

CURRENT AFFAIRS

WEEKLY

WEEK: 4

APRIL
2022

MAINS

GS-II

- THE GLOBAL IDEA OF “WHO’S FIRST-EVER PANDEMIC TREATY”
- CHINA, SOLOMON ISLANDS SIGN LANDMARK SECURITY AGREEMENT
- INDO-FRENCH DIALOGUE ON BILATERAL DEFENCE COOPERATION
- WHO AND TRADITIONAL MEDICINE IN INDIA
- AYUSHMAN BHARAT DIGITAL MISSION

GS-III

- THE EMERGING ‘GAMING INDUSTRY’ IN INDIA
- PROVISIONS OF EPCG SCHEME EASED
- THE ECONOMICS OF OILS BONDS
- THE STATUS OF INDIA’S NATIONAL CYBER SECURITY STRATEGY
- CENTRE EXTENDS TENURE OF ENVIRONMENTAL CLEARANCES
- IPCC SIXTH ASSESSMENT REPORT- PART 3

GS-IV

- PANOPTICONISM & THE ETHICS OF TECHNOLOGICAL SURVEILLANCE
- ‘RULE OF BULLDOZER’, WHAT ABOUT ‘JUSTIFICATION’ IN LAW?, THREAT TO PRINCIPLE OF NATURAL JUSTICE

PRELIMS

- ART & CULTURE**
 - Belur’s historic Chennakeshava temple
 - Guru Tegh Bahadur’s 400th birth anniversary
- POLITY & GOVERNANCE**
 - The functioning of the Enforcement Directorate
 - e-DAR portal to speed up accident compensation claims
- ECONOMY**
 - Nod to 20% FDI in LIC
 - NFT Bubble
 - SBI raises marginal cost of funds-based lending rates (MCLR)
- ENVIRONMENT**
 - ‘Mahabali frog’ may be Kerala’s official amphibian
 - Punjab to use ancient broadcasting technique to grow rice this Kharif, save groundwater
 - New shrimp species discovered off Lakshadweep
- SCIENCE & TECHNOLOGY**
 - Vice President confers International Gandhi Award for Leprosy, 2021
 - The Neptune cruise missile that severely damaged a Russian warship
 - India’s first unmanned Earth satellite ‘Aryabhata’ shot into space on April 19, 1975
 - China sending up next space stationcrew in June
 - Researchers successfully use cost-effective Cherenkov radiation device to detect cancer
 - A geomagnetic storm is expected to hit the earth. What is it, and how is it caused?

GS SCORE

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The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION: A
(MAINS)

CURRENT AFFAIRS

THE GLOBAL IDEA OF “WHO’S FIRST-EVER PANDEMIC TREATY”

CONTEXT:

Members of the World Health Organisation (WHO) holding the first round of negotiations towards creating the ‘first-ever pandemic treaty’.

◎ BACKGROUND

- World Health Assembly had in December 2021 agreed to start a global process to draft the pandemic treaty.

- The World Health Assembly (WHA) is the forum through which the World Health Organization (WHO) is governed by its 194 member states.
- It is the world’s highest health policy setting body and is composed of health ministers from member states.

- It was felt after the COVID-19 pandemic exposed the shortcomings of global health systems.
- For this at a special session The Health Assembly adopted “The World Together” as title to its initiative of drafting a global pandemic treaty.
- This resulted the World Health Organisation establishing an intergovernmental negotiating body (INB) to draft and negotiate the contents of the pandemic treaty in compliance with Article 19 of the WHO Constitution.

- Article 19** of the WHO Constitution gives the World Health Assembly the authority to adopt conventions or agreements on matters of health. A two-third majority is needed to adopt such conventions or agreements.
- The WHO Framework Convention on Tobacco Control was set up under Article 19 and it came into force in 2005.

- The pandemic treaty will be covering aspects like data sharing and genome sequencing of emerging viruses and equitable distribution of vaccines and drugs and related research throughout the world.
- This was felt necessary as solutions to the COVID-19 pandemic have seen an inequitable distribution of vaccines so far, with poorer countries at the mercy of others to receive preventive medication.
- Most countries have followed the “me-first” approach which is not an effective way to deal with a global pandemic.

◎ ANALYSIS

Key-highlights of the recommendations

Suggestions range from accountability to more powers to developing countries to the insufficiency of the International Health Regulations (IHR) to deal with pandemics currently.

- Global Public Health Convention (GPHC)** pushed for three other non-negotiable principles: Solidarity, transparency, and equity.
- It also suggested incentivising alerting any public health threat, making public health measures an obligation and sharing information, sequences and samples “rapidly and systematically” so everyone can benefit from it, essential.
- The **G20 Health and Development Partnership (HDP)** suggested creating a body similar to the Office for Budget Responsibility (OBR) for pandemic preparedness and health system resilience which would report annually to the British Parliament.

Office for Budget Responsibility (OBR)

- The OBR, created in 2010, is a fiscal watchdog which provides independent economic forecasts and analysis of the UK economy.
- A similar body for health would increase scrutiny of and confidence in Britain’s pandemic plans for future outbreaks.

- The **Geneva Global Health Hub** released a report on the politics of a WHO pandemic treaty.
- It stated, “Whatever the route of the pandemic treaty, whatever the strategies for pandemic preparedness and response, it will not be possible for negotiators to side line how deeply unjust the international order is and to avoid positioning themselves vis á vis this conjuncture, worsened by COVID-19.”

International Health Regulations (IHR):

- Since IHR falls under **Article 21** of the **WHO’s Constitution**, countries have to explicitly opt out if they wish to do so.

- The potential treaty will be formed under Article 19 under which countries have to explicitly opt in.
- To address issues of inequity, developed countries have to undertake some positive obligations, which mean they must be party to the treaty. But if they are not, inequity will persist even with a treaty.
- The IHR, in its ambit, already covers all kinds of public health emergencies of international concern which includes a pandemic.

Need of international collaboration

- The pandemic has highlighted **dangerous fissures in the global health system**.
- The **IHR adopted in 2005** in the aftermath of the 2002-03 SARS outbreak, **do provide a legal framework on how to proceed in such events**.
- The Panel for a **Global Public Health Convention (GPHC)** — an independent coalition of global leaders working towards preventing infectious disease outbreaks from becoming pandemics — **has stressed on the need for accountability** in a report released recently.
- The report noted, “While we appreciate the complexity of negotiating a Convention, we also urge haste. With current systems, we are little better prepared now to face a new pandemic threat than we were two years ago”.

About WHO:

- The World Health Organization (WHO) is a specialized agency of the United Nations that is concerned with international public health.

- It was established on 7 April 1948, and is headquartered in Geneva, Switzerland.
- The core function of WHO is to direct and coordinate international health work through collaboration.
- The main areas of work are health systems; health through the life-course; non-communicable and communicable diseases; preparedness, surveillance and response; and corporate services.
- WHO partners with countries, the United Nations system, international organisations, civil society, foundations, academia, and research institutions.
- The World Health Assembly is attended by delegations from all Member States, and determines the policies of the Organization.

- The **World Health Assembly constituted an intergovernmental negotiating body** in December 2021.

Way Forward

- The first meeting of INB was held on February 24, 2022. The second meeting, where the members are expected to discuss the progress on a working draft, will take place by August 1, 2022.
- It is also important to note that a progress report is expected to be delivered to the 76th World Health Assembly in 2023, and its outcome will be submitted to the 77th World Health Assembly in 2024 for consideration. An intermittent public hearings are also planned.

CHINA, SOLOMON ISLANDS SIGN LANDMARK SECURITY AGREEMENT

CONTEXT:

China and the Solomon Islands have signed a framework agreement on security cooperation.

What are the salient features of the agreement?

- The **Inter-Governmental Framework Agreement Security Cooperation** between the two countries seeks to enhance "social stability and long-term tranquility in the Solomon Islands,".
- According to the provisions on this agreement the two countries will conduct cooperation in such areas as:
 - ▶ Maintenance of social order
 - ▶ Protection of the safety of people's lives and property,
 - ▶ Humanitarian assistance and natural disaster response
 - ▶ The above will be done in an effort to help the Solomon Islands strengthen capacity building in safeguarding its own security.

Why is the US concerned?

- **Broad nature of agreement:** Unites States raised concerns on "the broad nature of the security agreement," which may enable China to deploy its military forces in the country.
 - ▶ This deal has **vaguely defined terms** which may empower the former to use interpretation beneficial to itself.
 - ▶ The agreement permits Beijing with **enormous inroads into Solomon Islands**.
 - ▶ It would allow **intelligence agencies of China to operate** in Solomon Islands.
 - ▶ It also allows **China to deploy its armed forces in the island country** for the purpose of maintaining peace and order in the latter.
 - ▶ Chinese forces in the above scenario will be protected from prosecution by '**legal and judicial**' immunity provided by this agreement.
- **Instability:** The agreement could stir up instability in the Solomon Islands and "set a concerning precedent for the wider Pacific Island region.
- **New Zealand:** The Prime Minister of New Zealand has termed this move as a step taken towards militarisation of the region.

- **Australia:** On similar lines the Australian Prime Minister has also criticised the move.

China's claim

- As per China, the China-Solomon Islands security cooperation is not targeted at any third country, serving the common interests of the South Pacific region.

What Solomon Island's own citizens (Opposition) are not convinced?

- The opposition parties in Solomon Islands considering this agreement to be **surrender of country's sovereignty to China**.
- Parties in opposition in the Island country feel that the government of Prime Minister Manasseh Sogavare will use the political turmoil to **call in Chinese military troops, with an excuse to bring peace and stability**, and allow Solomon Islands to be a military base of China.

Turmoil in Solomon Islands: The unrest followed protests by residents of Malaita, the South Pacific island nation's most populous province, which opposed a decision by Prime Minister Sogavare's government in 2019 to formally recognise China instead of Taiwan.

- They also fear that the immunity granted to Chinese personnel in Solomon Islands will make the **country subservient to China**.
- Efforts of China to first firmly establish itself in waters of Pacific and now on the Islands has started giving cold feet to AUKUS nations.

AUKUS

- AUKUS is a trilateral security pact between Australia, the United Kingdom, and the United States, announced on 15 September 2021 for the Indo-Pacific region.
- Under the pact, the US and the UK will help Australia to acquire nuclear-powered submarines.

The rationale for the Solomon Islands' increasing proximity to China:



- The Solomon Islands is part of the ethnically Melanesian group of islands in the Pacific and lies between Papua New Guinea and Vanuatu.
- The islands, which were initially controlled by the British Empire during the colonial era, went through the hands of Germany and Japan and then back to the U.K., after the Americans took over the islands from the Japanese during World War II.
- The **islands became independent in 1978** to become a **constitutional monarchy** under the **British Crown**, with a parliamentary system of government.
- The Solomon Islands had cultivated strong ties with Taiwan, which ended with the emergence of the current government in Honiara.
- In 2019, the new government headed by Prime Minister Manasseh Sogavare switched Taiwan for China.

Why is China interested in the Solomon Islands?

- **Need for diplomatic recognition:** The Pacific islands are among the few regions in the world where China has competition from Taiwan for diplomatic recognition.

- ▶ China considers Taiwan to be a renegade territory awaiting reunification, and opposes its recognition as an independent state on the international stage.
- ▶ Hence, any country which has to officially establish relations with China will have to break diplomatic ties with Taiwan.
- **Vote bank:** The small Pacific island states act as potential vote banks for mobilising support for the great powers in international fora like the United Nations.
- **Exclusive Economic Zones:** Moreover, these states have disproportionately large maritime Exclusive Economic Zones when compared to their small sizes, the reason why these 'small island states' are seen also seen as 'big ocean states'.
- **Mineral resources:** Solomon Islands, in particular, have significant reserves of timber and mineral resources, along with fisheries.
- **Strategic location:** But more importantly, they are strategically located for China to insert itself between America's military bases in the Pacific islands and Australia.
 - ▶ This is especially significant in the current scenario, given the emergence of the **AUKUS** which seeks to elevate Australia's strategic capabilities vis-à-vis China through Anglo-American cooperation.
- **Anti-China riots:** Nonetheless, the anti-China nature of the 2021 riots in Honiara turned out to be the immediate trigger for Beijing to ramp up its security cooperation with the Solomon Islands.

Concluding thoughts

- It is true that Solomon Islands is a sovereign country and it is independent to take decision with respect to its foreign. The above though should not permit Solomon Islands to convert itself into race for strategic positioning and brinkmanship in the Pacific.
- It must also become a matter of concern for the international community if China starts exercising hegemony over the island country and influences its domestic politics. Therefore the international community, including India, should enhance its engagement with Solomon Islands and see to it that it does not become pawn to China's rising ambitions.

INDO-FRENCH DIALOGUE ON BILATERAL DEFENCE COOPERATION

CONTEXT:

The conclusion of 20th edition of India-France Joint Staff talks held in Paris.

◎ BACKGROUND

- India and France share a dynamic and multifaceted relationship.
- Both countries signed a strategic partnership agreement in 1998.
- Frequent interactions at the highest political levels, comprehensive defence cooperation and dynamic cultural linkages have further contributed to maturing the partnership.
- Convergence of their views on multi-polar world order and their belief in multilateralism for addressing international challenges help them in developing greater political synergy at the global level.
- India and France have been expanding their relationship amid changing regional and global dynamics.
- France has been termed by India as its "Gateway to Europe".

◎ ANALYSIS

What was the focus of the India-France Joint Staff talks held in Paris recently?

- The India-France Joint Staff talks is a forum established to enhance defence cooperation between the nations through regular talks at the strategic and operational levels.
- The discussions in this meeting focused on new initiatives under the ambit of existing bilateral defence cooperation mechanism and strengthening ongoing defence engagements.
- The roadmap aims to forge a common vision of ocean governance based on the rule of law and to cooperate on sustainable and resilient coastal and waterways infrastructure.
- This meeting is considered important as it came close on the heels of India and France inking a roadmap to enhance their bilateral exchanges on the blue economy in February during Foreign Minister S Jaishankar's visit to France.

Important arenas

- The scope of the roadmap will encompass maritime trade, the naval industry, fisheries, marine technology and scientific research, ocean observation, marine biodiversity, marine ecosystem-based management and integrated coastal management, marine eco-tourism, inland waterways, cooperation between competent administrations on civil maritime issues, marine spatial planning as well as international law of the sea and related multilateral negotiations.

Collaboration of India and France in different spheres is elaborated below:

• Defence Cooperation:

- ▶ Defence cooperation is a crucial aspect of India-France strategic partnership.
- ▶ There has been regular exchange of visits at the level of Services Chiefs between India and France.
- ▶ Both countries have regular defence exercises such as Shakti - Army, Varuna - Navy and Garuda - Air Force.
- ▶ India and France signed the Joint Strategic Vision of India-France Cooperation in the Indian Ocean Region.
- ▶ The above vision document recognizes the strategic importance of India and France in the Indian Ocean.
- ▶ Both countries have shared concerns over the emerging challenges such as maritime traffic - terrorism and piracy, respect for international law by all States, fight against organized crime, trafficking, smuggling and illegal fishing, combating climate change and its consequences on security, natural disasters, etc.
- ▶ France has also been supplier to India's armoury. This includes India buying 36 Rafale fighters from France.
- ▶ India and France are also participants of Project-75 which would help India acquire Scorpene class submarines.

- ▶ India and France have a history of successfully implementing joint defence projects the examples of which are Indian missile manufacturer, BDL, has manufactured more than 10,000 anti-tank Milan missiles with collaboration of France; HAL is producing the light helicopters, Cheetah and Chetak, with cooperation from France
 - **Economic Engagement:**
 - ▶ India's economic engagement with France is important. However, economic potential of Indo-French relations is yet to be realized.
 - ▶ French companies have good presence in India.
 - ▶ France is the ninth largest foreign investor in India.
 - ▶ Both India and France have been pursuing economic reforms and both can help each other immensely in creating wealth for their respective citizens.
 - **Space Cooperation:**
 - ▶ Space cooperation is considered to be 'unique' and 'historical' in Indo-French relations.
 - ▶ Their cooperation has expanded in various facets of space science, technology and applications between the Indian Space Research Organisation (ISRO) and the French National Space Agency (CNES).
 - **Cultural Cooperation:**
 - ▶ Cultural interaction, people-to-people contacts, migration, mobility, tourism etc have assumed greater significance in today's world.
 - ▶ Vibrant people-to-people interactions and tourism enrich not only political relations but also contribute to growth of the local economy.
 - ▶ India and France signed bilateral partnership agreement on migration and mobility, which will facilitate student and professional mobility between the two countries by simplifying the conditions for entry and long term stay in the two countries.
 - ▶ "France-India Programme for the Future", which is a French initiative aimed at fostering youth exchanges, are useful initiatives for future growth of India-France ties.
 - ▶ India and France have been trying to promote tourism in each-others countries and for this the help of Bollywood has also been taken.
- ◎ **CONCLUSION:**
- India and France share a multifaceted and dynamic strategic partnership. Their political relations are vibrant, defence cooperation is deep and growing and their economies offer greater opportunities for reciprocal engagement.
 - India's infrastructure development and socio-economic programmes provide long-term opportunities for greater technological cooperation and investment. Growing cultural interaction with special focus on youth would contribute to further developing social understanding about the two countries. It would be pertinent to note that the India-France strategic partnership is significant from a European perspective as well. The French role is going to be crucial in shaping the future of EU reforms and its directions.

WHO AND TRADITIONAL MEDICINE IN INDIA

CONTEXT:

In a positive development, the World health Organisation (WHO) and Government of India has finalised the establishment of Global Centre for Traditional Medicine (GCTM) in Jamnagar, Gujarat.

It will be first one-of-its kind traditional medicine centre, supported by an investment of USD 250 million from the Government of India.

◎ BACKGROUND

- Traditional medicine has a long history.
- Around **80% of the world's population** is estimated to use traditional medicine.
- Some **40% of approved pharmaceutical products** in use today derive from **natural substances**, highlighting the vital importance of conserving biodiversity and sustainability.
- The WHO's decision to advance knowledge in traditional medicine stems from the fact that **170 out of 194 member states** have reported the use of traditional medicine in their respective nations and have asked for the former's support in the creation of a reliable governing body.
- The Indian government has committed \$250 million to support the institute's establishment, infrastructure and operations.

indigenous and different cultures have used over time to maintain health and prevent, diagnose and treat physical and mental illness.

- Its reach encompasses ancient practices such as **Acupuncture, Ayurvedic medicine and Herbal mixtures** as well as modern medicines.



◎ ANALYSIS

The new WHO Centre

- Location:** Jamnagar, Gujarat, India.
- While Jamnagar will serve as the hub, the new centre is being designed to engage and benefit all regions of the world.
- It will concentrate on building a solid evidence base for policies and standards on traditional medicine practices and products and help countries integrate it as appropriate into their health systems and regulate its quality and safety for optimal and sustainable impact.
- Strategic area:** The new centre focuses on four main strategic areas:
 - evidence and learning
 - data and analytics
 - sustainability and equity
 - innovation and technology

What is Traditional medicine?

- The term traditional medicine describes the total sum of the knowledge, skills and practices

Different types of Traditional medicine system in India

Traditional medicine has for long been the first port of call to treat a diverse set of ailments — a significant number of people in India still trust **ayurveda, siddha, unani, sowa-rigpa and others**.

- Ayurveda:** The Ayurvedic System of Medicine evolved nearly 5000 years ago (3000 BC). The word Ayurveda means '**Science of Life**' and employs treatment modalities, such as **purification, palliation, prescription of various diets, exercises and the avoidance of disease causing factors**.
- Unani Medicine:** Unani Medicine originated in the **Arab world**. Unani medicine treats a patient with diet, pharmacotherapy, exercise, massages and surgery.
 - It was introduced in India around the 10th century AD.
- Homeopathy:** The word 'Homeopathy' is derived from the Greek words, '**Homoi**' meaning '**similar**' and '**pathos**' means '**suffering**'. It originated in Germany and was introduced in India around 1810-1839.

- ▶ Homeopathy is based on the **law of healing- 'similia Similibus Curantur'** which means 'likes are cured by likes'. It uses highly individualized remedies selected to address specific symptoms or symptom profiles.
- **Siddha:** This system has originated in India and is amongst the oldest systems of medicine in the country.
 - ▶ It takes into account the patient, his/her surroundings, age, sex, race, habitat, diet, appetite, physical condition etc. to arrive at the diagnosis.
 - ▶ Siddha System **uses minerals, metals and alloys and drugs and inorganic** compounds to treat the patients. Unlike most T&CM, this system is largely therapeutic in nature.
 - ▶ Siddha literature is in Tamil Nadu.
- **Sowa-Ripa:** The word combination means the 'science of healing' and its considered one of the oldest living and well-documented medical traditions of the world. It **originated from Tibet** and is widely practiced in India, Nepal, Bhutan, Mongolia and Russia.
- **Yoga & Naturopathy:** The concepts and practices of Yoga are reported to have originated in India. Naturopathy or the naturopathic medicine is a drugless, non-invasive system of medicine imparting treatments with natural elements based on the theories of vitality, toxemia and the self-healing capacity of the body as well as the principles of healthy living.
 - ▶ The common naturopathy modalities include counselling, diet and fasting therapy, mud therapy, hydrotherapy, massage therapy, acupressure, acupuncture, magnet therapy and yoga therapy.
- **Siddha system-**The term 'Siddha' is derived from the root word 'Siddhi' which means 'an object to be attained' or 'perfection'.
 - ▶ The Siddha system of medicine owes its origin to medicinal ideas and practices of a class of Tamil sages called the Siddhars – 'perfected' or 'holy immortals'.
 - ▶ They had firm faith in the 'deathless' physical body being in tune with the spiritual immortal 'soul'.

Medicinal Plants Used in Alternative/ Traditional Medicines

- The Indian subcontinent is a vast repository of medicinal plants that are used in traditional medical treatments.
- The alternative medicines in the traditional systems are derived from herbs, minerals, and organic matter, while for the preparation of herbal drugs only medicinal plants are used.
- India is the largest producer of medicinal plants.

- There are currently about 250,000 registered medical practitioners of the Ayurvedic system, as compared to about 700,000 of the modern medicine.
- In India, around 20,000 medicinal plants have been recorded; however, traditional practitioners use only 7,000–7,500 plants for curing different diseases.

Need for Revival of traditional Medicines

- **In search of better alternative:** Variety, flexibility, easy availability, religious/social acceptance, relative low side effect and cost are the key factor for the need of revival of traditional medicine.
- **Increasing burden on modern medicines:** In 21st century, tremendous advances in healthcare sector coexist with inequities in **accessibility, availability and affordability** of the healthcare facilities in many parts of India.
 - ▶ **Integration of Ayurvedic and others Indian traditional medicine in clinical practice** will helpful to promote the health of the people who are unable to access the modern medicine properly.
- **Rural reach:** A study in rural area of West Bengal shows that folk medicine play a key role to prevent common diseases likes small injuries, skin disease, fever, dehydration, diabetes, high BP, liver disease etc in better way.
 - ▶ In rural areas, indigenous medicine play significant role in primary healthcare for prevention/management of common ailments.
- **Less side-effect:** the traditional medicines have less side effects with respect to modern allopathic medicines as they are made from natural substances.

WHO'S provision for traditional medicines:

- The WHO has issued guidelines for the assessment of herbal medicines.
- These guidelines defined the basic criteria for the evaluation of quality, safety, and efficacy of herbal medicines with the goal of assisting national regulatory authorities, scientific organizations, and manufacturers in assessing documentation, submissions, and dossiers in respect of such products.

Traditional medicine vs Modern medicines

- **Technical challenges:** Instruction and practice of traditional medicine have increasingly embraced the principles of modern medicine, practitioners of this system are reasonably acclimatized with the latter.

- ▶ But the same cannot be said about their modern medical counterparts. An integrated model would need to educate modern **medical doctors about holistic, non-reductionist approaches that are typical of traditional systems.**
- ▶ Such a **holistic approach endorses interaction between patient and physician.** They would also have to be taught about the need to strike the right balance between the disparate approaches.
- **Conceptual incompatibility:** Conceptual incompatibilities between modern and traditional medicine present yet another formidable challenge.
 - ▶ Medical education will need to embrace a **pluralist paradigm of understanding.**
 - ▶ **Evidence from Korea** indicates that integrated teaching and practice of both systems by the same individual can overcome problems arising out of such incompatibilities.
- **Evidence-based inequality:** Demand for 'evidence' by the modern medicine's doctors is a challenge. However, the demand for evidence should not undermine the considerations of public welfare.
 - ▶ The need for evidence should be balanced against other factors, such as the prevailing public satisfaction with traditional systems, **cost-effectiveness, and the long-established empirical efficacy and safety of certain interventions.**
- This department was, in November 2003, renamed as **Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH).**
- The current **National Health Policy** of India has proposed **functional linkages of AYUSH** at all levels of health systems, including **service delivery as well as work force.**

What measures are required?

- **Effective planning:** The modernization of traditional and complementary medicines would require extensive scientific research, diligent screening and strict regulatory measures.
- **Modernisation:** The facilities of the GCTM must be used to encourage the induction of scientific and ethical practices within traditional medicines and modernize them.
- **Transparent policies:** Governing bodies, too, must be transparent about the safety and the efficacy of such treatments. But the encouragement of alternative medicines must not mean State disincentives for allopathy.
- **Supplementary care:** The aim of institutes such as the GCTM should not be to replace allopathy but rather plug the gaps and provide supplementary care.

◎ CONCLUSION

The stand of WHO and GOI for establishing a Global health centre, an integrative model will be needed. A greater share of public funds for traditional medicine will be required as it becomes a significant component of the healthcare agenda. But the rise in investment would need to be justified against the limited evidence of traditional medicine. Financing disparate medicine systems under a universal insurance plan would lead to complexities, particularly in deciding the terms of reimbursement, when both systems are practised together.

How India is promoting 'traditional medicines'?

- For supporting traditional medicine in India, the first full-fledged department for **Indian Systems of Medicine and Homeopathy (ISM&H)** was created under **the Ministry of Health and Family Welfare, in 1995.**

AYUSHMAN BHARAT DIGITAL MISSION

CONTEXT:

The National Health Authority (NHA), the implementing agency for the Ayushman Bharat Digital Mission, has invited expressions of interest in developing innovative solutions that will help build a national digital health ecosystem.

◎ BACKGROUND

- Launched in September 2021, the Ayushman Bharat Digital Mission (ABDM) aims to provide digital health IDs for all Indian citizens to help hospitals, insurance firms, and citizens access health records electronically when required.
- The **National Health Authority (NHA)** under the Ministry of Health and Family Welfare is the implementing Agency.
- The mission aims to create a **seamless online platform** that will enable interoperability within the **digital healthcare ecosystem**.
- The mission has been conceptualized as a set of 'digital building blocks'.
 - ▶ Each building block is seen as a 'digital public good' that can be used by any entity in the digital health ecosystem and provides key capabilities that enable the ABDM vision.

Key building blocks of ABDM

- Ayushman Bharat Health Account (ABHA)
- Healthcare Professionals Registry (HPR)
- Health Facility Registry (HFR)
- Health Information Exchange and Consent Manager (HIE-CM)

◎ ANALYSIS

What are the features of the mission?

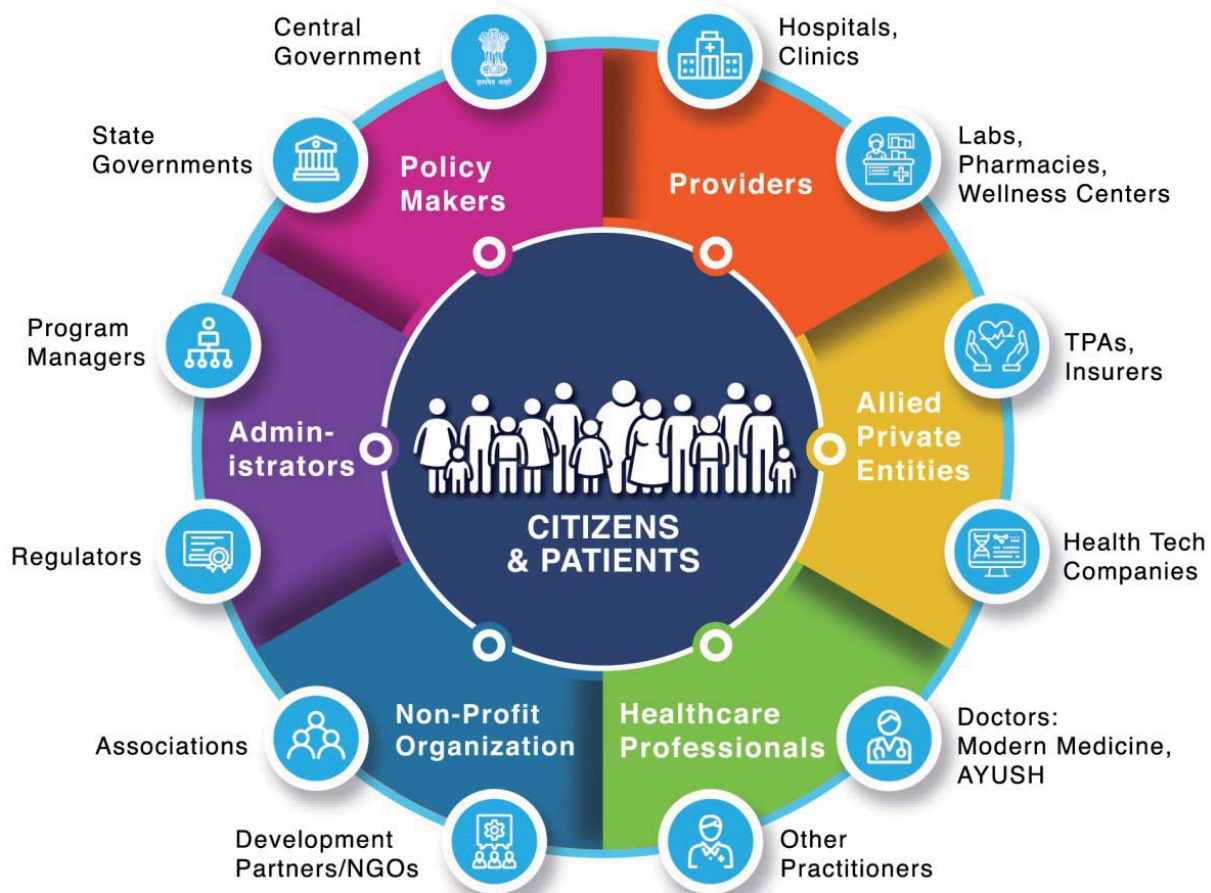
- **Health ID made for every beneficiary:**
 - ▶ It will be issued for every citizen that will also work as their health account. This health account will contain details of every test, every disease, the doctors visited, the medicines taken and the diagnosis.
 - ▶ Health ID is free of cost, voluntary. It will help in doing analysis of health data and lead to better planning, budgeting and implementation for health programs.
- **Healthcare Facilities & Professionals' Registry:**

- ▶ The other major component of the programme is creating a Healthcare Professionals' Registry (HPR) and Healthcare Facilities Registry (HFR), allowing easy electronic access to medical professionals and health infrastructure.
- ▶ The HPR will be a comprehensive repository of all healthcare professionals involved in delivering healthcare services across both modern and traditional systems of medicine.
- ▶ The HFR database will have records of all the country's health facilities.
- **Ayushman Bharat Digital Mission Sandbox:**
 - ▶ The **Sandbox**, created as a part of the mission, will **act as a framework for technology and product testing** that will help organisations, including private players intending to be a part of the national digital health ecosystem become a Health Information Provider or Health Information User or efficiently link with building blocks of Ayushman Bharat Digital Mission.

What are Benefits and concerns?

- **Expected Benefits:**
 - ▶ Ensure **ease of doing business** for doctors and hospitals and healthcare service providers.
 - ▶ Enable access and exchange of longitudinal health records of citizens with their consent.
 - ▶ Create integration within the digital health ecosystem, similar to the role played by the **Unified Payments Interface (UPI)** in revolutionising payments.
 - ▶ The mission will improve **"equitable access" to quality healthcare as it'll encourage the use of technologies** such as telemedicine, and enable national portability of health services.
- **Concerns:**
 - ▶ The **lack of a data protection bill** could lead to the misuse of data by private firms and bad actors.
 - ▶ **Exclusion of citizens and denied healthcare** due to faults in the system are also a cause of concern.

THE NDHM ECOSYSTEM



What is the need of an innovative solution?

- The ABDM seeks to develop the foundations of an integrated digital health infrastructure of India, connecting the different stakeholders of the healthcare ecosystem through digital pathways.
- Its building blocks are digital systems consisting of digital health IDs, registries of health professionals and facilities, and patient health records.
- Currently, there are separate web portals for each system.
- The Ayushman Bharat Digital Mission (ABDM)'s ambition requires all hands on deck.
- In this regard, the **National Health Authority** is giving an open call inviting all interested parties to contribute to the Unified Health Interface (UHI),

Health Claims Protocol (HCP), and various other **open-source digital public goods** being created to expand the digital health ecosystem.

How would it help?

- This collaborative approach will not just help speed up the development but also help in making digital public goods available to public and/or private entities
- The NHA intends to develop a digital platform similar to the Unified Payment Interface or UPI for interoperability between various digital solutions to facilitate various stakeholders using disparate solutions to communicate, according to the statement.

THE EMERGING 'GAMING INDUSTRY' IN INDIA

CONTEXT:

Co-founder of Winzo App stated in a recent interview that the Gaming Industry in India is set to expand manifold and provide employment opportunities to many Indians.

◎ ANALYSIS

What is Gaming Industry?

- It is an industry involved in the development, marketing, and monetization of video games.
- How has the gaming industry fared in India in recent times?
- Gaming industry clocked **40% growth** in 2019–20, which made it one of the **fastest-growing sunrise industries** in India.
- Net revenue of US\$ 1.5 billion was generated by the gaming ecosystem during this period and the industry is **expected to surpass US\$ 5 billion by 2025**.
- In terms of user base, the **Indian** gaming industry recently **overtook that of the US**.
- **Mobile phones dominate** the Indian gaming industry, with phone-based gaming apps accounting for 86% of total gaming apps in 2021.
- **Internet affordability and growing smartphone penetration** in the country are indicative of bright prospects for the industry.



What are the Key drivers of Gaming Industry in India?

- **Smartphone penetration:**
 - ▶ India has **502.2 million smartphone users**, with smartphone penetration at 36.7%.
 - ▶ The above **numbers are increasing** at a very rapid pace in the country.
 - ▶ The use of smartphones has risen with the advent of more **gaming-friendly handsets** supported by faster processing capabilities.

- ▶ For instance, the **RAM in these smartphones has increased** by three to four times in the last five years thus enhancing the gaming experience.
- ▶ This is making **access to gaming easy** in India.

Affordable internet:

- Internet access in India is **very cheap**.
- This has led to heavy internet use amongst the mobile subscribers in the country.
- This **low-cost internet** makes using gaming apps affordable to Indians.

Young demography of India:

- India has a **significant demographic advantage** with 46% of its population under the age of 25 and 67% in the working class (ages 15–64).
- Demography is considered a major factor for growth in the gaming industry.
- In a survey conducted by KPMG, nearly 75–80% of the respondents between the age group of 18 to 36 reported playing at least one to three times a week. Fifty percentage of those in the age group of 37-50 respondent by stating that they were engaged in playing online games four times a week.

Introduction of new games with a shorter learning curve:

- Indians are **increasingly getting acquainted** with new and more sophisticated games.
- These new games have **shorter learning curve** and hence understanding them and then using them gets streamlined.

The Rise of Gaming Industry in India:

- Gaming is the **fastest-growing** entertainment industry in India.
- At present there are more than **15,000 game developers** in the country.
- Various **international studios** such as Electronic Arts (EA), Ubisoft and Zynga **have been setting up gaming development centres in India** since early 2010 and have been groomed several gaming developers.

- The number of **gaming companies** increased nearly 10x since 2010, **crossing 275 in 2020**.
- **Investors are attracted by the boom** in the Indian gaming industry, especially the Triple-A title games.
- **Triple-A Title Games:** In the video-game industry, **AAA** (pronounced and sometimes written **Triple-A**) is an informal classification used to categorise games produced and distributed by a mid-sized or major publisher, which typically have higher development and marketing budgets than other tiers of games.
- The meteoric rise in gaming has also benefited the **individual content creator industry**, contributing to its growth.
- There has also been **increase in the subscribers of individual game streamers** on YouTube. Thus creating an income opportunity for proficient gamers in India.
- At present there are **920 gaming start-ups in India**, with Mumbai being the headquarters for the top players in this domain.
- What initiatives have been taken by the Government of India to boost the domestic gaming industry?
- It has set up the **Animation, Visual Effects, Gaming and Comic (AVGC) Centre for Excellence** in Collaboration with IIT Bombay.
- Government of India has permitted **100% foreign direct investment (FDI) in gaming**.
- **NITI Aayog had last year organised a consultation programme** for industry participants to facilitate

good governance, growth, and innovation in the gaming ecosystem.

- India's flagship programme, **Digital India**, has also helped the gaming industry to a certain extent.
- The government's Digital Village scheme is also aimed at boosting Internet usage in rural India and increasing smartphone penetration which will without any doubt increase the subscriber to the gaming platforms.
- The Union Ministry of Education is working on **policies to create job opportunities for students** in online gaming and toys. India conducted the Smart India Hackathon to help students showcase their online gaming skills.
- **Data centre parks and related initiatives** in the country are aimed at providing digital infrastructure for upcoming gaming companies.

Future of Gaming Industry in India:

- The Indian gaming industry is set to be on a **high growth trajectory**, with rapid digitalisation and transformation, increasing internet usage and rising smartphone penetration.
- The domestic gaming industry is expected to **create large number of direct and indirect jobs** by 2023.
- In the following two years, it is expected to attract **US\$ 100 million in foreign direct investment (FDI)**.
- These factors indicate **bright prospects** for the industry.

PROVISIONS OF EPCG SCHEME EASED

CONTEXT:

The Commerce Ministry has relaxed various procedures under the Export Promotion Capital Goods (EPCG) scheme in order to reduce compliance requirements and facilitate ease of doing business.

◎ BACKGROUND

- The capital goods industry is considered the **core of the manufacturing sector**, and provides critical inputs like machinery and equipment to a broad set of user-industries.
- India's capital goods sector has grown in size since liberalisation in the 1990s.
- And now with the opening up of the economy, the capital goods sector is witnessing strong traction due to healthy order inflows across companies, rising execution levels in key projects, the improving liquidity situation, and spending by the central government.
- The capital expenditure for 2022-23 has been pegged at Rs 7.5 lakh crore.
 - ▶ The major import sources of top 10 capital goods imports include China, South Korea, developed nations like the US, Germany, Japan, and Southeast Asian countries like Malaysia, Singapore, and Vietnam. India has existing trade agreements with Japan, South Korea, and the Southeast Asian nations.

◎ ANALYSIS

What is Export Promotion Capital Goods (EPCG) Scheme?

- **Launched in:** 1990s
- **Export Promotion Capital Goods (EPCG) Scheme** helps in facilitating the **import of capital goods** for manufacturing quality goods and to augment the competitiveness of India's export.

Capital Goods

- **Export Promotion Capital Goods** are **capital goods** used in the production of goods that are exported to other countries.
 - ▶ It includes machinery as well as spares.
 - ▶ Hence, to qualify as Export Promotion Capital Goods, the commodity manufactured in India must be exported outside India.
- **Factors of production:** Capital goods are one of the four factors of production.

This means that businesses cannot run without them. The other three are:

- **Natural resources** (such as land, oil, and water)
- **Labor** (such as workers)
- **Entrepreneurship**, which is the drive to create new companies

- A part of **India's Foreign Trade Policy**, the scheme enables the import of capital goods that are used in the pre-production, production, and post-production without the payment of **customs duty**.

Customs duty is a variant of **Indirect Tax** and is applicable on all goods imported and a few goods exported out of the country.

- **EPCG License:** In order to obtain a License under the EPCG scheme, it is a primary requirement to file an application with the licensing authority of the **Director General of Foreign Trade**.
 - ▶ The issuing authority is the licensing authority – Director General of Foreign Trade (DGFT).

Doing the numbers

- EPCG allows the import of capital goods at a **customs duty of 0% or 3%**.
- **0% Duty**
 - ▶ The 0% customs duty requires the authorisation holder to undertake **export obligation amounting to 6 times** of the amount saved on duty on the capital goods.
 - ▶ Also, the capital goods should be imported **within a 6-year period** from the authorisation issue date.
- **3% Duty**
 - ▶ **For 3% duty**, the authorisation holder needs to undertake **export obligation of 8 times** the duty saved on the import of capital goods over a **period of 8 years**.
 - ▶ The imported goods **cannot be sold or transferred**.

- ▶ The installation of capital goods and its usage in production should be done **within 6 months**.
- ▶ **Second-hand goods** of any nature will **not be permitted** under the EPCG scheme.
- The facility to pay customs duty through scrips (MEIS /RoDTEP /RoSCTL) for default under EPCG has been withdrawn.

What changes have been brought to the EPCG scheme?

- **The annual reporting of EO** (export obligation) can now be done **by June 30** of each year instead of April 30, but any delay will be subject to a late fee of Rs 5,000.
- **Requests for export obligation extension** can now be made **within six months of expiry** instead of the earlier prescribed period of 90 days.
- Abovementioned request could also be made after six months of expiry till six years, subject to late fees of Rs. 10,000 per application.
- Requests for **block-wise export obligation extension** could now be made **within six months of expiry**.
- This application can also be made after six months of expiry of authorisation and up to six years but with a late fee of Rs 10,000 per authorisation.
- For the purpose of above application, earlier, no specified time limit was prescribed, leading to discretionary interpretations.

Important Scheme putting focus on the sector

- **PM Gati Shakti Master Plan:** The government has recently introduced the '**PM Gati Shakti Master Plan**' to create comprehensive infrastructure development plan including roads, railways, power, telecom, etc.
 - ▶ This is likely to revive the capex cycle and drive further growth in the sector.
- **National Infrastructure Pipeline:** Launched to cover the fiscal years between 2019 and 2025, the National Infrastructure Pipeline is a 'first-of-its-kind, whole-of-government exercise to provide world-class infrastructure to citizens and improve their quality of life'.

◎ CONCLUSION

The abovementioned changes **would bring down compliance requirement** for the exporters who use imported capital goods as inputs and hence **enhance the Ease of Doing Business** in India.

THE ECONOMICS OF OILS BONDS

CONTEXT:

While replying to questions raised in the Parliament regarding high petroleum prices in India, Finance Minister Nirmala Sitaramaiha stated that rates of petroleum products cannot be reduced due to the interest payments that the Indian Government has to do on Oil Bonds issued by the Manmohan Singh regime.

◎ BACKGROUND

- Oil bonds were issued by the Congress-led UPA (United Progressive Alliance) government between 2005 and 2010 to insulate consumers from price shocks.
- They are issued by the government to compensate oil marketing companies for not passing on the higher costs to consumers.
- These were issued at the time when oil prices were not market linked but dictated by the government.
- The bonds could be redeemed at a later date by oil marketing companies, usually after 10-15 years.

◎ ANALYSIS:

What are Oil Bonds?

- Oil bonds are issued by the government to **compensate oil marketing companies (OMCs) to offset losses** that they suffer to shield consumers from rising crude oil prices.
- Under this mechanism the government reimburses oil companies, for subsidies on petroleum products, by issuing long-term bonds that they could redeem at a later date, typically ranging **15-20 years**.
- The government issued these bonds mainly during **2005 to 2010**.

Why were the Oil Bonds issued?

- Oil bonds were used by the previous government to **insulate the consumers from rising prices of petroleum products and to avoid the ballooning of government's fiscal deficit**.
- During the abovementioned period, i.e. 2005 to 2010, the global oil prices had picked and reached record high.
- As the government of the time wanted to avoid burdening the consumers to pay the whole amount, they **directed** the Oil Marketing Companies (OMCs) **to sell the petroleum products at cheaper rates** (controlled price).

- However, compensating the OMCs for the difference in value between the actual price and the retail price of petroleum products was necessary from the point of view of their financial viability.
- Ideally in the above situation, it must have been the **government of the time who should have paid for the difference** in price but that would have **increased the fiscal deficit of government** and thus constraint it from undertaking welfare measures.
- It has to be also remembered that the **global recession came about in 2008** causing economic slowdown all around the world including India.
- The priority of Indian Government therefore at this time was to **utilise its limited fiscal resources for the purpose boosting economic activities** in the country.
- An alternative path** therefore was taken up by the Manmohan Singh government under which **Oil Bonds were issued to the OMCs**.
- It is prudent to remember that, in essence, **these bonds are like promissory notes of deferred payment of subsidies that the government owes to oil marketing companies**.
- Since the government did not subsidise these companies upfront, these **payouts did not show up in budget documents**, until the repayment of the principal or interest components took place.
- As a result petroleum products were made available to the people of India without increase seen in the fiscal deficit at that point of time and OMCs being saved from dreadful under-recoveries.

What are under-recoveries?

- Under recoveries are revenues foregone by state-run refiners for selling fuel below cost. This is what kept diesel and petrol prices artificially in check.

What are total outstanding payments on oil bonds?

- An oil bond says the government will pay the oil marketing company the sum of, say, **Rs 1,000 crore in 10 years**.

- And to compensate the OMC for not having this money straightaway, the government will pay it, say, **8%** (or Rs 80 crore) each year until the bond matures.
- The government has so far paid Rs 70,195.72 crore as interest on oil bonds in the last seven years.
- Of the Rs 1.34 lakh crore worth of oil bonds, Rs 3,500 crore principal has been paid and the remaining Rs 1.3 lakh crore is due for repayment until 2025-26.

Are the Oil bonds really the reasons for high petroleum prices?

- Objectively **it cannot be said that the oil bonds** are in actuality the **only reasons for high fuel rates** in India.
- The finances of Oil bond show that the **repayment of money to OMCs is a minuscule amount of the total revenue** received by the government in form of taxes imposed on petroleum products in India.
- Though it can't completely denied that Oil Bonds do not affect the pricing of oil in today's market.

What are the other factors causing high price of petroleum products in India?

- Around 80% of India's **petroleum requirements are fulfilled by imports**, thus India plays a very little role in pricing of petroleum products in international market.
- The above therefore means that rise in fuel prices globally will lead to inflation of fuel prices in India too.
- Adding to this is the **deregulation policy** on fuel adopted by both Manmohan Singh and Narendra Modi government.

Deregulation Policy: It means that the retail price of fuel in India will be dictated by their actual price in the market with government providing very little to no subsidy.

- It must also be remembered that two year of economic slowdown due to Covid has forced has **depleted the treasury of government** and has made it impossible for to subsidise the fuel prices even if it wanted to.

- **The taxes** collected by the Union Government and state governments are **major and reliable source of their revenue** in the current scenario and help them to carry out their functioning including the implementation of welfare schemes.
- **Value Added Tax (VAT)** falls in the realm of state governments and is an important component of retail price of fuel. Hence, controlling the fuel prices completely is also not in the hands of the Union Government.
- **The war in Ukraine** has let to economic sanctions been applied on Russia, who is one of the major exporters of hydrocarbon globally, causing the skyrocketing of fuel prices.

What are the effects of high fuel prices on Indian Economy?

- It has to be remembered that petroleum products are **non-substitutable imports** and not buying them is out of question.
- Their high prices though severely impact the economy of India as a whole.
- Inflation in their cost leads to **upswing of the input price** of nearly all items of consumption and use.
- These leads to **downfall of savings** of the people of the country and that in turn negatively effects the capital available for investment in India.

How can the problem of high fuel prices can be solved?

- Providing **subsidies is not a viable solution** as it **balloons the fiscal deficit** of India.
- The above causes **limited amount available with the government to be spend on welfare** of the most economically marginalised communities.
- Increasing fiscal deficit also **downgrade the investment ratings** of India and therefore arrests the growth of Indian Economy.
- The Union Government therefore has to consider **rolling back of taxes** as the economy starts moving back to normal and sources of income get diversified.
- Government shall also focus its attention on **developing alternatives to petroleum products** which are ecologically friends, easily available and over the period time become less

THE STATUS OF INDIA'S NATIONAL CYBER SECURITY STRATEGY

CONTEXT:

The National Security Council secretariat organises National Cyber security incident response exercise NCX, for Government officials and Critical sector Organisations.

It will be a hybrid exercise of 10-days aim to strengthen India's cyber position.

◎ BACKGROUND

- **Cybercrime** is vastly growing in the world of technology today. Criminals of the World Wide Web exploit internet users' personal information for their own gain.
- They dive deep into the **dark web to buy and sell illegal products and services**. They even **gain access to classified government information**.
- **Cybercrimes are at all-time high, costing companies and individuals billions of dollars annually**. What's even more frightening is that this figure only represents the last 5 years with no end in sight.
- **The evolution of technology and increasing accessibility of smart tech** means there are multiple access points within **users' homes for hackers to exploit**.
- While **law enforcement attempts** to tackle the growing issue, criminal numbers continue to grow, taking advantage of the anonymity of the internet.
- As the world gets absorbed by the **COVID-19 pandemic, cyberattacks** have become a critical area for all **technology-focused organizations in India**.

Recent incidents of cyberattack

- In 2016, banks had reportedly announced a leak of personal information of 3.2 million debit cards.
- In 2018, Pune-based Cosmos Bank lost Rs 94 crore in a malware attack.
- In 2019, the Kudankulam plant was attacked using malware.
- And, CERT-IN has recently issued an advisory that there is a threat of a massive phishing attack.
- In 2018, when **Wannacry** disrupted the National Health Service systems in the UK, the country's health system was brought to a standstill.

- For three months in 2019, India faced the most cyber-attacks in the world.
- While the US was the most cyber-targeted nation in 2019, India held the top spot in April, May and June.
- The most cyber-attacked countries in 2019 were the **US, India, UK, Singapore, Ukraine, UAE, Nigeria, Japan, South Korea and Spain respectively**.
- **Pegasus** is spyware developed by the Israeli cyber-arms company NSO Group that can be covertly installed on mobile phones running most versions of iOS and Android. Pegasus is able to exploit iOS versions up to 14.6, through a zero-click exploit.

What is NCX India?

- **Aim:** It aims to train **senior management and technical personnel** of the **Government/ Critical Sector organizations and agencies** on **contemporary cyber threats** and handling cyber incidents and response.
- **Areas to cover:** The participants will be trained on various key cyber security areas such as **Intrusion Detection Techniques, Malware Information Sharing platforms (MISP), Vulnerability Handling & Penetration Testing, Network Protocols & Data Flows** among others.
- **Significance:** The exercise will **help strategic leaders** to better understand **cyber threats, assess readiness and develop skills for cyber crisis management and cooperation**.
- The National Security Council Secretariat (NSCS) in association with **Data Security Council of India (DSCI) as the knowledge partner** with support of **Defence Research and Development Organization (DRDO)** will organize the NCX.

National Security Council (NSC)

- NSC is an **executive government agency** tasked with advising the Prime Minister's Office on matters of national security and strategic interest.

- It was established by the former Prime Minister of India Atal Bihari Vajpayee in 1998.
- **Structure:**
 - ▶ NSC is a three-tier structure body.
 - ▶ The three tiers are the **Strategic Policy Group, the National Security Advisory Board and a secretariat from the Joint Intelligence Committee.**

What's upping India's cybersecurity threat?

- **Increasing digitalisation:** India is one of the fastest-growing markets for digital technologies fuelling government's push towards actualising its Digital India mission.
 - ▶ Whether creating broadband highways or rolling out services such as DigiLocker and e-governance schemes like the Jan Dhan Yojana, the government has pushed for as much digital adoption as possible over the past few years.
- **Pool of digitally vulnerable targets:** India now has over 1.15 billion phones and more than 700 million internet users and makes it a large pool of digitally vulnerable targets.
- **Heavier dependence on digital technology:** The pandemic has only exacerbated this problem as it resulted in an even heavier dependence on digital technologies. From payments to e-shopping to WFH, the pandemic led to greater adoption of interconnected devices and hybrid work networks.

What does India need?

- **Comprehensive standards:** With countries resorting to digital warfare and hackers targeting government processes, India needs comprehensive cybersecurity guidelines and standards for checking cyber vulnerabilities and cyber responses.
- **Cyber defence network:** In many cases, as it happens, the government itself uses legacy systems which are vulnerable to cyberattacks; countries like China and Singapore, in the meanwhile, have progressed towards creating cyber defence networks.
- **Strengthened policy framework:** **National cybersecurity projects** such as the **National Cyber Coordination Centre (NCCC), National Critical Information Infrastructure Protection Centre (NCIIPC)** and the **Computer Emergency Response Team (CERT)** need to be strengthened, manifold and reviewed.

Types of Cybercrime

- Cyber threats are of varied nature and some of the key notable ones would be
- **Malware, Viruses, Trojans, spywares**
- **Backdoors**, which allow remote access
- **DNS (Domain Named System)** poisoning attacks, which compromises the DNS and redirect websites to malicious sites
- **DDoS Attacks:** These are used to make an online service unavailable and take the network down by overwhelming the site with traffic from a variety of sources. Large networks of infected devices known as Botnets are created by depositing malware on users' computers. The hacker then hacks into the system once the network is down.
- **Botnets:** Botnets are networks from compromised computers that are controlled externally by remote hackers. The remote hackers then send spam or attack other computers through these botnets. Botnets can also be used to act as malware and perform malicious tasks.
- **Identity Theft:** This cybercrime occurs when a criminal gains access to a user's personal information to steal funds, access confidential information, or participate in tax or health insurance fraud. They can also open a phone/internet account in your name, use your name to plan a criminal activity and claim government benefits in your name.
- **Cyberstalking:** This kind of cybercrime involves online harassment where the user is subjected to a plethora of online messages and emails. Typically cyberstalkers use social media, websites and search engines to intimidate a user and instill fear. Usually, the cyberstalker knows their victim and makes the person feel afraid or concerned for their safety.
- **PUPs:** PUPS or Potentially Unwanted Programs are less threatening than other cybercrimes, but are a type of malware. They uninstall necessary software in your system including search engines and pre-downloaded apps.
- **Phishing:** This type of attack involves hackers sending malicious email attachments or URLs to users to gain access to their accounts or computer.

Indian laws concerning Cyber Security

- **Information Technology Act, 2000:** The act provides legal recognition to e-commerce and e-governance and facilitates its development as an alternative to paper-based traditional methods. It

aims to protect the advancement in technology by defining crimes, prescribing punishments, laying down procedures for investigation and forming regulatory authorities.

- **Crime and Criminal Tracking Network System (CCTNS):** It is a nationwide network infrastructure for evolution of IT-enabled state-of-the-art tracking system around "investigation of crime and detection of criminals".
- **National Cyber Security Policy, 2013:** It provides for:
 - ▶ To build a secure and resilient cyberspace.
 - ▶ Creating a secure cyber ecosystem, generate trust in IT transactions.
 - ▶ Creation of a 24 x 7 National Critical Information Infrastructure Protection Center (NCIIPC).
 - ▶ Indigenous technological solutions.
 - ▶ Testing of ICT products and certifying them.
- **National Technical Research Organization (NTRO):** NTRO is a highly specialized technical intelligence gathering agency. It develops technology capabilities in aviation and remote sensing, data gathering and processing, cyber security, cryptology systems, strategic hardware and software development, and strategic monitoring.
- **National Critical Information Infrastructure Protection Centre (NCIIPC):** Creation of National Critical Information Infrastructure Protection Centre, the national nodal agency in respect of protection of critical information infrastructure. It is placed under the National Technical Research Organization.
- **CERT-In:** CERT-In has been designated to serve as the national agency to perform the following functions:
 - ▶ Collection, analysis, and dissemination of information on cyber incidents.
 - ▶ Forecast and alerts of cybersecurity incidents
 - ▶ Emergency measures for handling cybersecurity incidents

- ▶ Coordination of cyber incident response activities
- ▶ Issue guidelines, advisories, vulnerability notes and white papers relating to information security practices, procedures, prevention, response and reporting of cyber incidents
- **National Cyber Coordination Centre (NCCC):** It is a critical component of India's cyber security against hackers and espionage as well as to track terrorist activity online.

- **Cyber Surakshit Bharat:** Cyber Surakshit Bharat is an initiative from the Ministry of Electronics and Information Technology (MeitY) that pointed at creating a robust cybersecurity ecosystem in India.
- **India-ITU Joint Cyberdrill event:** Last December, the Department of Telecommunications (DoT) and the International Telecommunication Union (ITU) launched the **India-ITU Joint Cyberdrill event** that aimed at training Indian critical network infrastructure operators. Industry experts discussed cybersecurity policy initiatives in India and across the globe.

Way Forward

- India cannot afford to be complicit about cybersecurity. An attack explicitly directed towards these services can cause much more damage. **India should not wait for an attack to upgrade its infrastructure.** In India, **the private sector** has started playing a significant role in operating critical information infrastructure, particularly in **power, transportation and healthcare.**
- It is now more necessary than ever before to take cognisance of new directions and shifts in policies across the world. India needs a Strategic and comprehensive national cyber security that provides clearly mandate and empowers provisions against cybercrimes. It should supervise and enforce policies across the country to strengthen the cyber security framework.

CENTRE EXTENDS TENURE OF ENVIRONMENTAL CLEARANCES

CONTEXT:

Easing norms for infrastructure projects, the Union environment ministry has extended the tenure of environmental clearances (EC) granted for existing or new projects.

ANALYSIS:

The extended period

- **River valley projects:** The EC for river valley projects will now have a 13 year validity.
- **Nuclear power projects:** Nuclear power projects, or those involving the processing of nuclear fuel 15 years.
- **Others:** Projects and activities other than the mining and river valley projects will have their EC valid for 10 years.

Rationale behind the move:

- Explaining its rationale, the Ministry said in its gazette notification that nuclear power projects and hydropower projects had:
 - ▶ "high gestation" period due to "geological surprises"
 - ▶ delays in forest clearance
 - ▶ land acquisition
 - ▶ local issues
 - ▶ rehabilitation and resettlement, etc

The above mentioned issues are often beyond the control of project proponents and in this context, the Central Government "deems it necessary" to extend the validity of Environmental Clearance (EC) for such projects.

For Example:

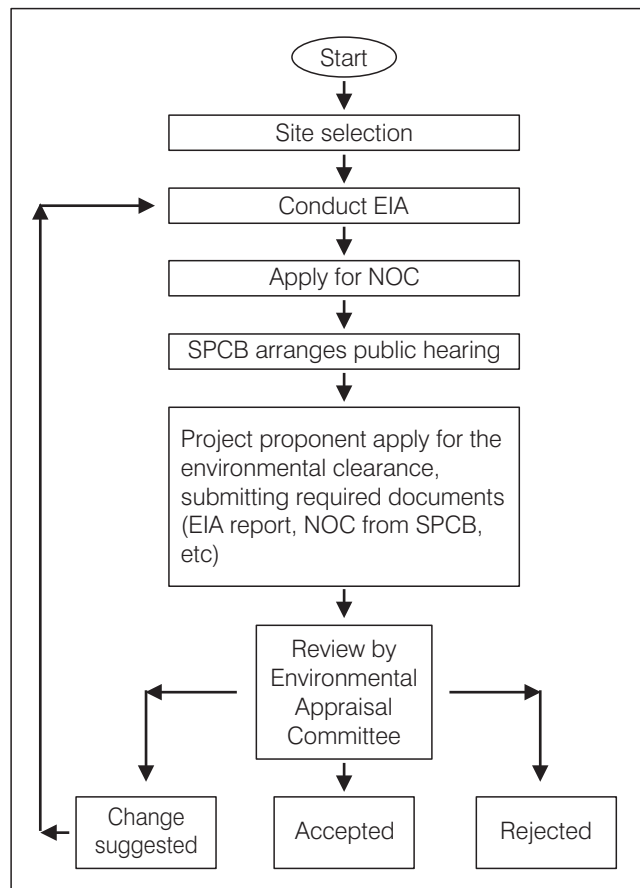
- Mining leases are now granted for a period of fifty years but the Environment Clearance is valid for thirty years. The Central Government deems it necessary to align the validity of mining ECs which is currently permissible up to a maximum duration of thirty years, subject to review and appropriate environmental safeguards.

What is an Environmental Clearance (EC)?

- An EC is a long-drawn process that is mandatory for projects beyond a certain size and often involves an

environment impact assessment of a potential project and sometimes public hearings involving the local populace who might be affected by the project.

- One of the conditions of an EC is that a project must begin construction in the period that it has been granted an EC and if unable, a fresh process must begin.
- This leads to projects being financially unviable.



What is the process of granting EC?

The process of granting of environment clearance includes:

- Specifying Terms of Reference (ToR)
- Preparing Environmental Impact Assessment (EIA) report
- Holding Public Consultation

Importance of EIA:

- EIA links environment with development for environmentally safe and sustainable development.
- EIA provides a cost effective method to eliminate or minimize the adverse impact of developmental projects.
- EIA enables the decision makers to analyse the effect of developmental activities on the environment well before the developmental project is implemented.
- EIA encourages the adaptation of mitigation strategies in the developmental plan.
- EIA makes sure that the developmental plan is environmentally sound and within the limits of the capacity of assimilation and regeneration of the ecosystem.

IPCC SIXTH ASSESSMENT REPORT- PART 3

CONTEXT:

Recently Third part of IPCC's Sixth Assessment Report which talks about the possibilities of reducing emissions has been released.

The first part, centered around climate change' scientific basis, was released last August. The second instalment, which talked about climate change impacts, risks and vulnerabilities, and adaptation options has been released in March 2022.

◎ BACKGROUND:

- The Assessment Reports, the first of which was in 1990, are the most comprehensive **evaluations of the Earth's climate**.
- Hundreds of experts go through every piece of relevant and published scientific information available to prepare a common understanding of climate change.
- The four subsequent reports came out in **1995, 2001, 2007, and 2015**. These are the **basis of the global response on climate change**.
- The Paris Agreement, negotiated on the basis of the Fifth Assessment Report.
- The Assessment Reports are prepared by three working groups of scientists.
 - ▶ Working Group-I - Deals with the scientific basis for climate change.
 - ▶ Working Group-II - Looks at the likely impacts, vulnerabilities and adaptation issues.
 - ▶ Working Group-III - Deals with actions that can be taken to combat climate change.

◎ ANALYSIS:

Key findings of the report:

- **Issue at hand:**
 - ▶ Governments agreed in the 2015 Paris accord to keep global warming well below 2 degrees Celsius this century, ideally no more than **1.5 degrees** Celsius.
 - ▶ Yet temperatures have **already increased by over 1.1C** since pre-industrial times, resulting in measurable increases in disasters such **flash floods, prolonged droughts, more intense hurricanes and longer-burning wildfires**, putting human lives in danger and costing governments hundreds of billions of dollars to confront.

Greenhouse Gas Emissions:

- In 2019, global net anthropogenic Greenhouse gas (GHG) emissions were at **59 Gigatonnes** of carbon dioxide equivalent (GtCO₂e), **54% higher** than in 1990.
- But the average annual rate of growth slowed to **1.3% per year** in the period 2010-19, compared to **2.1% per year** in the period 2000-09.
- At least **18 countries** have reduced GHG emissions for longer than 10 years on a continuous basis due to decarbonisation of their energy system, energy efficiency measures and reduced energy demand.

- **Net Emission:** Net emissions refer to emissions accounted for after deducting emissions soaked up by the world's forests and oceans.
- **Anthropogenic Emission:** Anthropogenic emissions refer to emissions that originate from human-driven activities like the burning of coal for energy or cutting of forests.

Emission by the Least Developed Countries:

- **Carbon inequality** remains pervasive as ever with Least Developed Countries (LDCs) emitting only **3.3%** of global emissions in 2019.
- Their average per capita emissions in the period 1990-2019 were only **1.7 tonnes CO₂e**, compared to the **global average of 6.9 tCO₂e**.
- LDCs contributed **less than 0.4%** of total historical CO₂ emissions from fossil fuels and industry in the period 1850-2019.
- Globally, **41%** of the world's population lived in countries emitting less than **3 tCO₂e** per capita in 2019.

Insufficient Pledges:

- IPCC finds that it is likely that warming will exceed 1.5 degrees Celsius (°C) in this century, thereby failing the Paris Agreement's mandate.

- The CO₂ emissions from existing and planned fossil fuel infrastructure — coal, oil, and gas — contribute greatly to this projected failure.
- In its best-case scenario, known as the **C1 pathway**, the IPCC outlines what the world needs to do to limit temperatures to 1.5°C, **with limited or no 'overshoot'**.
- To achieve the C1 pathway, global GHG emissions must fall by **43% by 2030**.

Overshoot:

- Overshoot refers to global temperatures crossing the 1.5°C threshold temporarily, but then being brought back down using technologies that suck CO₂ out of the atmosphere.

Low Emissions Technologies:

- This could require measures such as the removal of CO₂ from the atmosphere with **natural or artificial means**, but also potentially risky technologies such as **pumping aerosols** into the sky to reflect sunlight.
- Among the solutions recommended are a **rapid shift away from fossil fuels** toward renewable energy such as **solar** and **wind**, the **electrification** of transport, more **efficient use of resources** and

massive financial support for poor countries unable to pay for such measures without help.

- One move often described as “low-hanging fruit” by scientists is **to plug methane leaks** from mines, wells and landfills that release the **potent but short-lived greenhouse gas** into the atmosphere.
- The costs of low emissions technologies have fallen continuously since 2010. On a unit costs basis, solar energy has dropped **85%**, wind by **55%**, and lithium-ion batteries by **85%**.
- Their deployment, or usage, has increased multiple fold since 2010 — 10 times for solar and 100 times for electric vehicles.

About IPCC:

- The Intergovernmental Panel on Climate Change (**IPCC**) is the international body for **assessing the science related to climate change**.
- The IPCC was set up in 1988 by the World Meteorological Organization (**WMO**) and United Nations Environment Programme (**UNEP**).
- It aims to provide **policymakers** with **regular assessments** of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

PANOPTICONISM & THE ETHICS OF TECHNOLOGICAL SURVEILLANCE

CONTEXT:

In today's digitalised world, panopticism is getting used as a metaphor to define "technological surveillance."

The present-day CCTV camera is a candid example of how the theory works with people being cautious about how they behave irrespective of whether the camera is functional or not.

Understanding Panopticonism

- Panopticonism was a theory introduced by Michel Foucault in one of his most influential books, "**Discipline and Punish: The Birth of the Prison**".
- It is a concept that explains a new model of surveillance in society.
- Elaborated by **English philosopher and architect Jeremy Bentham**, the panopticon was a circular building with cells built into its circular walls with an observational tower at the centre.
- A guard could observe every move of the prisoners in each cell from the observational tower.
- The prisoners, in turn, could see the tower but could not see anything inside it on account of the difference in height as well as the shutters and blinds.
- The ambiguity about whether or not they were being observed forced the prisoners to conduct themselves inside their cells with the assumption that the guards could be observing them at any point in time.
- This was the perfect idea for a prison, according to Bentham, as it was visible yet unverifiable. He believed that the fear of constant surveillance could help bring order and discipline, alter and reform groups and preserve morals inside the four walls of the prison.

What is meant by 'Technological Surveillance'?

- Surveillance as defined is the monitoring of the behaviour, activities or other changing information of people for the purpose of influencing, managing, directing or protecting them.
- Surveillance of an individual would raise concerns on the type of surveillance being used and being monitored by whom.
- In the digital world, the process of digitisation has been optimised through the Big Data Revolution. It is now considered the '**New Gold**'.

- Based on 'one like' a person's personal choices ranging from clothes, food, politics everything could be analysed and enumerated.
- This data is then used by companies to sell the apt products or services based on our preferences.
- We are dependent on various applications for booking appointments, paying bills and also making some quick decisions, for instance, finance, insurance or stock management. The life between online and offline has been significantly blurred and is now present in almost all aspects of our life.

Ethical Concerns of Technological Surveillance

- Since power is exercised over us and our decision-making is invisible and unverifiable we do not explicitly feel being violated.
- While downloading an app, or giving acceptance to certain access on our phone we do not analyse the consequences of it.
- As our human mind is conditioned to focus on results and to maximise desires, we tend to ignore threats that are certainly looming over us all the time.
- **George Orwell's 'Big Brother'** is now transformed into an invisible power wherein our choices and rights are not limited, we are not living in an authoritarian state rather we are living in a state of illusion.
- Data is controlling our search optimisation techniques.

USA case Study:

- After the infamous revelation of the surveillance system of United States investigative agencies by the whistleblower Edward Snowden, people and scholars started to identify the ethical issues surrounding privacy, big data, and Governance.

- Further, after the US Presidential elections in 2016, this concern was alleviated by a controversy. Scholars have termed this kind of technology as persuasive technology. Digital panopticism is controlling and changing our behavioural patterns.
- Russian hackers targeted US voter rolls in several states as part of the Kremlin's broader efforts to undermine the integrity of the 2016 elections, and since then, security researchers have discovered further breaches of data affecting 198 million Americans, 93 million Mexican, 55 million Filipino, and 50 million Turkish voters.
- In April 2018, Facebook founder and chief executive Mark Zuckerberg testified in two congressional hearings about his company's role in the Cambridge Analytica scandal, in which it was revealed that Facebook had exposed the data of up to 87 million users to political exploitation. The case was a reminder of how personal information is increasingly being employed to influence electoral outcomes.
- Recently, a popular magazine in the U.S. took a survey of how many would have objections to the idea of surveillance? If the survey result is to be believed, many had no problem if they are being monitored as they have nothing to hide from the government. Exactly, when there is nothing to hide and are true to oneself, the need for fear is gone.

Chinese Case Study:

- Disinformation and propaganda disseminated online have poisoned the public sphere. The unbridled collection of personal data has broken down traditional notions of privacy. And a cohort of countries is moving toward digital authoritarianism by embracing the Chinese model of extensive censorship and automated surveillance systems. As a result of these trends, global internet freedom declined
- for the eighth consecutive year in 2018.
- China's surveillance is particularly suffocating in Xinjiang, where the authorities use mobile apps, biometric collection, artificial intelligence, and big data, among other means, to control 13 million Turkic Muslims.

India's Case Study:

- Recently, a list of persons allegedly targeted by Pegasus spyware was released by a multi-organisational investigation involving news organizations, cybersecurity specialists, and Amnesty International. The list includes over 1,000 Indians, including at least 40 journalists, and several members of Parliament. It said the Indian government used it to spy on around 300 people between 2017 and 2019.

The Necessity of Technological Surveillance

- With the advancement of technology, there are advantages and disadvantages. In the case of surveillance, it definitely questions one's privacy but one needs to think that if the individual responsible for planning the terrorized attacks is also being monitored and probably we would be safe as a result of being watched.
- Surveillance using cameras in public places, which is being implied in almost all the metros, is recommended option and provides a lot of information needed for the investigations of any criminal activity involved, thereby saving a lot of time and resources for the government.
- Surveillance incorporate is also recommended, because it not only tracks the movements of the employees but also traces the outsider's activity in the building.
- Corporate leaders in India like Infosys etc have cameras installed at the entrance of every building. Employees may not like it but the need of being watched has come.
- Also, many of them use snooping tools to know the whereabouts of their family, with a concern for the loved one's security. Though there is a difference between snooping and surveillance, all is good for the sake of security.
- In India, if an official snooped on a young woman for the sake of her security, definitely does not arise the question of rights be legal, moral and ethical.
- The urge to surveillance rose because of the rise in insecurity of an individual. Had we been more moral to ourselves, more ethical to ourselves and more legitimate to ourselves we would not have to deal with such unnecessary technology for our security.
- In this entire scheme of things, the government has to be honest with its citizens. If the government itself hides the truth and gets involved in the scams the meaning of mass surveillance goes in vain.

Response to Technological Surveillance

- Many countries have now adopted digital media codes or rules and regulations to restrict the misuse of the data collected by various online platforms. In India, the recent Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 is also laid down on similar lines. The government has described these rules as a soft-touch self-regulatory mechanism.
- All media platforms will have to set up a grievances redressal and compliance mechanism, which should constitute a resident grievance officer, chief compliance officer, and a nodal contact person.

- The Ministry of Electronics & Information Technology has further ordered platforms to submit monthly reports on complaints received from users and actions taken. Finally, instant messaging apps will have to make provisions for tracking the first originator of a message in case it is asked by legitimate authorities. Apprehensions raised by companies are related to the latter part of the rule.
- Media platforms will have to accept the rules for the greater good. However, both sides will have to reconcile and find a middle way to ensure the safety of the citizens. On the other hand, specific rules will have to be laid down as to stating the purpose of tracking messages and how the data will be utilised.
- The government's initiative is timely as technology is outgrowing the legal-justice system. The new era is going to be the age of the digital world, however ethical themes as enshrined in international treaties and our constitution must always be upheld.
- Human dignity and the right to privacy under Fundamental Rights and the Universal Declaration

of Human Rights (UDHR) must guide the policies and actions of various entities. Values such as autonomy, equal power relationships, and control over technology are not explicitly named in the treaties but can be seen as part of following these fundamental and human rights.

◎ CONCLUSION:

Not only are existing protections weak but the proposed legislation related to the personal data protection of Indian citizens fails to consider surveillance while also providing wide exemptions to government authorities. In order to satisfy the ideal of due process of law, there needs to be an oversight from another branch of the government. As surveillance spyware becomes more affordable and interception becomes more efficient, there will no longer be a need to shortlist individuals. Everyone will be potentially subject to state-sponsored mass surveillance. The only solution is immediate and far-reaching surveillance reform.

'RULE OF BULLDOZER', WHAT ABOUT 'JUSTIFICATION' IN LAW?, THREAT TO PRINCIPLE OF NATURAL JUSTICE

CONTEXT:

Recently communal clashes broke out in a few of the states during processions to celebrate Ram Navami, with two persons killed, one at Lohardaga in Jharkhand and one at Khambat in Gujarat. It has been alleged that the authorities riding bulldozers have razed buildings or house extensions built "illegally" in neighbourhoods that recorded communal clashes recently in Delhi, Madhya Pradesh and Gujarat.

Critics have called these demolition drives a move to "bulldoze" a particular community. But officials defended their actions as "routine exercises" against illegal constructions. We take a look at what happened across the country and how institutional mechanism has failed to deliver justice.

◎ BACKGROUND:

- From Kolkata in the east to Gujarat in the west and from Delhi in the north to Andhra Pradesh in the south, violence and mayhem have broken out in the last two weeks.
- In the past two weeks, **Ram Navami and Hanuman Jayanti processions** have **descended into violence** and chaos across states in the country and are currently on edge.
- The festivals of Hanuman Jayanti and Ram Navami have been **marred by sectarian violence**, sparking concern that the country is becoming **more polarised** than ever **along Hindu-Muslim lines**.
- UP government had brought an ordinance to issue recovery notices to those accused of damaging public properties during riots and protests.

The Supreme Court has **questioned the procedure followed** and has taken a serious view of the matter and has ordered to halt the drive and **maintain the status quo**.

Uttar Pradesh and Karnataka, Haryana have laws in place for the recovery of damages to the property during a disturbance. From the administrative point of view, it may appear to be reasonable but it also endangers the fundamental rights of citizens.

◎ ANALYSIS:

Primarily our discussion shall be focused on the **principles of natural justice** in the light of administrative law, incorporating the **basic principle of fairness**, and the **right to be heard**.

Principle of Natural Justice:

- It involves a procedural requirement of fairness. It is also known as **substantial justice** or **fundamental justice** **Universal justice** or **fair play in action**. Principles of Natural Justice derived from the expression "*Jus Natural*" of the Roman Law, do not have a force of law as they may or may not form part of statute but they are necessary to be followed.
- The **principles of natural justice are not embodied rules and are not codified**. They are judge-made rules and are regarded as the counterpart of the **American procedural due process**.
- The principles of natural justice should be **free from bias** and parties should be given a fair opportunity to be heard and all the reasons and decisions taken by the court should be informed by the court to the respective parties.

Basis of the application of the principle of natural justice:

- The principles of natural justice, are based on two Latin maxims, (which were drawn from **jus natural**).

Three principles of natural justice have been recognized:

- Nemo Judex in causa sua** or **Nemo debet esse judex in propria causa** or Rule against bias (No man shall be a judge in his own cause). This principle is more popularly known as the *Doctrine of Bias*.

When it is said that **hear the other side**, it means that **hearing should not be** confined to only **auditory hearing**. It should be an **effective hearing**. It is absolutely essential to **hear both sides before** you make up your mind.

- ▶ **Audi Alteram partem** or the rule of fair hearing (hear the other side).
- ▶ **Speaking orders or reasoned decisions.**
- The **first two have come to us from the Roman Law** and the **third one is a recent Innovation** due to the rapid development of the constitutional as well as administrative law. The above rules make it clear that the judiciary must be **free from bias** and **should deliver pure and impartial justice**. Judges must **act judicially** and decide the case **without considering anything other than the principles of evidence**.

Despite the recent **knee jerk reaction of the government** India still retains the basic principle of justice in its laws and is supposed to still follow the rule of law. **Mobs and criminals** don't care for **natural justice or the rule of law**, but the **State is still bound by them** and can be held **accountable in the courts** if it acts without following the law.

- In a few of the recent developments the local **police have tried to argue** that they demolished properties which were **illegal encroachments**, but the **political stance** is taken up by the government and local authorities suggests that the demolitions were a **response to rioters and stone-pelters**.

Essentials of fair hearing:

To constitute a fair hearing, the following ingredients are to be satisfied.

- **Notice:** There is a duty on the part of the deciding authority to give notice to a person before taking any action against him. The notice must be reasonable and must contain the time, place, nature of hearing and other particulars.
- **Hearing:** Fair hearing in its full sense means that a person against whom an order to his prejudice is passed should be informed of the charges against him, be allowed to submit his explanation thereto, have a right to know the evidence both oral and documentary.

Justifying the Demolitions:

- Neither the Parliament nor any State Legislative Assemblies, allow the demolition of property of those accused of being involved in riots and damage to public/private property.
- **Scope of Criminal Law:**
 - ▶ **Punitive action** against an accused person can only take place **after conviction** in a court of law, which is of course the way in which the **right to be heard finds its place in criminal law**.

- ▶ The person **has to be informed** of the charges against them, a court **has to take cognisance** of the charges, the prosecution **has to provide evidence** to prove its case, and the **accused gets to present their own evidence** and **claim any defences** valid under the law. The court **has to weigh everything** and see if the **person's guilt has been proved beyond all reasonable doubt**.

Even if the accused are convicted, **Indian criminal law** only prescribes punishment in the form of imprisonment and/or fines, **not demolition of their property**. Any sort of "**retributive action**" which also runs the risk of being "**collective punishment**" is absolutely "**not allowed**" under Indian criminal law.

- In any case, even if certain people are ordered to pay compensation under the rule of law and their properties are attached to ensure payment is made, there is **no provision in the law for the demolition of properties**.
- It is unfortunate that the **iteration of law** has been cited by the government authorities in the recent happenings when bulldozing the houses of those accused of being rioters, still, the **demolition of the properties is not justified**.

Law on Illegal Encroachments:

- The only circumstance in which the demolition of a person's private property can be done is if there is any illegal construction, for instance by encroaching on another person's land, or if the structure fails to comply with regulations.
 - ▶ In Madhya Pradesh where Khargone saw "illegal encroachments" being bulldozed in the wake of the Ram Navami clashes, the **Rule 12 of the Madhya Pradesh Bhumi Vikas Rules 1984** specifies that notice needs to be sent to any person whose property violates rules. The recipient of the notice must also be given 10 days to either leave or make the building comply with the rules. Notably, while officials in the Khargone district administration said that those whose houses and businesses were razed were given prior notices, reports have claimed that this was not the case.
 - ▶ Similarly, **Section 343 of the Delhi Municipal Corporation Act 1957** also provides for a **notice to be served** ahead of demolishing any building that has been constructed illegally, without sanction, or in violation of building bylaws. The commissioner, according to this section, can order the owner or occupant to demolish the building within five to 15 days. Failing this, the commissioner may himself order the demolition of the structure.

Legality in demolishing properties of those accused in riots:

- There is no law that **allows for the demolition** of the property of those who stand accused of rioting or damaging public or private property.
- In a 2009 judgement the Supreme Court judgment had noted that since there was no law to recover damages for losses caused by violence, the high courts can take cognisance of such incidents of mass damage to public property on their own and set up a machinery to investigate and award compensation.
- Resorting to the **destruction of the properties** of alleged wrongdoers by means of **bulldozing** is clearly **against our constitutional ethos** and the criminal justice system, as also in **violation of the rights of accused persons**.

Law violates freedom of expression:

- Impartial implementation of laws** not only violates the fundamental rights enshrined in **Article 19** of the Constitution of **freedom of expression**, but it also **reflects the mentality of the executives** by leaving the scope for different interpretations.
- Be it the **altercation between Hindus and Muslims** as a Hanuman Jayanti procession in Northwest Delhi's Jahangirpuri or the clashes in Khargone city when a Ram Navami procession crossed the sensitive Talab Chowk area near Jama Masjid. The violence wasn't restricted to the streets, as the prestigious Jawaharlal Nehru University also witnessed protests and beatings on Ram Navami. One common thing that finds a place in both the issues is the **manner in which the justice has been delivered and it is worrying**.

Violation of the Right to Property:

- The freedom to acquire, hold and dispose of private property was originally a fundamental right under the Constitution in **Article 19(1)(f)**. In 1978, in line with the socialist ideals prevalent at the time, this fundamental right was repealed by a constitutional amendment.

- Article 31** of the Constitution not only **guarantees the right of private ownership** but also the **right to enjoy and dispose of property free from restrictions other than reasonable restrictions**. The article states that no person shall be deprived of his/her property, except by authority of law. However, this **does not mean that a person's private property can just be destroyed or taken away at the whims of the government**.
- Article 300A**, which was added to the Constitution after the repeal of Article 19(1)(f), says: **"No person shall be deprived of his property save by authority of law."**

This means that **any action which takes away a person's property** has to be **in accordance with an Act or Rules or other statutory instrument** passed by the central or state government, including the procedure established by such law. **This supports the basic concept of the right to be heard** and makes sure that a **person does not suffer** a loss of their property **without being given a chance to defend themselves**.

CONCLUSION:

- Any country which doesn't want to be a **dictatorship or a feudal monarchy** has to follow the laid principles of natural justice. These principles find their mention in the **"Magna Carta"** which argues in favour of the trinity of **"hear, interrogate and adjudicate."**
- The **contentious practise of using bulldozers** to pull down residential and commercial properties of persons **"suspected"** goes against the spirit of **impartial justice** and results in **irreparable harm** to the residents of the area. **The consequence of rampant bulldozing without proper hearing** will be faced by common people of another community. These actions are short-lived but the scar has a lasting impact and raises questions about the justice delivery mechanism in the country. It is important that the court should send a message indicating that the **rule of law firmly prevails in India**.

SECTION: B

(PRELIMS)

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BELUR'S HISTORIC CHENNAKESHAVA TEMPLE

- © **CONTEXT:** Continuing with the tradition, rathotsava (chariot or car festival) at the Chennakeshava temple in Belur started with Moulvi reads excerpts from the Quran (Koran)

The Quran Tradition

- The temple follows its age-old tradition of reciting excerpts from Quran by a Maulvi to mark the celebration of the annual car festival.

About Chennakeshava temple

- Chennakeshava Temple is also known **Vijaya Narayana Temple**.
- **Built by: Hoysala King Vishnuvardhana** to commemorate his victory over the Cholas in 1116 AD.
 - It is believed that the temple is built by– **Dasoja and Chavana**, a father and son duo.
- **Belief:** This star shaped temple is located in Belur and is dedicated to **Lord Vishnu**
- Beluru (also known earlier as Velapuri, Velur and Belapur in olden times) is situated on the banks of **Yagachi River** and was one of the capitals of the **Hoysala Empire**.



Hoysala Temples in Karnataka

- Some other Hoysala temples include the **Hoysaleswara Temple** at Halebidu and the **Kesava Temple** at Somanathapura.
- There are several other examples of Hoysala craftsmanship such as the temples at **Hosaholalu, Belavadi, Amruthapura, Basaralu, Mosale, Arasikere, Nuggeshalli and Kikkeri**.
- The Hoysala temples are protected monuments under the **Archaeological Survey of India (ASI)**.
- Recently, India has finalised the **Hoysala Temples** in Karnataka as its nominations for consideration in the **World Heritage Sites List for 2022-23**.
 - The Hoysala temples in Belur and Halebeedu in Hassan district and Somanathapura in Mysuru district have been nominated.

GURU TEGH BAHADUR'S 400TH BIRTH ANNIVERSARY

- © **CONTEXT:** Prime Minister Narendra Modi on April 21, 2022, released a commemorative coin and postage stamp to mark the 400th birth anniversary of Guru Tegh Bahadur and recalled the sacrifice of the ninth Sikh guru in protecting culture.

About Guru Tegh Bahadur (1621–1675)

- Guru Tegh Bahadur was the ninth of ten Gurus of the Sikh religion.

- He was born at Amritsar in 1621 and was the youngest son of Guru Hargobind.
- His term as Guru ran from 1665 to 1675.
- One hundred and fifteen of his hymns are in Guru Granth Sahib.
- There are several accounts explaining the motive behind the assassination of Guru Tegh Bahadur on Aurangzeb's orders.
- He stood up for the rights of Kashmiri Pandits who approached him against religious persecution by Aurangzeb.
- He was publicly killed in 1675 on the orders of Mughal emperor Aurangzeb in Delhi for himself refusing Mughal rulers and defying them.
- Gurudwara Sis Ganj Sahib and Gurdwara Rakab Ganj Sahib in Delhi mark the places of execution and cremation of his body.
- His martyrdom is remembered as Shaheedi Divas of Guru Tegh Bahadur every year on 24 November.
- It is based on the Nanakshahi calendar which was released by the Shiromani Gurdwara Parbandhak Committee in 2003.



About the Sikh Gurus:

- **Guru Nanak:** He was the first guru of Sikhs and gave the first teaching and true meaning to Sikhism. He is known as the founder of the religion.
- **Guru Angad:** He was the second guru and popularized the Gurumukhi script.
- **Guru Amar Das:** He established the Manji and Piri System of religious missions. He also asked Akbar to ban the toll levied from non-muslim travelers.
- **Guru Ram Das:** He composed the four Lawans of the Anand Karaj which is a distinct marriage code for Sikh. He laid the foundation of Amritsar City.
- **Guru Anjan:** He was the 5th Guru and compiled the Guru Grant Sahib, the holy text of Sikhism. He was executed by Jahangir, the Mughal emperor.
- **Guru Har Gobind:** He started the practice of the Sikh army – saint warriors.
- **Guru Har Rai:** The 7th guru fought against the atrocities of Muslim rulers.
- **Guru Har Krishan:** He was the youngest and for the smallest duration. He died due to smallpox.
- **Guru Tegh Bahadur:** He was the second last guru and was executed by Aurengzeb.
- **Guru Gobind Singh:** He was the last guru and was assaulted by Wazir Khan, a Mughal emperor.

THE FUNCTIONING OF THE ENFORCEMENT DIRECTORATE

© **CONTEXT:** The Enforcement Directorate (ED) is in the news now and often.

About Enforcement Directorate (ED):

- It was established as '**Enforcement Unit**' in **1956** under the **Department of Economic Affairs**, for handling Exchange Control Laws violations under the **Foreign Exchange Regulation Act (FERA)**.
- Today, Directorate of Enforcement is a **Multi-Disciplinary Organization** mandated with the task of enforcing the provisions of **two special fiscal laws – Foreign Exchange Management Act, 1999 (FEMA) and Prevention of Money Laundering Act, 2002 (PMLA)**.
- Whenever any offence is registered by a local police station, which has generated proceeds of crime **over and above ₹1 crore**, the ED steps in.
 - The ED can also **carry out search (property) and seizure (money/documents) if it suspects money has been laundered**.
- Since the PMLA was enacted only in 2005, any ill-gotten property acquired before the year 2005 has no case under PMLA.
- **Functions:-**
 - To collect, develop and disseminate intelligence relating to violations of FEMA, 1999, the intelligence inputs are received from various sources such as Central and State Intelligence agencies, complaints etc.
 - To investigate suspected violations of the provisions of the FEMA, 1999 relating to activities such as "hawala" foreign exchange racketeering, non-realization of export proceeds, non-repatriation of foreign exchange and other forms of violations under FEMA, 1999.
 - To adjudicate cases of violations of the erstwhile FERA, 1973 and FEMA, 1999.
 - To realize penalties imposed on conclusion of adjudication proceedings.
 - To handle adjudication, appeals and prosecution cases under the erstwhile FERA, 1973
 - To process and recommend cases for preventive detention under the Conservation of Foreign Exchange and Prevention of Smuggling Activities Act (COFEPOSA)
 - To undertake survey, search, seizure, arrest, prosecution action etc. against offender of PMLA offence.
 - To provide and seek mutual legal assistance to/from contracting states in respect of attachment/confiscation of proceeds of crime as well as in respect of transfer of accused persons under PMLA.

From where does the ED get its powers?

- As per the Prevention of Money Laundering Act, the ED got its power to investigate under **Sections 48** (authorities under act) and **49** (appointment and powers of authorities and other officers).
- If money has been laundered abroad, **the PMLA court** (constituted as per the Act) has the right to send a letter of rogatory **under Section 105** (reciprocal arrangements regarding processes) of the Code of Criminal Procedure.

Other roles and functions of the ED:

- The ED carries out search (property) and seizure (money/documents) after it has decided that the money has been laundered, under Section 16 (power of survey) and Section 17 (search and seizure) of the PMLA.
 - On the basis of that, the authorities will decide if arrest is needed as per Section 19 (power of arrest).
- Under Section 50 (powers of authorities regarding summons, production of documents and to give evidence etc), the **ED can also directly carry out search and seizure without calling the person for questioning**.

- It is not necessary to summon the person first and then start with the search and seizure.
- If the person is arrested, the **ED gets 60 days to file the prosecution complaint (chargesheet) as the punishment under PMLA doesn't go beyond seven years.**
- If no one is arrested and only the property is attached, then the prosecution complaint along with attachment order is to be submitted before the adjudicating authority within 60 days.

E-DAR PORTAL TO SPEED UP ACCIDENT COMPENSATION CLAIMS

◎ CONTEXT:

The Ministry of Roads, Transport and Highways (MoRTH) has developed the portal named 'e-DAR' (e-Detailed Accident Report).

About 'e-DAR' (e-Detailed Accident Report):

- The portal named '**e-DAR' (e-Detailed Accident Report)** is a web portal designed by the **government in consultation with insurance companies** will provide instant information on road accidents with a few clicks and help accelerate accident compensation claims, bringing relief to victims' families.
 - Digitalised Detailed Accident Reports (DAR) will be uploaded on the portal for easy access.
- The web portal **will be linked to the Integrated Road Accident Database (iRAD).**
 - From iRAD, applications to more than 90% of the datasets would be pushed directly to the e-DAR. Stakeholders like the police, road authorities, hospitals, etc., are required to enter very minimal information for the e-DAR forms.
 - Thus, e-DAR would be an **extension and e-version of iRAD.**

About iRAD

- The Integrated Road Accident Database (iRAD) Project is an **initiative of the Ministry of Road Transport and Highways (MoRTH).**
- It is funded by **World Bank.**
- **Objective:** To improve road safety in the country by **enriching the accident databases from every parts of the country.**
- The outcome of the project would be **enhanced road safety** i.e. 'Safe Road for All' in India.

- e-DAR portal would **conduct multiple checks against fake claims** by conducting a sweeping search of vehicles involved in the accident, the date of accident, and the First Information Report number.
- The portal would be **linked to other government portals like Vaahan** and would get access to information on driving licence details and registration of vehicles.
- For the benefit of investigating officers, the portal would provide geo tagging of the exact accident spot along with the site map.
 - This would **notify the investigating officer on his distance from the spot** of the incident in the event the portal is accessed from any other location.
- Details like photos, video of the accident spot, damaged vehicles, injured victims, eye-witnesses, etc., would be uploaded immediately on the portal.

NOD TO 20% FDI IN LIC

◎ **CONTEXT:**

The cabinet recently approved a proposal to allow up to 20% foreign direct investment (FDI) in Life Insurance Corporation of India (LIC) through the automatic route, a move that will facilitate the insurer's upcoming initial public offer (IPO).

Key Notes:

- At present, the FDI policy **does not prescribe any specific** provision for foreign investment in LIC which is a **statutory corporation** established under LIC Act, 1956.
 - LIC is fully owned by the government.
 - It was set up in 1956.
 - It has the biggest share in India's insurance business.
- The policy permits FDI in insurance companies and intermediaries or insurance intermediaries in the insurance sector.
- The **FDI ceiling for public sector banks is 20%** on the government approval route.
 - While the government had **last year** raised the FDI limit in the insurance sector to 74% from 49%, it **did not cover LIC** that is governed by a specific legislation.
- Since LIC does not fall in any of these categories and no limit is prescribed for foreign investment in LIC under the LIC Act, the government has decided to allow foreign investment up to 20% for LIC and other corporate bodies.
- In order to expedite the capital raising process, such FDI has been kept on the automatic route, as is in the case of the rest of the insurance sector.
- The government expects to mobilize **Rs 63,000-66,000 crore** from the proposed share sale to meet its disinvestment target of Rs 78,000 crore for FY 2021-22.
- In most contexts, disinvestment typically refers to sale from the government, partly or fully, of a government-owned enterprise.
- A company or a government organisation will typically disinvest an asset either as a strategic move for the company, or for raising resources to meet general/specific needs.

NFT BUBBLE




◎ **CONTEXT:**

People are increasingly investing in NFTs in hope to get rich quickly without assessing risks and taking any due consideration.

What is NFT?

- Unlike, a fungible asset that can be readily interchanged - like money, a non-fungible token or NFT is unique digital asset that cannot be interchanged.
- NFTs can really be anything digital like drawings, music etc. but a lot of the current excitement is around using the tech to sell digital art.
- NFTs, can help artwork in getting “tokenized” thus creating a digital certificate of ownership that can be bought and sold.
- NFTs may also contain smart contracts that can give the artist, for example, a cut of any future sale of the token.
- It is backed by Blockchain technology.
- For the uninitiated, Blockchain is a distributed ledger where all transactions are recorded. It is like your bank passbook, except all your transactions are transparent and can be seen by anyone and cannot be changed or modified once recorded.
- However NFT’s does not prevent people from copying the digital art.
- Most NFTs are part of the Ethereum blockchain. However, other blockchains can have their own versions of NFTs.

Fungible items, on the other hand, can be exchanged because their value defines them rather than their unique properties.

	Fungible My \$10 is valued the same as your \$10
	Semi-fungible We both have tickets to the show, although the seat numbers could affect the value
	Non-fungible Represents something unique in value

How is an NFT different from cryptocurrency?

- NFTs and cryptocurrencies are very different from each other. While both are built on Blockchain, that is where the similarity ends.
- Cryptocurrency is a currency and is fungible, meaning that it is interchangeable.
 - **For instance**, if you hold one crypto token, say one **Ethereum**, the next Ethereum that you hold will also be of the same value.
- But NFTs are non-fungible that means the value of one NFT is not equal to another. Every art is different from other, making it non fungible, and unique.

SBI RAISES MARGINAL COST OF FUNDS-BASED LENDING RATES (MCLR)

◎ **CONTEXT:**

State Bank of India (SBI), India’s largest commercial bank, recently raised the marginal cost of funds-based lending rates (MCLR) for the first time in three years, signalling that the soft rates regime that has prevailed since 2019 may be over.

About Marginal Cost of Funds-Based Lending Rates (MCLR):

- The marginal cost of funds-based lending rate (MCLR) is the **minimum interest rate** that a bank can lend at.
- MCLR is determined **internally by the bank** depending on the period left for the repayment of a loan.
- The **RBI introduced the MCLR methodology for fixing interest rates** from 1 April 2016. It replaced the base rate structure, which had been in place since July 2010.
- It is **applicable to fresh corporate loans and floating rate loans** taken before October 2019.
- RBI then **switched to the external benchmark linked lending rate (EBLR) system** where lending rate is linked to benchmark rates like repo or Treasury Bill rates.

Other important rates

- **Repo rate:** The interest rate that the RBI charges when commercial banks borrow money from it is called the repo rate.
- **Reverse repo rate:** The interest rate that the RBI pays commercial banks when they park their excess cash with the central bank is called the reverse repo rate
- **Base rate:** Base Rate is the lending rate calculated based on the total cost of funds of the banks and is the minimum interest rate at which a bank can lend except for loans to its own employees, its retired employees and against bank's own deposits.
- **PLR:** PLR (Prime Lending Rate) is the internal benchmark rate used for setting up the interest rate on floating rate loans sanctioned by **Non-Banking Financial Companies (NBFC) and Housing Finance Companies (HFC)**.
 - ▶ PLR rate is calculated based on average cost of funds.
 - ▶ NBFC and HFC generally price their loan at discount on their existing PLR.
- **Treasury bills or T-bills:** They are money market instruments, are short term debt instruments issued by the Government of India.

What changes will be seen after increase in MCLR?

- EMLs are set to rise
- Interest rates will rise
- Banks expect a repo rate hike
- Deposit rates will also rise

‘MAHABALI FROG’ MAY BE KERALA’S OFFICIAL AMPHIBIAN

◎ CONTEXT:

The purple frog, one of the rarest frog species endemic to the Western Ghats, would soon be declared as Kerala’s official amphibian.

About Mahabali or Maveli Frog:

- The purple frog (or pig-nosed frog) spends much of its life underground, emerging briefly for a few days each year at the start of the monsoons to breed.
- The purple frog is one of only two species in the family **Nasikabatrachidae**.
- This family is endemic to the Western Ghats of India and has been evolving independently for around 100 million years.

- Molecular evidence has found the purple frogs to be most closely related to a family of tiny frogs only found on the Seychelles.
- It is thought the two families shared a common ancestor that was subsequently isolated on different landmasses following the breakup of the supercontinent Gondwana.
- As it is a fossorial (burrowing) species, the purple frog was long overlooked by science, being formally described in only 2003, despite already having a number of local names.
- The tadpoles are adapted to living in torrents and have specialised sucker-like mouthparts which they use to cling onto the algae covered rocks where they feed.
- The purple frog is listed as Endangered by the IUCN Red List, and is threatened by deforestation from expanding cultivation, in addition to consumption and harvesting by local communities.



PUNJAB TO USE ANCIENT BROADCASTING TECHNIQUE TO GROW RICE THIS KHARIF, SAVE GROUNDWATER

◎ CONTEXT:

The Punjab government has decided to bring an area of 1.2 million hectare (mha) of under the Direct Seeding of Rice (DSR) method in the upcoming Kharif sowing season to conserve water while sowing paddy.

- This is double the area that was sown under DSR in 2021 (0.6 mha).

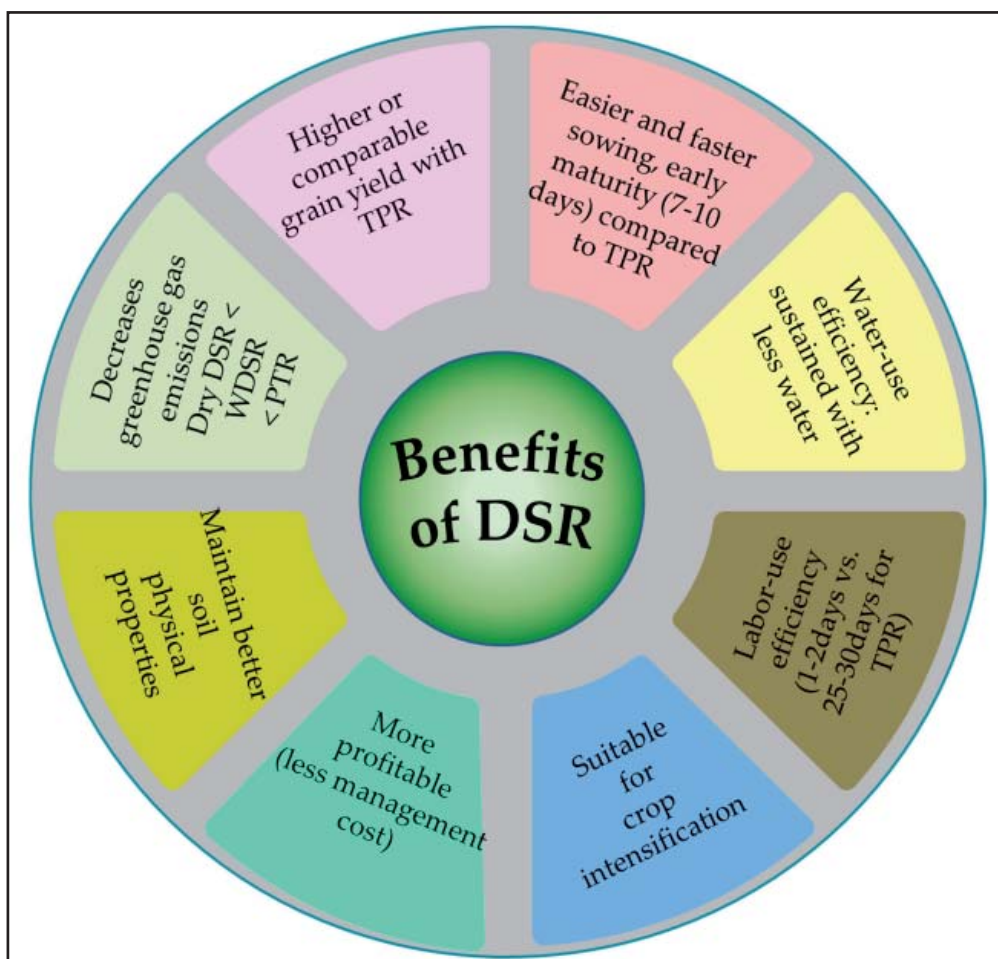
Direct Seeding of Rice (DSR) method:

- DSR is direct seeding of rice in which seeds are **sown in the field rather than by transplanting seedlings from the nursery**.
- It aims to **sow short duration and high yield varieties**.
- It is done through DSR machines which are used for planting seeds of rice directly into the fields.
- DSR is also called the '**broadcasting seed technique**', under which seeds are directly drilled in the fields.
- The field is **laser levelled and pre-sowing (rauni) irrigation** is done.
- The field is **prepared to optimum soil moisture condition** and paddy (non-basmati) is seeded immediately.
- This technique **saves groundwater** and thus electricity, as opposed to the traditional water-intensive method.
- It can help **reduce water consumption by as much as 35 per cent** over the traditional process of transplanting rice seedlings from a nursery to waterlogged fields.

Transplanting Paddy:

- In transplanting paddy, farmers prepare nurseries where the paddy seeds are first sown and raised into young plants.

- The nursery seed bed is 5-10% of the area to be transplanted.
- These seedlings are then uprooted and replanted 25-35 days later in the puddled field.



Rice

- Rice is a staple food for the overwhelming majority of the population in India.
- It is a **kharif crop** which requires **high temperature, (above 25°C)** and **high humidity** with annual **rainfall above 100 cm**.
 - ▶ In the **areas of less rainfall, it is grown with the help of irrigation.**
- In **southern states and West Bengal** the climatic conditions allow the cultivation of **two or three crops** of rice in an agricultural year.
 - ▶ In West Bengal farmers grow three crops of rice called '**aus**', '**aman**' and '**boro**'.
- About **one-fourth of the total cropped area in India is under rice cultivation.**
 - ▶ **Leading producer states:** West Bengal, Uttar Pradesh, and Punjab.
 - ▶ **High Yielding States:** Punjab, Tamil Nadu, Haryana, Andhra Pradesh, Telangana, West Bengal and Kerala.
- Punjab and Haryana are **not traditional rice growing areas.**
 - ▶ Rice Cultivation in the irrigated areas of Punjab and Haryana was introduced in the 1970s following the **Green Revolution.**
 - ▶ Almost the entire land under rice cultivation in Punjab and Haryana is irrigated.

NEW SHRIMP SPECIES DISCOVERED OFF LAKSHADWEEP

◎ CONTEXT:

Scientists from the ICAR-National Bureau of Fish Genetic Resources (NBFG), focused on documentation of aquatic genetic resources with special attention on fish and shell fish resources, have discovered a new species of shrimp.

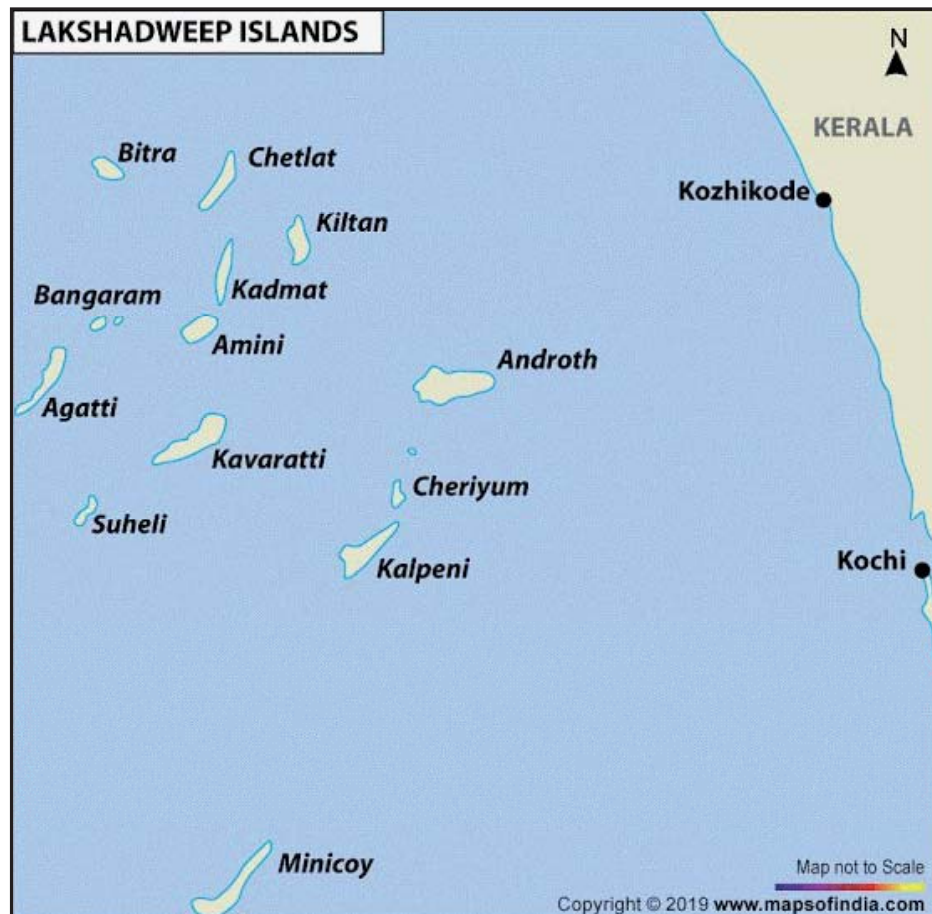
About the new species:

- It is named **Actinimenes koyas**.
- The species was collected at a **depth of 1.0–2.0 m** from the **coral atoll of Agatti Island**, which is part of the **Lakshadweep group of islands**.
- This new species has been named '**Koyas**' to honour the local community on the Lakshadweep islands.
 - Koyas form an important **ethnic community** on the islands, who have made a significant contribution to the development and preservation of the heritage of the society.



About Agatti Island:

- The Agatti Island is at a distance of 459 km (248 nautical miles) from Kochi and is located the **west of Kavaratti Island**.



- Agatti has one of the most **beautiful lagoons in Lakshadweep**.
- In Agatti **coral growths** and **multicoloured coral fishes** abound in its lagoons.
 - **Fishing** is the most important industry of Agatti which is perhaps the only island besides Minicoy getting surplus fish.
 - Next to Fishing, **Coir and Copra are the main industries**.
- The **airport** is built on this island.
- Agatti is the **virtual gateway to the islands**.

About National Bureau of Fish Genetic Resources:

- ICAR-National Bureau of Fish Genetic Resources (ICAR-NBFGR) was established in December **1983** in a rented premises at Allahabad under the aegis of Indian Council of Agricultural Research to undertake research related to the conservation of fish germplasm resources of the country.
- The Bureau's **permanent infrastructure was developed at Lucknow, U.P in 1999**.
- **Vision:** The Institute's vision is assessment and conservation of fish genetic resources for intellectual property protection, sustainable utilization and posterity.
- **Mandate:** The mandate of the Institute includes collection, classification and cataloguing of fish genetic resources of the country, maintenance and preservation of fish genetic material for conservation of endangered fish species and evaluation and valuation of indigenous and exotic fish species.
- The Institute has taken up **capacity building programmes for the sustainable utilisation of the native germplasm** for livelihood upliftment of the local people.
- NBFGR is also **attempting to document the biodiversity of shallow water organisms** in the waters off different Lakshadweep islands.
- NBFGR has been **conducting many exploratory surveys off the Lakshadweep islands** with special focus on fish and shrimp species.
 - The studies have revealed great diversity of symbiotic communities, which mostly comprise colourful and undescribed shrimp species.
- Recently, **NBFGR scientists had discovered new shrimp species** - Periclimenella agattii (2019) named after the Agatti Island and Arabianensis (2020) named after the Arabian Sea.

About Indian Council of Agricultural Research (ICAR):

- The Indian Council of Agricultural Research (ICAR) is an **autonomous organisation** 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**.
- The Council is the **apex body for co-ordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences** in the entire country.
- It is engaged in cutting edge areas of science and technology development and its scientists are internationally acknowledged in their fields.

VICE PRESIDENT CONFERS INTERNATIONAL GANDHI AWARD FOR LEPROSY, 2021

◎ **CONTEXT:** Vice President recently conferred the International Gandhi Award for Leprosy, 2021 to Dr. Bhushan Kumar of Chandigarh and Sahyog Kushtha Yagna Trust, Gujarat.

About the International Gandhi Awards for Leprosy award:

- The annual award has been instituted by Gandhi Memorial Leprosy Foundation to recognise the work of individuals and organisations who have worked tirelessly to fight this disease and the prejudices associated with it.
- The award commemorates the compassion that Gandhiji possessed and the service he rendered toward people afflicted with leprosy.

About Leprosy:

- Leprosy also known as Hansen's disease (HD) is a chronic infection caused by the bacteria *Mycobacterium leprae* and *Mycobacterium lepromatosis*.
- Leprosy is not highly infectious. It is transmitted via droplets from the nose and mouth during close and frequent contacts with untreated cases.
- Leprosy is curable with the combination of drugs known as Multi-Drug Therapy (MDT).

World Health Organisation's Global Leprosy Strategy (2016): The key interventions as provided in the Strategy include:

- Detecting cases early before visible disabilities occur with a special focus on children as a way to reduce disabilities and reduce transmission;
- Targeting detection among higher risk groups through campaigns in highly endemic areas or communities; and
- Improving health care coverage and access for marginalized populations among others.

THE NEPTUNE CRUISE MISSILE THAT SEVERELY DAMAGED A RUSSIAN WARSHIP

◎ **CONTEXT:** Ukraine claimed to have severely damaged the Russian Black Sea Fleet Flagship 'Moskva' off the coast of Odessa via a missile strike on the ship.

What is the type of cruise missile that hit the Moskva?

- The Ukrainians claim that the Moskva was hit by two anti-ship cruise missiles called the Neptune. Ironically, the design of this missile is based on a Russian Kh-35 cruise missile which goes by the NATO name of AS-20 Kayak.
- The Neptune Missile system was inducted into the Ukrainian Defence Forces in March 2021 after being in development for around six years.
- The cruise missile was developed in haste by the military as the Russian threat to the coastal areas of Ukraine was growing rapidly since the occupation of Crimea in 2014.
- According to the Ukrainian Ministry of Defence, the Neptune is a coastal anti-ship cruise missile which is capable of destruction of naval vessels in a range of about 300 km.

Neptune missile



Type:	Anti-ship cruise missile
Warhead:	High explosive fragmentation
Weight:	870 kg
Length:	5.05m
Range:	170 miles (280 km)

Source: BBC research, Ukroboronprom, Government of Ukraine



About Moskva, the ship that was hit by the missile:

- Moskva is a guided missile cruiser of the Russian Navy named after the city of Moscow.
- It has a displacement of 12,490 tons.
- It is the flagship of the Black Sea Fleet of the Russian Navy and carries a crew of around 500 personnel.
- The Moskva was originally commissioned as the Slava in 1983.
- It was recommissioned in 2000 as the Moskva with refurbished weapon systems and electronics.

Moskva



Crew:	510
Length:	186.4m
Speed:	32 knots (37 mph, 59 kmph)
Range:	10,000 nm (12,000 miles, 19,000 km)
Aircraft:	1 helicopter

Source: BBC research, Reuters



INDIA'S FIRST UNMANNED EARTH SATELLITE 'ARYABHATA' SHOT INTO SPACE ON APRIL 19, 1975

© CONTEXT:

April 19 is a special day for India's space mission, as on this day in 1975, India's first unmanned Earth satellite, Aryabhata, was shot into space.

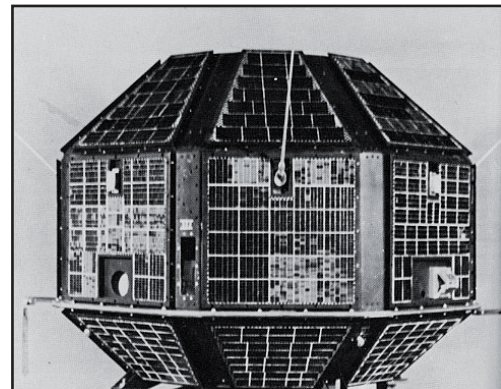
Aryabhata

- The **Aryabhata spacecraft**, named after the famous **Indian astronomer**, was **India's first satellite**.

- It was completely designed and fabricated in India and launched by a **Soviet Kosmos-3M rocket** from Kapustin Yar on April 19, 1975.

Mission	Scientific/ Experimental
Weight	360 kg
On board power	46 Watts
Communication	VHF band
Stabilization	Spinstabilize
Payload	X-ray Astronomy Aeronomy & Solar Physics
Launch date	April 19, 1975
Launch site	Volgograd Launch Station (presently in Russia)
Launch vehicle	C-1 Intercosmos
Orbit	563 x 619 km
Inclination	50.7 deg
Mission life	6 months(nominal), Spacecraft mainframe active till March,1981
Orbital Life	Nearly seventeen years (Re-entered on February 10,1992)

- India became world's 11th nation** and the second developing country after China to orbit a satellite.
- The mission was **X-ray astronomy for the detection and study of X-ray emission** from outer space, study of solar neutron and gamma rays emanating from the sun, and study of aeronomy including ionosphere.
- All faces (except the top and bottom) were **covered with solar cells**. A power failure halted experiments after 4 days in orbit.



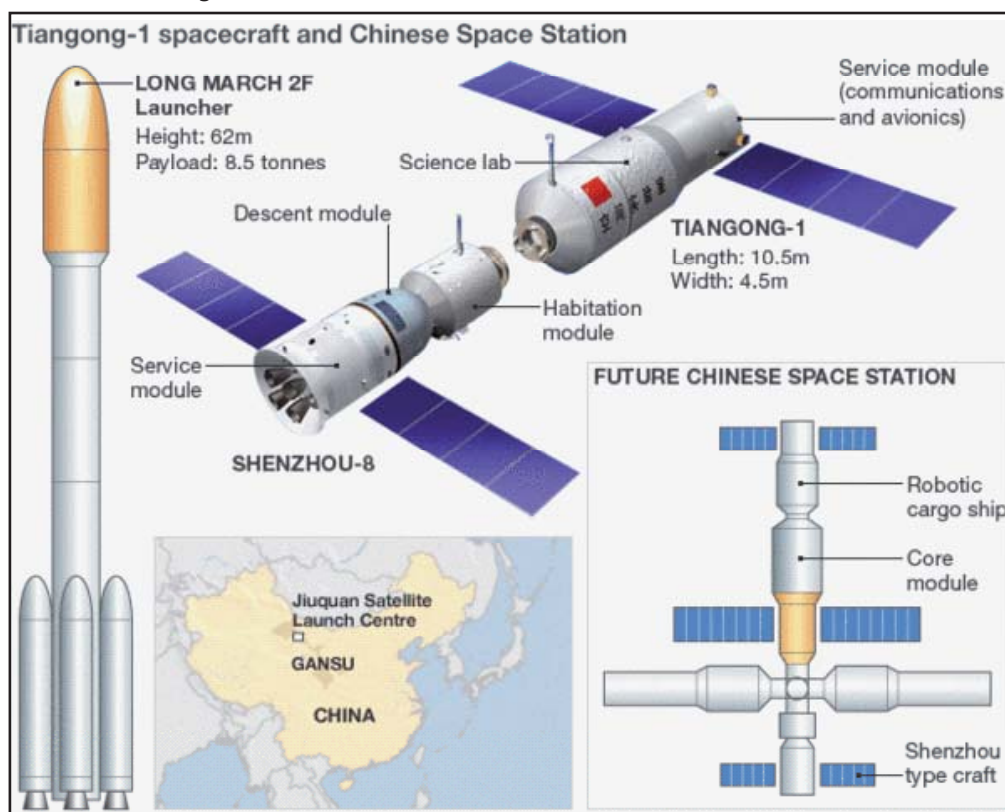
CHINA SENDING UP NEXT SPACE STATION CREW IN JUNE

- ◎ **CONTEXT:** China will launch three more astronauts to its newest space station in June after the latest crew returned recently following a six-month stay in orbit.

About China's space station – Tiangong:

- Tiangong is China's space station in low Earth orbit.
- Tiangong is a space station that the Chinese Manned Space Agency (CMSA) is building in low Earth orbit.

- In May 2021, China launched Tianhe, the first of the orbiting space station's three modules, and the country aims to finish building the station by the end of 2022.
- CMSA hopes to keep Tiangong inhabited continuously by three astronauts for at least a decade.
- The space station will host many experiments from both China and other countries.
- Tiangong, which means "Heavenly Palace," will consist of Tianhe, the main habitat for astronauts, and two modules dedicated to hosting experiments, Mengtian and Wentian, both of which are due to launch in 2022.
- Shenzhou spacecraft, launching from Jiuquan in the Gobi Desert, will send crews of three astronauts to the space station, while Tianzhou cargo spacecraft will launch from Wenchang on the Chinese island of Hainan to deliver supplies and fuel to the station.
- Tiangong will be much smaller than the International Space Station (ISS), with only three modules compared with 16 modules on the ISS.
- Tiangong will also be lighter than the ISS, which weighs about 400 tons (450 metric tons) following the recent addition of Russia's Nauka module.



RESEARCHERS SUCCESSFULLY USE COST-EFFECTIVE CHERENKOV RADIATION DEVICE TO DETECT CANCER

© **CONTEXT:**

Researchers have successfully developed a cost-effective method to detect cancer using Cherenkov radiation.

About Cherenkov radiation:

- Cherenkov radiation is a particular kind of radiation that is **emitted by charged particles (like electrons) when they pass through some mediums.**

- A good example of this kind of radiation is the characteristic **blue glow of underwater nuclear reactors**.
- A new research has successfully used this kind of **radiation to detect and locate the presence of cancer in patients**.
- The Cherenkov radiation is analogous with the more well-known **sonic boom effect**.
 - If an aircraft moves slower than the sound speed in a medium, the air deflection is smooth around the wings of the aircraft.
 - However if the motion speed exceeds the medium sound velocity, then a sudden pressure change would happen and shock waves propagate away from the aircraft in a cone at the speed of sound.
- A **Cherenkov luminescence imaging (CLI) procedure** where charged particles released by the system cause the target tissue (the tumour) to vibrate and stop vibrating in such a way that they emit light which can be captured by a camera.
- **Advantage:** It is much cheaper to purchase and use than current nuclear imaging technology.
- **Disadvantage:** CLI images are not nearly as precise as those from PET/CT scans but the researchers believe that CLI can be used as an initial diagnostic test or assessment.

A GEOMAGNETIC STORM IS EXPECTED TO HIT THE EARTH. WHAT IS IT, AND HOW IS IT CAUSED?

- ◎ **CONTEXT:** Space-monitoring agencies have predicted that a strong geomagnetic storm is likely to hit the earth.
- **The Centre for Excellence in Space Sciences, India said that there is a “very high probability of earth impact” due to solar activity causing the phenomenon.**

Geomagnetic storm:

- A geomagnetic storm is a **disturbance in the earth’s magnetosphere**, which is the area around the planet controlled by its magnetic field.
- The **earth’s magnetosphere** protects its inhabitants from most of the particles emitted by the sun.
- When a **coronal mass ejection (CME)** or a high-speed stream reaches the earth, it strikes the planet’s magnetosphere.
- If the incoming solar magnetic field is directed southwards, it interacts strongly with the earth’s own magnetic field that is opposite in direction, causing disturbances.
- The changes produced in the earth’s magnetic field as a result of this interaction allow solar wind particles to stream down the magnetic field lines and hit the atmosphere near the poles.
- Solar winds deeply **impact the shape of the earth’s magnetosphere**, and variations in solar winds cause geomagnetic storms on earth.
- At the surface of the earth, a geomagnetic storm can **result in a rapid decline in the earth’s magnetic field strength**. This decrease can last for around 6 to 12 hours and gradually recovers over several days.
- Sunspots are dark areas on the solar surface and contain strong, shifting magnetic fields. These are formed when areas on the surface of the sun cool slightly – from around 6,000 °C to about 4,200 °C — due to strong magnetic fields that emerge through the solar surface. Sunspots appear as dark spots against the otherwise bright sun.

Coronal Mass Ejection (CME):

- A coronal mass ejection is a **large expulsion of plasma and magnetic field** from the sun's corona.
- Plasma is the **highly ionised gas present on the sun**, while corona is the outermost part of the sun's atmosphere.
- The corona is structured by strong magnetic fields. If these fields are closed, the solar atmosphere can release sudden, violent bubbles of gas and magnetic fields which constitute the CME.
- One large CME is capable of containing a billion tonnes of matter.
- CMEs can travel at varying speeds – as slow as 250 km per second to as high as 3,000 km per second.

What are the hazards associated with geomagnetic storms?

- According to the U.S. Geological Survey (USGS), geomagnetic storms can **impact long-range radio communication and global positioning system (GPS) devices**.
- These storms can also **damage satellite electronics and expose astronauts and high-altitude pilots to increased levels of radiation**.
- **Voltage surges** due to altered magnetic activity can also affect power supply on the earth and cause outages.
- Geomagnetic storms are also linked with **intensified northern lights** visible in the skies of higher latitudes.

What is a Solar Storm?

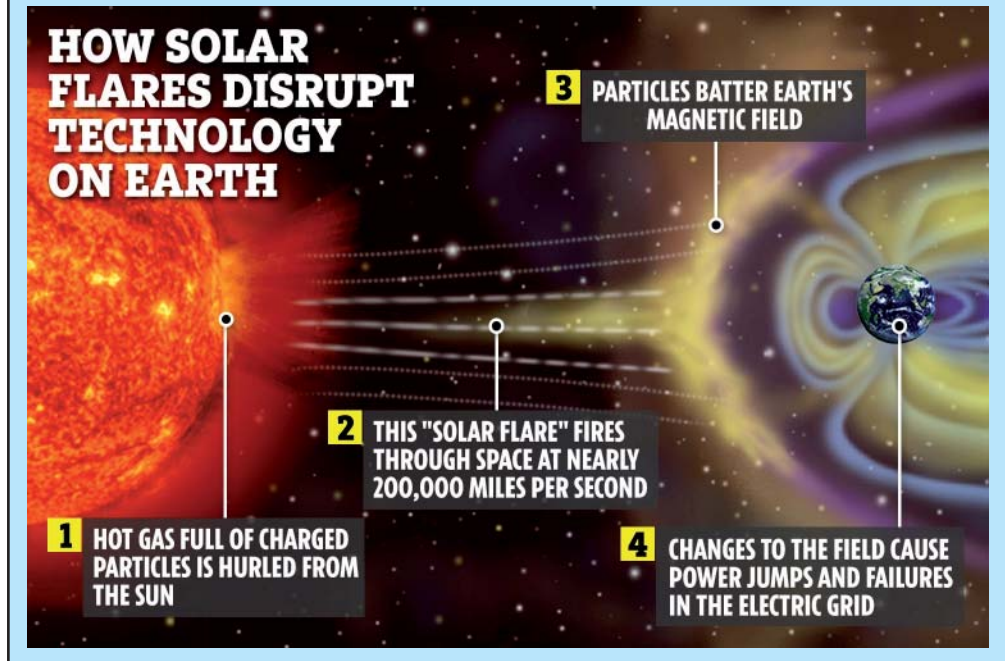
- Solar storms are magnetic plasma ejected at great speed from the solar surface.
- They occur during the release of magnetic energy associated with sunspots ('dark' regions on the Sun that are cooler than the surrounding photosphere), and can last for a few minutes or hours.
- Solar storms can hit operations of space-dependent services like global positioning systems (GPS), radio, and satellite communications.

Types of Solar Storms:

Solar Storms come in the form of the following types:

- **Solar Flares:** A solar flare is a sudden flash of increased brightness on the Sun, usually observed near its surface and in proximity to a sunspot group.
 - ▶ Powerful flares are often, but not always, accompanied by a coronal mass ejection.
 - ▶ Even the most powerful flares are barely detectable in the total solar irradiance (the "solar constant").
- **Coronal Mass Ejection:** A coronal mass ejection (CME) is a significant release of plasma and accompanying magnetic field from the solar corona.
 - ▶ They often follow solar flares and are normally present during a solar prominence eruption.
- **Geomagnetic Storm:** A geomagnetic storm is a major and temporary disturbance of Earth's magnetosphere.
 - ▶ They occur when a surge of solar wind (charged particles from the sun) interacts with Earth's magnetic field and generates charged particles and currents in Earth's upper atmosphere.
 - ▶ Geomagnetic storms interfere with high-frequency radio communications and GPS navigation systems. Aircraft flights, power grids, and space exploration programmes are vulnerable.

- **Solar Particle Events:** A solar particle event or solar proton event (SPE), occurs when particles (mostly protons) emitted by the Sun become accelerated either close to the Sun during a flare or in interplanetary space by coronal mass ejection shocks.



SECTION: C
(QUICK FACTS)

WHY JERUSALEM'S AL-AQSA MOSQUE HAS BEEN A SITE OF FREQUENT CLASHES

© **CONTEXT:** Tensions flared at Jerusalem's al-Aqsa Mosque compound recently, leading to clashes that left 17 Palestinians wounded.

Jerusalem's al-Aqsa Mosque Compound:

- The al-Aqsa Mosque is one of Jerusalem's most recognised monuments.
- The mosque's complex is one of Islam's most revered locations, and the Temple Mount is the holiest site in Judaism.
- Over the decades, the site in Jerusalem's Old City has frequently been a flashpoint for violence between Palestinians and Israeli forces and hard-line groups and is at the heart of competing historical claims.
- Some Palestinians believe that the mosque has also served as a symbol of their resistance, culture and nationhood.



- The Temple Mount is a walled compound inside the Old City in Jerusalem, and is the site of two structures: the Dome of the Rock to the north and the Al-Aqsa Mosque to the south.
- The Dome of the Rock is a seventh-century structure, an important Islamic shrine, believed to be where the Prophet Muhammad ascended to heaven.

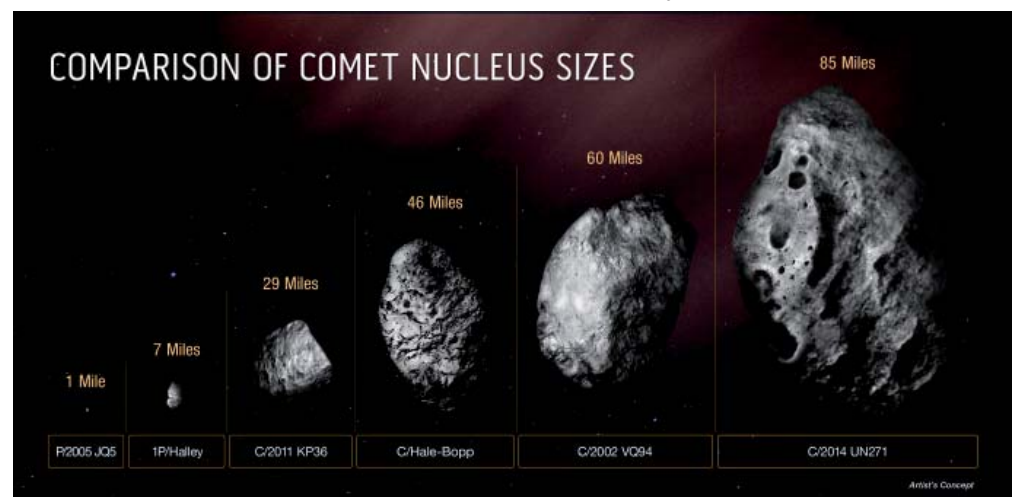
- To the southwest of the Temple Mount, is the Western Wall, a remnant of the Second Temple and the holiest site in Judaism.

ALL WE KNOW ABOUT THE BERNARDINELLI-BERNSTEIN COMET, THE LARGEST ONE EVER SEEN

◎ **CONTEXT:** National Aeronautics and Space Administration’s (NASA) Hubble Space Telescope has confirmed that the huge Bernardinelli-Bernstein comet is indeed the largest icy comet nucleus ever seen by astronomers.

Bernardinelli-Berstein comet:

- The comet was discovered by astronomers **Pedro Bernardinelli and Gary Bernstein** in archival images from the Dark Energy Survey at an astronomical observatory in Chile.
- It was **discovered by chance in November 2010** and has been intensively studied since.
- Stretching about 80 miles (129 kilometers) across, the nucleus (or solid center) of the comet, known as **C/2014 UN271** (Bernardinelli-Bernstein), is larger than the state of Rhode Island, and it’s about **50 times larger than the average comet core**.
- The Bernardinelli-Berstein comet has been **travelling towards the sun** for over a million years and it is believed to have originated in the Oort cloud, a distant region of the solar system that is predicted to be the source of most comets.
 - The **Oort cloud is still only a theoretical concept** as the comets that constitute it are too faint and distant to be directly observed.
 - It was **first hypothesised by Dutch astronomer Jan Oort in 1950**.
- The Bernardinelli-Berstein comet follows a 3-million-year-long elliptical orbit and has an estimated temperature of **minus 348 degrees Fahrenheit** – warm enough to sublimate carbon monoxide from the surface to produce the dusty coma.



Is the comet a threat?

- It is unlikely that the Bernardinelli-Bernstein comet can become a threat to the earth.
- It is **travelling at a speed of 22,000 miles per hour** from the edge of the solar system towards us, but it will never get closer than one billion miles away from the sun.
- That is a **little farther than the planet Saturn**, and even this situation is not likely to occur till 2031.

Hubble Space Telescope:

- The Hubble Space Telescope was launched by **NASA in 1990** and is named in honour of Edwin Hubble, a revered American astronomer of the early 20th century.
- The telescope is a **space-based observatory** and has made significant observations related to interstellar objects, including moons around Pluto and a comet crashing into Jupiter.
- The telescope has now been **in operation for over thirty years**.

NASA SHARES PICTURE OF MARTIAN SUNRISE CLICKED BY INSIGHT ROVER

- ◎ **CONTEXT:** NASA has recently shared an interesting image of a Martian sunrise captured on the planet by the space agency's InSight rover.

About InSight rover:

- InSight (**Interior Exploration using Seismic Investigations, Geodesy and Heat Transport**), is a Mars lander which is the first robotic explorer **to study the crust, mantle and core of Mars**.
- The InSight rover has **two primary science objectives**:
 - to understand the formation and evolution of the terrestrial planet by investigating the interior structure and processes of Mars and
 - to determine the present level of tectonic activity and meteorite impact rate on the planet
- Apart from helping learn **how Mars was formed**, understanding its patterns will also help prepare for human exploration of the planet.
- It uses its instruments to **dig deep beneath the surface of the red planet** and seek the 'fingerprints' of the process that formed the planet.
 - To do this, it **measures the planet's "vital signs": seismology, heat flow and precision tracking**.



IVF PIONEER DR. CHAKRAVATY DIES


- ◎ **CONTEXT:** Baidyanath Chakravarty, one of the pioneers of reproductive medicine in the country who worked closely with Subhash Mukhejee, creator of India's first and world's second test tube baby, passed away in Kolkata.

About:

- Dr Chakrabarty **founded the Institute of Reproductive Medicine (IRM)** in the year 1986 for artificial insemination research.
 - He had **handed it over to the ICMR in 2019**.

- He was a pioneer in the field of IVF or artificial insemination research and treatment in India.
- The Institute of Reproductive Medicine, founded by this veteran physician, has helped countless childless couples to have children.
- The state government had also given him a Lifetime Achievement Award in the year 2019.
- In vitro fertilisation (IVF) is a process in which an egg is combined with the sperm in vitro or in an artificial environment for fertilization.
- After that, one or more fertilized eggs can be transferred into the woman's uterus where they may implant in the uterine lining and develop.

CONDUCTED 4,000 PROCEDURES	
<ul style="list-style-type: none"> ➤ Baidyanath Chakravarty: Born in Faridpur in undivided Bengal ➤ He topped his school in matriculation. Syama Prasad Mukherjee gave him free studentship at Asutosh College on a condition that he would have to top the first-year final ➤ He also got through both NRS Med College and Bengal Medical College, as MCH used to 	<ul style="list-style-type: none"> ➤ be called; he took admission to Bengal Medical College in 1947 ➤ Chakravarty worked closely with Subhas Mukherjee, the man behind India's first IVF baby, for over 2 decades ➤ In 2019, he donated his Institute of Reproductive Medicine to ICMR ➤ He is believed to have conducted 4,000 IVF procedures



WHAT IS LUNAR LITTER?

© **CONTEXT:** The moon has a lot of man-made junk on it.

About

- For the past half-century, the **Moon has been the destination of some of humankind's most monumental and challenging expeditions.**
- As the **Moon becomes more accessible to both national space programs and private enterprise,** it is important that we protect lunar artifacts for both their historic and scientific value.
- It's challenging to say, but the **trash on the moon likely weighs upward of 400,000 lbs. (181,000 kilograms) on Earth.**
- Much of this moon litter was left by NASA astronauts who landed on the lunar surface **between 1969 and 1972 during the Apollo program.**
- The other rubbish comes from crewless missions from space-exploring agencies, including those from the United States, Russia, Japan, India and Europe.
- Many of the older pieces are lunar probes that were sent to the moon to learn about it, such as whether spaceships could land on its surface.
- In the 1960s, some scientists thought that the moon might have a quicksand-like exterior because so many space rocks had pummeled and pulverized it over the years.
- These robotic probes, which stayed on the moon after their missions ended, showed that this idea was wrong, and that human-made gear could land on the moon's surface.

50 years after Apollo, lunar litter is piling up...

FIFTY years ago today the Apollo 14 mission blasted off into space... and it would see astronaut Alan Shepard play golf on the Moon!

Amazingly, two of the balls he used are still up there. But they aren't the only weird and wacky items humans have left behind. In fact, there is a whopping 200 tons of rubbish up there.

Here, **JAMES MOORE** reveals the pick of the lunar litter...

GOLF BALLS:

Having smuggled the head of a six iron on to the Apollo 14 spacecraft, along with a couple of golf balls, Shepard attached the club to an excavating tool during a moonwalk - hitting them for "miles and miles" thanks to the low gravity.

The club is now in a US museum. On the same mission Edgar Mitchell hurled a javelin made out of a lunar scoop.

METAL FOOTBALL:

In 1959 the Soviet probe Luna 2 dropped what looked like a metal football. It contained an explosive charge which fired lots of individual pennants



HUMAN WASTE:

There are 96 bags of human poo and wee left on the Moon by visiting astronauts.

SPACE BOOTS:

Among the things discarded on the Apollo missions to reduce the weight on the journey back to Earth are 12 pairs of space boots.

FLAGSSix "Stars and Stripes" were planted by the Apollo missions. One has toppled over while the others have been bleached by UV rays from the sun.

DEAD MAN'S ASHES:

SPACE SCULPTURE:

TOP 100
ALL INDIA RANKING
CSE 2020

8	9	12	13	14	16	17	19	20		
24	26	28	30	31	36	38	41	45	50	
51	52	55	56	58	59	67	68	70	71	73
74	76	78	83	84	85	86	89	93	98	100

SUCCESS IS A PRACTICE WE DO!

TOP 100
ALL INDIA RANKING
CSE 2019

3	6	10	11	16	17	21	22	28			
30	33	38	39	42	44	46	53	54	59	66	69
70	72	77	78	80	82	84	86	87	94	97	98

TOP 100
ALL INDIA RANKING
CSE 2018

2	3	5	7	27	36	37	40	44	49		
51	52	56	58	62	74	81	89	92	94	98	100

TOP 100
ALL INDIA RANKING
CSE 2017

3	10	19	31	33	35	40	41	44	45	48		
54	57	63	64	68	71	75	77	80	83	93	97	100