeals.

1.50 Ministry of Cooperation

- The Indian Central government has recently created a new Ministry of Cooperation for strengthening cooperative movement

What are the features of the new Ministry?

- Ministry created to realise the vision of 'sahkar se samriddhi' (through cooperation to prosperity).

- It will provide a separate administrative, legal and policy framework for strengthening the cooperative movement in the country.

- It will work to streamline processes for 'ease of doing business' for cooperatives and enable development of multi-state cooperatives (MSCS),

What is a cooperative?

- Cooperatives are people-centred enterprises owned, controlled and run by and for their members to realise their common economic, social, and cultural needs and aspirations.

- Provisions of Indian Constitution related to Cooperatives

- The Constitution (97th Amendment) Act, 2011 made following changes in Constitution

- New Part IXB regarding the cooperatives working in India added. (Part IXA deals with Municipals)

- In Art. 19(1)(c) the word "cooperatives" was added after "unions and associations". This enables all the citizens to form cooperatives by giving it the status of fundamental right of citizens.

- A new Article 43B was added in the Directive Principles of State Policy (Part IV) regarding the "promotion of cooperative societies"

1.51 **Central Information Commission (CIC)**

- The Supreme Court has directed the Central government to place on record the latest information on the appointment of Information Commissioners, vacancies and pendency of cases in the Central Information Commission (CIC).

About Central Information Commission (CIC):

- The Central Information Commission is a statutory body,
- It set up under the Right to Information Act in 2005 under the Government of India to act upon complaints from those individuals who have not been able to submit information requests to a Central Public Information Officer or State Public Information Officer due to either the officer not have been appointed, or because the respective Central Assistant Public Information Officer or State Assistant Public Information Officer refused to receive the application for information under the Right to Information Act.
- It is not a constitutional body.
- The Central Information Commission is a high-powered independent body which inter alia looks into the complaints made to it and decide the appeals. It entertains complaints and appeals pertaining to offices, financial institutions, public sector undertakings, etc., under the Central Government and the Union Territories.
- The commission includes one chief information commissioner and not more than ten information commissioners who are appointed by the President of India on the recommendation of a committee consisting of the Prime Minister as Chairperson,
- The Leader of Opposition in the Lok Sabha and a Union Cabinet Minister to be nominated by the Prime Minister. Two women have been Chief Information Commissioners: Deepak Sandhu (fourth Chief Information Commissioner overall) and Sushma Singh (fifth overall).

COMPOSITION

- The Commission consists of a Chief Information Commissioner and not more than ten Information Commissioners.
- The Commission, when constituted initially, had five commissioners including the Chief Information Commissioner. At present (2019), the Commission has six Information Commissioners apart from the Chief Information Commissioner.
- They are appointed by the President on the recommendation of a committee consisting of the Prime Minister as Chairperson, the Leader of Opposition in the LokSabha and a Union Cabinet Minister nominated by the Prime Minister.

- They should be persons of eminence in public life with wide knowledge and experience in law, science and technology, social service, management, journalism, mass media or administration and governance.

- They should not be a Member of Parliament or Member of the Legislature of any State or Union Territory.

- They should not hold any other office of profit or connected with any political party or carrying on any business or pursuing any profession.

TENURE AND SERVICE CONDITIONS

- The Chief Information Commissioner and an Information Commissioner shall hold office for such term as prescribed by the Central Government or until they attain the age of 65 years, whichever is earlier. They are not eligible for reappointment . The President can remove the Chief Information Commissioner or any Information Commissioner from the office under the following circumstances:

1. If he is adjudged an insolvent; or

2. If he has been convicted of an offence which (in the opinion of the President) involves a moral turpitude; or

3. If he engages during his term of office in any paid employment outside the duties of his office; or

4. If he is (in the opinion of the President) unfit to continue in office due to infirmity of mind or body; or

5. If he has acquired such financial or other interest as is likely to affect prejudicially his official functions.

- In addition to these, the President can also remove the Chief Information Commissioner or any Information Commissioner on the ground of proved misbehaviour or incapacity. However, inthese cases, the President has to refer the matter to the Supreme Court for enquiry. If the Supreme Court, after the enquiry, upholds the cause of removal and advises so, then the President can remove him.

- The salary, allowances and other service conditions of the Chief Information Commissioner and an Information Commissioner shall be such as prescribed by the Central Government. But, they cannot be varied to his disadvantage during service.

1.52 **Tele-Law Programme**

- Justice Department commemorates the milestone of crossing 9 lakh beneficiaries under its Tele-Law programme.

- The programme connects the disadvantaged and needy seeking legal advice from Panel Lawyers through e-interface platform available in Common Service Centres(CSC).

- Tele–Law began its humble journey in 2017 by covering 170 districts in 11 States through 1800 CSCs. In 2019, 115 Aspirational Districts were added taking the number of CSCs to 29,860.

- Tele-Law programme is presently operational in 633 districts (including 115 Aspirational Districts) across 34 States/UTs through a network of 50,000 CSCs.
- Tele-Law saw a surge of 369% growth in number of beneficiaries seeking legal advice during last one year during the Covid Pandemic.
- Even though Tele-law programme is technology driven, its success is dependent on the working of field functionaries comprising of Village Level Entrepreneurs(VLEs), Para Legal Volunteers (PLVs), State Coordinators and Panel Lawyers.

1.53 **Sparsh Yojana**

- Pan India scholarship program called Deen Dayal SPARSH Yojana for school children was launched by the Ministry of communication to increase the reach of Philately (the collection and study of Postage stamps). Under the scheme of SPARSH (Scholarship for Promotion of Aptitude & Research in Stamps as a Hobby), proposals have been made to award annual scholarships to children of class VI to IX having academic excellence and also pursuing Philately as a hobby.
- The objective of the scholarship is to "Promote Philately among children at a young age in a sustainable manner that can reinforce and supplement the academic curriculum in addition to providing a hobby that can help them relax and de-stress".

Criteria for selection:

- The selections will be made through a competitive selection process in all postal circles.
- A maximum of 40 students will be selected representing 10 students each from class VI to class IX.
- The scholarship is fixed at Rs. 6000 per annum.
- The selections will be made based on performance in Philately Quiz conducted by Circles and evaluation of Project work on philately.
- To avail this scholarship, a child must be a student of a recognized school within India and the concerned school should have a Philately Club and the candidate should be a member of the Club.
- In case the school has not established a Philately Club, a student having his own Philately Deposit Account would also be considered for the scholarship.
- A Philately mentor chosen from among renowned Philatelists would be assigned to each school participating in the competition. The Philately mentor will be responsible for providing guidance in establishment of a school level Philately club, guide the aspiring Philatelists on pursuing the hobby. He would also help the young Philatelists in their Philately projects.

Philately:

- Philately is the hobby of collection and study of Postage stamps. It also entails the collection, appreciation and research activities on stamps and other related philatelic products. The hobby of collecting Stamps includes seeking, locating, acquiring, organizing, cataloguing, displaying, storing, and maintaining the stamps or related products on thematic areas. Philately is called the "king of hobbies" because Stamp collection as a hobby has a lot of educational benefits – it teaches a lot about the socio economic political reality of the period in which the stamp is issued or the theme on which it is issued.

1.54 **National Security Act (NSA), 1980**

- Former civil servants have demanded an end to the misuse of the National Security Act terming it a draconian preventive detention law.

About the National Security Act (NSA):

- The NSA is a preventive detention law.

- Preventive Detention involves the detainment (containment) of a person in order to keep him/her from committing future crimes and/or from escaping future prosecution.

- Article 22 (3) (b) of the Constitution allows for preventive detention and restriction on personal liberty for reasons of state security and public order.

Article 22(4) states that:

- No law providing for preventive detention shall authorise the detention of a person for a longer period than three months unless:

- An Advisory Board reports sufficient cause for extended detention.

- The 44th Amendment Act of 1978 has reduced the period of detention without obtaining the opinion of an advisory board from three to two months. However, this provision has not yet been brought into force, hence, the original period of three months still continues.

Period of Confinement:

- The maximum period for which one may be detained is 12 months. But the term can be extended if the government finds fresh evidence.

- A person can be held for 10 days without being told the charges against them. The person can appeal before a high court advisory board but will not be allowed a lawyer during the trial.

Concerns associated with the misuse of this law:

- Article 22 (1) of the Indian Constitution says an arrested person cannot be denied the right to consult, and to be defended by, a legal practitioner of his choice.

- According to Section 50 of the Criminal Procedure Code (CRPC), any person arrested has to be informed of the grounds of arrest and has the right to bail.

- However, under National Security Act, none of these rights are available to the person detained. The government holds the right to conceal information which it considers to be against public interest to disclose.

1.55 **Delimitation of Jammu and Kashmir**

- The Jammu and Kashmir Delimitation Commission has completed its consultation with various Stake holders and stated that it would base its final report on the 2011 Census to add at least seven more seats to the 83-member Assembly of the erstwhile state.

Agenda for delimitation

- Delimitation will be conducted on the basis of the 2011 census report. This assumes significance because the last delimitation exercise was conducted 26 years ago in 1995, and that too was based on the census of 1981.

- Apart from the demographics indicated in the Census, the commission will also take into account practicality, geographical compatibility, topography, physical features, means of communication and convenience available.

- Twenty-four seats that are reserved for Pakistan-occupied Jammu and Kashmir (PoJK) would not be delimited in this process. This further makes the delimitation exercise relevant because some political parties argue, that this freeze has created inequity for the Jammu region.

- The commission will also specify the number of seats to be reserved for the SC and the ST communities in the UT. This is important because despite having a sizeable tribal population, no seats had ever been reserved in the past for the Scheduled Tribes in Jammu and Kashmir.

- A draft report will be prepared and put in the public domain for consensus and feedback. Only after the fresh comments, the final draft will be prepared.

What is Delimitation and why is it needed?

- Delimitation is the act of redrawing boundaries of an Assembly or Lok Sabha seat to represent changes in population over time.

- This exercise is carried out by a Delimitation Commission, whose orders have the force of law and cannot be questioned before any court.

- The objective is to redraw boundaries (based on the data of the last Census) in a way so that the population of all seats, as far as practicable, be the same throughout the State.

- Aside from changing the limits of a constituency, the process may result in a change in the number of seats in a state.

How often has delimitation been carried out in J&K?

- Delimitation exercises in J&K in the past have been slightly different from those in the rest of the country because of the region's special status — which was scrapped by the Centre in August 2019.

- Until then, the delimitation of Lok Sabha seats in J&K was governed by the Constitution of India, but the delimitation of the state's Assembly was governed by the J&K Constitution and J&K Representation of the People Act, 1957.

- Assembly seats in J&K were delimited in 1963, 1973 and 1995.

- The last exercise was conducted by the Justice (retired) K K Gupta Commission when the State was under President's Rule and was based on the 1981 census, which formed the basis of the State elections in 1996.

- There was no census in the state in 1991 and no Delimitation Commission was set up by the state government after the 2001 census as the J&K Assembly passed a law putting a freeze until 2026.

Why is it in the news again?

- After the abrogation of J&K's special status in 2019, the delimitation of LokSabha and Assembly seats in the newly-created UT would be as per the provisions of the Indian Constitution.

- On March 6, 2020, the government set up the Delimitation Commission, headed by retired Supreme Court judge Ranjana Prakash Desai, which was tasked with winding up delimitation in J&K in a year.

- As per the J&K Reorganization Bill, the number of Assembly seats in J&K would increase from 107 to 114, which is expected to benefit the Jammu region.

1.56 **UP's New Population Policy**

- A new population policy released by Uttar Pradesh's CM has stated that it not only aims to bring fertility levels down, but also, notably, to "ensure there is a population balance among various communities"

- The policy comes at a time when The Uttar Pradesh State Law Commission has prepared a proposed draft bill for population control.

- India has just 2% of the world's landmass and 16% of the global population.

- The current Total Fertility Rate (TFR) of Uttar Pradesh was 2.7.

- India's TFR is declining. It is now 2.2 per woman, nearing the replacement rate of 2.1, according to the latest government data.

- TFR indicates the average number of children expected to be born to a woman during her reproductive span of 15-49 years.

UP's Population Policy aims at:

- Decreasing the total fertility rate from 2.7 to 2.1 by 2026 and 1.7 by 2030.

- Increase modern contraceptive prevalence rate from 31.7% to 45% by 2026 and 52% by 2030.

- Increase male methods of contraception use from 10.8% to 15.1% by 2026 and 16.4% by 2030.

- Decrease maternal mortality rate from 197 to 150 to 98, and infant mortality rate from 43 to 32 to 22, and under 5 infant mortality rate from 47 to 35 to 25.

- The State's policy also aims at increasing the life expectancy from 64.3 to 69 by 2030 and child sex ratio (0-6 years) from 899 to 919 by 2030.

- Draft Population Control Bill under which a two-child norm would be implemented and promoted has the following incentives:

- Upon voluntary sterilisation of self or spouse after the second child, a government servant can receive two additional increments during the period of service, subsidy on property purchase from government bodies, housing loans at softer terms, rebates on utility charges, maternity/paternity leave of 12 months, 3% additional contribution from government (as employer) to NPS.

- For sterilisation post one-child, there is free healthcare and insurance for the child, free education up to graduation, scholarship if the child is a girl, etc.

- For those who are not government employees and still contribute towards keeping the population in check, benefits like rebates in taxes on water, housing, home loans etc. will be provided

- BPL couples adopting the one-child policy will get lumpsum money from the government.

- It proposes that any citizen who "violates" a two-child policy not only be barred from contesting local bodies polls

Other Key Provisions of the Proposed Bill

- Awareness: State government to introduce population control as compulsory subject in all secondary schools. Awareness and extensive programmes would be held among those communities, cadres and geographical areas that have a higher fertility rate

- Applicability: The provision of this legislation shall apply to a married couple where the boy is not less than 21 years of age and the girl is not less than 18.

- Non-Coercive: The policy will be voluntary – it will not be enforced upon anyone

- Dedicated Fund: The Uttar Pradesh government plans to set up a state population fund to implement the measures.

Issues and concerns associated with the Bill:

- A policy or law that arms governments with more powers over citizens is erroneous for a fundamental reason: India is not being threatened by a "population explosion". Rather, India is naturally witnessing Population decline.

- TFR has declined from 3.4 in 1994 to 2.2 in 2015. Even in populous UP, the TFR has fallen an impressive 1.1 points to 2.7 in the span of a decade — without the state's coercive measures

- Experts have advised caution against any population policy that puts women's health and well being at risk.

- Given that the burden of contraception and family planning disproportionately falls on women, it is likely that female sterilisation will increase further.

- Stringent population control measures can potentially lead to an increase in these practices and unsafe abortions given the strong son-preference in India, as has been witnessed in a few states in the past.

- The success of India's southern states in containing population growth indicates that economic growth as well as attention to education, health and empowerment of women work far better to disincentivise larger families than punitive measures.

- Any government interested in supporting fertility decline, then, must go to work on the education and empowerment of women and respecting their choice.

1.57 **Right to Repair Movement**

- In recent years, countries around the world have been attempting to pass effective 'right to repair' laws.

About:

- US President Joe Biden signed an executive order calling on the Federal Trade Commission to curb restrictions imposed by manufacturers that limit consumers' ability to repair their gadgets on their own terms.

- The UK, too, introduced right-to-repair rules that should make it much easier to buy and repair daily-use gadgets such as TVs and washing machines.

What is the right to repair movement?

- Activists and organisations around the world have been advocating for the right of consumers to be able to repair their own electronics and other products as part of the 'right to repair' movement.

- The movement traces its roots back to the very dawn of the computer era in the 1950s.

- The goal of the movement is to get companies to make spare parts, tools and information on how to repair devices available to customers and repair shops to increase the lifespan of products and to keep them from ending up in landfills.

- They argue that these electronic manufacturers are encouraging a culture of 'planned obsolescence' — which means that devices are designed specifically to last a limited amount of time and to be replaced. This, they claim, leads to immense pressure on the environment and wasted natural resources.

Electronic manufacturers oppose this movement:

- Large tech companies, including Apple, Microsoft, Amazon, and Tesla, have been lobbying against the right to repair.

- Their argument is that opening their intellectual property to third party repair services or amateur repairers could lead to exploitation and impact the safety and security of their devices.

1.58 **Kongu Nadu**

- A list of new Union Cabinet ministers issued by the present Central ruling government has triggered a debate in political circles in Tamil Nadu, as well as on social media, by referring to 'Kongu Nadu', the informal name for a region in the western part of the state.

- The list mentions new minister hailing from 'Kongu Nadu'. This has led to allegations that the present Central ruling government trying to bifurcate the State.

About

- 'Kongu Nadu' is neither a place with a PIN code nor a name given formally to any region. It is a commonly used name for part of western Tamil Nadu.

- In Tamil literature, it was referred to as one of the five regions of ancient Tamil Nadu. There were mentions of 'Kongu Nadu' in Sangam literature as a separate territory.

- In the present state of Tamil Nadu, the term is informally used to refer to a region that includes the districts of Nilgiris, Coimbatore, Tirupur, Erode, Karur, Namakkal and Salem, as well as Oddanchatram and Vedasandur in Dindgul district, and Pappireddipatti in Dharmapuri district.

- The name derives from Kongu Vellala Gounder, an OBC community with a significant presence in these districts.

- The region includes prominent businesses and industrial hubs at Namakkal, Salem, Tirupur and Coimbatore.

1.59 **PRASHAD Scheme**

- PRASHAD projects were recently inaugurated in Varanasi, Uttar Pradesh.

- The inaugurated projects include a Tourist Facilitation Centre and operation of Cruise Boat from Assi Ghat to Raj Ghat.

What is PRASHAD scheme?

- It is also called as the 'National Mission on Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive' (PRASHAD).

- It is a Central Sector Scheme fully financed by the Government of India.

- Launched by the Ministry of Tourism in the year 2014-15.

- Objective: Integrated development of identified pilgrimage and heritage destinations.

- It includes infrastructure development such as entry points (Road, Rail and Water Transport), last mile connectivity, basic tourism facilities.

1.60 **Anti-defection law**

- Lok Sabha Secretariat has issued notices to three MPs, after their parties petitioned Speaker Om Birla, seeking their disqualification under the Anti-Defection Law.

- They have been asked to give their comments within 15 days of receipt of letters.

- Anti-defection law:

- In 1985 the Tenth Schedule, popularly known as the anti-defection law, was added to the Constitution by the 52nd Amendment Act.

- The purpose of the Amendment was to bring stability to governments by deterring MPs and MLAs from changing their political parties on whose ticket they were elected.

- The penalty for shifting political loyalties is the loss of parliamentary membership and a bar on becoming a minister.

When can a member be disqualified?

If a member of a house belonging to a political party:

- Voluntarily gives up the membership of his political party, or

- Votes, or does not vote in the legislature, contrary to the directions of his political party. However, if the member has taken prior permission, or is condoned by the party within 15 days from such voting or abstention, the member shall not be disqualified.

- If an independent candidate joins a political party after the election.

- If a nominated member joins a party six months after he becomes a member of the legislature.

- However, Legislators may change their party without the risk of disqualification in certain circumstances.

Exceptions:

- The law allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger.

- On being elected as the presiding officer of the House, if a member, voluntarily gives up the membership of his party or rejoins it after he ceases to hold that office, he won't be disqualified.

Decision of the Presiding Officer is subject to judicial review:

- The law initially stated that the decision of the Presiding Officer is not subject to judicial review. This condition was struck down by the Supreme Court later, thereby allowing appeals against the Presiding Officer's decision in the High Court and Supreme Court.

- However, it held that there may not be any judicial intervention until the Presiding Officer gives his order.

Is there a time limit within which the Presiding Officer should decide?

- There is no time limit as per the law within which the Presiding Officers should decide on a plea for disqualification.

1.61 **Adjournment Motion**

- Adjournment motion is an extraordinary procedure which, when admitted, leads to setting aside the normal business of the House for discussing a definite matter of urgent public importance.

- The main object of an adjournment motion is to draw the attention of the House to a recent matter of urgent public importance having serious consequences, and with regard to which a motion or a resolution with proper notice will be too late.

- The proposed matter to be raised has to be a serious issue that it affects the whole country and its security and the House is required to pay its attention immediately by interrupting the normal business of the House.

- The subject of the motion must have a direct or indirect relation to the conduct or default on the part of the Union Government

- It must precisely pinpoint the failure of the Government of India in the performance of its duties in accordance with the provisions of the Constitution and Law.

- A matter which falls within the jurisdiction of a State Government is not admissible, but a matter related to the constitutional developments in a State or atrocities on the Scheduled Castes and Scheduled Tribes and other weaker sections of the society which bring the Union Government into the picture may be considered for admission on merits.

- The refusal to give consent is in the absolute discretion of the Chair and the Chair is not bound to give any reasons, therefore.

1.62 **National Mission for Clean Ganga**

- A policy document from the National Mission for Clean Ganga has instructed Cities situated on river banks to incorporate river conservation plans when they prepare their Master Plans.

- The recommendations are currently for towns that are on the main stem of the Ganga. There are 97 towns encompassing five States — Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal.

- Some of the norms emphasised in the policy document are

- Clarifying land ownership issue, restrictions on the Floor Area Ratio, increasing green cover in the vicinity of the river by creating green buffers, removing concrete structures and employing green infrastructure.

- Facilitating the use of state-of-the-art technologies for river management – Satellite-based monitoring of water quality; Big data for river-health monitoring and Drones & AI for riverine biodiversity & floodplain mapping.

What is the National Mission for Clean Ganga(NMCG)?

- The National Ganga Council, also known as the National Council for Rejuvenation, Protection, and Management of River Ganga was set up in 2016. It replaced the National River Ganga Basin Authority (NRGBA).

- NGRBA was constituted under the provisions of the Environment (Protection) Act (EPA),1986.

- The National Ganga Council, chaired by Prime Minister, has been given overall responsibility for the superintendence of pollution prevention and rejuvenation of River Ganga Basin, including Ganga and its tributaries.

- National Mission for Clean Ganga (NMCG) is the implementation arm of national Ganga Council.

- NMCG is registered as a society in 2011 under the Societies Registration Act 1860.

The aims and objectives of NMCG are:

- To ensure effective control of pollution and rejuvenation of the river Ganga by adopting a river basin approach to promote inter-sectoral coordination for comprehensive planning and management.

- To maintain minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.

1.63 **UDAN scheme:**

- The government has announced new flights under the UDAN scheme to connect small cities with the metros.

- The flights utilises less used airports in the country and seeks to offer affordable flights to the people of the country.

Background:

- The Centre plans to operationalise 100 unserved and underserved airports and start at least 1,000 air routes under a regional connectivity scheme called UDAN scheme (UdeDeshKaAamNagrik).

About UDAN Scheme:

- The scheme is aimed at enhancing connectivity to remote and regional areas of the country and making air travel affordable.

- It is a key component of Centre's National Civil Aviation Policy led by Prime Minister NarendraModi and launched in June 2016.

- Under the scheme, nearly half of the seats in Udan flights are offered at subsidised fares, and the participating carriers are provided a certain amount of viability gap funding (VGF) – an amount shared between the Centre and the concerned states.

- The scheme will be jointly funded by the central government and state governments.

- The scheme will run for 10 years and can be extended thereafter.

UDAN 4.0:

- The 4th round of UDAN was launched in December 2019 with a special focus on North-Eastern Regions, Hilly States, and Islands.
- The airports that had already been developed by Airports Authority of India (AAI) are given higher priority for the award of VGF (Viability Gap Funding) under the Scheme.
- Under UDAN 4, the operation of helicopters and seaplanes is also been incorporated.

1.64 **UMANG App**

- Ministry of Electronics & IT enables map services in "UMANG App"; Signs MoU with Mapmy India. The service will enable people to find government facilities like Mandis, Blood Banks etc. near their location

Key Highlights:

- Ministry of Electronics & Information Technology (MeitY) has taken various initiatives in the recent past to ease the lives of citizens by facilitating online delivery of Government services. To further enhance the initiatives of Digital India Programme, and keeping in view the theme of 'Aatmanirbhar Bharat', MeitY has enabled map services in "UMANG App " through an MOU with Mapmy India.
- With integration of UMANG with Map my India Maps, citizens will be able to find government facilities nearest to their location, such as mandis, blood banks and much more, at the click of a button.
- They will also be able to see these on the most detailed and interactive street and village level maps of India, built by Mapmy India.
- Citizens will also be able to view the driving distance, get directions and turn by turn voice and visual guidance to locations, including traffic and road safety alerts during navigation, through the linkage between UMANG App and Map my India".

UMANG app has already started to provide map functionality through MapmyIndia in the following services:

- Mera Ration – Through UMANG, users can identify and navigate to the 'Nearest Fair Price Shops' as shops are visible in the form of pointers on Map my India integrated map.
- eNAM – Through UMANG, 'Mandi Near Me' service will help users to identify and navigate to the nearby mandis pointed on the map.
- Damini – 'Damini Lightning Alerts' service is to provide lightning alerts to users by giving a visual of nearby areas where lightning has struck in the last few minutes. This alert mechanism provides the possibility of lightning strikes on map view.

- To further increase usefulness to citizens, the map functionality will be shortly enabled in many more services such as:

- ESIC – Users can view ESIC centers such as hospitals/dispensaries on map view and navigate to them.

- Indian Oil – Service is to locate nearby retail and distributors of Gas stations as well as fuel filling stations.

- NHAI: Users can view the toll plazas and toll rates information while travelling.

- National Crime Records Bureau (NCRB) provides information corresponding to nearby police stations on the map.

- Pradhan Mantri Gram Sadak Yojana (MeriSadak) will help users to raise complaints of damaged roads (under PMGSY) by selecting the road on Map my India platform.

About UMANG App:

- The UMANG mobile app (Unified Mobile Application for New-age Governance) is a Government of India single, unified, secure, multi-channel, multi-platform, multi-lingual, multi-service mobile app,

- It provides access to high impact services of various organizations (Central and State).

- Prime Minister of India, had launched the UMANG App in 2017.

- UMANG brings major government services on a single mobile app, with a larger goal to make the government accessible on mobile phones of citizens.

- As on date, UMANG provides about 1251 services from 257 Departments & 32 States and about 20,280 Utility Bill Payment services and many more services are there in the pipeline.

- UMANG user base has crossed 3.41 Crore across Android, iOS, Web and KaiOS platforms. Citizens can also access their Digilocker Accounts from UMANG and give their feedback after availing any service through Rapid Assessment System (RAS) which has been integrated with UMANG.

About Map My India:

- Map my India, is a product of an indigenous, company founded and headquartered in New Delhi, India, in 1995, which has digitally mapped the entire country. It helps users find relevant places nearby and see them on detailed building level maps. Map my India's APIs enable app and technology developers to easily integrate India's own, indigenous, Aatmanirbhar maps into their apps.

1.65 **Conjugal rights before Supreme Court**

- The Supreme Court is expected to begin hearing a fresh challenge to the provision allowing restitution of conjugal rights under Hindu personal laws.

What is the provision under challenge?

- Section 9 of the Hindu Marriage Act, 1955, which deals with restitution of conjugal rights.

What are conjugal rights?

- Conjugal rights are rights created by marriage, i.e. the right of the husband or the wife to the society of the other spouse.

- The law recognizes these rights— both in personal laws dealing with marriage, divorce etc and in criminal law requiring payment of maintenance and alimony to a spouse.

- The concept of restitution of conjugal rights is codified in Hindu personal law now, but has colonial origins and has genesis in ecclesiastical law.

- Similar provisions exist in Muslim personal law as well as the Divorce Act, 1869, which governs Christian family law.

- Incidentally, in 1970, the United Kingdom repealed the law on restitution of conjugal rights.

How can a case under Section 9 be filed?

- If a spouse refuses cohabitation, the other spouse can move the family court seeking a decree for cohabitation.

- If the order of the court is not complied with, the court can attach property.

- However, the decision can be appealed before a High Court and the Supreme Court.

- Normally, when a spouse files for divorce unilaterally, the other spouse files for restitution of conjugal rights if he or she is not in agreement with the divorce.

- The provision is seen to be an intervention through legislation to strike a conciliatory note between sparring spouses.

Why has the law being challenged?

- The law is being challenged now on the main grounds that is violative of the fundamental right to privacy.

- The plea argues that court-mandated restitution of conjugal rights amounted to a "coercive action" on the part of the state, which violates one's sexual and decisional autonomy, and right to privacy and dignity.

- In 2019, a nine-judge Bench of the Supreme Court recognised the right to privacy as a fundamental right.

- The verdict in the privacy case set the stage for potential challenges to several laws such as the criminalization of homosexuality, marital rape, restitution of conjugal rights, the two-finger test in rape investigations.

Question over gender-neutrality

- Although the law is ex-facie ('on the face if it') gender-neutral since it allows both wife and husband to seek restitution of conjugal rights, the provision disproportionately affects women.

- Women are often called back to marital homes under the provision and given that marital rape is not a crime, leaves them susceptible to such coerced cohabitation.

- It will also be argued whether the state can have such a compelling interest in protecting the institution of marriage that it allows legislation to enforce the cohabitation of spouses.

What has the Court said about the law earlier?

Supreme Court:

- In 1984, the Supreme Court had upheld Section 9 holding that the provision "serves a social purpose as an aid to the prevention of break-up of marriage".

- Leading up to the Supreme Court intervention, two High Courts — those of Andhra Pradesh and Delhi — had ruled differently on the issue.

AP High Court:

- In 1983, AP High Court had for the first time struck down the provision and declared it null and void. It cited the right to privacy among other reasons.

- The court also held that in "a matter so intimately concerned the wife or the husband the parties are better left alone without State interference".

- The Court had, most importantly, also recognised that compelling "sexual cohabitation" would be of "grave consequences for women".

Delhi High Court:

- In the same year, a single-judge Bench of the Delhi High Court took a diametrically opposite view of the law and upheld the provision.

- From the definitions of cohabitation and consortium, it appears that sexual intercourse is one of the elements that go to make up the marriage.

- But it is not the summumbonum (the ultimate aim). as if marriage consists of nothing else except sex.

1.66 **Mekedatu Project**

- Mekedatu Balancing Reservoir and Drinking Water Project has both financial and social benefits as it proposes a plan to provide drinking water for nearly 100 lakh people with an additional benefit of generating 400 MW power.

- Therefore, this project is proposed with an aim to conserve water, prevent energy shortage and provide drinking water facilities to Bangalore cities and surrounding areas in the Cauvery basin.

Background

- The possibility of developing power from the Mekedatu project has been under examination since 1948 when Kollegal territory was a part of the Madras Presidency.

- However, this project wasn't examined till the reorganization of the States in the year 1956.

- After 1956, initially, this project was investigated by the Hydro-Electric Project Investigation Department of GoM and then on by the Karnataka Power Corporation Limited (KPCL) from the year 1986 onwards.

- KPCL prepared a report titled "Mekedatu Hydroelectric Project – Project Report" in July 1996.

- However, further consideration of the same got delayed at that time, directing the Government of Karnataka to wait for the Award of the Hon'ble Cauvery Water Disputes Tribunal (CWDT).

- The subject of sharing of the waters was adjudicated by the Hon'ble Cauvery Water Disputes Tribunal (CWDT).

Objectives of Mekedatu Dam Project

The objectives of Mekedatu Balancing Reservoir and Drinking Water Project are:

- To provide a drinking water facility to Bengaluru Metropolitan Region, and its adjoining area by way of proposing a scheme to tap water from the foreshore of the intended Mekedatu project by utilising the additional 4.75 TMC (thousand million cubic feet) of water.

- To harness nearly 400 MW of renewable energy (hydroelectric power) annually by Cauvery Neeravari Nigam Limited (CNNL).

- To regulate the required quantum of water to Tamil Nadu on a monthly basis to store the floodwaters and prevent it from escaping to sea as it happened in the monsoon of 2018.

- Mekedatu Dam Project Location

- Mekedatu project is located in Muguru and Mekedatu villages, Kanakapura and Kollegaltaluks of Ramanagara and Chamarajanagar Districts of Karnataka.

- The dam site is located about 3.0 Km downstream of the confluence of Arkavathy with Cauvery river called 'Sangama'.

- The left flank of the dam falls under Ramanagara District, the right flank falls under Chamarajanagar District.

- The centreline of the Cauvery river forms the administrative boundary between the two districts.

1.67 **Indian Labour Conference**

- The Bharatiya Mazdoor Sangh (labour union) wrote to the Prime Minister asking him to convene the Indian Labour Conference (ILC).

- It argued that since Indian Parliament has ratified Convention No 144 of the International Labour Organisation, it is now India's legal obligation to hold the ILC in order to strengthen the tripartite mechanism.

- ILC also known as the 'labour parliament' of the country formed on the lines of International Labour Conference is the apex level tripartite (Government, Employers and Workers) consultative committee in the Ministry of Labour & Employment.

- International Labour Conference also known as International Parliament of Labour is a conference organized by ILO every year.

- Each member State is represented by a delegation consisting of two government delegates, an employer delegate, a worker delegate, and their respective advisers.

- The first meeting of the ILC (then called Tripartite National Labour Conference) was held in 1942 and so far a total of 46 Sessions have been held.

- The most recent session of which was held in 2015.

- The agenda of the ILC is finalised by the Standing Labour Committee which is again a tripartite body after detailed discussions.

Function:

- To advise the Government on the issues concerning the working class of the country.

Members:

- Central Trade Union Organisations, Central Organisations of employers, all State Governments and Union Territories and Central Ministries/Departments concerned with the agenda items, are the members of the ILC.

1.68 **Speedy Trial Is A Fundamental Right**

- In the Bhima Koregaon caste violence case, highlighting the issue of undertrials, the Supreme Court has said that "speedy trial is a fundamental right".

- Charges are not framed in the case. Many witnesses are still being examined. They are languishing in jail without trial.

- About the Constitutional Right to Speedy Trial:

- The main aim of the Right to Speedy trial is to inculcate Justice in the society.

- It was first mentioned in that landmark document of English law, the Magna Carta.

- In India, it is covered under Article 21 which declares that "no person shall be deprived of his life or personal liberty except according to the procedure laid by law."

Evolution of the right to speedy trial:

- 1978 Babu Singh v. State of UP: The court remarked, "Our justice system even in grave cases, suffers from slow motion syndrome which is lethal to 'fair trial' whatever the ultimate decision.

- Speedy justice is a component of social justice since the community, as a whole, is concerned in the criminal being condignly and finally punished within a reasonable time and the innocent being absolved from the inordinate ordeal of criminal proceedings."

- HussainaraKhatoon v. State of Bihar, 1979: It formed the basis of the concept of the Speedy Trial. It was held that where under trial prisoners have been in jail for duration longer than prescribed, if convicted, their detention in jail is totally unjustified and in violation to fundamental rights under article 21.

- Katar Singh v. State of Punjab 1994: It was declared that the right to speedy trial is an essential part of fundamental right to life and liberty.

Factors for Pendency of the Cases:

- Delay in disposition of cases because of huge pendency.

- Delay due to lawyers/ advocates.

- Infrastructure issue: The Courts have no convenient building or physical facilities due to which it takes more time to dispose off a case.

- Provision for adjournment.

- Vacation of the court.

- The Investigation agencies such as Police also play a role in delay of cases.

1.69 **Adarsh Smarak Scheme**

- In news Monuments at Nagarjunakonda, Budhhist remains at Salihundam and Veerabhadra Temple at Lepakshi are identified as 'Adarsh Smarak' in Andhra Pradesh for providing additional facilities.

- About the Adarsh Smarak scheme

- Launched in 2014 for providing improved visitor amenities, especially for the physically challenged.
- Implemented by the Ministry of Culture.
- The civic amenities are being augmented at the protected sites under the scheme.
- Archaeological Survey of India had identified 100 monuments as "Adarsh Smarak" for upgradation

What are the Objectives of the Scheme?

1. To make the monument visitor friendly.
2. To provide interpretation and audio-video centers.
3. To make the monument accessible to differently-abled people.
4. To implement Swachh Bharat Abhiyan.

1.70 **Lokpal**

- More than two years after the Lokpal came into being, the Centre is yet to appoint a director of inquiry for conducting a preliminary inquiry into graft complaints sent by the anti-corruption ombudsman.

Who is 'Director of Inquiry'?

- According to the Lokpal and Lokayuktas Act, 2013, there shall be a director of inquiry, not below the rank of Joint Secretary to the GoI.
- He/ She shall be appointed by the Central government for conducting preliminary inquiries referred to the Central Vigilance Commission (CVC) by the Lokpal.

About the Lokpal

- The Lokpal, the apex body to inquire and investigate graft complaints against public functionaries, came into being with the appointment of its chairperson and members in March 2019.
- In March 2019, former SC judge Justice Pinaki Chandra Ghose was selected as the first head of the Lokpal.
- Lokpal and Lokayuktas Act, 2013
- The Lokpal Act 2013 is anti-corruption legislation that seeks to provide for the establishment of the institution of Lokpal.
- It seeks to inquire into allegations of corruption against certain important public functionaries including the PM, cabinet ministers, MPs, Group A officials of the Central Government etc.
- The Bill was introduced in the parliament following massive public protests led by anti-corruption crusader Anna Hazare and his associates.
- The Bill is one of the most widely discussed and debated Bills in India in recent times.

History

- The term Lokpal was coined in 1963 by Laxmi Mall Singhvi, a member of parliament during a parliamentary debate about grievance mechanisms.
- The Administrative Reforms Commission (ARC) headed by Morarji Desai submitted an interim report on "Problems of Redressal of Citizen's Grievances" in 1966.
- In this report, ARC recommended the creation of two special authorities designated as 'Lokpal' and 'Lokayukta' for redress of citizens' grievances.
- Maharashtra was the first state to introduce Lokayukta through The Maharashtra Lokayukta and Upa-Lokayuktas Act in 1971.

1.71 **SMILE Scheme**

- Recently, the Ministry of Social Justice and Empowerment has formulated a scheme "SMILE – Support for Marginalized Individuals for Livelihood and Enterprise".
- It includes a subscheme – 'Central Sector Scheme for Comprehensive Rehabilitation of persons engaged in Begging'.

About the Scheme:

- It is a new Scheme after the merger of existing Schemes for Beggars and Transgenders.
- Scheme provides for the use of the existing shelter homes available with the State/UT Governments and Urban local bodies for rehabilitation of the persons engaged in the act of Begging.
- In case of non-availability of existing shelter homes, new dedicated shelter homes are to be set up by the implementing agencies.
- It is estimated that an approximate 60,000 poorest persons would be benefited under this scheme for leading a life of dignity
- **Focus:** Rehabilitation, provision of medical facilities, counselling, education, skill development, economic linkages and so on.
- **Implementation:** It will be implemented with the support of State/UT Governments/Local Urban Bodies, Voluntary Organizations.

What is the Status of Beggars In India?

- According to the Census 2011 , total number of beggars in India is 4,13,670 and the number has increased from the last census.
- Top States: West Bengal, Uttar Pradesh and Bihar
- Top UTs: New Delhi and Chandigarh.
- Recently, the Supreme Court has agreed to examine a plea for decriminalising begging which has been made an offence in various states under Prevention of Begging Act.

1.72 **Independence of the Judiciary**

- Recently the Supreme Court of India mentioned about two "parallel systems" of justice — one for the rich and the other for the poor.
- It was dealing with a case where the bail granted to the husband of a legislator in Madhya Pradesh.

What's the issue?

- Madhya Pradesh High Court had granted the bail. The Supreme Court termed the grant of bail to a man with criminal antecedents who has been evading arrest a "grave error".

What has the court said?

- India cannot have two parallel legal systems, one for the rich and the resourceful and those who wield political power and influence, and the other for the small men without resources and capabilities to obtain justice or fight injustice.
- The existence of a dual legal system will only chip away the legitimacy of the law.
- Independence of the judiciary is the independence of each and every judge. The case pointed to a larger malaise of application of political pressure on trial judges.

How the Constitution of India ensures the independence of the Judiciary?

- Security of Tenure: Once appointed, the judges cannot be removed from the office except by an order of the President and that too on the ground of proven misbehavior and incapacity (Articles 124 and 217).
- The salaries and allowances of the judges are fixed and are not subject to a vote of the legislature.
- Powers and Jurisdiction of Supreme Court: Parliament can only add to the powers and jurisdiction of the Supreme Court but cannot curtail them.
- No discussion in the legislature of the State with respect to the conduct of any judge of Supreme Court or of a High Court in the discharge of his duties.
- Both the Supreme Court and the High Court have the power to punish any person for their contempt.

Why Judicial Independence is needed?

- The judicial independence ensures public confidence as an institution of the last resort where justice will be served despite any opposition and Influence.
- People place high credibility and trust in the judiciary to get justice in case of any kind of misconduct by the executive.
- The latter clause and confidence will be meaningless if executive interference is allowed into the process of judicial proceedings as well as judicial bias over the executive.

1.73 **Essential Defence Services Bill**

- The Bill was recently introduced by the Parliament.

- It is aimed at preventing the staff of the government-owned ordnance factories from going on a strike.

About:

- The Essential Defence Services Bill, 2021 was introduced in Lok Sabha by the Minister of Defence, Mr.Rajnath Singh, on July 22, 2021. The Bill seeks to replace the Ordinance promulgated in June 2021. The Bill allows the central government to prohibit strikes, lock-outs, and lay-offs in units engaged in essential defence services.

Key features of the Essential Defence Services Bill include:

Essential defence services: Essential defence services include any service in:

- Any establishment or undertaking dealing with production of goods or equipment required for defence related purposes, or any establishment of the armed forces or connected with them or defence.

- These also include services that, if ceased, would affect the safety of the establishment engaged in such services or its employees. In addition, the government may declare any service as an essential defence service if its cessation would affect the:

1. Production of defence equipment or goods,

2. Operation or maintenance of industrial establishments or units engaged in such production, or

3. Repair or maintenance of products connected with defence.

- Public utility service: The Bill amends the Industrial Disputes Act, 1947 to include essential defence services under public utility services. Under the Act, in case of public utility services, a six-week notice must be given before:

  - Persons employed in such services go on strike in breach of contract or

  - Employers carrying on such services do lock-outs.

- Defined Strikes: Under the Bill, strike is defined as cessation of work by a body of persons acting together. It includes:

  - Mass casual leave,

  - Coordinated refusal of any number of persons to continue to work or accept employment,

  - Refusal to work overtime, where such work is necessary for maintenance of essential defence services, and

  - Any other conduct which results in, or is likely to result in, disruption of work in essential defence services.

- Prohibition on strikes, lock-outs, and lay-offs: Under the Bill, the central government may prohibit strikes, lock-outs, and lay-offs in units engaged in essential defence services. The government may issue such order if necessary in the interest of:

  - Sovereignty and integrity of India,

- Security of any state,

- Public order,

- Public,

- Decency, or

- Morality.

- The prohibition order will remain in force for six months, and may be extended by another six months.

- Strikes and lock-outs that are declared after the issue of the prohibition order, or had commenced before the prohibition order was issued will be illegal. The prohibition will not apply to lay-offs made due to power shortage or natural calamity, or lay-offs of temporary or casual workmen.

- Punishment for illegal lock-outs and lay-offs: Employers violating the prohibition order through illegal lock-outs or lay-offs will be punished with up to one year imprisonment or Rs 10,000 fine, or both.

- Punishment for illegal strikes: Persons commencing or participating in illegal strikes will be punished with up to one year imprisonment or Rs 10,000 fine, or both. Persons instigating, inciting, or taking actions to continue illegal strikes, or knowingly supplying money for such purposes, will be punished with up to two years imprisonment or Rs 15,000 fine, or both. Further, such an employee will be liable to disciplinary action including dismissal as per the terms and conditions of his service. In such cases, the concerned authority is allowed to dismiss or remove the employee without any inquiry, if it is not reasonably practicable to hold such inquiry.

- All offences punishable under the Bill will be cognisable and non-bailable.

Why does the government feel its need?

- In June the government announced the corporatization of the Ordnance Factory Board.

- The OFB was directly under the Department of Defence Production and worked as an arm of the government.

- The government has claimed that the move is aimed at improving the efficiency and accountability of these factories.

- The Bill mentioned that there is a threat, though, that the employees of these factories can go on a strike against the decision.

- An uninterrupted supply of ordnance items to the armed forces should be maintained.

- This is essential for the defence preparedness of the country.

- This is especially true given the prevailing situation on the northern front of the country.

- With these, it was felt necessary that the Government should have power to meet any emergency and ensure the maintenance of essential defence services.

Right to Strikes

- Right to strike is recognized globally. Article 19(1) the Constitution of India guarantees the protection of certain freedoms as fundamental rights such as:
- Freedom of speech and expression.
- Assemble peaceably and without arms.
- Form associations or unions.
- Move freely throughout the territory of India.
- Reside and settle in any part of the territory of India.
- Practise any profession, or to carry on any occupation, trade or business.
- However, strike is not expressly recognized in the Constitution of India. The Supreme Court settled the case of Kameshwar Prasad v. The State of Bihar 1958 by stating that strike is not a fundamental right. Government employees have no legal or moral rights to go on strikes.
- India recognized strike as a statutory right under the Industrial Disputes Act, 1947.

1.74 **Assam-Mizoram border dispute**

- Context: Recently, at least five Assam Police personnel were killed after the old boundary dispute between Assam and Mizoram exploded in violent clashes at a contested border point.
- In October last year, residents of Assam and Mizoram had clashed twice in the space of a week over territory, in which at least eight people were injured.
- The violence spotlights the long-standing inter-state boundary issues in the Northeast, particularly between Assam and the states that were carved out of it.

What is the genesis of Assam-Mizoram boundary dispute?

- The boundary between present-day Assam and Mizoram, 165 km long today, dates back to the colonial era, when Mizoram was known as Lushai Hills, a district of Assam.
- The dispute stems from a notification of 1875 that differentiated the Lushai Hills from the plains of Cachar, and another of 1933, that demarcates a boundary between the Lushai Hills and Manipur.
- Mizoram believes the boundary should be demarcated on the basis of the 1875 notification, which is derived from the Bengal Eastern Frontier Regulation (BEFR) Act, 1873.
- Mizo leaders have argued in the past against the demarcation notified in 1933 because Mizo society was not consulted.
- Assam government follows the 1933 demarcation, and that was the point of conflict.
- According to an agreement between Mizoram and Assam, status quo was to be maintained in the no man's land in the border area.

Recent Clashes

- In February 2018, there was violence when students' union MZP (Mizo Zirlai Pawl) built a wooden rest house for farmers on land that was claimed by Assam and which was demolished by Assam Police.

- Again, in October 2020, clashes erupted twice in a week over construction of huts in Lailapur (Assam) on land claimed by Mizoram.

Are there other boundary issues in the northeast?

- Assam has had boundary problems with all its north-eastern neighbours, except Manipur and Tripura that had existed as separate entities.

- State Reorganisation Post Independence: The primary reason is that the other States, which were all part of Assam during the British rule, have contested the boundaries since they separated from Assam and became full-fledged States over a period of time (Nagaland Statehood in 1963; Meghalaya, Tripura & Manipur Statehood in 1971; Arunachal Pradesh & Mizoram Statehood in 1987)

- Constitutional Solution Vs Historical grounds: Assam has accepted several recommendations of border commissions set up by the Supreme Court, but other States have been sticking to "historical boundaries" that go back to the period before 1826, when the British annexed undivided Assam and included the hills as its provinces.

- Issue of Nagaland: The Nagaland government has been insisting that a 16-point agreement of 1960, which led to the creation of Nagaland, also included "restoration" of all Naga territories that had been transferred out of the Naga Hills after the British annexed Assam in 1826.

- Issue of Meghalaya: Meghalaya has challenged the Assam Reorganisation Act of 1971, claiming that two blocks in Assam's KarbiAnglong district belonged to the erstwhile United Khasi and Jaintia Hills created in 1835.

- Assam's point of view: Assam says its neighbours have encroached upon more than 75,000 hectares of land. Revenue records of the Assam government say Nagaland has encroached upon 19,819.62 hectares, Arunachal Pradesh 5,756.02 hectares and Meghalaya 65.62 hectares since 2001.

Way Forward

- Burden borne by common man: The border residents will continue to bear the brunt of the unrest unless an acceptable solution is arrived at.

- Joint patrolling by police personnel of both the States with Central forces along the inter-State border.

- Maintaining Peace & Order: Apart from drawing up the standard operating procedure for guarding the contentious boundary, state governments need to strengthen coordination between the Superintendents of Police of the border districts for prompt action against criminals and anti-social activities that add to the border tension.

2. INTERNATIONAL RELATIONS

2.1 UN Peacekeeping

- The 193 member states of the United Nations have thus far failed to agree on a peacekeeping budget for the year beginning July 1, which could lead to "a freeze on all missions" should a deal not soon materialize.
- The roadblock stems from China and African countries making multiple last-minute requests.

What's the issue?

- The budget for the UN's global peacekeeping operations — about 20 missions worldwide, with nearly 100,000 Blue Helmets mobilized — amounts to about $6.5 billion and covers a 12-month period starting each year on July 1.
- This year, the member nations have failed to agree on the budget.

Implications:

- The risk is that for a while until a decision on budgets is reached by the General Assembly, missions will find themselves under strict constraints, to only spend on measures to protect our personnel.
- Curtailment of operations would limit the ability of the missions to implement their mandate, including, for example, supporting host countries on Covid response, protecting civilians, among others.

How UN Peacekeeping operations are funded?

- While decisions about establishing, maintaining or expanding a peacekeeping operation are taken by the Security Council, the financing of UN Peacekeeping operations is the collective responsibility of all UN Member States.
- Every Member State is legally obligated to pay their respective share towards peacekeeping. This is in accordance with the provisions of Article 17 of the Charter of the United Nations.

The top 5 providers of assessed contributions to United Nations Peacekeeping operations for 2020-2021 are:

1. United States (27.89%).
2. China (15.21%).
3. Japan (8.56%).
4. Germany (6.09%).
5. United Kingdom (5.79%).

What is peacekeeping? It's significance?

- United Nations Peacekeeping is a joint effort between the Department of Peace Operations and the Department of Operational Support.

- Every peacekeeping mission is authorized by the Security Council.

Composition:

1. UN peacekeepers (often referred to as Blue Berets or Blue Helmets because of their light blue berets or helmets) can include soldiers, police officers, and civilian personnel.

2. Peacekeeping forces are contributed by member states on a voluntary basis.

3. Civilian staffs of peace operations are international civil servants, recruited and deployed by the UN Secretariat.

 UN Peacekeeping is guided by three basic principles:

1. Consent of the parties.

2. Impartiality.

3. Non-use of force except in self-defence and defence of the mandate.

2.2 Indian Ocean Naval Symposium(IONS)

- The 7th edition of Indian Ocean Naval Symposium (IONS), a biennial event,

- It was hosted by the French Navy at La Réunion from 28 June to 01 July 2021.

- Admiral Karambir Singh, Chief of the Naval Staff, Indian Navy, participated virtually in the inaugural session of the event and provided his congratulatory remarks to the outgoing and Incoming Chairmen.

- During the Symposium, SME presentations were made by French Institute of International Relations

- The Symposium also held panel discussions themed on the three IONS working Groups viz., HADR, Maritime Security and Information Sharing & Interoperability.

- The Naval Maritime Foundation (NMF) also participated in the Panel Discussion on HADR.

- IONS Conclave of Chiefs (CoC) is the decision-making body at the level of Chiefs of Navies, which meets biennially.

- 6th IONS and CoC was conducted by Iran Navy in April 2018 at Tehran.

- Owing to the pandemic, the CoC2021, will be hosted by French Navy later this year.

2.3 OECD-G20 Inclusive Framework Tax Deal

- India is joining the OECD-G20 framework for a global minimum tax.

What is this tax deal?

The proposed solution consists of two components:

- Pillar One is about the reallocation of an additional share of profit to the market jurisdictions and

- Pillar Two consists of minimum tax and subject to tax rules

- Some significant issues including share of profit allocation and scope of subject to tax rules, remain open and need to be addressed.

- Further, the technical details of the proposal will be worked out in the coming months and a consensus agreement is expected by October.

Why did India join?

- The principles underlying the solution vindicates India's stand for a greater share of profits for the markets, consideration of demand-side factors in profit allocation.

- There is a need to seriously address the issue of cross border profit shifting and need for the subject to tax rules to stop treaty shopping.

- India is in favour of a consensus solution that is simple to implement and simple to comply with.

- At the same time, the solution should result in the allocation of meaningful and sustainable revenue to market jurisdictions, particularly for developing and emerging economies.

What is Base Erosion and Profit Shifting (BEPS)?

- BEPS refers to corporate tax planning strategies used by multinationals to "shift" profits from higher-tax jurisdictions to lower-tax jurisdictions.

- It thus "erodes" the "tax base" of the higher-tax jurisdictions.

- Corporate tax havens offer BEPS tools to "shift" profits to the haven, and additional BEPS tools to avoid paying taxes within the haven.

- It is alleged that BEPS is associated mostly with American technology and life science multinationals.

2.4 Istanbul Convention On Violence Against Women

- Turkey's controversial exit from Istanbul Convention on Violence Against Women on July 1 has received severe criticism from various quarters and has led to protests across the country.

- The Council of Europe established the Istanbul Convention, a human rights treaty, with the aim to prevent and prosecute all forms of violence against women, promote gender equality and ensure protection and rehabilitation of women who are victims of violence.

- The treaty was opened for ratification in May 2011. From the European Union, 34 countries signed this treaty.

- On November 24, 2011, Turkey became the first country to ratify the Istanbul convention and, on March 8, 2012, it incorporated the Istanbul Convention into domestic law.

- some officials of Erdogan's nationalist party claimed that the convention demeans traditional family structure, promotes divorces and encourages acceptance of LGBTQ in the society.

- Violence against women and honour killings are persistent in Turkey.

- The country ranks 133 out of 156 countries in the Global Gender Gap report 2021. According to UN women data, 38 per cent of women in Turkey face violence from a partner in their lifetime.

2.5   US Child Soldiers Prevention Act (CSPA)

- US adds Pakistan, along with 14 other countries, to the list of the Child Soldiers Prevention Act.

- The list identifies foreign governments with government-supported armed groups that recruit or use child soldiers and subjects them to certain restrictions.

- Other countries which have been added to the annual TIP list of the US State Department are Turkey, Afghanistan, Myanmar, Democratic Republic of the Congo, Iran, Iraq, Libya, Mali, Nigeria, Somalia, South Sudan, Syria, Venezuela and Yemen.

About the Child Soldiers Prevention Act, 2008:

- It identifies foreign governments having government-supported armed groups that recruit or use child soldiers.

- The Act requires publication in the annual Trafficking in Persons (TIP) report a list of foreign governments that have recruited or used child soldiers during the previous year.

- Designation under this act could result in restrictions on certain security assistance and commercial licensing of military equipment.

- The term child soldier means any person under 18 years of age who takes a direct part in hostilities or who has been compulsorily recruited into governmental armed forces, police, or other security forces.

- It also means any person under 15 years of age who has been voluntarily recruited into governmental armed forces, police, or other security forces or any person under 18 years of age who has been recruited or used in hostilities by armed forces distinct from the armed forces of a state.

- It also includes any such person who is serving in any capacity, including in a support role, such as a cook, porter, messenger, medic, guard or sex slave.

2.6   China goes malaria-free with multi-pronged health strategy

- In the context of the World Health Organization (WHO) declaring China "malaria-free", the article analyses China's health strategy vis-à-vis malaria and the lessons it can offer India's own efforts against malaria.

- The "malaria-free" certification from the WHO requires four consecutive years of reporting no local cases.

- China is the first country in the Western Pacific region to be declared malaria-free in more than 30 years.

Malaria:

- Malaria is a mosquito-borne disease caused by a parasite.

- It is typically transmitted through the bite of an infected Anopheles mosquito. Infected mosquitoes carry the Plasmodium parasite (Plasmodium vivax) When this mosquito bites a human, the parasite is released into the bloodstream.

- Malaria is typically found in tropical and subtropical climates where the parasites can live. It is most prevalent in Africa, followed by Asia and Latin America. It also affects people in the Middle East and Europe albeit to a much smaller degree.

- The number of malaria cases worldwide in 2019 was around 229 million, according to the World Malaria Report in 2020, with 409,000 lives lost to the mosquito-borne disease.

- The 2020 report said the majority of cases were reported in Africa, while India and Southeast Asia recorded a significant drop. Cases in India fell from approximately 20 million to 6 million, according to the report.

Details:

- China followed a multi-pronged health strategy that was able to entirely eliminate indigenous cases of malaria that once a major public health problem in China with millions of cases reported annually.

Some of the major aspects of this strategy involved the following:

Mosquito control:

- Targeting mosquito breeding grounds and using of insecticide spraying have been a major aspects of China's mosquito control efforts.

Robust surveillance:

- The WHO has attributed a lot of credit to China's '1-3-7 strategy' for its success in tackling malaria.

- "1-3-7 strategy" refers to a one-day deadline to report a malaria diagnosis, confirming a case and determining the spread by the third day, and measures taken to stop the spread by the seventh day, along with continued surveillance in high-risk areas.

- China has also strengthened its laboratory networks with quality laboratory equipment, which has let it detect cases of malaria in a fast and effective manner.

- This approach has allowed China to detect cases early and prevent its spread.

Robust public health system:

- Strong political commitment to strengthen the national health systems has been a major factor of strength in the fight against the disease.

- China's public health system offering free of charge diagnosis and treatment of malaria has played a major role in bringing down cases drastically.

Anti-malarial medicines:

- The discovery of artemisinin under "the 523 project" and its use in artemisinin-based combination therapies has provided one of the most effective antimalarial drugs.

Human resources:

- With assistance from the Global Fund to Fight AIDS, Tuberculosis and Malaria starting in 2003, China stepped up training, staffing to deal with the handling of the malaria disease. This has ensured the required human resources for the fight against Malaria.

Other interventions:

- China has been using insecticide-treated nets widely and distributed them free of cost to people living in vulnerable areas.

2.7 White Flag Campaign

- In Malaysia, some residents of low-income families have started waving white flags as part of the so-called "White Flag Campaign", or the #benderaputi (white flag) movement.

- They are doing this to convey distress about the financial crunch they have had to deal with amid the lockdowns due to Covid-19. Malaysia enforced another lockdown on June 1 in order to control another surge of Covid infections.

- As part of the movement that was initiated last week, families that are facing hunger or need any other kind of assistance are encouraged to wave a white flag or put a piece of white cloth outside their homes to signal that they need help.

- The idea is that by spotting the white flag, neighbours and good samaritans can reach them.

- Black flag movement:

- Alongside the white flag movement, there is the black flag movement as well, in order to express dissatisfaction with the Malaysian government.

- Specifically, this movement is demanding that Prime Minister MuhyiddinYassin resign.

2.8 Honorary Consul generals

- Industrialist N.S. Srinivasa Murthy based in Bengaluru has been appointed as Honorary Consul General of Vietnam for Karnataka.

- He is the first honorary consul general of Vietnam from India and the 19th across the world.

Who are Honorary Consuls?

- Together with diplomatic missions, an honorary consul promotes economic and cultural relations.

- They are private individuals who take care of their tasks on a part-time basis without remuneration.

- Ministry of External Affairs (MEA)'s approval is essential before the formal appointment.

- Honorary consuls do not accept passport applications nor do they handle matters pertaining to visas or residence permits.

- Honorary consuls cannot serve as attorneys in judicial proceedings or as legal advisers.

2.9 International Cooperation and Convention Centre – Rudraksh in Varanasi

- It was inaugurated recently.

- It has been constructed with Japanese assistance.

- The objective of the project is to provide opportunities for social and cultural interactions between people.

Image tweeted by @narendramodi

2.10 The election in Pakistan Occupied Kashmir

- Elections are scheduled to be held in Pakistan Occupied Kashmir (PoK) for 53 seats. There are about 20 lakh voters.

Present position of PoK:

- PoK is called "Azad Jammu & Kashmir" ("AJK" in short)by Pakistan

- It came into being after the 1949 ceasefire between India and Pakistan.

- It comprises the parts of the erstwhile state of Jammu and Kashmir that were illegal occupied by the Pakistani forces.

- Pakistan's constitutional position on PoK is that it is not a part of the country, but the "liberated" part of Kashmir.

- However, Article 257 of Pakistan's Constitution says: "When the people of the State of Jammu and Kashmir decide to accede to Pakistan, the relationship between Pakistan and the State shall be determined in accordance with the wishes of the people of that State."

Political structure and how is it administered?

- The constitution of Pakistan lists the country's four provinces — Punjab, Sind, Balochistan, and Khyber Pakhtunkhwa.

- For all practical purposes, PoK is run by the Pakistan government through the all-powerful Kashmir Council, a nominated 14-member body headed by the Prime Minister of Pakistan.

- The Assembly has a five-year term. The legislators elect a "Prime Minister" and a "President" for the territory.

- While PoK is ostensibly an autonomous, self-governing territory, the Pakistan Army is the final arbiter on all matters Kashmir.

India's stand on PoK:

- The fact that entire erstwhile J&K State including PoK is an integral part of India has been our consistent policy ever since 1947.

- India has also made clear to the world that any issue related to PoK is the internal matter of India.

- Pakistan-occupied Kashmir (PoK) is part of the newly created Union Territory of Jammu and Kashmir, while Gilgit-Baltistan is in the UT of Ladakh in the fresh maps released by the government.
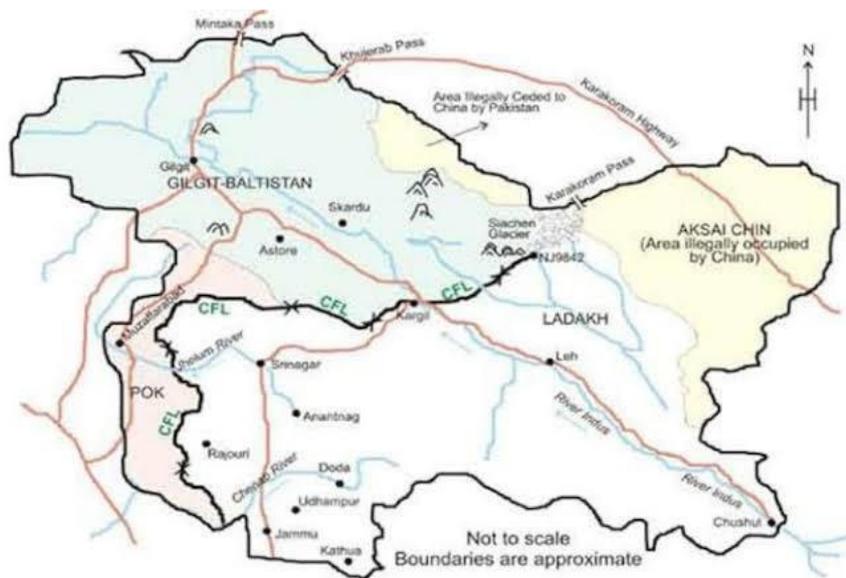
2.11 Alexander Dalrymple Award

- Chief Hydrographer to the Govt. of India received the Alexander Dalrymple award from the British High Commissioner.

- The Alexander Dalrymple Award has been named after the first hydrographer of the Admiralty and was instituted in 2006.

- India's chief hydrographer, Vice Admiral Vinay Badhwar, was honoured with the award in recognition of his leadership in the disciplines of hydrography and nautical cartography.

About the Chief Hydrographer to the Govt. of India:

- The Chief Hydrographer heads the Indian Naval Hydrographic Department (INHD) which is an Indian government agency responsible for hydrographic surveys and nautical charting in India.

- INHD's headquarters National Hydrographic Office is located in Dehradun.

- The department is also responsible for making electronic navigational charts officially on behalf of the government of India.

- It was formed in 1954 although its origins date back to 1874 when the Indian Marine Survey Department was established in Calcutta.

Objectives of the INHD:

- Carryout accurate hydrographic surveys.

- Ensure availability of genuine, accurate and up-to-date navigational products to mariners.

- Provide hydrographic services to National and International agencies and Public as well as Private sector undertakings.

- Provide quality training in the field of Hydrography.

- Ensure total satisfaction to the users of its products.

- Extend cooperation in the field of Hydrography to the maritime states in the region.

2.12 China's wolf warrior approach

- China's assertive new diplomatic approach in the era of XiJinping has come to be recorded as "wolf warrior diplomacy", stuck by a muscular posture in pursuing China's vital interests.

What is wolf war diplomacy

- "Wolf-warrior diplomacy," was named on one of the famous Chinese dramas and movies, describing offensives by Chinese diplomats to defend China's vital interests, often in offensive ways.

- It emphasizes a presumed transition of Chinese foreign diplomacy from conservative, passive, and low-key to assertive and proactive roles.

Instances:

- In the last year, the Chinese foreign ministry has taken a growingly strident pitch against the United States, India, Australia, and other quad countries.

- In the south China sea, China declared the naming of 80 islands, reefs, seamounts, shoals, and ridges, triggering angry protests from other claimants areas

- China also tried to enter India from various places.

Why is China resorting to wolf-warrior diplomacy?

- Nationalism: Since 2010, when China's GDP overtook Japan as the world's second-largest, the Chinese confidence rises and China's foreign policy has become more assertive.

- China as a great power: The earliest diplomatic offensive act of china is one of the parts of the official effort to project China as a great power that is leading the global fight against the COVID-19. China's image was badly suffered during the covid crisis due to its bungled handling of the outbreak at the early stage.

How successful has this approach been in a holistic way–

- The wolf-warrior diplomacy is already creating hurdles in China's foreign policy, since it has created pushback, such as Australia's calls for independent surveillance into the coronavirus' origins.

- China's soft power is very weak worldwide; a lethargic approach will further damage China's global image.

- Wolf warrior tactics, along with its military assertiveness on the China-India border, has summed up pushing India much closer to the U.S., and pushing a billion plus-person economy.

2.13 International North-South Transport Corridor (INSTC)

- India wants Chabahar port to be included in the 13-nation International North South Transport Corridor that extends from India to Russia, and expand INSTC membership by including Afghanistan and Uzbekistan.

What is the INSTC?

- International North-South Transport Corridor (INSTC) is a 7,200-km-long multimodal network of ship, rail and road routes for moving freight across India, Iran, Afghanistan, Armenia, Azerbaijan, Russia, Central Asia and Europe.

- The route primarily involves moving freight from India, Iran, Azerbaijan and Russia via ship, rail and road.

- The objective of the corridor is to increase trade connectivity between major cities such as Mumbai, Moscow, Tehran, Baku, Bandar Abbas, Astrakhan, Bandar Anzali, etc.

India pushes for Chabahar:

- Pitching for Chabahar in the INSTC which goes via Iran's biggest port Bandar Abbas, India proposed that the land route via Kabul and Tashkent would form the INSTC's "Eastern corridor".

- Establishing an eastern corridor through Afghanistan would maximise its potential.

- The Chabahar Port has already handled 123 vessels and 18 lakh tons of cargo, which include trans-shipments from "Russia, Brazil, Thailand, Germany, Ukraine and the UAE".

Credit lines:

- Iran has said that India has participated in the first phase of development of Shahid Beheshti port of Chabahar and supplying of equipment.

- It deems necessary for the Indian operator to facilitate the process of supplying the remaining equipment.

- We can enjoy more credit lines allocated by India for equipping the port as well as completion of infrastructure projects of transport networks related to it.

- India has already provided the Shahid Beheshti port with two cranes, and promised a further six, but is not at present part of the 628-km railway project, which Iran decided to develop on its own last year.

Multi-mode network:

- The INSTC project was originally decided between India, Iran and Russia in 2000 in St Petersburg.
- Subsequently included 10 other central Asian and west Asian countries as an observer.
- These are: Azerbaijan Armenia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkey, Ukraine, Belarus, Oman, Syria and Bulgaria.
- It envisions a 7,200-km-long multi-mode network of ship, rail and road route for transporting freight.
- It aimed at reducing the carriage cost between India and Russia by about 30% and bringing down the transit time from 40 days by more than half.

Chabahar- INSTC integration

- India and Iran have a long-standing agreement, signed in 2002, to develop Chabahar into full deep sea port.
- Bandar Abbas port handles 85% of Iran's seaborne trade and is highly congested.
- Whereas, Chabahar has high capacity with plans to expand it from its current capacity of 2.5 million to 12.5 million tons annually.
- Unlike Bandar Abbas, Chabahar has the ability to handle cargo ships bigger than 100,000 tons.
- India is also eyeing trade with Europe via Chabahar port and the International North-South Transport Corridor.

Challenges:

- The INSTC doesn't have a strong institutional mechanism to deal with the operational issues on the ground.
- The Problems related to customs procedure and documentation needs to be addressed.
- Funding of the infrastructure related Issues.
- Lack of a common border crossing rules among the participating nations.
- Security problem emanating from Islamic insurgents east, and west of the route, and associated hurdle of high insurance costs.

2.14 3rd Arctic Science Ministerial

- The Government of India has participated in the 3rd Arctic Science Ministerial (ASM3).

About Arctic Science Ministerial (ASM3):

- Arctic Science Ministerial(ASM) is a global platform for discussing research and cooperation in the Arctic region.

- Organized by: Iceland and Japan have jointly organized the 3rd Arctic Science Ministerial(ASM3). It is the first Ministerial meeting being held in Asia.
- The first Arctic Science Ministerial was hosted by the United States in Washington in 2016. The second ASM was co-hosted by the European Commission, Finland, and Germany in Berlin in 2018.
- Purpose: To provide opportunities to various stakeholders, to enhance collective understanding of the Arctic region. It also emphasizes the constant engagement in monitoring and strengthening Arctic observations.
- Theme: 'Knowledge for the Sustainable Arctic'.

About NISAR(NASA-ISRO Synthetic Aperture Radar) Mission:

- NISAR is a joint Earth-Observation mission between ISRO and NASA. It aims to make global measurements of land surface changes using advanced radar imaging.
- Objective: To improve understanding of the impact of climate change on Earth's changing Ecosystems, land and coastal processes, land deformations, and Cryosphere.
- Features: It is a dual-band (L-band and S-band) Radar imaging mission with the capability of full polarimetric and interferometric modes of operation, to observe minor changes in land, vegetation, and cryosphere.
- Contributions: NASA is developing L-band SAR and associated systems. While ISRO is developing S-band SAR, spacecraft bus, the launch vehicle, and associated launch services.
- Launch Year: NISAR is proposed to be launched in early 2023.

2.15 INDRA NAVY – 21

- The 12th edition of exercise INRA NAVY was held in the Baltic Sea.
- INDRA NAVY is a biennial bilateral maritime exercise between Indian Navy and Russian Navy.
- Initiated in 2003, Ex INDRA NAVY epitomises the long-term strategic relationship between the two navies.
- The current exercise was undertaken as part of the visit of INS Tabar to St. Petersburg, Russia to participate in the 325th Navy Day celebrations of the Russian Navy.
- The primary aim of this year's edition is to further consolidate inter-operability built up by the two Navies over the years and also to enhance understanding and procedures for multi-faceted maritime operations. The scope of this edition includes wide-ranging and diverse activities across the spectrum of maritime operations.

3. INDIAN ECONOMY

3.17 **NTPC Limited first energy company to declare its Energy Compact Goals**

- National Thermal Power Corporation (NTPC) Limited has become the first energy company in the Indian energy domain to declare its Energy Compact Goals as part of UN High-level Dialogue on Energy (HLDE).

- NTPC is India's largest power generating company which is under the Ministry of Power.

- The United Nations is set to convene a high-level dialogue (HLD) in September, 2021 to promote the implementation of the energy-related goals and targets of the 2030 Agenda for Sustainable Development.

 About Energy Compacts

- It is a platform to unite and connect commitments and actions.

- They are being mobilized by UN-Energy throughout the current Decade of Action.

- They form part of commitments that will advance progress on one or more of SDG7's three core targets.

- SDG7 calls for "affordable, reliable, sustainable and modern energy for all" by 2030.

- SDG 7 three core targets: Access to energy, Renewable energy, Energy efficiency.

- These are voluntary commitments from Member States and non-state actors

 About NTPC Energy Compact Goals

- It has set a target to install 60 GW of renewable energy capacity by 2032.

- It is also aiming at 10% reduction in net energy intensity by 2032.

- NTPC has declared that it will form at least 2 international alliances/groups to facilitate clean energy research and promote sustainability in the energy value chain by 2025.

3.18 **PMFME Scheme**

- The centrally sponsored Pradhan Mantri Formalization of Micro food processing Enterprises (PMFME) Scheme, launched under the Aatmanirbhar Bharat Abhiyan marks the completion of its one year.

 PMFME Scheme

- The PMFME Scheme is a centrally sponsored scheme that aims to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry.

- It aims to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and promote formalization of the sector,

- It further aims to promote formalization of the sector and provide support to Farmer Producer Organizations, Self Help Groups, and Producers Cooperatives along their entire value chain.

- The scheme envisions to directly assist the 2,00,000 micro food processing units for providing financial, technical, and business support for upgradation of existing micro food processing enterprises.

Major component of the scheme

- One District One Product
- Under the One District One Product (ODOP) component of the PMFME Scheme, the Ministry of Food Processing Industries approved ODOP for 137 unique products.
- The GIS ODOP digital map of India has been launched to provide details of ODOP products of all the States and UTs.
- The digital map also has indicators for Tribal, SC, ST, and aspirational districts.
- It will enable stakeholders to make concerted efforts for its value chain development.

3.19 **Bharat Net Project**

- The Union Cabinet approved a Viability Gap Funding support of up to Rs. 19,041 crore (Out of the total expense of Rs. 29,430 crore) for the implementation of the BharatNet project through Public-Private Partnership model.
- Public-Private Partnership (PPP) involves collaboration between a government agency and a private-sector company that can be used to finance, build, and operate projects. The PPP Model in this critical infrastructure of Telecom is a novel initiative.
- Viability Gap Funding (VGF) means a grant one-time or deferred, provided to support infrastructure projects that are economically justified but fall short of financial viability.
- It is the world's largest rural broadband connectivity programme using Optical fibre. And also a flagship mission implemented by Bharat Broadband Network Ltd. (BBNL).
- BBNL is a Special Purpose Vehicle (SPV) set up by the Government of India under the Companies Act, 1956 with an authorized capital of Rs 1000 crore.
- It is a highly scalable network infrastructure accessible on a non-discriminatory basis, to provide on demand, affordable broadband connectivity of 2 Mbps to 20 Mbps for all households and on demand capacity to all institutions, to realise the vision of Digital India, in partnership with States and the private sector.
- It is being implemented by the Department of Telecommunication under the Ministry of Communications.
- National Optical Fibre Network (NOFN) which was launched in October 2011 was renamed as Bharat Net Project in 2015.
- NOFN was envisaged as an information superhighway through the creation of a robust middle-mile infrastructure for reaching broadband connectivity to Gram Panchayats.

- In 2019, the Ministry of Communications also launched the 'National Broadband Mission' to facilitate universal and equitable access to broadband services across the country.

Current Extension of BharatNet:

- The project will be extended to all inhabited villages beyond the gram panchayats in 16 States which are:

- Kerala, Karnataka, Rajasthan, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, West Bengal, Assam, Meghalaya, Manipur, Mizoram, Tripura, Nagaland and Arunachal Pradesh.

- The revised strategy will include creation, upgrading, operation, maintenance and utilisation of BharatNet by the private sector partner, who will be selected by a competitive international bidding process.

- The selected private sector partner is expected to provide reliable, high speed broadband services as per predefined Services Level Agreement (SLA).

3.20 **Revamped Distribution Sector Scheme**

- The scheme was recently approved by the Union Cabinet.

Highlights of the scheme:

- It is a reforms-based and results-linked scheme.

- It seeks to improve the operational efficiencies and financial sustainability of all DISCOMs/Power Departments excluding Private Sector DISCOMs.

- The scheme envisages the provision of conditional financial assistance to DISCOMs for strengthening supply infrastructure.

- The assistance will be based on meeting pre-qualifying criteria as well as upon the achievement of basic minimum benchmarks by the DISCOM.

- The scheme involves a compulsory smart metering ecosystem across the distribution sector—starting from electricity feeders to the consumer level, including in about 250 million households.

- Scheme also focuses on funding for feeder segregation for unsegregated feeders.

- The Scheme has a major focus on improving electricity supply for the farmers and for providing daytime electricity to them through solarization of agricultural feeders.

Implementation:

- Existing power sector reforms schemes such as Integrated Power Development Scheme, Deen Dayal Upadhyaya Gram Jyoti Yojana, and Pradhan Mantri Sahaj Bijli Har Ghar Yojana will be merged into this umbrella program.

- Each state would have its own action plan for implementation of the scheme rather than a 'one-size-fits-all' approach.

- Nodal agencies for the scheme's implementation are Rural Electrification Corporation (REC) Limited and Power Finance Corporation (PFC).

Objectives of the scheme:

- Reduction of average aggregate technical and commercial loss to pan-India levels of 12-15% by 2024-25.

- Narrow the deficit between the cost of electricity and the price at which it is supplied to zero by 2024-25.

- Developing institutional capabilities for modern DISCOMs.

- Improvement in the quality, reliability, and affordability of power supply to consumers through a financially sustainable and operationally efficient distribution sector.

3.21 **Crop Insurance Week**

- Government has launched the Crop Insurance Awareness Campaign for FasalBimaYojana during the Crop Insurance Week (being observed from July 1 to 7).

- Till date, the scheme has insured over 29.16 crore farmer applications (5.5 crore farmer applications on year-on-year basis).

- Over the period of 5 years, more than 8.3 crore farmer applications have benefited from the scheme.

- Moreover, Rs.95,000 crores claims have been paid as against Rs. 20,000 crore farmers share.

About PradhanMantriFasalBimaYojana:

- It is in line with the One Nation – One Scheme theme- It replaced National Agricultural Insurance Scheme (NAIS) and Modified National Agricultural Insurance Scheme (MNAIS).

- Launched in 2016.

- Coverage: All food & oilseed crops and annual commercial/horticultural crops for which past yield data is available.

- Premium: The prescribed premium is 2% to be paid by farmers for all Kharif crops and 1.5% for all rabi crops. In the case of annual commercial and horticultural crops, the premium is 5%.

Objectives:

- To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crops as a result of natural calamities, pests & diseases.

- To stabilise the income of farmers to ensure their continuance in farming.

- To encourage farmers to adopt innovative and modern agricultural practices.

- To ensure flow of credit to the agriculture sector.

- The Scheme covers all Food & Oilseeds crops and Annual Commercial/Horticultural Crops for which past yield data is available and for which requisite number of Crop Cutting Experiments

(CCEs) are being conducted under General Crop Estimation Survey (GCES).

3.22 **Financial Stability Report (FSR)**

- The Reserve Bank of India (RBI) released the 23rd issue of its Financial Stability Report (FSR).

Key Facts

Gross non-performing asset (GNPA) ratio

- India's Scheduled Commercial Banks (SCBs) may climb by the end of the current fiscal year to as much as 11.2% under a severe stress scenario, from 7.48% in March 2021.
- Under the medium stress scenario, where GDP growth is at 6.5%, the gross NPA ratio could rise to 10.36%.
- Under the severe stress scenario, where GDP growth is at 0.9%, the gross NPA ratio for the banking sector may rise to 11.22%.
- Policy support has helped in shoring up financial positions of banks, containing non-performing loans and maintaining solvency and liquidity globally.
- For private banks and foreign banks, the transition of the NPA ratio from baseline to severe stress is from 5.82 per cent to 6.04 per cent to 6.46 per cent, and from 4.90 per cent to 5.35 per cent to 5.97 per cent.
- This shows there are incipient signs of stress in the micro, small and medium enterprises (MSMEs) and retail segments.

Capital to risk-weighted assets ratio (CRAR)

- Increased to 16.03% and the provisioning coverage ratio (PCR) stood at 68.86% in March 2021.
- Banks respond to credit demand in a recovering economy, they will need to reinforce their capital and liquidity positions to fortify themselves against potential balance sheet stress

Impact of second wave of COVID-19

- Dented economic activity but monetary, regulatory and fiscal policy measures have helped curtail the solvency risk of financial entities, stabilise markets, and maintain financial stability,
- Write-offs as a percentage of GNPA at the beginning of the year, fell sharply as compared to 2019-20, except for private banks.

Macro stress tests indicates

- The gross non-performing asset (GNPA) ratio of SCBs may increase from 7.48 per cent in March 2021 to 9.80 per cent by March 2022 under the baseline scenario.
- To 11.22 per cent under a severe stress scenario, although SCBs have sufficient capital, both at the aggregate and individual level, even under stress.

Restructuring Of Loans

- By March 2021, 0.9% of total bank advances were under restructuring.

- Micro, small and medium enterprises had the highest restructure ratio at 1.7%.

- Corporate borrowers had a restructured ratio of 0.9% of total advances.

- 0.7% of total retail advances were restructured.

3.23 **Open Network for Digital Commerce (ONDC) Project**

- The Department for Promotion of Industry and Internal Trade (DPIIT) has issued orders appointing an advisory committee for its Open Network for Digital Commerce (ONDC) project.

What does one mean by 'Open-source'?

- An open-source project means that anybody is free to use, study, modify and distribute the project for any purpose.

- These permissions are enforced through an open-source licence easing adoption and facilitating collaboration.

What is ONDC Project?

- ONDC seeks to promote open networks, which are developed using the open-source methodology.

- The project is aimed at curbing "digital monopolies".

- This is a step in the direction of making e-commerce processes open-source, thus creating a platform that can be utilized by all online retailers.

- They will encourage the usage of standardized open specifications and open network protocols, which are not dependent on any particular platform or customized one.

What processes are expecting to be open-sourced with this project?

- Several operational aspects including onboarding of sellers, vendor discovery, price discovery and product cataloguing could be made open source on the lines of Unified Payments Interface (UPI).

- If mandated, this could be problematic for larger e-commerce companies, which have proprietary processes and technology deployed for these segments of operations.

What is the significance of making something open-source?

- Making a software or a process open-source means that the code or the steps of that process is made available freely for others to use, redistribute and modify.

- If the ONDC gets implemented and mandated, it would mean that all e-commerce companies will have to operate using the same processes.

- This could give a huge booster shot to smaller online retailers and new entrants.

What does the DPIIT intend from the project?

- ONDC is expected to digitize the entire value chain, standardize operations, promote inclusion of suppliers, derive efficiencies in logistics and enhance value for stakeholders and consumers.

What is a 'Digital Monopoly'?

- Digital monopolies refer to a scenario wherein e-commerce giants or Big Tech companies tend to dominate and flout competition law pertaining to monopoly.
- The Giants have built their own proprietary platforms for operations.
- In March, India moved to shake up digital monopolies in the country's $ 1+ trillion retail market by making public a draft of a code of conduct — Draft Ecommerce Policy, reported Bloomberg.
- The government sought to help local start-ups and reduce the dominance of giants such as Amazon and Walmart-Flipkart.
- The rules sought to define the cross-border flow of user data after taking into account complaints by small retailers.

Processes in the ONDC

- Sellers will be onboarded through open networks. Other open-source processes will include those such as vendor and price discovery; and product cataloguing.
- The format will be similar to the one which is used in the Unified Payments Interface (UPI).
- Mega e-commerce companies have proprietary processes and technology for these operations.
- Marketplaces such as Amazon, Flipkart, Zomato, BigBasket and Grofers will need to register on the ONDC platform to be created by DPIIT and QCI.
- The task of implementing DPIIT's ONDC project has been assigned to the Quality Council of India (QCI).

3.24 Authorised Economic Operators (AEO)

- The Central Board of Indirect Taxes & Customs (CBIC) has inaugurated the online filing of Authorised Economic Operators (AEO) applications.
- The web application is designed to ensure continuous real-time and digital monitoring of physically filed AEO applications for timely intervention and expedience.
- AbAEO is a programme (2007) under the aegis of the World Customs Organization (WCO) SAFE Framework of Standards to secure and facilitate global trade.
- It aims to enhance international supply chain security and facilitate the movement of goods.
- Under this, an entity engaged in international trade is approved by WCO as compliant with supply chain security standards and granted AEO status.
- An entity with an AEO status is considered a 'secure' trader and a reliable trading partner.
- Benefits of AEO status include expedited clearance times, fewer examinations, improved security and communication between supply chain partners.

AEO is a voluntary programme.

Indian AEO Programme:

- The AEO Programme was introduced as a pilot project in 2011.

- The security standards detailed in WCO SAFE Framework are the basis of the Indian AEO programme.
- There is a three tier AEO Status for Exporters and Importers.
- The three tiers are AEO T1, AEO T2, AEO T3, where AEO T3 is the highest level of accreditation.

3.25 Agriculture Infrastructure Fund

- Some modifications were approved by the Union Cabinet in Central Sector Scheme of Financing Facility under 'Agriculture Infrastructure Fund'.
- The modifications in the Scheme will help to achieve a multiplier effect in generating investments while ensuring that the benefits reach small and marginal farmers.

What is Agriculture Infrastructure Fund?

- It is a Central Sector Scheme under Union Ministry of Agriculture to inject formal credit into farm and farm-processing based activities.
- It is a part of the over Rs. 20 lakh crore stimulus package announced in response to the Covid-19 crisis.
- Aim: To provide medium – long term debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets.
- The funds will be provided for setting up of cold stores and chains, warehousing, silos, assaying, grading and packaging units, e-marketing points linked to e-trading platforms and ripening chambers, besides PPP projects for crop aggregation sponsored by central/state/local bodies.
- Duration: Financial Year 2020 to 2029.

Target Beneficiaries:

- Farmers, PACS, Marketing Cooperative Societies, FPOs, SHGs, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups, and Central/State agency or Local Body sponsored Public-Private Partnership Projects.

Features:

- Financial Support: Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans to be provided for Agriculture Infrastructure projects.
- Interest Subvention: Loans will have interest subvention of 3% per annum up to a limit of Rs. 2 crore. This subvention will be available for a maximum period of seven years.
- CGTMSE Scheme: A credit guarantee coverage will be available for eligible borrowers from the scheme under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crore.
- Management: The fund will be managed and monitored through an online Management Information System (MIS) platform.

- The National, State and District level monitoring committees will be set up to ensure real-time monitoring and effective feed-back.

3.26 **Emergency Use Listing (EUL)**

- A WHO pre-qualification, or Emergency Use Listing (EUL), is necessary for a vaccine company to supply vaccines to global facilities such as COVAX or international procurement.
- So far, eight vaccines have got an EUL from the WHO.
- WHO will also take a decision on including Bharat Biotech's Covaxin in its list shortly.

About WHO's Emergency Use List (EUL):

- The WHO Emergency Use Listing Procedure (EUL) is a risk-based procedure for assessing and listing unlicensed vaccines, therapeutics and in vitro diagnostics with the ultimate aim of expediting the availability of these products to people affected by a public health emergency.

To be eligible, the following criteria must be met:

- The disease for which the product is intended is serious or immediately life threatening, has the potential of causing an outbreak, epidemic or pandemic and it is reasonable to consider the product for an EUL assessment, e.g., there are no licensed products for the indication or for a critical subpopulation (e.g., children).
- Existing products have not been successful in eradicating the disease or preventing outbreaks (in the case of vaccines and medicines).
- The product is manufactured in compliance with current Good Manufacturing Practices (GMP) in the case of medicines and vaccines and under a functional Quality Management System (QMS) in the case of IVDs.
- The applicant undertakes to complete the development of the product (validation and verification of the product in the case of IVDs) and apply for WHO prequalification once the product is licensed.

3.27 **Retail Direct Scheme RBI**

- RBI Retail Direct Scheme announced by the RBI is a one-stop solution to facilitate investment in government securities by individual investors.
- The Reserve Bank of India – RBI launched the Retail Direct Scheme on 12th July 2021. In February 2021 proposed to allow retail investors to open gilt accounts with the central bank to invest in Government securities directly and without the help of intermediaries.

Retail Direct Scheme – Overview

- Under the scheme RBI Retail Direct, the retail investors will be allowed to open retail direct gilt accounts (RDG) directly with the central bank.
- A "Gilt Account" means an account opened and maintained for holding Government securities, by an entity or a person. A Gilt Account is similar to a bank account, except that

- the RDG account is debited or credited with treasury bills or government securities instead of money.
- As part of continuing efforts to increase retail participation in government securities for improving ease of access by retail investors through online access to the government securities market – both primary and secondary. Check out the Difference between Primary and Secondary Market on the linked page.
- RBI seeks to democratize the ownership of government debt securities beyond banks and managers of pooled resources such as mutual funds.

Under the scheme –

- Retail investors (individuals) will have the facility to open and maintain the 'Retail Direct Gilt Account' (RDG Account) with RBI.
- Retail Investor is a non-professional investor who buys and sells securities or funds that contain a basket of securities such as mutual funds and Exchange Traded Funds (ETFs).
- RDG Account can be opened through an 'Online portal' provided for the purpose of the scheme.
- Government securities, for the purpose of this scheme, mean securities issued in the form of stock by credit to the SGL/CSGL account maintained with RBI as defined under Section 3(iii) of Government Securities Act 2006. These include:
- Government of India Treasury Bills; (Central Government issues both treasury bills and bonds or dated securities).
- Government of India dated securities;
- Sovereign Gold Bonds (SGB);
- State Development Loans – SDLs (bonds and dated securities issued by the State Government).

Importance of Retail Direct Scheme India

- A vast pool of domestic savings will be financed when direct retail participation in the government securities market is allowed. This could be a game-changer in India's investment market.
- The process of trading in government securities will smoothen for small investors thus retail participation in G-Secs will rise leading to improved ease of access.
- This measure together with relaxation in mandatory Hold To Maturity (securities that are purchased to be owned until maturity) provisions will facilitate smooth completion of the government borrowing programme in 2021-22.

3.28 **Kisan Sarathi**

- Government of India launched digital platform KisanSarathi

Key Highlights Kisan Sarathi

- The platform Kisan Sarathi was jointly launched by Ministry of Agriculture and Ministry Electronics and Information Technology through video conference on the occasion of 93rd ICAR Foundation Day.

- Launched to facilitate farmers to get 'right information at right time' in their desired language

- With this digital platform, the farmers can interact and avail personalized advisories on agriculture and allied areas directly from the respective scientists of Krishi Vigyan Kendra (KVKs).

- Kisan Sarathi will empower farmers with the technological interventions and reach farmers in remote areas.

- 'KisanSarathi' initiative will be highly valuable not only in addressing the location specific information needs of the farmers but also in Agricultural Extension, Education and Research activities of ICAR.

The Indian Council of Agricultural Research (ICAR)

- The Indian Council of Agricultural Research (ICAR) is an autonomous organization.

- It work under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare , Government of India.

- Formerly known as Imperial Council of Agricultural Research,

- It was established on 16 July 1929 as a registered society under the Societies Registration Act, 1860 in pursuance of the report of the Royal Commission on Agriculture.

- The ICAR has its headquarters at New Delhi.

Krishi Vigyan Kendra

- Krishi Vigyan Kendras commonly known as KVKs are the agricultural science centres established as innovative institutions for imparting vocational training to the practising farmers, school dropouts and field level extension functionaries.

- Krishi Vigyan Kendra has been in the news as the 11th National KrishiVigyan Kendra Conference was held in New Delhi in February 2020.

- Krishi Vigyan Kendras are the centres for agriculture extensions created by Indian Council for Agricultural Research (ICAR) and its affiliated institutions at the district level.

- KVKs are an integral part of the National Agricultural Research System (NARS) and serve as the link between the NARS and the farmers.

- The KVK centre provides various types of farm support to the agricultural sector and creates awareness about the improved agricultural technologies.

- The first KrishiVigyan Kendra, on a pilot basis, was established in 1974 at Puducherry (Pondicherry) under the administrative control of the Tamil Nadu Agricultural University, Coimbatore.

- KVKs are sanctioned to Agricultural Universities, ICAR institutes, related Government Departments and Non-Government Organizations (NGOs) working in Agriculture. Usually, a KVK is associated with a local agricultural university.

- All KVKs fall under the jurisdiction of one of the 11 Agricultural Technology Application Research Institutes (ATARIs) throughout India.

- These KrishiVigyaan Kendra are 100% financed by the Government of India and are crucial to fulfilling the target of doubling farmer's income in near future.

3.29 **Dairy Investment Accelerator**

- The Department of Animal Husbandry & Dairying (DAHD), Government of India, with a view to provide dedicated focus towards promoting & facilitating investments in the Indian Dairy sector, has setup Dairy Investment Accelerator under its Investment Facilitation Cell.

- This Investment Accelerator is a cross functional team constituted to serve as the interface with investors.

- It shall provide support across the investment cycle:

- Offering specific inputs for evaluation of investment opportunities

- Addressing queries about application to govt. schemes

- Connecting with strategic partners

- Providing on-ground assistance with state departments & relevant authorities

Animal Husbandry Infrastructure Development fund (AHIDF)

- Dairy Investment Accelerator is also generating awareness among investors about Animal Husbandry Infrastructure Development fund (AHIDF).

- AHIDF is one of the flagship schemes by DAHD, Government of India whereby Rs. 15,000 crorefund has been setup for offering financial support to entrepreneurs, private companies, MSME, Farmers Producers Organizations (FPOs), and Section 8 companies.

3.30 **Central bank digital currency (CBDC)**

- The Reserve Bank of India is likely to soon kick off pilot projects to assess the viability of using digital currency to make wholesale and retail payments to help calibrate its strategy for introducing a full-scale central bank digital currency (CBDC).

Need for:

- An official digital currency would reduce the cost of currency management while enabling real-time payments without any inter-bank settlement.

- India's fairly high currency-to-GDP ratio holds out another benefit of CBDC — to the extent large cash usage can be replaced by CBDC, the cost of printing, transporting and storing paper currency can be substantially reduced.

- The need for inter-bank settlement would disappear as it would be a central bank liability handed over from one person to another.

What is the CBDC or National Digital currency?

- A Central Bank Digital Currency (CBDC), or national digital currency, is simply the digital form of a country's fiat currency. Instead of printing paper currency or minting coins, the central bank issues electronic tokens. This token value is backed by the full faith and credit of the government.

SC Garg Committee recommendations (2019):

- Ban anybody who mines, hold, transact or deal with cryptocurrencies in any form.
- It recommend a jail term of one to 10 years for exchange or trading in digital currency.
- It proposed a monetary penalty of up to three times the loss caused to the exchequer or gains made by the cryptocurrency user whichever is higher.
- However, the panel said that the government should keep an open mind on the potential issuance of cryptocurrencies by the Reserve Bank of India.

Challenges in rolling out National Digital Currency:

- Potential cybersecurity threat.
- Lack of digital literacy of population.
- Introduction of digital currency also creates various associated challenges in regulation, tracking investment and purchase, taxing individuals, etc.
- Threat to Privacy: The digital currency must collect certain basic information of an individual so that the person can prove that he's the holder of that digital currency.

3.31 Academic Bank of Credit

- On the first anniversary of the National Education Policy (NEP), the Centre plans to officially roll out some initiatives promised in the policy, such as the Academic Bank of Credit

Academic Bank of Credit

- Academic Bank of Credit referred to as ABC is a virtual storehouse that will keep records of academic credits secured by a student.
- It is drafted on the lines of the National Academic Depository.
- It will function as a commercial bank where students will be the customers and ABC will offer several services to these students.
- Students will have to open an Academic Bank Account and every account holder would be provided with a unique id and Standard Operating Procedure (SOP).
- The academic accounts of students will have credits awarded by higher education Institutes to students for the courses they are pursuing.

- However, ABC will not accept any credit course document directly from the students, and its institutes that will make the deposits in students' accounts.

Functions of ABCs

- ABC will be responsible for opening, closing, and validating the academic accounts of students.

- It will also perform tasks including credit verification, credit accumulation, credit transfer/redemption of students, and promotion of the ABC among the stakeholders.

- The courses will also include online and distance mode courses offered through National Schemes like SWAYAM, NPTEL, V-Lab, etc.

- The validity of these academic credits earned by students will be up to seven years. The validity can also vary based on the subject or discipline. Students can redeem these credits.

- For instance, if a student has accumulated 100 credits which is equivalent to say one year and they decide to drop out.

- Once they decide to rejoin they can redeem this credit and seek admission directly in the second year at any university. The validity will be up to seven years, hence, students will have to rejoin within seven years.

Benefits for students

- The participating HEIs in the ABC scheme will enable students to build their degrees as per their choices.

- As per UGC guidelines, the higher education institutes will have to allow students to acquire credits 50-70% of credits assigned to a degree from any institute.

- Students, depending upon their needs can take this opportunity.

- UGC will ensure that students secured the minimum credits to be secured in the core subject area.

3.32 Strategic Petroleum Reserves (SPR) Programme

- Under the Strategic Petroleum Reserves (SPR) programme, the government has given approval for establishing two additional facilities.

- In 2020, India filled its strategic petroleum reserves in view of the slump in crude prices.

- The new facilities will be commercial-cum-strategic facilities with a total storage capacity of 6.5 MMT (Million Metric Ton) underground storages at:

- Chandikhol, Odisha (4 MMT)

- Padur, Karnataka (2.5 MMT)

- They will be built in Public Private Partnership mode under phase II of the SPR Programme.

Existing Facilities:

- Under Phase I of the Programme, Government of India has established petroleum storage facilities with total capacity of 5.33 MMT at 3 locations:

- Visakhapatnam, Andhra Pradesh (1.33 MMT).

- Mangaluru, Karnataka (1.5 MMT).

- Padur, Karnataka (2.5 MMT).

- The petroleum reserves established under Phase I are strategic in nature and the crude oil stored in these reserves will be used during an oil shortage event, as and when declared so by the Government of India.

About Strategic Petroleum Reserves:

- Strategic petroleum reserves are huge stockpiles of crude oil to deal with any crude oil-related crisis like the risk of supply disruption from natural disasters, war or other calamities.

- According to the agreement on an International Energy Programme (I.E.P.), each International Energy Agency (IEA) country has an obligation to hold emergency oil stocks equivalent to at least 90 days of net oil imports.

- In case of a severe oil supply disruption, IEA members may decide to release these stocks to the market as part of a collective action.

- India became an associate member of the IEA in 2017.

4. ENVIRONMENT

4.15 <u>**India's first cryptogamic garden houses over 70 plant species:**</u>

- The first cryptogamic garden in India was inaugurated on Sunday, July 11 in Uttarakhand's Dehradun district. The garden is a first of its kind and houses a plethora of cryptogams species.

- The cryptogamic garden has been established at Deoban in the Dehradun range of the Research circle. It is at a commanding height of 2,700 metres in an area of 3 acres

- The Cryptogamic garden houses around 76 species of lichens, ferns, and fungi. These species require a moist condition to grow, which the Deoban's forest provides well.

Know the Cryptogams

- The word cryptogamic originates from the Greek word, 'Kryptos meaning "hidden" and "gameein" meaning "to marry". Thus, cryptogamic refers to "hidden reproduction". Cryptogams are one of the oldest groups of plant species, existing since the Jurassic era. A cryptogamic species does not produce any seed or flower. These non-seed-bearing plants include algae, bryophytes, lichens, ferns, and fungi.

- Three groups i.e. algae, bryophytes (moss; liverworts), lichens, comprises primitive, simple species where the plant body is thalloid (not differentiated into true roots, stems, and leaves).

Importance of cryptogams

- The cryptogamic organisms play a vital role in the ecosystem. Algae, one of the most primitive organisms, are excellent at cleaning the environment. Similarly, mosses prevent soil erosion by binding the soil.

- Further, the cryptogamic species are used for the creation of various medicines, scents, and natural colours. Human beings and animals also feed on them.

- Algae are healthy sources of carbohydrates, fats, proteins, and vitamins. It is used as a food ingredient in several countries like China, Japan, Norway, Scotland, etc. Further, it can also be used as a liquid fertilizer which helps in repairing nitrogen levels in the soil.

- Bryophytes (mosses, liverworts) too, like algae clean the environment. This cryptogamic species monitors air pollution, prevents soil erosion, and helps in soil formation over the bare rocky surface. Mosses have a high water retention capacity, which makes them suitable for the transportation and packaging of plants. Mosses are also indicators of mineral deposits.

- Ferns, a unique group of plants, are grown as ornamental plants. They are indicators of the moisture regime of the area.

- Similarly, lichens are equally important for the environment. They are not only pollution monitors but are also important due to their nutritional values. They are a source of nutrition for snails, termites, caterpillars, slugs, etc. Cladoniarangiferina (Reindeer moss) is the main food for reindeers (a kind of deer) in polar countries.

- Moreover, lichens are very useful to people in diverse cultures, especially as a source of drugs, medicines, perfumery, foodstuff, dyes, bio-monitoring, and other useful compounds. Eg, lichens have been used as coloring agents in the leather industry, in the cosmetic industry for making items like perfumes, incessant, etc.

- Fungi are essential to many household and industrial processes. They are used for making bread, wine, beer, and certain cheeses. Mushrooms, a type of fungi, are low in calories and sodium, fat-free, cholesterol-free, are nutritious for the body. Humans and animals both feed on them.

- The conservation of these species would also benefit the fauna of the region. For eg, certain birds use mosses for making their nests.

Cryptogams in Uttarakhand

- Uttarakhand is home to a variety of flora and fauna. According to the website of Uttrakhand Tourism, the State is home to around 4,000 species of plants, that belong to 1,198 genera under 192 families. According to various research studies, Uttarakhandhas recorded 539 species of lichens, 346 species of algae, 478 species of bryophytes, and 365 species of pteridophytes.

Cryptogams in India

- In India, there are 7,411 species (14.98%) of algae belonging to 735 genera that are recorded and described under 206 families.

- About 9% of world pteridophytes (ferns) occur in India or only in 2.5% landmass of the world. Ferns and fern-allies are the second largest group of plants in Indian flora and represented by 33 families, 130 genera and 1,267 species. Among them, 70 species are endemic to India.

- Lichens comprise over 2,900 species which is 14.8% of the world's known species under phylum Ascomycota, of which about 540 (over 18%) species are endemic to Indian boundaries.

4.16 NTPC Simhadri commissions 10 MW floating solar power project:

- National Thermal Power Corporation's (NTPC) Simhadri Super Thermal Power Plant, Visakhapatnam has commissioned a 10 MW floating solar plant, which is part of the 25 MW plant.

- According to an NTPC's press release, it is India's largest floating installation to date, and it is also regarded as an engineering marvel because of its unique anchoring and mooring techniques. The project was given to BHEL on EPC basis in the year 2019 with a cost of 110 Crores and with a completion period of 15 months.

- Electricity generation is one of the most significant contributors to global climate change. Coal, nuclear power, and other non renewable energy sources provide the majority of the county's electricity. Thus, the use of these resources to generate energy has certainly a negative influence on the environment.

- Clean energy production is critical to combat climate change and on similar lines, this floating solar plant will enhance clean energy developments across the nation in an eco-friendly and effective manner.

About other floating solar plants

- Another 100MW floating solar project till date is being developed in Telangana'sRamagundam and is likely to be commissioned this year. NTPC also plans a 92 MW floating unit at the Kayamkulam plant in Kerala.

What is floating solar?

- Floating solar is also known as floating photovoltaics (FPV) or floatovoltaics. A new alternative has been used quite frequently in the solar industry, which is floating solar. The solar array floats

above a waterbody or a reservoir in which solar panels must be attached to a buoyant structure. Usually, the floating solar installations are most likely to be located in a lake, basin or man-made water bodies, such as reservoirs.

Advantages of Floating solars:

Valuable land space is conserved:

- One of the biggest advantages of floating solar panels is that they do not take up valuable land space. Many of these facilities can be set up on underutilized areas on water bodies, such as hydroelectric dam reservoirs, wastewater treatment ponds, or drinking water reservoirs.

Higher solar panel performance:

- Solar panels are designed to endure high temperatures. Other electronics in the plant, however, can be damaged by high temperatures, affecting the plant's production. The effectiveness of solar panels declines as temperatures rise, however, the water bodies that host floating solar arrays assist in cooling the solar equipment, allowing the panels to produce power at higher efficiencies in hot climates too.

Environmental benefits:

- The ponds, reservoirs, and lakes are shaded by the floating solar panel structure, which lowers evaporation. This is especially beneficial in drought-prone locations, where water loss due to evaporation can mount up over time and lead to a shortage. The floating solar panels create shade, which also helps to prevent the production of algae in freshwater bodies.

4.17 <u>Delhi works to resurrect 22 native plant species:</u>

- Delhi's forest department is working with the Bombay Natural History Society to resurrect at least 22 native plant species that are on the verge of disappearing from Delhi's landscape.

- The endangered native tree varieties will be grown in the nursery, and once ready, planted in the AsolaBhati Wildlife Sanctuary itself. The species include Adusa (Malabar Nut), Barna (Three-leaf Caper), Bistendu (Bombay Ebony), Dhau (Axle Wood Tree), Goya Khair (Sickle Bush), Gangeti

(White Crossberry), Guggal (Indian Bdellium), Gunja (Indian Ash Tree), Inderjao (Indrajao), Indrokh (RoundleafAxlewood), Jaal (Large Toothbrush Tree), JungliMoringa (KonkanMoringa) and Kankera (Red Spike Thorn).

- The nursery has become home to around 100 plant species, including at least 22 that were once native to the national capital, but which are rarely seen now.

- PradipKrishen, author and tree expert, said that native trees are not only easy to grow and maintain, it also contributes towards improving a city's ecology.

4.18 **How Galapagos giant tortoises avoid cancer:**

- GALAPAGOS giant tortoises are long-lived in part because their cells are surprisingly sensitive

- to certain forms of stress. Galapagos giant tortoises, for example, can live for more than 150 years.

- We would expect large animals to be more susceptible to cancer because they have more cells, each of which has a chance to become cancerous. But recent studies have shown how big, long-lived

animals such as elephants have paradoxically low cancer rates thanks to having extra copies of genes involved in suppressing tumour development.

- They found that Galapagos giant tortoises have evolved a marked reduction in cancer risk,and that their genomes contain extra copies of genes involved in responding to cellular stress caused by damaged or misshaped proteins. The accumulation of such proteins in cells has been associated with ageing and cancer.

- When the researchers applied a drug that triggers this kind of stress to giant tortoise cells in a lab dish, they were surprised to see that the cells immediately self-destructed. Killing damaged cells before they turn cancerous protects the animal from developing tumours.

4.19 **Climate change to blame for monarch butterfly decline:**

- CLIMATE change has been the biggest cause of the precipitous decline of the monarch butterfly (Danausplexippus) in North America in recent years, say researchers who fear parts of its breeding range will become inhospitable under future warming.

- The puzzle of the decline of the insect, famous for its epic migration from the US and Canada to Mexico in the winter, has been variously blamed on herbicides wiping out the milkweed plant their caterpillars feed on, to problems on their migratory route and climate change.

- Between 2004 and 2018, rainfall and temperature deviated from the long-term average was about seven times more important than other factors in explaining the monarch's summer numbers.Between 2004 to 2018, the milkweed stayed constant, along with the results of the new study, indicates that climate change explains the recent decline.

- Previous research – which found a correlation between herbicide use, milkweed loss and the steepest monarch decline, from 1994 to 2003. The research doesn't mean conservationists should stop protecting and planting milkweed to help the butterflies. "But as we think forward [to climate change], planting milkweed may not be enough.

4.20 **EU's carbon tax will apply globally from 2026:**

- AN UNPRECEDENTED and controversial carbon tax will be applied to goods imported to the European Union from 2026, the flagship measure in a sweeping suite of European Commission policies unveiled in July to meet the bloc's 2030 climate target.

- The tax will mean companies importing iron and steel, aluminium, cement, fertilisers

- and electricity to the EU will have to buy a certificate for every tonne of carbon dioxide embedded in their goods. In theory, it puts importers' costs on a par with those of firms within the EU that have to pay for similar certificates in the EU's internal carbon market.

- Formally known as the carbon border adjustment mechanism (CBAM), the scheme is the first of this scale and scope globally.

- The CBAM's central aim is to combat "carbon leakage", the risk of a company in the EU responding to the union's climate policy costs by relocating outside the bloc to a country that may have a cheaper, but more polluting, energy supply.

- A secondary goal is to provide an incentive for non-EU countries to increase their ambition on climate change. For instance, a fertiliser firm in Turkey should have to pay lower taxes to ship its product to the EU if Ankara used policies to clean up the country's electricity grid.

Opposition to tax:

- The border tax has generated a storm of pushback even before it was officially outlined, with China, Australia and other countries warning against trade barriers and protectionism.

- At the most extreme end, the EU could be forced into a climbdown akin to one it madein 2012 after it included flights in its carbon market.

- At a fundamental level, the tax will have to be compatible with World Trade Organization (WTO) rules. Globally, some international development groups will be disappointed that the tax makes no exemptions for the world's poorest countries, which are concerned the measure goes against the multilateral spirit of climate efforts such as the Paris Agreement.

- Carbon border tax is a bold new way to try fighting climate change, and even its existence will make a difference. This would be the first time carbon pricing applied to producers in a jurisdiction is applied to those outside. This in itself is an incredible step.

4.21 **World Nature Conservation Day:**

- The World Nature Conservation Day is celebrated annually on 28 July, all over the world to support the cause of preserving nature.
- The theme for this year's World Nature Conservation Day 2021 is "Forests and Livelihoods: Sustaining People and Planet".

What is nature; what does it comprise of?

- Nature is the equivalent of the natural world, physical world, or material world. It encompasses living plants, animals, geological processes, the weather, and physics, such as matter and energy.

WORLD NATURE
CONSERVATION DAY

" The Earth is what we all have in common. "
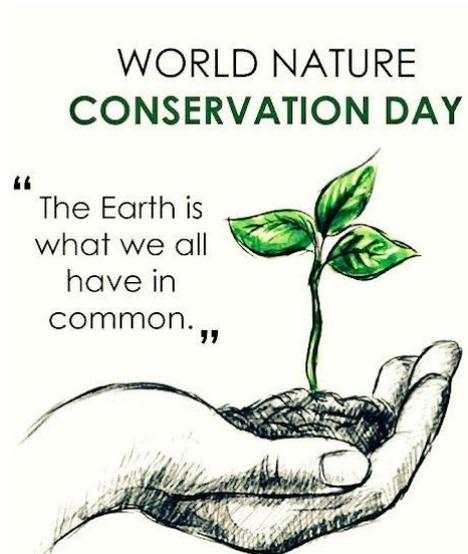
Inextricable relation between human & nature:

- Our ecosystem is very closely interwoven in a delicate balance, where each living organism has a specific role and purpose. If any species is pulled out of that ecosystem, the chain gets broken and everything from the food cycle to habitats gets distorted.
- Humans too are tied to nature in an inextricable bond that can never be reversed. They derive and depend on mother nature, for fulfilling their every need.
- In addition, it is highly imperative in safeguarding the human race from the unpredictability and volatility that future on planet Earth brings. The nature that surrounds us acts as a 'safety net' of our planet. It is the insurance policy that safeguards our survival.

Importance of nature conservation:

- The preservation of nature is highly imperative for manifold reasons:
    - To sustain life by supporting ecological balance
    - To ensure future generation's access to resources

- To preserve biodiversity

- To safeguard human survival

- To promote mental health & creative thinking

Common threats:

- While climate change might be the culprit behind most of the unusual events facing the world today, it is not the only factor responsible.

The major threats facing nature today include:

- Deforestation

- Pollution due to rapid industrialization & influx of vehicles on the road

- Loss of biodiversity due to loss of natural habitat

- Oceanic dead zones due to immersion of plastics in water bodies

- Overpopulation

- Over-fishing

- It's highly imperative to preserve our nature, to nurture it, and protect it from dying, cause when nature dies, so will the human existence on planet Earth.

4.22 **IITM-ESM, to study the impact of climate change on India's monsoon:**

- The Government has developed an indigenous climate model that will predict the impact of climate change on monsoon in the country, informed Dr.Jitendra Singh, the Union Minister of State (Independent Charge) Earth Sciences.
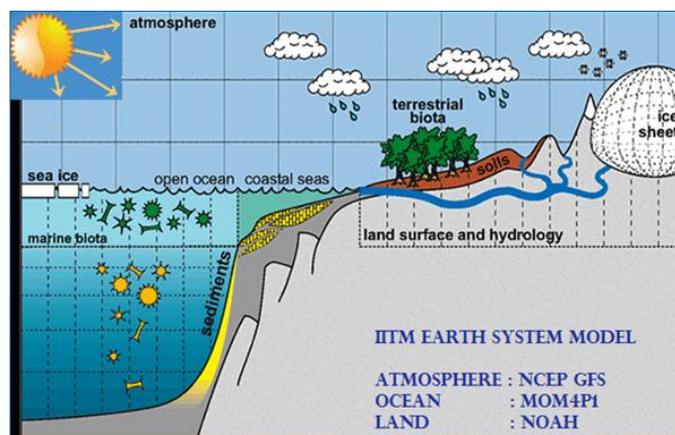
- The model, Earth System Model or IITM-ESM has been developed at the Centre for Climate Change Research (CCCR), Indian Institute of Tropical Meteorology (IITM) under the Ministry of Earth Sciences (MoES).

- IITM-ESM, to study the impact of climate change on India's monsoon

- Earth System Model is developed by the scientists at IITM, Pune in collaboration with the international research community. It is the first climate model from South Asia that has contributed

to the Intergovernmental Panel on Climate Change (IPCC) sixth assessment report (AR6) and participated in the Coupled Model Inter-comparison Project –Phase 6 (CMIP6) experiments.

- It is basically a numerical model that expresses the earth's processes as sets of mathematical equations. Other features of the model include a radiatively balanced framework and an improved simulation of time-mean to study South Asia's monsoon precipitation. Further, it also incorporates interactive ocean biogeochemistry and ecosystem processes which allow investigating the impacts of climate change and climate variability on the ocean.

How will it predict the impact?

- The IITM-ESM has capabilities to address key questions concerning the science of climate change, including reliable projections of the global and regional climate, Indian monsoon, hydrological cycle, sea-level changes, tropical ocean atmosphere processes in a changing climate. Further, it has capabilities to address the effects of land use and land cover changes on the climate system.

Impact of climate change on India's monsoon

- Indian monsoon, also known as the South Asian monsoon is the lifeline of regional socio-economic activities. Agriculture to rivers flow, all depend on monsoon to continue the life process. Human beings have now also started harvesting rainwater to meet their various needs.

- However, according to studies, climate change has had an adverse impact on India's monsoon. It has made the Indian monsoon wetter and stronger. More wet years in the future years can potentially mean a disturbance to the economy, early monsoon can damage crops and agriculture, and affect the socio-economic well-being of the Indian subcontinent.

- The IITM-ESM model will facilitate in better studying and understanding the rain and may help in devising a mitigation plan to reduce the impact of climate change. The framework will help in addressing the science of climate change, including detection, attribution, and future projections of global climate, with a major focus on the South Asian Monsoon.

Benefits of IITM-ESM:

- The development of the IITM-ESM model is advantageous to scientists and researchers studying the impact of climate change on the environment. It is an important tool in the understanding of the physical, chemical, and biological mechanisms that govern the rate of change of elements of Earth's system. Furthermore, this development will help in enhancing the fundamentals of the climate system, its multi-scale variability, global and regional climatic phenomena, and making projections of future climate change.

- **To facilitate land studies:** The Model will be useful in studying the major changes the Asian region has undergone in terms of forest cover, agricultural land, and vegetation types since the pre-industrial times. Further, it will also help in studying the role of land use and land cover changes on the regional monsoon precipitation pattern.

- **Long-term investigation:** The IITM ESM can facilitate long-term analysis and study of the earth's system. It is a long term climate model simulation, meaning, it can help in interpreting the observed global-mean surface temperature trends during the post-1950s as well as the influence of human activities on the climate system.

- **Studies Indian monsoon**: The model has been specially designed to assess the changes in the Indian monsoon precipitation under climate change. It is focused on refining the representations of both the global climate and the regional monsoon phenomenon.

    In addition to this, in the next 5 years, the next generation of the IITM ESM model is also planned which will include interactive aerosols and chemistry and improved physical processes.

4.23 **Salmon are getting cooked by climate change:**

- A heat wave is expected to kill all juvenile chinook salmon in California's Sacramento River. Meanwhile, climate change and extreme heat waves are hitting Canada's salmon too, on both coasts.

What's happening to salmon in California?

- California's Department of Fish and Wildlife warned that among chinook salmon in the Sacramento River "it is possible that all in-river juveniles will not survive this season." That was due to a heat wave that pushed local temperatures above 37 C, combined with a drought that caused more water to be diverted to cities and farmers, making the river shallower and quick to heat up.

How do warm temperatures harm or kill salmon?

- Both Atlantic and Pacific salmon are cold-water fish, which means they tend to do best at temperatures in the mid-teens and struggle when it's over 20 C.

- Warm water can harm salmon in several ways. For one thing, warmer water holds less oxygen, making it harder for fish to breathe. Because they're cold-blooded, they can't adjust their body temperature relative to the environment when conditions get too warm or too cold. Warmer temperatures speed up their metabolism, causing them to require more oxygen and food, and also forcing them to swim to find cooler waters, consuming more energy.

- The heat makes it harder for them to swim and can stress salmon migrating to their spawning grounds, said Sue Grant, head of the state of salmon program at Fisheries and Oceans Canada. As a result, some don't survive to spawn, and those that do may produce less healthy offspring.

What is being done to reduce impact of extreme heat on salmon?

- Conservation and stewardship

- This involves habitat monitoring and restoration, some of the goals of the Watershed Watch Salmon Society and the Atlantic Salmon Federation and its partners.

- In Nova Scotia, the Margaree Salmon Association has installed water temperature monitors in the Margaree and Mabout rivers to help find hot spots. When they're found, work crews will do things such as plant trees to shade the river at those locations.

- In New Brunswick, the Miramichi Salmon Association has been enhancing pools of cold water along the river by diverting the river's flow to carve them out and make them bigger.

- Stocking programs. Enhanced hatchery production is one of the solutions in the federal Pacific salmon strategy. In California, officials aim to save some Sacramento River chinook by trucking them to a hatchery.

Could salmon go extinct due to climate change?

- They do seem to be adapting to climate change to some extent. Both Atlantic and Pacific salmon are being found further north, and some northern populations are doing well. But some populations could disappear, especially in the south, and the loss will be felt by communities with deep and strong connections to salmon.

4.24 **International day for the conservation of the Mangrove Ecosystem:**

- Mangroves are rare, spectacular and prolific ecosystems on the boundary between land and sea. These extra ordinary ecosystems contribute to the wellbeing, food security, and protection of coastal communities worldwide.

- They support a rich biodiversity and provide a valuable nursery habitat for fish and crustaceans. Mangroves also act as a form of natural coastal defense against storm surges, tsunamis, rising sea

levels and erosion. Their soils are highly effective carbon sinks, sequestering vast amounts of carbon.

- Yet mangroves are disappearing three to five times faster than overall global forest losses, with serious ecological and socio-economic impacts. Current estimates indicate that mangrove coverage has been divided by two in the past 40 years.

- UNESCO is engaged deeply in supporting the conservation of mangroves, while advancing the sustainable development of their local communities. The inclusion of mangroves in Biosphere Reserves, World Heritage sites and UNESCO Global Geoparks contributes to improving the knowledge, management and conservation of mangrove ecosystems throughout the world.

- The International Day for the Conservation of the Mangrove Ecosystem, adopted by the General Conference of UNESCO in 2015 and celebrated each year on 26 July, aims to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem" and to promote solutions for their sustainable management, conservation and uses.

4.25 India's newest freshwater snail found in Mizoram

- India is ecstatic to welcome the newest species of freshwater snails, found recently in the foothills of the northeastern state of Mizoram. Scientifically named as Pilamizoramensis, the species is the sixth member of the Pila genus from India and the second to inhabit hill streams. It is commonly known as Apple Snail.

About Apple Snails:

- The apple snail or Ampullariidae are common freshwater snails found in tropical areas around the world.

- The apple snail family is divided into several genera, of which, Asolene, Felipponea, Marisa, and Pomacea are the New World genera found commonly in South America, Central America, the West Indies, and the Southern U.S.A., while the genera Afropomus, Lanistes, and Saulea are found in Africa. On the other hand, the genus Pila is native of both Africa and Asia.

About new snail species, found in Mizoram (Pilamizoramensis):

- The species, commonly named Mizoram Apple Snail, has a diameter and shell height of about 2.5 cm. The perennial habitat of this freshwater snail is waterfalls.
- So far, there are only two species of Pila in India, restricted to either the streams or found in the northern Western Ghats.

How were they discovered?

- In July 2017, the Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore planned an expedition to the Blue Mountain National Park in Mizoram to study land snails. While returning, they explored a waterfall near the National Highway for freshwater snails and fortunately came across India's newest species of freshwater snails.
- The snails were among algae and semi-aquatic plants in the splash zones of the waterfalls. The area in which they were found had a temperature of not more than 25 degrees celsius with an average annual rainfall of over 2500 mm.

Nomenclature:

- Morphological, anatomical, and phylogenetic studies were conducted to provide a detailed description of the species. At first, the shell characteristics were ascertained, as to whether it was left or right coiled.
- The Mizoram Apple snail or Pilamizoramensis was right coiled. The DNA studies showed that it was closely associated with the Southeast Asian species of Pilavirescens.

Threats faced:

- The location where the first sample of the new species was found, already faces threats owing to human intervention and encroachment.
- Mindless human activities like dumping garbage, washing vehicles near the falls, etc. play a crucial role in hampering the living conditions and natural habitat of the freshwater snails.

What it means for India?

- The discovery of new species of flora and fauna is indicative of ecosystem health. It reflects the geographical and topographical changes that an ecosystem went through over the years.
- Further, it facilitates new studies and adds to India's vast biodiversity. The study of the newly found species of freshwater snails was conducted by ATREE in collaboration with the Indian Institute of Science (IISC), Bangalore, and the Indian Institute of Scientific Education and Research (IISER), Thiruvananthapuram.
- The team has also planned to conduct more studies to understand the extent of this snail's distribution in the Northeast Indian region, its reproductive biology, ecology, and response to habitat disturbances.

4.26 RamgarhVishdhari to be fourth tiger reserve in Rajasthan:

- National Tiger Conservation Authority, NTCA, has approved the conversion of the RamgarhVishdhari Sanctuary in Rajasthan's Bundi district into the fourth tiger reserve in the state. According to the 2018 tiger census, there are 102 tigers in three reserves – Ranthambore Tiger Reserve in SawaiMadhopur, Sariska Tiger Reserve in Alwar and Mukundra Hills Tiger Reserve in Kota – in the state.

- The proposal for converting the RamgarhVishdhary Sanctuary, which is spread across 1,071 square kilometres, into a tiger reserve was recently approved by the National Tiger Conservation Authority's technical committee.

4.27 Climate change wreaks havoc as parts of US, Canada boils to record-high temperatures:

- Climate Change is a pressing global challenge. It calls for collective human action & comprehensive response. In India, faith & nature have had a deep link since ancient times" – PM NarendraModi

- Canada and parts of the US have made it to the global headlines for hitting unusually high temperatures, in what is termed as a 'pressure cooker' heatwave by the World Meteorological Organization (WMO).

- UN's specialized agency, responsible for atmospheric science & climatology took to Twitter to notify about the dangerously high temperatures in parts of the USA & Canada. It said, "Extreme heatwave is baking Northwest USA & Western Canada, having major impacts on health, ecosystems, and economy. Multiple records have been broken with skyrocketing temperatures."

- In addition, lightning strikes continue to spark dozens of wildfires in western Canada. It is not long ago when unprecedented fires swept across the Amazon forests. The glaciers of Antarctica, the world's largest contributor to rising sea levels, continue to melt rapidly. And, if we look locally, there's no dearth of incidents of wildfires, floods, or glacial bursts.

However, what lies at the heart of Mother Earth? What has ousted it to wreak havoc onto this beautiful planet?

Where lies the problem?

- While it is almost impossible to reflect a single cause to the multifaceted ecological problems facing the world today, however, it cannot be ruled out that climate change is the root cause of most of these.

What is Climate change?

- A modification in the Earth's climate brought as a result of atmospheric changes and interactions between the atmosphere and geologic, chemical, biological, and geographic factors within the Earth system, over a period of time, can be termed as climate change. In simple terms, it refers to the global rise in average temperatures.

What is causing climate change?

- There's no denying the fact that the phenomenon of climate change is human-driven.

- Acclaimed international agencies like the U.S. Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA), and the National Oceanic and Atmospheric Administration (NOAA) reiterate, based on studies that climate change is certainly a result of mindless human activities.

- As per popular scientific consensus, the burning of fossil fuels like oil and coal constitutes the primary cause of climate change. It releases carbon dioxide and other greenhouse gases that trap heat within the atmosphere. This, in turn, increases the atmospheric temperature, leading to rising sea levels, severe weather events, and droughts, thus, rendering landscapes vulnerable to wildfires.

- While these gases are naturally occurring, constituting a critical part of our ecosystem & the Earth's temperature control system, it is its concentration that is troublesome. For example, the atmospheric concentration of $CO2$ never rose above 300 parts per million since the advent of human civilization. However, today it stands at about 400 ppm, a level that was untapped in more than 400,000 years.

How it affects us?

- What may seem like a small increase in Earth's temperature, caused by climate change may have severe effects on health, ecosystems, economy, and the planet at large. The average temperature of the earth has gone up by 1.4° F over the past century and it is only expected to rise, as much as 11.5° F, over the next.

- This rise in the earth's atmospheric temperature leads to rising sea levels due to the melting of glaciers, ocean warming causes severe and frequent storms, and additional rainfall often leads to flooding. Further, less rainfall causes droughts and increases the incidence and severity of wildfires, which in turn threaten habitats, homes, and lives. Heatwaves too contribute to human deaths.

Easy ways to tame heat waves caused by climate change:

1) Stay hydrated; drink lots of water and eat juicy-watery foods

2) Wear comfortable, loose-fitted clothes, made of breathable fabrics

3) Avoid direct sunlight and try to stay indoors

4) Take frequent showers, use fans to reduce body temperatures

Global efforts to reverse climate change:

- As part of global efforts to mitigate the enormous effects of climate change, the Paris Agreement was signed. As a pioneering step in the longstanding fight against the man-made phenomenon of the global temperature rise, it inspired countries to take steps at the administrative and community level. Thus, Nationally Determined Contributions were set and the Solar Alliance, pitched in by India was adopted.

India pioneering to combat climate change:

- India is among the top three nations in the world that are leading towards global renewable energy growth. It is also one of the few nations in the world that is set to over-achieve the targets set in the Paris Agreement.

- **Renewable energy:** India gears to have 60% renewable energy ie., 450 GW by 2030.

- Further, India has some of the lowest solar tariffs globally, dropping to ₹2.36 ($0.0316)/kWh with thermal capacity declined from 70% in 2015 to 61% in 2020.

- **Emissions:** The emission intensity of India is already reduced by 21%, with its target to reduce the emissions intensity of GDP by 33-35% by the next decade.

- **India Cooling Action Plan:** The action plan works to build efficient buildings and cool roofs to save energy and reduce heat-trapping hydrofluorocarbons (HFCs).

- **FAME (Faster Adoption & Manufacturing of Hybrid and Electric Vehicles):** The government's FAME-II scheme works to promote E-vehicles and to efficiently build the E-vehicle ecosystem in the country.

- Yet, steps must be taken at the individual level as well to offshoot individual carbon footprints.

4.28 Manas National Park sees a significant rise in its tiger population:

- Two decades ago, the Manas national park in Assam had not even a single tiger in its possession. It was ravaged by the rampant poaching at the hands of insurgents, for twenty long years.

- However, the picture has truly transformed today as Manas boasts of 48 members of the endangered species.

- The results of the 12th annual camera trapping survey brought joy to the people of not just Assam, but the whole of the country. It covered 876 sq km of the park and adjoining areas with cameras placed at 285 locations.

- The survey revealed the presence of 48 tigers at the national park, of which 38 were adults, 3 sub-adults, and 7 cubs. Further, it accounted for a three-fold rise in the number of adult tigers from 10 in 2010 to 38 in 2021, thus setting a record in tiger conservation in the country. By 2020, there were 30 adult tigers recorded in the park.

What ushered this success?

- The rise in the tiger population has brought cheer to everyone in Manas and highlights that the tiger conservation efforts have finally borne results. The country has already surpassed the World Wildlife Foundation and Global Tiger Forum's goal of doubling the tiger population by 2022.

- The recent increase in the population of tigers could be attributed to the Covid-19 restrictions, by reducing the no of visitors in the park, thus reducing the human intervention.

Other species of big cats found in Manas:

- The Manas national park is now a sprawling hub of not just tigers, but also other species of big cats.

- Thirty-seven species of leopards were recorded in the national park, including thirty-one adults and six sub-adults. Five other species of wild cats, leopard cat, clouded leopard, marbled cat, golden cat, and jungle cat are also found in the park.

Other endangered species found:

- The Manas national park houses many other endangered species. According to the survey, four endangered species, nine vulnerable species, four nearly-threatened species, and eleven species of least concern mammals as per the International Union for Conservation of Nature (IUCN) status, are found in the national park situated in Assam.

- Among these categories, Manas is home to animals like the Asian elephant, hog deer, hispid hare, wild buffalo, rhino, sambar deer, swamp deer, spotted deer, barking deer, Himalayan black bear, Himalayan serow, Goral, black panther, and binturong.

- Thus, it is evident that Manas is a healthy biodiversity hotspot and a breeding ground for tigers. The tigers are flourishing in the region and this significant recovery is exemplary for the globe. The increase in breeding females and cubs further reiterate this fact.

The historic cultural relevance of Tigers in India:

- Tiger is postulated as the national animal of India. It has a revered place in India's history, culture, and religious scriptures.

- For ages, Tigers symbolize India's magnificence, power, beauty, and fierceness. It is associated with traits like bravery and valor. It also has a significant place in the scriptures as the primary vehicle of Goddess Durga.

5. SCIENCE & TECHNOLOGY

5.11 **Hyderabad-based Grene Robotics develops India's 1st indigenous drone defence dome – 'Indrajaal':**

- Hyderabad-based technology R&D firm Grene Robotics has designed and developed India's first indigenous drone defence dome called "Indrajaal".

- As per the company, the drone defence dome has the capability to autonomously protect an area of 1000-2000 sq km against the aerial threats by assessing and acting on aerial threats such as Unmanned Aerial Vehicles (UAVs), loitering munitions, and Low- Radar Cross Section (RCS) targets.

- "For the first time in India and many times, globally rogue forces have adopted cutting-edge technologies such as UAVs, Smart Swarms, etc. Jammu Air Base on June 27th was attacked by such technologies to drop explosives next to the Mi-17 hangar," Grene Robotics stated in a press release.

- The ANTI-UAV systems will not only provide protection to defence bases but it will be beneficial for linear infrastructures like international borders against advanced weaponry.

- The path-breaking development is imperative because manual weapons and point-based defence systems can't defend modern warfares, which are operated by Artificial Intelligence (AI) and robotics.

Decoding Indrajaal:

- Considered as the 3rd revolution of warfare, the design principles of Indrajaal are based on delivering autonomy to the armed forces. The synergic combination of 9-10 modern technologies helmed by Artificial Intelligence (AI), cybersecurity and robotics.

- Capable of real-time situational awareness, Indrajaal comprises all current weapons suite and infrastructure along with a honeycombed cell structure to provide a seamlessly built over a combination of 9-10 technologies for 24×7 persistent monitoring, tracking and action.

Salient features of Indrajaal

– Real-time situational awareness

– Integrated and Intelligent meshed network

– Integrated all current weapons suite and infrastructure

– Honeycombed cell structure for seamlessly built

– Synergic combination of 9-10 technologies

– 24×7 persistent and autonomous monitoring, action and tracking

5.12 **Global Cybersecurity Index-2020:**

- India jumps 37 places to rank 10 in Global Cybersecurity Index 2020 - According to a United Nations report , India has jumped 37 places to 10th position in the Global Cyber Security Index (GCI) 2020.

- The GCI is a composite index created, analyzed and published by the International Telecommunication Union (ITU), a specialized agency of the United Nations, to measure the commitment to cyber security of its 194 member countries to raise cyber security awareness. The latest report is the fourth GCI edition by the ITU, the first version of which was launched six years ago.

- India ranked 10th in the fourth edition of the Global Cyber Security Index 2020 (GCI), a significant jump of 37 places from its previous GCI rank in 2018. Breaking into the top 10 in the list released by the United Nations (UN) agency for Information and Communication Technologies (ITU), India also ranks fourth in the Asia-Pacific region.

- According to an official release, the GCI measures countries' commitment to cyber security on a global scale, to raise awareness of the importance and various dimensions of the issue.

- As cybersecurity has a wide area of application, cutting across multiple industries and different sectors, each country's development or engagement is assessed along five pillars – (i) Legal measures, (ii) Technical measures, (iii) Organizational measures, (iv) Capacity development, and (v) Cooperation- and then aggregated into a composite score.

- "Digital gaps between nations create an unsustainable environment in the cyber domain. Increasing digital dependence in the post-COVID era has exposed digital disparities. This must be bridged through capacity building," Shringla said in the UNSC debate

- The Foreign Secretary said "There's a sophisticated use of cyberspace by terrorists to broaden their propaganda and incite hatred. As a victim of terrorism, India has always stressed the need for the Member Countries to tackle the effects of terrorist exploitation of cyber domain more strategically."

- The top rank in the GCI was achieved by the US with a score of 100. The UK and Saudi Arabia finished second, tied for next place with a score of 99.54. In the Asia Pacific region, South Korea and Singapore are on top with a score of 98.52, which ranks fourth globally. Other countries at the top of the index include Russia, the United Arab Emirates and Malaysia (98.06) at fifth place, Lithuania at sixth, Japan at seventh and Canada, France and India at the subsequent positions.

- Among other countries, Turkey (97.49) was ranked 11th, Germany (97.41) at 13th, China (92.53) at 33rd and Israel (90.93) at 36th position.

5.13 **RT-LAMP: ICMR-NIV develops technology for rapid diagnosis of Covid-19:**

- In the fight against Covid-19, India has come up with medical interventions in the form of vaccines but there is a strong need for rapid, specific and sensitive SARS-CoV-2 detection technology to prevent the virus from spreading. Aligning with this, a cost-effective and sensitive RT-LAMP technology has been developed for rapid diagnosis of Covid-19.

- Indian Council of Medical Research (ICMR) and National Institute of Virology (NIV), Pune have jointly developed the RT-LAMP kits for which the technology has been transferred to two companies for the manufacturing of these kits.

RT-LAMP: A new technology for detecting the virus

- The current and widely used method for diagnosis of Covid-19 is the RT-PCR test which detects the presence of viral nucleic acids in nasopharyngeal swab samples. There are certain shortcomings with the RT-PCR tests, as the specificity and sensitivity of the test is about 95% and the turnaround time is about 10 hours so that the result will be available only by the next day. Hence, a superior technique to accurately and timely detect the virus is now in India in the form of RT-LAMP (Reverse Transcriptase loop-mediated isothermal amplification) technology.

- RT-LAMP detects viral RNA and allows for quicker analysis of genetic material than traditional PCR. According to ICMR, the results through RT-LAMP technology can be detected visually and no other sophisticated instruments are required for the interpretation of results.

Science Behind: How Does RT-LAMP Technology work?

- The methodology for RT-LAMP is a one-stop nucleic acid amplification. Unlike other technologies, RT-LAMP recognizes and multiplies specific sequences of RNA of the SARS-CoV-2. The mechanism works by making a copy of RNA into cDNA (copy DNA) by the usual method of reverse transcription and then the DNA is amplified by the LAMP technique.

- The prime feature of RT-LAMP is that it can achieve high specificity due to the target sequences. It uses six independent sequences at the start and four independent sequences towards the latter stages. Hence, recognition of the target genome leads to a strong colourimetric reaction, which provides for the early detection of viruses without highly specialized or costly instrumentation.

RT-LAMP technology: A superior option for detection

- The LAMP technology has many advantages over RT-PCR technology, especially in regards to thermal cycles. While the RT-PCR test needs different temperatures in one cycle, the RT-LAMP technology is done at a constant temperature cycle, that is, 65°C, which removes the requirements for a thermal cycler.

- Other benefits of the technology include higher amplification efficiency as there is no need to wait for thermal changes as against a traditional PCR which can take around 3 to 4 hours. But an RT-LAMP test takes less than an hour, making it highly sensitive and cost-efficient.

- An equally important advantage of the LAMP technology is that the reagents can be stored at 4°C (ordinary fridge), whereas the PCR-based reagents are stored and transported in deep freezers that escalate the cost.

Covid-19: User-Friendly RT-LAMP kits

- The World Health Organization (WHO) has urgently demanded an extension of screening and testing. With this, to address the Covid-19 pandemic, an accurate, low-cost and user-friendly diagnostic method is the need of the hour, and so, RT-LAMP is ideal for the nation's requirements and conditions. There is an urgent need to build the testing capacity of India against what has been achieved with the available interventions. The RT-LAMP method's speed and simplicity allow it to be the ideal method for diagnosing the infection.

5.14 **Tsunami in Space: Super massive Black Holes may host giant 'Tsunamis' in Escaping Gas:**

- The world outside our Blue planet is a mysterious dark vacuum, which is holding the secrets of the existence of our origin. Researchers and scientists are continuously digging deep to unravel the cosmic mystery and coming up with discoveries that are no less than a sci-fi thriller.

- Recently, NASA has used computer simulations to show that deep in space, the gas escaping the gravitational pull of a super massive black hole may form tsunami-like structures. According to the researchers, the enigmatic environment of super massive black holes may host the largest tsunami-like structures in the universe. The illustrations shown below are shared by NASA that illustrated a supermassive black hole veiled in dust and strange features in nearby gas.

What does the Black-hole Tsunami consist of?

- "What governs phenomena here on Earth are the laws of physics that can explain things in outer space and even very far outside the black hole," said Daniel Proga, an astrophysicist at the University of Las Vegas, Nevada.

- On Earth, earthquakes and underwater volcanic eruptions are responsible for displacing ocean water to create a tsunami. But the images shared by NASA of a supermassive black hole enshrouded in dust, with strange features in nearby gas is unravelling a mystery on how laws of physics governing Earth can also explain things of outer space.

- NASA explained the features of the photograph by suggesting that high-energy X-rays from the disk surrounding the black hole interact with the inflated pockets of heated gas within the atmosphere of the accretion disk and give rise to two unusual features; Tsunamis that is the light blue "waves" above the disk and a Kármán vortex street orange in colour. The heated plasma rises like a balloon, expanding into and disrupting the surrounding cooler gas which is scorching, no matter measured in whatever unit, as per the space agency.

- Simply put, it is to be noted that a relatively cool atmosphere exists at a distance where the supermassive black hole loses its grip on the surrounding matter. Precisely, it is the location where

the waves are formed at the supermassive black hole's rapidly spinning disk, in likeness to the one observed above the Earth's oceanic surface when a tsunami rises.

Subsea volcanic eruption: Explained

- According to NASA, the gigantic structures are formed due to the hot pockets of gas in the outskirts of the accretion disk of the supermassive black holes that are responsible for initiating the outward propagating disturbances, instead of a subsea volcanic eruption causing tsunamis.

- As they shared the photographs of the structures, NASA in the opening line of their post stated "A name fit for a sci-fi thriller: Supermassive Black Hole Tsunami." Such discoveries lead to unravelling mysteries that are buried on the surface of the black, dense and cold space and though stronger evidence may come from future missions will continue to help in understanding our existence.

5.15 **High Altitude Pseudo Satellite (HAPS):**

- Giving a giant leap to India's military strike capabilities, State-owned aerospace and defence company Hindustan Aeronautics Limited (HAL) is building a first-of-its-kind High Altitude Pseudo Satellite (HAPS) with a Bengaluru-based start-up to assist Indian Armed Forces in strike missions.

- HAPS are advanced unmanned flying systems, which operate in the stratosphere at an altitude of 70,000 feet continuously for 2-3 months, to maintain surveillance on the ground below. The solar energized system is designed to act as a bridge between Unmanned Aerial Vehicles (UAVs) and conventional satellites. The futuristic project has not been designed by any other country yet.

- The design work has already been initiated by HAL and HAPS will be induced by 2024-2025.

How are they beneficial for Armed Forces

- Recently, there has been a significant increase in the development of High Altitude Pseudo Satellites (HAPS) platforms, which are among the latest aerospace technologies which could revolutionize near-space operations.

- Although the development of these unmanned stratospheric vehicles has been underway since the 1990s, the latest advancements in technologies have spurred the momentum with the latest iterations reaching advanced stages in terms of payloads, operations, and capabilities.

- HAPS are unmanned aircraft positioned above 20 km altitude, in the stratosphere, to link between unmanned aerial vehicles (UAVs) flying in lower altitudes and conventional satellites in higher altitudes like the Thermosphere. These unmanned aircraft may be airplanes, airships, or balloons and are stationed at a fixed place to enable versatile intelligence, surveillance, and reconnaissance (ISR) options thereby eliminating performance and capability limitations of satellites.

- HAPS are cost-effective and are easier to launch. These satellites can be controlled from anywhere using Beyond Line of Sight (BLOS) technology and comprises applications such as telecommunication and remote sensing for both civilian as well as military purposes. HAPS is particularly useful in providing communication in remote locations or in deep seas.

- Further, HAPS could offer advantages and complementary applications over satellites, terrestrial infrastructures, and Remotely Piloted Aircraft Systems (RPAS), at a relatively convenient price. In this context, space assets could play an imperative role in the development of these new services.

HAL's CATS: India's advanced combat air defense drones

- Imagine a fighter aircraft flying in hostile air space, the pilot in the cockpit operating the aircraft, and just a few meters away, there is a drone flying and the pilot is controlling that drone to execute an attack on an aerial threat. This is called a 'loyal wingman system' where an aircraft with a human in it operates an Unmanned Aerial Vehicle (UAV) flying somewhere else using artificial intelligence.

- This is the advanced technology, India's aerospace major Hindustan Aeronautics Limited (HAL) along with the Bengaluru-based NewSpacestartup is developing as a part of the indigenous 'Combat Air Teaming System' (CATS). CATS drone is a deep penetration aerial attack system that enables a fighter pilot to remain safely within the country's borders while being able to deploy missiles or swarms of drones deep into enemy territory to destroy targets.

- The stealth drones can carry up to 4 conventional munitions including cruise missiles, runway destroying bombs, and other payloads. The aerial vehicle has a capacity of flying at a speed of 350 km into the enemy's territory guided by "mother ship," – a light combat aircraft (LCA), which can enter the enemy region, drop its missile and return to base.

- On being aligned with CATS, HAPS can provide communication to the troops in strike missions with live video feeds and images.

5.16 **NASA's Lucy Mission: Words of Wisdom in the Darkness of Space:**

- In the 1970s, NASA's four spacecraft fired their engines and started a one-way journey out of the solar system carrying small metal plaques on Pioneer 10 and 11 and golden records on Voyager 1

and 2 spacecraft. These plaques identified the time and place of origin of these spacecraft to serve as messages to any alien spacefarers that may someday encounter the plaques in the distant future.

- The golden plaque was the brainchild of Carl Sagan, who hoped that in the distant future, if any alien civilization might encounter the craft, then they would be able to recognize who made it and how to contact them.

- In continuation with the hope to find answers to the alien universe, NASA's Lucy spacecraft, as the first-ever mission to the Trojan asteroids, will carry a similar plaque. Hence, the plaque in Lucy is a time capsule featuring messages to our descendants. The messages are the words of wisdom meant to inspire humanity in the distant future.

A time-capsule containing words of wisdom

- The Lucy spacecraft is scheduled to launch in October 2021, and the Lucy team chose to put a time capsule aboard the spacecraft with messages not for unknown aliens, but for future space travelers. The messages are from the prominent members of our society including those who have deliberated and contemplated human's position and place in our universe. The plaque includes quotes from the greatest physicists of all time, Albert Einstein, poet Joy Harjo, author Kazuo Ishiguro, leader Martin Luther King Jr., Brian May of Queen, Yoko Ono, Carl Sagan, and others.

- These Nobel Laureates in Literature, United States Poet Laureates, and other inspirational figures are joined by members of the band 'The Beatles' that indirectly inspired the Lucy mission's name. Although the Lucy spacecraft is named in honor of the fossilized human ancestor, Lucy's name was also indirectly inspired by the Beatles' song "Lucy in the Sky with Diamonds."

- The plaque is inscribed with the quotes of the Band members John Lennon, Paul McCartney, Ringo Starr, and George Harrison. These quotes include:

- "And in the end, the love you take is equal to the love you make." – Paul McCartney

- "We all shine on . . . like the moon and the stars and the sun." – John Lennon

- "Peace and love." – Ringo Starr

- "When you've seen beyond yourself then you may find peace of mind is waiting there." – George Harrison

Lucy: NASA's first-ever mission to the Trojan asteroids

- NASA's Lucy mission will probe into a set of asteroids near Jupiter known as the Trojans. These ancient space rocks hold critical clues regarding the creation of our solar system which will potentially unravel various unanswered questions of the origin of life on Earth.

- As part of NASA's Discovery Program, the mission Lucy was approved in January 2017 and it will survey the enigmatic population of small bodies that orbit the Sun beyond the main asteroid belt, trapped by Jupiter and the Sun.

5.17 China's cyber attacks:

- The recent revelation by the US government agencies that China's Ministry of State Security was involved in cyber attacks on American companies e-mail systems this March; and that China had contracted "criminal hackers" for state-sponsored cyberattacks for financial gains, has rattled the international community, as the globalisation process is intensifying.

- The US has sought a unified response against China's attacks from its allies in Europe, Australia, New Zealand, Japan and others; thus seeking global response.

- While these accusations are not new, it nevertheless reveals the travails of the ever-expanding cyber domain that has become indispensable after the novel coronavirus spread from Wuhan in China in late 2019.

- The lockdown of whole nations in the last one-and-half years of the epidemic signified the outreach of e-commerce platforms, fin-tech, start-ups and others on a global scale but also to their vulnerabilities for cyber-attacks.

- According to an estimate; out of nearly 500 documented cyber-attacks in 2009-19, 79 confirmed attacks originated from China. According to another estimate, 41 percent of global cyberattacks are traced to China till last year.

- Thousands of specialised network-warfare specialists from China's Ministry of State Security, Public Security Ministry and the armed forces are said to be involved in the cyber-attacks worldwide. With the recent launch of the "Military-Civilian Fusion campaign", China is also sourcing cyber capabilities from civilian institutes and universities.

- Apart from stealing data from over 30,000 organisations worldwide during the March attack on Microsoft servers, the targets of China's cyber-attacks are not only the defence and civilian government agencies but also defence-related and other R&D centres, hi-tech corporations, industries, airlines or are related to economic crimes in the transportation sector, pharmaceutical companies world-wide and non-state actors like the Uighurs, Tibetans or Hong Kong Democracy rights activists as well.

- This has resulted in not only crucial intellectual property rights violations but also ransomware and phishing activities leading to billions of dollars in theft apart from other damages.

- Major examples of China's cyber-attacks worldwide include the 2015 hacking of the US Homeland Security computers and stealing the personnel profiles, attacks on Google, Yahoo, Adobe, Northrop Grumman and others. Australia, Japan, Taiwan and European countries also reported an increase in such attacks.

- China's cyber-attacks are not only on western countries but surprisingly on its close partners as well.In May this year, a Chinese group hacked into a nuclear submarine designing group of the Russian Navy. Last year, Chinese hackers conducted cyber espionage on Vietnamese government agencies.

- The security footage of the African Union headquarters was also siphoned off by Chinese hackers last December. In June this year, Chinese hackers targeted the Afghan National Security Council servers.

- Last December, Chinese hackers had compromised the Mongolian National Data Centre.

- While India had restricted China's cyber outreach after the Galwan border skirmish last year; by banning over 200 Chinese apps and investment in infrastructure and start-ups, New Delhi still remains vulnerable to Chinese attacks as reflected in last year, when its transportation and electricity sectors were hacked into. Last October, the hacking of the electricity grid affected Mumbai and other cities.

- Despite India's restrictions on the removal of certain sensitive apps from Chinese mobile phones, and refusal to shortlist Huawei 5G early this year, India could still be vulnerable to cyber-attacks originating from China. Several other cyber-attacks originating from China were reported on India's security related and other important installations.

- As cyber-attacks are now comprehensive and multi-pronged in nature, there is an urgent need for a "rules-based order" to be implemented in the cyber domain. As a member of the recently formed "Quad", India along with the US, Japan and Australia and others need to evolve policies aimed at countering such cyber disruptions.

- In 2019 alone, it is estimated that India lost $19 billion in such cyber attacks. Hence, at the legislative level, India needs to evolve more agile and strict cyber rules and legislation to address emerging cybercrimes.

5.18 <u>SATNAV Policy – 2021:</u>

- In order to achieve the goal of self-reliance in India's satellite-based navigation and augmentation services sector, a comprehensive and substantive policy for satellite-based navigation has been

proposed. The draft of the Indian Satellite Navigation Policy – 2021 (SATNAV Policy – 2021) has been presented on the official website of the Indian Space Research Organisation (ISRO).

- The draft states that it tends to "Achieve self-reliance in satellite-based navigation and augmentation services with an emphasis on assuring availability & quality, enhancing usage, working towards progressive evolution of the services and promoting research & development."

- Indian Satellite Navigation Policy – 2021

- The policy has been formulated with the objective to address the growing demands of space-based navigation and timing applications, with the view of self-sustenance in areas of commercial, strategic, and societal applications to maximize the socio-economic benefits. For a variety of applications, navigation signals are offered free-to-air. These applications include tracking, telematics, location-based services, automotive, survey, mapping & GIS, and timing.

- According to the draft, there is a need for such secured services that are exclusive to the Indian strategic community.

- The objective of the draft is to ensure the continuous availability of free-to-air navigation signals for civilian uses and secured navigation signals for strategic uses in the defined coverage area. For aviation safety in the defined coverage area, the draft ensures guaranteed and continuous availability of the Satellite-Based Augmentation System (SBAS). The draft also aims to focus on technology development for enhancing the navigation satellite systems and work towards compatibility and interoperability of Indian satellite navigation and augmentation signals with other GNSS/SBAS signals.

- Further to intensify the Atmanirbhar Bharat initiative, the draft ensures continuity of NavIC and GAGAN services, upgrading the system and ensuring the capability to operate in conjecture with other GNSS/SBAS. Hence, according to the Department of Space, it is pertinent to devise a substantive national policy to boost national infrastructure.

Space-Based Navigation Systems

- With the advent of rapid development of communication & information and mobile phone technology, crores of users across the nation are dependent on PVT (Position, Velocity, and Time) based applications for almost every task that happens virtually in their lives. Over the last few decades, there has been tremendous growth in the number of applications that depend on Position, Velocity, and Time (PVT) services that are provided by space-based navigation systems.

- Global Navigation Satellite System (GNSS) is a general term describing a space-based navigation system that provides positioning, navigation, and precise-time (PNT) services on a global or regional basis. Currently, there are four GNSS:

  - GPS: The Global Positioning System (GPS) is a satellite-based radio navigation system owned by the USA and operated by the United States Force.

- GLONASS: A Russian space-based satellite navigation system is a GNSS that provides an alternative to GPS and is the second navigational system with global coverage, freely available to all.
- Galileo: A global GNSS was created in 2016 by European Space Agency.
- BeiDou: The BeiDou Navigation Satellite System is owned and operated by the People's Republic of China. It consists of two separate satellite constellations.

In addition to this, there are two regional navigation satellite systems

NavIC: With the operational name NavIC, the Indian Regional Navigation Satellite System is an independent regional navigation satellite system developed by India. It provides accurate, precise, and real-time positioning and services. The satellite covers India and a region extending 1,500 km around.

QZSS: The Quasi-Zenith Satellite System, also known as Michibiki, is a regional GNSS owned by Japan and operated by QZS System Service. It is a four-satellite regional time transfer system, enhancing the United States-operated Global Positioning System in the Asia-Oceania regions, with a focus on Japan.

5.19 **Pegasus spyware:**

- It is a malicious software designed to enter a phone and send phone's data to third party with out consent. It takes control of the phone completely and turns the phone into a surveillance device.It has been developed by an Israeli company called NSO Group.

How does it infect the phone?

- It can find a route into a target's device that is unknown to the developer of the device and its software, and without requiring the target to take any action such as clicking a link.It primarily relied on SMS and WhatsApp messages to trick targets into opening a malicious link, which would lead to infection of their mobile devices.

- In its October 2019 report, Amnesty International first documented use of 'network injections' which enabled attackers to install the spyware "without requiring any interaction by the target". Pegasus can achieve such zero-click installations in various ways. One over-the-air (OTA) option is to send a push message covertly that makes the target device load the spyware,

Why was it developed?

- NSO started focusing on building Pegasus as a spying solution for intelligence agencies and police forces. The narrative they built was that government agencies would use it to tackle terrorism, drug-trafficking, etc. Its first state client — Mexico.Today there are various countries that are using this software.

What kind of devices are vulnerable?

- All devices, practically. iPhones have been widely targeted with Pegasus through Apple's default iMessage app and the Push Notification Service (APNs) protocol upon which it is based. The spyware can impersonate an application downloaded to an iPhone and transmit itself as push notifications via Apple's servers.

What information can be compromised?

- Once infected, a phone becomes a digital spy under the attacker's complete control.

- Upon installation, Pegasus contacts the attacker's command and control (C&C) servers to receive and execute instructions and send back the target's private data, including passwords, contact lists, calendar events, text messages, and live voice calls (even those via end-to-end-encrypted messaging apps). The attacker can control the phone's camera and microphone, and use the GPS function to track a target.

5.20 **Monkey B virus:**

- China has reported the first human infection case with monkey B virus after a veterinarian was confirmed with the virus in the month of March, 2021. The infected person died in the month of May.

What is Monkey B virus?

- The virus, initially isolated in 1932, is an alpha herpes virus enzootic in macaques of the genus Macaca. B virus is the only identified old-world-monkey herpes virus that displays severe pathogenicity in humans.

How is it transmitted?

- The infection can be transmitted via direct contact and exchange of bodily secretions of monkeys and has a fatality rate of 70 per cent to 80 per cent.

- Macaque monkeys commonly have this virus, and it can be found in their saliva, feces (poop), urine (pee), or brain or spinal cord tissue. The virus may also be found in cells coming from an infected monkey in a lab. B virus can survive for hours on surfaces, particularly when moist.

When can a human get infected with B virus?

- Humans can get infected if they are bitten or scratched by an infected monkey; get an infected monkey's tissue or fluid on broken skin or in eyes, nose, or mouth; scratch or cut oneself on a contaminated cage or other sharp-edged surface or get exposed to the brain (especially), spinal cord, or skull of an infected monkey.

Symptoms

- Symptoms typically start within one month of being exposed to B virus, but could appear in as little as three to seven days.

- The first indications of B virus infection are fever and chills, muscle ache, fatigue and headache, following which an infection person may develop small blisters in the wound or area on the body that came in contact with the monkey.

- Some other symptoms of the infection include shortness of breath, nausea and vomiting, abdominal pain and hiccups.

- As the disease progresses, the virus spreads to and causes inflammation (swelling) of the brain and spinal cord, leading to neurologic and inflammatory symptoms such as pain, numbness, itching near the wound site; issues with muscle coordination; brain damage and severe damage to the nervous system and in extreme cases, death.

Is there a vaccine against B virus?

- No. Currently, there are no vaccines that can protect against B virus infection.

- Who are at higher risk for infection?

- The virus might pose a potential threat to laboratory workers, veterinarians, and others who may be exposed to monkeys or their specimens.

- Are there any cases of human-to-human transmission?

- Till date, only one case has been documented of an infected person spreading B virus to another person.

5.21 **ISRO's Chandrayaan-3 to take flight into space next year:**

- Chandrayaan-3 is a lander-and rover-specific mission, which will demonstrate India's capability of soft landing on a celestial body, with the rover then communicating with Earth via the existing orbiter from Chandrayaan-2 and taking images 100 km from Moon's orbit. The orbiter has an estimated lifespan of seven years.

- The unique exploration of Chandrayaan-3 aims at studying not just one area of the Moon but all the areas combining the exosphere, the surface as well as the sub-surface in a single mission.

- With Chandrayaan-1, ISRO achieved immense success as the 'Moon Impact Probe' by Chandrayaan-1 lunar remote sensing orbiter detected water in vapor form in trace amounts. The discovery was done along with JPL-Brown University payload Moon Mineralogy Mapper (M3) that confirmed that the formation of Hydroxyl ions and water molecules on the lunar surface is an ongoing process.

- With Chandrayaan-3, India aims to further the study of the lunar surface, focussing on the dark side of the Moon that has not seen sunlight in billions of years, which is believed to have ice and vast mineral reserves.

Why exploring the Moon is imperative?

- The Moon is the closest cosmic body at which space discovery can be attempted and documented. Further, Moon is a promising testbed to showcase technologies required for deep-space missions. Exploring the Moon will enhance our understanding of the celestial body clearly, stimulating the advancement of technology, promoting global alliances and inspiring future generations of explorers and scientists.

Why Lunar South Pole of the Moon is targeted for exploration?

- The Moon provides the best linkage to Earth's early history and civilization. The exploration will offer an undisturbed historical record of the inner Solar system environment.

- The Lunar South pole is especially interesting because the lunar surface area that remains in shadow is much larger than that at the North Pole. Further, there could be a possibility of the presence of water in permanently shadowed areas around it. In addition, the South Pole region has craters that are cold traps and contain a fossil record of the early Solar System.

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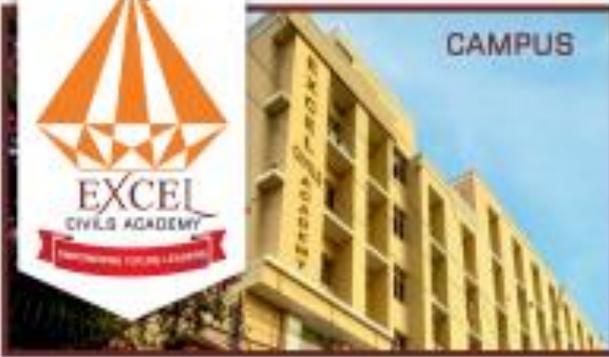
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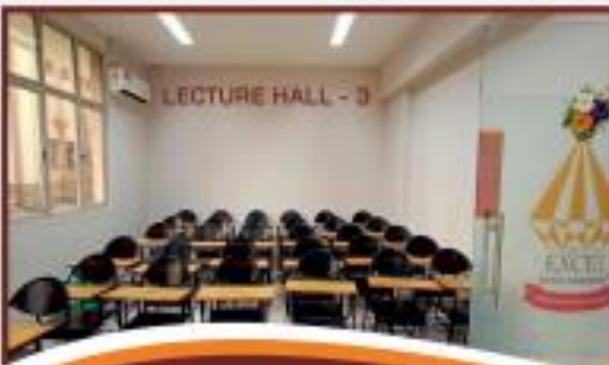
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