

JULY EDITION 2023

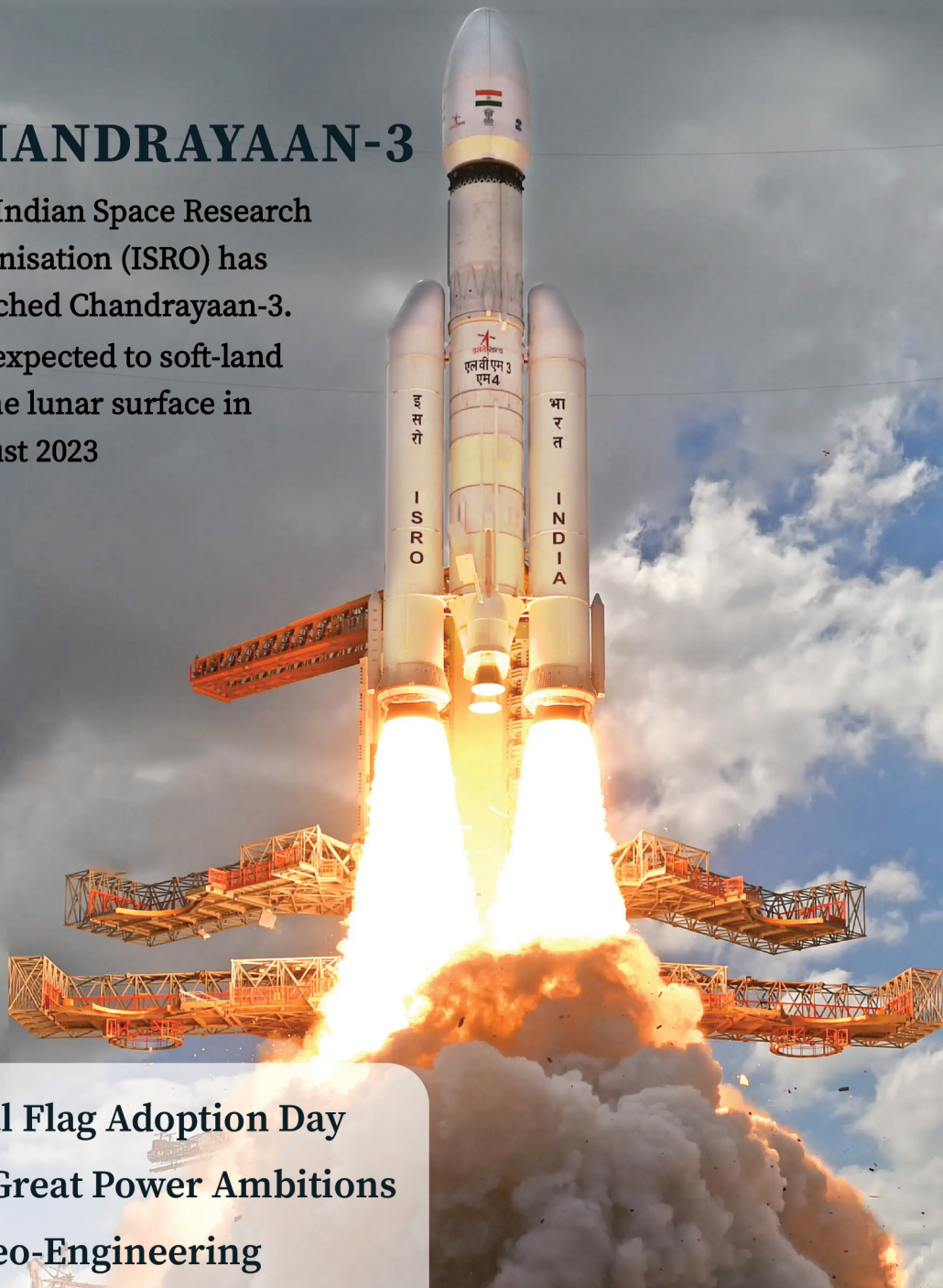
VOL. II ISSUE 07

Varthaman

MONTHLY CURRENT AFFAIRS MAGAZINE
BY RV TRAINING ACADEMY

CHANDRAYAAN-3

The Indian Space Research Organisation (ISRO) has launched Chandrayaan-3. It is expected to soft-land on the lunar surface in August 2023



- + National Flag Adoption Day
- + India's Great Power Ambitions
- + Solar Geo-Engineering
- + J Robert Oppenheimer

CURRENT AFFAIRS
& PRACTICE QUESTIONS

ADMISSIONS OPEN

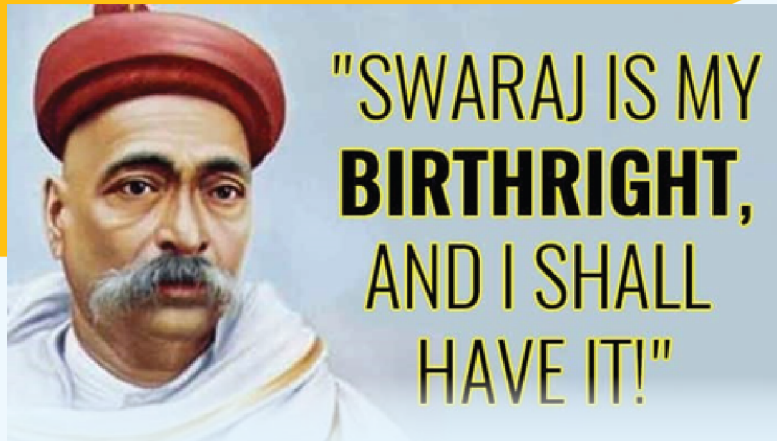
NEW BATCH STARTS
AUGUST 2023

COURSE HIGHLIGHTS

- BASIC NCERT FOUNDATION
- PRELIMS CLASSES
- WEEKLY CURRENT AFFAIRS
- MAINS UPGRADATION
- ANSWER WRITING PRACTICE
- PERSONALISED MENTORING
- STUDY MATERIALS

RV TRAINING ACADEMY

EMINENT PERSONALITY



LOKMANYA BAL GANGADHAR TILAK

- **Birth:** He was born on **July 23, 1856**, in **Maharashtra's Ratnagiri**.
- **Education:** He completed a **Bachelor of Arts degree in Mathematics from Deccan College of Pune in 1877** and obtained his **LL.B degree from Government Law College in 1879**. Tilak was well read in Hindu scriptures, and also he was influenced by Western thoughts of metaphysics and politics.
- **Vocation:** He was a freedom fighter, social thinker, philosopher, teacher, one of the first and strongest advocates of Swaraj ("self-rule") who had played an important role in India's freedom movement.
- **Title:** He was conferred with the title of "*Lokmanya*", which means "**accepted by the people (as their leader)**" and **Mahatma Gandhi** called him "**The Maker of Modern India**".
- **Death:** **1st August 1920** in Bombay (now Mumbai).
- **Significant Contributions:**
 - > **Political Contribution:**
 - In 1890, Tilak joined the **Indian National Congress**.
 - **Lal Bal Pal and Swadeshi movement:**
 - The political discourse of the Indian freedom movement significantly changed during the period between 1900 and 1908.
 - It was under the leadership of the political triumvirate, **Lala Lajpat Rai, Bipin Chandra Pal and Bal Gangadhar Tilak**, popularly known as **Lal-Bal- Pal**, Swadeshi movement gained momentum across the country.
 - The trio also mobilised Indians against the **Bengal partition**.
 - It was during this period that the trio proposed the **Swadeshi movement and boycott of foreign goods**.
 - > **Imprisonment:**
 - Tilak was arrested by the British on the charges of **sedition in 1908** and sentenced to **six years of imprisonment in Mandalay (Burma)**.
 - > **Home Rule Movement:**
 - After returning from Burma, Tilak was involved in the Home Rule Movement and joined Anne Besant's Home Rule League.
 - In 1916, he concluded the **Lucknow Pact** with **Mohammed Ali Jinnah**, which provided for Hindu-Muslim unity in the nationalist struggle.
 - In 1918, he visited England to popularise the Home Rule Movement.
 - He organized two important festivals, **Ganeshotsav in 1893 and Shiv Jayanti in 1895**.
 - > **Educational institutions:**
 - After his graduation, Tilak with his friends **GG Agarkar, MA Chiplunkar and Mahadev B Namjoshi**, started the **New English School in Pune in 1880** and later founded the **Deccan Education Society in 1884** and the **Fergusson College in 1885**.
 - > **Literary Work:**
 - He also launched two weeklies, **Kesari (in Marathi)** and **Mahratta (in English)**, which criticised British policies of the time.
 - He published **The Orion** or **Researches into the Antiquity of the Vedas (1893)** and **The Arctic Home in the Vedas (1903)**.
 - In the **Mandalay jail**, he wrote his magnum opus, the **Srimad Bhagavadgita Rahasya (Secret of the Bhagavadgita)**, an original exposition of the most sacred book of the Hindus.

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POLITY AND GOVERNANCE

SUSPENSION OF MLA FROM THE RAJYA SABHA

In News: One of the Members of Parliament (MPs) from the Rajya Sabha was suspended recently for "violating" the chair's directives.



More on the Topic:

- The general principle is that it is the role and duty of the Presiding Officer Speaker of Lok Sabha and Chairman of Rajya Sabha to maintain order so that the House can function smoothly.
- To ensure that proceedings are conducted properly, the Speaker/ Chairman is empowered to force a Member to withdraw from the House.

What are the Rules under which the Presiding Officer acts?

- According to Rule Number 373 of the Rules of Procedure and Conduct of Business "The Speaker, if is of the opinion that the conduct of any Member is grossly disorderly, may direct such Member to withdraw immediately from the House, and any Member so ordered to withdraw shall do so forthwith and shall remain absent during the rest of the day's sitting.
- To deal with more obstinate or recalcitrant Members, the Speaker makes recourse to Rules 374 and 374A.
- Rule 374A was introduced in the Rule Book in December 2001.
- If a Member is named by the Speaker for a serious breach of conduct or severe charges, they will be automatically suspended from the House's service for five consecutive

sittings or the remaining duration of the session, whichever is less.

- **Rule 255:** Similar to the Speaker's authority in the Lok Sabha, the Chairman of the Rajya Sabha holds the power under Rule Number 255 to direct any Member whose behavior is deemed grossly disorderly to immediately withdraw from the House.
- However, unlike the Speaker of the Lok Sabha, the Chairman of the Rajya Sabha lacks the authority to suspend a member directly.
- In cases where a member disregards the Chair's authority or persistently and willfully obstructs the business of the Council, the Chairman has the right to "name" that member.
- Subsequently, the House can adopt a motion to suspend the Member from the service of the House for a period not exceeding the remainder of the session.
- **Rule 256** empowers the Chairman of the Rajya Sabha to suspend members from the service of the Council for a duration that does not exceed the remaining period of the ongoing session.

NATIONAL COMMISSION FOR WOMEN

In News: The cases of molestation and rape of women in Manipur have brought them into focus.



More on the Topic:

- Established in 1992, as per the National Commission for Women Act 1990, the commission is expected to take up the concerns of women at the national level. Each state also has its commission.
- They are expected to consist of "persons of ability, integrity and standing who have had experience in law or legislation, trade unionism committed to increasing the employment potential of women, administration,

economic development, health, education or social welfare."

- The Manipur State Commission for Women (MSCW) was constituted in September 2006 as a statutory body as per the Manipur State Commission for Women Act, 2006.

The Mandate:

- The commissions are expected to "investigate and examine all matters relating to the safeguards provided for women under the Constitution and other laws."
- They are also mandated to look into complaints and take **suo motu** notice of matters relating to "deprivation of women's rights, non-implementation of laws enacted to protect women".
- Facilitate **redressal of grievances** and advise the Government on all policy matters affecting women.

Concerns with the National Commission for Women's Functioning:

- Too much **paperwork** and too few field visits.
- **Political appointments** in the commissions.
- Since they are **nominated by the political party in power**, most of the commissions are wary of even minor criticism of the government. And they are sometimes over-enthusiastic in taking up states ruled by the Opposition.
- The **financial assistance** allocated to the Commissions is inadequate to meet their requirements.
- Their legislative power is lacking in substance, as evidenced by the mere **recommendatory nature of their reports**.

Way Ahead:

- A **social audit of the performance of different commissions** by competent external agencies regularly would give citizens an idea of their actual work.
- More connections to the ground realities must be ensured through field visits.
- Commissions need to be strengthened either by giving them Constitutional status or by amending their parent laws.

BIOLOGICAL DIVERSITY AMENDMENT BILL

In News: The Lok Sabha has passed the Biological Diversity (Amendment) Bill, 2021.



More on the Topic:

- The Bill aims to amend the Biological Diversity Act, of 2002.
- The amended Bill was drafted in response to complaints by traditional Indian medicine practitioners, the seed sector, industry and researchers that the Act imposed a **heavy "compliance burden"** and made it hard to conduct collaborative research and investments and simplify patent application processes.
- The text of the Bill also says that it proposes to "**widen the scope of levying access and benefit sharing with local communities and for further conservation of biological resources.**"

Highlights from the Bill:

- The Bill sought to **exempt registered AYUSH medical practitioners and people accessing codified traditional knowledge**, among others, from giving prior intimation to State biodiversity boards to access biological resources for certain purposes.
- The Bill **decriminalises a range of offences under the Act** and substitutes them with monetary penalties. It empowers government officials to hold inquiries and determine penalties.
- The Bill **removes research and bio-survey activities from the purview of benefit-sharing requirements**.

The Biological Diversity Act, 2002:

- The Biological Diversity Act, of 2002 was framed to give effect to the United Nations Convention on Biological Diversity (CBD), 1992, which strives for sustainable, fair and equitable sharing of benefits arising out of the utilisation of biological resources and associated traditional knowledge.
- To do this, it formulates a three-tier structure consisting of a **National Biodiversity Authority (NBA)** at the national level, State

Biodiversity Boards (SBBs) at the State level and Biodiversity Management Committees (BMCs) at local body levels.

- The primary responsibility of the BMCs is to document local biodiversity and associated knowledge in the form of a People's Biodiversity Register.

NEW HEALTH BILLS

In News: The government has introduced two health Bills: National Dental Commission Bill, 2023 and National Nursing and Midwifery Commission Bill, 2023 in Parliament.



More on the Topic:

- The Bills seek to repeal the Dentists Act, of 1948 and the Indian Nursing Council Act, of 1947, and propose to form regulatory bodies for dentists and nurses and midwives on the lines of the National Medical Commission (NMC).
- The medical commissions will have autonomous boards for undergraduate and postgraduate education, an assessment and rating board, and an ethics and registration board that will look at different aspects of dental and nursing education.
- Both Bills also have a provision for creating live national registers.
- Medical professionals currently need to register with their respective state councils. The registers created under the new Bills will be dynamic, with the state and the national registers syncing automatically, and the qualifications of the professionals will be updated from time to time.
- The National Dental Commission Bill will make provision for an exit test for dentists on the lines of the National Exit Test that is likely to be implemented for those completing MBBS from the next batch.

ZERO FIR

In News: Zero FIR is in the news in association with Manipur violence.



More on the Topic:

- A "Zero FIR" (First Information Report) is a concept in the Indian criminal justice system.
- It refers to the practice of registering a criminal complaint (FIR) at any police station, regardless of the location where the incident occurred or jurisdictional constraints.
- This provision was introduced to ensure that victims or witnesses of a crime can easily report it to the police without being turned away due to jurisdictional issues.
- The term "Zero FIR" is used because, upon receiving a complaint, the police assign a unique serial number to the FIR (starting from "Zero") and forward it to the appropriate police station having jurisdiction over the incident for further investigation.
- In cases where the exact location of the crime is not known, or if it is related to multiple jurisdictions, the police can register a Zero FIR immediately to initiate the investigation process.
- Once the investigation starts, the case can be transferred to the appropriate police station for further action and jurisdictional proceedings.
- This system helps in expediting the filing and investigation of criminal cases, particularly those involving immediate attention or where time is critical for collecting evidence.
- The provision of Zero FIR came up after the recommendation of the Justice Verma Committee, constituted after the 2012 Nirbhaya gang rape case to suggest a Criminal Law amendment.

Related Supreme Court Verdict:

- The Apex court in Lalita Kumari v. Government of U.P. observed that it is mandatory to

register an FIR under Section 154 if the complaint is related to a cognizable offence.

NATIONAL FLAG ADOPTION DAY

In News: Every year, National Flag Adoption Day is celebrated in India on July 22.



**HAPPY
NATIONAL
FLAG
ADOPTION**

*I pledge allegiance to my
Flag and the Republic, for
which it stands, one
nation, indivisible, with
liberty and justice for all.*

More on the Topic

- The day is observed to commemorate the Constituent Assembly's adoption of the tricolour in its current form in 1947, a month before our country gained Independence from British rule.
- The motion proposed that "the National Flag of India shall be a horizontal tricolour of deep saffron (Kesari), white and dark green in equal proportion."
- The white band was to have a wheel in navy blue (the charkha being replaced by the chakra), which appears on the abacus of the Sarnath Lion Capital of Ashoka.
- One of the minor committees of the Constituent Assembly, the **Ad-hoc Committee on the National Flag was headed by Dr. Rajendra Prasad.**

Flag Code of India (FCI) 2002:

- Flag Code of India (FCI) 2002 allows citizens to hoist the Indian flag over their homes, offices and factories on any day.
- It allowed the unrestricted display of the Tricolour as long as the honour and dignity of the flag were being respected.
- The flag code did not replace the pre-existing rules governing the correct display of the flag.
- It was, however, an effort to bring together all the previous laws, conventions and practices.

Guidelines in the Flag Code:

- Tricolour can be of nine standard dimensions including 6300 x 4200, 900 x 600, etc. (all sizes in mm). It should be rectangular in

shape and the length-to-width ratio should always be 3:2.

- The use of polyester, apart from cotton, wool, silk and khadi is allowed for making hand-spun, hand-woven and machine-made flags.

THE RIGHT TO SILENCE

In News: The Supreme Court said that all accused have a right to silence and investigators cannot force them to speak up or admit guilt.

More on the Topic:

- The right to silence emanates from Article 20(3) of the Indian Constitution, which states that no one can be compelled to be a witness against himself.
- The protection offered under Article 20 (3) is as follows:
- A defendant must be informed of their rights before meaning any statements which can incriminate him/her.
- A defendant cannot be compelled to give any statements.
- If a defendant has been pressured into giving a statement that is self-incriminating, it would not be accepted in a court of law.

FREEBIES DURING ELECTION

In News: Ahead of assembly elections in states and general elections next year, the Central Board of Indirect Taxes and Customs (CBIC) has released the Standard Operating Procedure (SOP) for preventive vigilance mechanisms to prevent the flow of suspicious cash, illicit liquor, drugs/narcotics, freebies and smuggled goods during elections.



More on the Topic:

- Highlights from the SOP.
- The GST and Customs officials would set up **"flying squads and static surveillance teams"** for the effective conduct of road and transit checks of vehicles, and verification of warehouses to curb illegal and prohibited activities.
- The chief commissioners and Principal Director Generals of Customs and GST will closely monitor the steps taken by the field formations to implement the directions of the ECI, especially in the **use of non-monetary inducements** (sarees, shirts, caps, scarves, white goods, masks, kitchen items etc.) and cash to lure voters.
- To act against the unauthorised diversion of liquor, cigarettes etc., **special watch/stock-taking should be kept/ carried out in the Customs Bonded Warehouses.**
- The Directorate General of Analytics and Risk Management (DG ARM) shall **study the surge patterns of the specified freebies** that might be associated with the candidate or political party to and within a state and analyse the place of storage of such goods.
- **Data analysis** should be done on identified sensitive sectors as well as groups/ organisations/ individuals known to generate/ deal in unaccounted cash.
- The GST officers have been mandated to **check e-way bills extensively at checkpoints** during elections to ensure that the specified goods are not moving without a proper GST invoice or e-way bill for distribution in the poll-bound area to influence voters.
- The Directorate of Revenue Intelligence (DRI) will increase its vigil along the **international border/ airports** and its **information-gathering mechanism** to check the flow of foreign currency/ gold/ narcotics etc. that could potentially be used for malpractices during the elections.

About freebie:

- The informal word "freebie" implies a thing that is provided to a person by any organization, company or state without paying for it or given out for free, especially for gaining support or favour.
- Freebies during elections hinder the constitutional mandate of free and fair elections by creating an undue influence on the

electorates and disturbing the poll process.

- It manipulates the free choice of electorates and has become an easy shortcut to tackle the competitive attitude of being in power among political parties.

About CBIC:

- It is a government body under the Ministry of Finance in India. It is responsible for formulating policies related to customs, excise duties, GST, and narcotics.
- CBIC oversees the administration and collection of these taxes and is the administrative authority for its subordinate organizations.

ENFORCEMENT DIRECTOR

In News: The Supreme Court held that the extension of the appointment of the Enforcement Director violates the mandate of the Supreme Court's 2021 judgement in the Common Cause vs. Union of India case that the existing ED should not be given further extension.



More on the Topic:

- At the same time, the SC has also upheld the amendments made to the Central Vigilance Commission (CVC) Act 2003 and the Delhi Special Police Establishment Act, 1946 which allow the Centre to extend the term of the heads of ED and CBI up to 5 years.
- These amendments were brought when SC in the 2021 judgement held that extensions could only be granted in 'rare and exceptional cases for a short period.
- Currently, the ED Director is appointed under Section 25 of the Central Vigilance Commission (CVC) Act, 2003.
- The Central Government appoints a Director of Enforcement in the Directorate of Enforcement in the Ministry of Finance on the recommendation of a selection committee.
- The committee is composed of the CVC

Chairperson, Secretaries to the Ministry of Home Affairs, the Ministry of Personnel and the Ministry of Finance in the Central Government.

- ED mainly functions under these major laws- Foreign Exchange Management Act, 1999 (FEMA), Prevention Of Money Laundering Act, 2002 (PMLA), Fugitive Economic Offenders Act, 2018 (FEOA), Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974 (COFEPOSA).

DISTRICT MINERAL FOUNDATION TRUSTS (DMFT))

In News: CAG has found Chhattisgarh mining department has underutilized District Mineral Fund Trusts and delayed projects.



More on the Topic:

- DMFs are statutory authorities that a State Government sets up in districts affected by mining.
- These bodies get their legality from Section 9B under the Mines and Minerals (Development and Regulation) Act, 1957 and its amendment in 2015.
- DMFs were instituted on 16th September 2015.
- The State Government can establish a DMF as a trust or non-profit body, and contributions from miners fund a DMF.
- They are aimed at working for the interest and benefit of people and areas affected by mining operations.
- It is funded through the contribution of miners.
- Under the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) launched by the Union Ministry of Mines in 2015, high-priority sectors can avail 60% of DMFT funds.
- The PMKKKY program is designed to utilize funds from District Mineral Foundations

(DMFs) to support the well-being of regions and individuals impacted by mining activities.

- Its primary objective is to provide assistance and welfare initiatives to those affected by mining-related operations.

GENETIC ENGINEERING APPRAISAL COMMITTEE (GEAC)

In News: Concerned citizens have urged the Telangana government to assert its authority and protect the public interest regarding the breach of policy decision on Genetically Modified (GM) crops by the Genetic Engineering Appraisal Committee (GEAC).



More on the Topic:

- The Genetic Engineering Appraisal Committee (GEAC) in India is a statutory body that functions under the Ministry of Environment, Forest and Climate Change (MoEFCC).
- It has been notified under the Environmental Protection Act of 1986.
- It is responsible for evaluating and assessing proposals related to the release of genetically engineered organisms (GMOs) into the environment, including genetically modified crops and other biotechnology-based products.
- The primary role of the GEAC is to ensure the safety of human health and the environment while considering the potential risks and benefits associated with genetically modified organisms (GMOs).
- The committee examines the scientific data, conducts risk assessments, and formulates guidelines and regulations for the research, development, import, export, and commercialization of GMOs in India.

GST COUNCIL

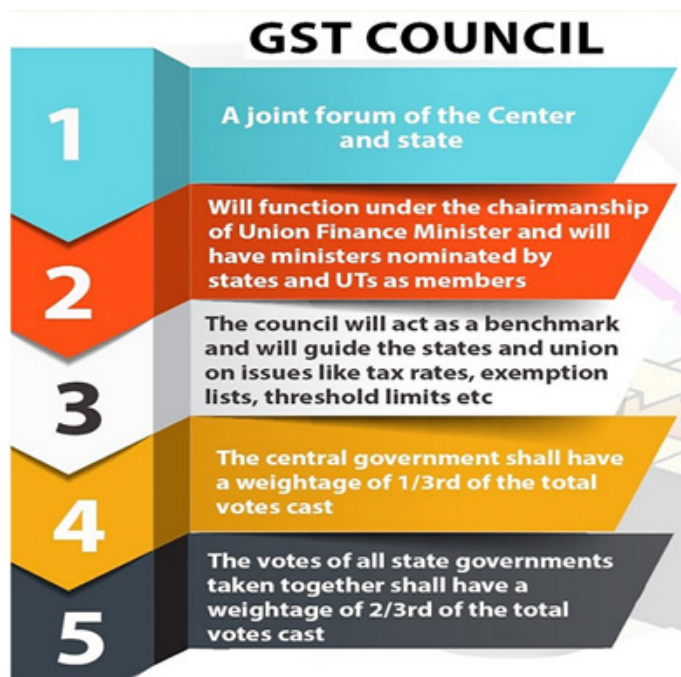
In News: The 50th GST Council meeting has been held in Delhi.

More on the Topic:

- The council decided to levy a uniform 28% tax on full face value for online gaming,

casinos and horse racing while reducing the rate for uncooked/ unfried snack pellets, cancer medicine and imitation zari thread.

- Foods served in Cinema halls, uncooked/ unfried snack pellets, and fish soluble paste rates were reduced from 18% to 5%.



GST Appellate tribunal:

- The Council also recommended setting up a mechanism for appellate tribunals from August 1.
- Demands for state-wise benches were presented by various states, and the Council approved the setting up of as many as 40 benches in phases.
- The tribunal is to have a Principal Bench in New Delhi, with the President, a judicial member, a technical member (centre) and a technical member (state).
- It will also have state benches.

About GST Council:

- The GST Council is a joint forum of the Centre and the states under Article 279-A of the constitution.
- Article 279-A gives the President the authority to appoint a GST Council by executive order.
- The members of the Council include the Union Finance Minister (chairperson), and the Union Minister of State (Finance) from various states and Union Territories.
- Article 279 is meant to "make recommendations to the Union and the states on important issues related to GST, like the goods and

services that may be subjected or exempted from GST, model GST Laws".

- It also decides on various rate slabs of GST.

8TH SCHEDULE OF THE CONSTITUTION OF INDIA

In News: The Odisha Cabinet has proposed the inclusion of the Kui language in the 8th Schedule of the Indian Constitution.

12 Schedules of Indian Constitution

Schedules	Details
Schedule 1	State and Union Territories Name and their Boundary details
Schedule 2	Special Powers and Salary details of President, Governors of state, Speakers and Deputy speakers of Rajiya sabha and Lok sabha, Supreme court and High Court Judges.
Schedule 3	Oath and Promises of All authority except President, and vice president.
Schedule 4	Rajiya Sabha MP count of state and Union Territories
Schedule 5	Scheduled Area and scheduled Tribes Administration and control Law Details
Schedule 6	States of Assam, Meghalaya, Tripura and Mizoram Tribal areas Administration and control law details
Schedule 7	Detailed List about Union and State Government Power and Concurrent List
Schedule 8	Official Languages
Schedule 9	Validation of certain Acts and Regulations.
Schedule 10	Details about Party changes and disqualification of MP/MLA
Schedule 11	Responsibilities and Powers of Panchayat
Schedule 12	Responsibilities and Powers of Municipalities

More on the Topic:

- At least 7 lakh people of the Kondh tribe in Odisha will benefit from the inclusion of the Kui language in the 8th Schedule of the Constitution.
- Besides, it will help preserve, promote and propagate the Kui language and culture in the state.
- Activities such as publication, creation of content and recognition will also get momentum.

About Kui Language:

- Kui Language belongs to the Dravidian Family of languages and is spoken mainly by people of the Kondh/ Kandha Tribe, the largest tribe of Odisha.
- It uses Odia Script and Khondi, and Gumsai are its dialects.

About 8th Schedule:

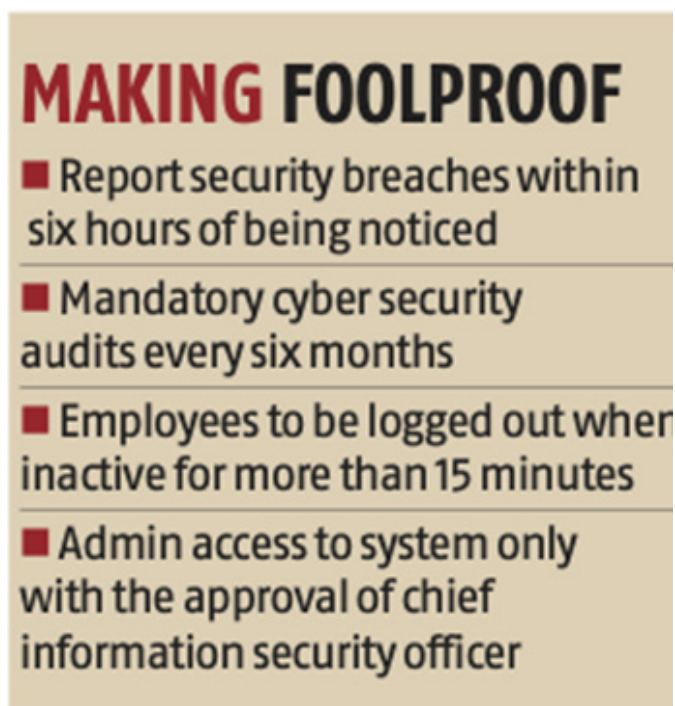
- The Eighth Schedule to the Constitution of India lists the official languages of the Republic of India.
- Part XVII of the Indian Constitution deals with the official languages in Articles 343 to 351.
- The Constitutional provisions relating to the Eighth Schedule occur in articles 344(1) and 351 of the Constitution.
- However, It can be noted that there are no fixed criteria for any language to be considered for inclusion in the Eighth Schedule.

Official Languages of India:

- The Eighth Schedule to the Constitution consists of the following 22 languages:
- Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.

GUIDELINES ON INFORMATION SECURITY PRACTICES" FOR GOVERNMENT ENTITIES FOR SAFE & TRUSTED INTERNET

In News: CERT-In has issued "Guidelines on Information Security Practices" for Government Entities for Safe & Trusted Internet.



More on the Topic:

- The guidelines include various security domains such as network security, identity

and access management, application security, data security, third-party outsourcing, hardening procedures, security monitoring, incident management, and security auditing.

- These guidelines apply to all Ministries, Departments, Secretariats, and Offices specified in First Schedule to Government of India (Allocation of Business) Rules, 1961, along with their attached and subordinate offices.
- These guidelines are a roadmap for Government entities and industries to reduce cyber risk, protect citizen data and improve the cyber-security ecosystem in the country.

Key guidelines issued by CERT-In:

- Government organizations should mandatorily report cyber incidents to CERT-In within six hours of noticing them, as private entities do. The information shall be shared with stakeholders like sectoral CERTs and regulators.
- Government offices need to conduct an internal and external audit of their entire cyber infrastructure and deploy appropriate security controls based on the audit.
- Government organizations need to appoint a Chief Information Security Officer (CISO) who would be accompanied by a dedicated cybersecurity team, separate from the IT operations team.
- Government bodies shall maintain an inventory of authorized hardware and software for their organization, along with a mechanism for automated scanning to detect any unauthorized device or software.
- Data Backup policy should be documented, scheduled and monitored.

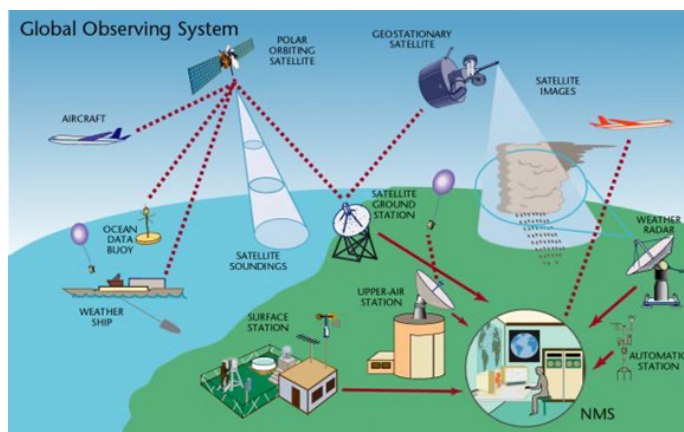
About CERT-In:

- Cert-In, established as per provisions of section 70B of the IT Act, 2000 under the Ministry of Electronics and Information Technology, is the national nodal agency for responding to computer security incidents.
- It is the nodal agency to deal with cyber security threats like hacking and phishing. It strengthens the security-related defence of the Indian Internet domain..

GOVERNMENT SCHEMES

ATMOSPHERE AND CLIMATE RESEARCH MODELLING OBSERVING SYSTEMS AND SERVICES

In News: Atmosphere & Climate Research -Modelling Observing Systems & Services (ACROSS) umbrella scheme is a central sector scheme that pertains to the atmospheric science programs of the Ministry of Earth Sciences (MoES).



More on the Topic:

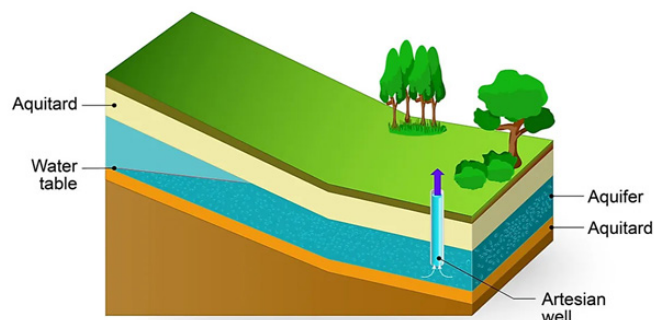
- The sub-schemes under the ACROSS scheme are multi-disciplinary in nature and will be implemented in an integrated manner through 4 institutes.
- The four institutes are the India Meteorological Department (IMD), the Indian Institute of Tropical Meteorology (IITM), the National Centre for Medium-Range Weather Forecasting (NCMRWF), Indian National Center for Ocean Information Services (INCOIS).
- They will cover all the aspects of the weather and climate.

The sub-schemes – Each institute has a designated role for accomplishing the above tasks through the following schemes:

- Upgradation of Forecast System
- Weather & Climate Services
- Atmospheric Observations Network
- Numerical Modeling of Weather and Climate
- Monsoon Mission III
- Monsoon Convection Clouds and Climate Change (MC4)
- High-Performance Computing System (HPCS)

THE NATIONAL AQUIFER MAPPING AND MANAGEMENT PROGRAM

In News: The National Aquifer Mapping and Management programme, which is aimed at delineating aquifer and water availability, is set to be completed in one year.



More on the Topic:

- Since 2012, the Central Ground Water Board (CGWB) has undertaken the National Aquifer Mapping and Management Programme (NAQUIM) to map aquifers across the country.
- NAQUIM was initiated as a part of the Ground Water Management and Regulation scheme to delineate and characterize the aquifers to develop plans for groundwater management.
- The primary objective of the National Aquifer Mapping and Management Programme (NAQUIM) is to offer comprehensive and accurate data on the geological structure, hydrological properties, water levels, and the presence of both natural and human-induced contaminants in aquifers.
- Aquifers are underground layers of permeable rock, sand, or gravel that contain and transmit groundwater. They are essential sources of freshwater for various human activities and ecological needs.

PM WANI

In News: PM WANI can be a game changer in digital connectivity.



Prime Minister's Wi-Fi Access Network Interface

More on the Topic:

- "PM WANI" stands for "Prime Minister's Wi-Fi Access Network Interface." It is an initiative launched by the Government of India to provide affordable and widespread internet connectivity across the country.
- The program aims to promote the growth of public Wi-Fi networks by allowing small shop owners, Kirana stores, and other businesses to set up and operate public Wi-Fi hotspots.
- Under the PM WANI scheme, eligible small-scale entrepreneurs and individuals are encouraged to become Public Data Office Aggregators (PDOAs) and Public Data Offices (PDOs).
- A PDOA acts as an aggregator that can provide bandwidth from internet service providers to multiple PDOs.
- On the other hand, PDOs are entities that establish and operate public Wi-Fi hotspots at their premises.
- The initiative is intended to create a collaborative and scalable ecosystem of public Wi-Fi networks, expanding internet access to rural and remote areas and empowering millions of Indians with affordable connectivity.
- By facilitating the growth of public Wi-Fi, the government aims to bridge the digital divide and enhance digital inclusion in the country.

INDIA CLIMATE ENERGY DASHBOARD (ICED)

In News: NITI Aayog has released the India Climate Energy Dashboard (ICED) 3.0.



More on the Topic:

- The ICED is the country's one-stop platform for near real-time data on the energy sector, climate, and related economic datasets based on government-published sources.
- ICED 3.0 enables users to freely access and analyze datasets using an analytical engine.
- It will facilitate insights and enhance understanding of the energy and climate sectors while identifying the key challenges.
- The Portal will draw insights from the available data parameters and hence immensely useful in monitoring the progress of India's clean energy transition journey.
- This dashboard offers more than 500 parameters, over 2000 infographics, and several interactive visualizations, allowing users to gain a holistic understanding of India's energy sector.

CREDIT GUARANTEE SCHEME FOR MSMEs IN LIVESTOCK SECTOR

In News: Department of Animal Husbandry and Dairying (DAHD) has announced a credit guarantee scheme to facilitate the inflow of funds to MSMEs engaged in the livestock sector.



More on the Topic:

- The department, which is under the Ministry of Fisheries, Animal Husbandry and Dairying, is implementing the Credit Guarantee Scheme under Animal Husbandry Infrastructure Development Fund (AHIDF).
- The scheme is aimed to strengthen the credit delivery system and facilitate a smooth flow of credit to the Micro, Small & Medium Enterprises (MSMEs) engaged in the livestock sector without hassles of collateral security.
- The credit guarantee scheme facilitates access to finance for the un-served and

under-served livestock sector, making the availability of financial assistance from lenders to mainly first-generation entrepreneurs and underprivileged sections of society, who lack collateral security for supporting their ventures.

- DAHD has established a Credit Guarantee fund Trust of Rs. 750.00 crores, which will provide credit guarantee coverage of up to 25% of the credit facilities extended to the MSMEs.

About AHIDF Scheme:

- AHIDF is a special credit facility for Animal Husbandry Infrastructure Development.
- It is a central sector scheme under Atmanirbhar Bharat Abhiyan.
- The key features of the AHIDF scheme are interest subvention of 3 per cent and a loan of up to 90 per cent of the total project cost from any Scheduled Bank, National Cooperative Development Corporation (NCDC).

About India's LiveStock Sector:

- India's livestock sector is one of the largest in the world.
- About 20.5 million people depend upon livestock for their livelihood.
- Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households.
- Livestock provides livelihood to two-thirds of the rural community.
- It also employs about 8.8 % of the population in India.
- India has vast livestock resources. The livestock sector contributes 4.11% of the GDP and 25.6% of total Agriculture GDP.

PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

In News: United Nations Development Programme (UNDP) and Absolute, a bioscience company, on Monday signed a Memorandum of Understanding (MoU) to strengthen the government of India's flagship Pradhan Mantri Fasal Bima Yojana (PMFBY) and enhance the resilience of the farmers.

More on the Topic:

- The partnership between UNDP India and Absolute aims to enhance the implementation

of the PMFBY and the Restructured Weather- Based Crop Insurance Scheme (RWB-CIS) by building technical capabilities of the scheme and digitizing service delivery of crop insurance and agricultural credit processes to increase the reach and uptake of the schemes.

- It will also promote credit profiling of farmers, agri-entrepreneurs, and Farmer Producers Organizations (FPOs), for accurate crop loss assessment and risk evaluation to mobilize agriculture financing.
- UNDP and Absolute will also use advanced technology and data-driven solutions to facilitate farmland identification and enhance farm monitoring, R&D, and analytical capabilities to facilitate data-driven policymaking and fraud analytics, ensuring efficient and transparent delivery of government support to vulnerable farmers.



About Fasal Bhima Yojana:

- Launched in 2016, the Pradhan Mantri Fasal Bima Yojana (PMFBY) is a **large-scale crop subsidy insurance scheme** that was aimed to safeguard farmers.
- This flagship scheme was designed in line with the One Nation–One Scheme and replaces three older initiatives—Modified National Agricultural Insurance Scheme (MNAIS), the Weather-based Crop Insurance Scheme and the National Agricultural Insurance Scheme (NAIS) by incorporating their best features and removing inherent shortcomings to improve insurance services available to farmers.
- This scheme is being administered by the Department of Agriculture, Cooperation and Farmers' Welfare under the Ministry of Agriculture, along with empanelled general insurance companies.
- The scheme provides coverage for the entire cropping cycle from pre-sowing to post-harvest

and midseason adversities.

- The primary goal of the initiative is to reduce the burden of insurance premiums on farmers and ensure early settlement of claims.
- The Scheme is available for all States and farmers voluntarily.
- Farmers have to pay a maximum 2% premium for Kharif, 1.5% for rabi food and oilseed crops, and 5% for commercial/horticultural crops.

GRAMODYOG VIKAS YOJNA

In News: Delhi Lieutenant Governor has distributed Honey Bee-Boxes and Toolkits to 130 beneficiaries under Gramodyog Vikas Yojana.



More on the Topic:

- GVI is one of the three components of the umbrella scheme 'Khadi and Gramodyog Vikas Yojana (KGVY)' with the other two components being Khadi Vikas Yojana and Khadi Grant.
- KGVY is a central sector scheme of the Khadi and Village Industries Commission (KVIC), Ministry of Micro, Small and Medium Enterprises.
- GVI is for the promotion and development of village industries through common facilities, technological modernization, training etc.

ESARAS MOBILE APP

In News: The Deendayal Antyodaya Yojana, part of the National Rural Livelihoods Mission, also known as DAY-NRLM, has launched the eSARAS mobile app to offer better marketing support to products made by women in self-help groups (SHGs).

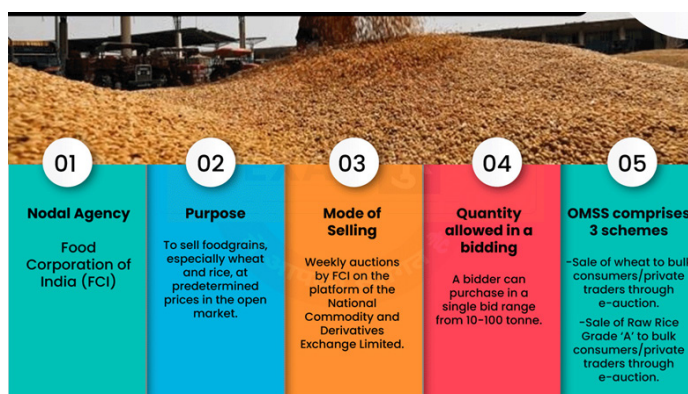


More on the Topic

- This eSARAS mobile app initiative was conceptualised by DAY-NRLM and the Ministry of Rural Development (MoRD) to promote and market authentic handicrafts and handlooms.
- It is an online platform for buying handicrafts and handloom items made by rural women registered with Self Help Groups.
- This online platform showcases the products made by self-managed Self Help Groups (SHGs) and federated institutions.
- The artisans get remunerated fairly with no middlemen to manipulate prices.

OPEN MARKET SALE SCHEME (OMSS)

In News: States have been looking at alternative ways of procuring wheat and rice in the aftermath of the Food Corporation of India's (FCI) quantity restrictions followed by the refusal to allow states to procure the two food grains through its Open Market Sale Scheme (OMSS).



More on the Topic:

- The procurement of food grains like wheat and paddy for the central pool happens in Rabi and Kharif marketing seasons by the FCI and State corporations according to procurement estimates finalised by the government of India before the seasons.
- These purchases happen as per the Minimum Support Price. From the central pool, the

government has to set aside wheat and rice for the 80 crore beneficiaries of free food-grains under the National Food Security Act (NFSA), maintain a buffer stock, and have a marketable surplus.

- Under the Open Market Sale Scheme, the FCI from time to time sells surplus food grains from the central pool especially wheat and rice in the open market to traders, bulk consumers, retail chains and so on at predetermined prices.
- The Corporation does this through e-auctions where open market bidders can buy specified quantities at the prices set at the start of a cycle and revised routinely.
- Usually, states are also allowed to procure food grains through the OMSS without participating in the auctions, for their needs beyond what they get from the central pool to distribute to NFSA beneficiaries.

The Objective of OMSS:

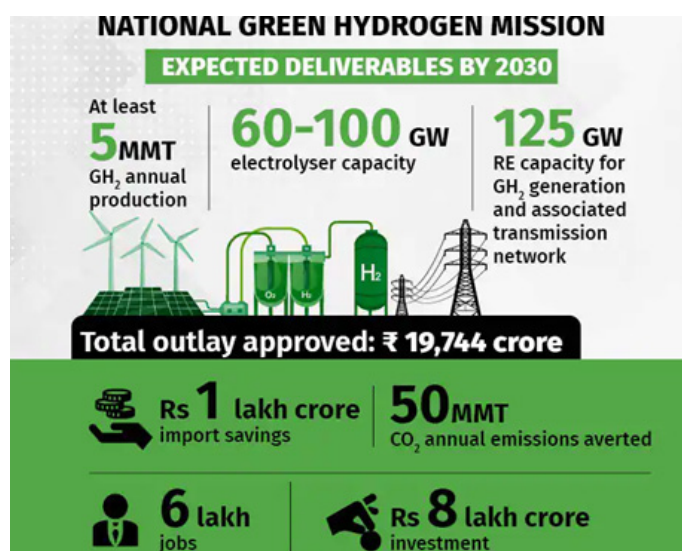
- The idea is to activate the OMSS during the lean season, the time between harvests, to improve and regulate domestic supply and availability of the two grains and bring down their prices in the open market; essentially making the scheme a measure to curb food grain inflation.

How has the Centre revised the OMSS?

- Recently, the Centre decided to restrict the quantity that a single bidder can purchase in a single bid under the OMSS.
- While the maximum quantity allowed earlier was 3,000 metric tonnes (MT) per bid for a buyer, it will now range from 10-100 metric tonnes (MT).
- The rationale given for the same by the Corporation is that the quantities have been reduced this time "to accommodate more small and marginal buyers and to ensure wider reach of the scheme".

STRATEGIC INTERVENTIONS FOR GREEN HYDROGEN TRANSITION (SIGHT) PROGRAM

In News: The Ministry of New & Renewable Energy (MNRE) has announced guidelines under the National Green Hydrogen Mission for manufacturing electrolyzers and production of green hydrogen for implementing the SIGHT Program.



More on the Topic:

- SIGHT is a sub-component of the National Green Hydrogen Mission.
- Two distinct financial incentive mechanisms are provided under the Strategic Interventions for Green Hydrogen Transition Programme (SIGHT). They are:
- Targeting domestic manufacturing of electrolyzers and Production of Green Hydrogen

About National Green Hydrogen Mission:

- The National Green Hydrogen Mission was launched in 2023, as part of its decarbonization strategy.
- The Mission places significant emphasis on R&D in green hydrogen and aims to make India a global hub of Green Hydrogen production, utilization, and export.
- The Mission will encourage private investment in the sector and enable rapid scale-up, technology development, establish standards & regulatory framework and enable rapid cost reduction.

Objectives of NGHM:

- Production of 5 million tonnes of green hydrogen by 2030. Make India a leading producer and supplier of Green Hydrogen in the world.
- Creating opportunities for employment and economic development. Supporting R&D projects in India for further development of Green Hydrogen.

About Green Hydrogen:

- Green Hydrogen is produced using electrolysis of water with electricity generated by renewable energy. The electrolysis process splits water into hydrogen and oxygen, and the hydrogen produced can be used as a clean and renewable

fuel. The carbon intensity ultimately depends on the carbon neutrality of the source of electricity (i.e., the more renewable energy there is in the electricity fuel mix, the "greener" the hydrogen produced).

- Green hydrogen energy is vital for India to meet its Nationally Determined Contribution (NDC) Targets and ensure regional and national energy security, access and availability.

THE SNAKE AWARENESS RESCUE AND PROTECTION APP

In News: The Sarpa app has helped bring down snakebite deaths in Kerala.



More on the Topic:

- The app is developed by the Kerala Forest Department.
- The app collects species-specific data.
- It has helped authorities to identify hotspots with high incidences of snakebites and the most active times for different snake species.
- The app allows users to upload photos of snake sightings or hiding places to alert the nearest rescuer, promoting timely assistance and reducing risks.
- The app aims to eliminate snakebite deaths and raise awareness about snakes and their habitats.
- The prime species of snakes involved in snakebite deaths in Kerala are the cobra, krait, Russell's viper, and saw-scaled viper.

AUDITONLINE

In News: The Action Taken Report (ATR) Module of AuditOnline was launched by the Ministry of Panchayati Raj (MoPR).



More on the Topic:

- To promote greater transparency and accountability in Panchayat audits, the Ministry of Panchayati Raj launched the AuditOnline application in April 2020, enabling online audits of Panchayat accounts and further strengthening financial management and transparency.
- States have achieved significant progress, generating over 200,000 Audit Reports in the two last two audit periods 2020–21 and 2021–22.
- AuditOnline is an open-source application, developed as a part of the Panchayat Enterprise Suite under the e-panchayat Mission Mode Project (MMP), initiated by the Ministry of Panchayati Raj (MoPR).

INDIAN ECONOMY

ENVIRONMENT SOCIAL AND GOVERNANCE SCHEME MUTUAL FUNDS

In News: The capital market regulator, SEBI has recently introduced a separate sub-category for ESG (Environmental, Social and Governance) investments under the thematic category of equity schemes.



More on the Topic:

- Under the current regulatory guidelines, mutual funds are permitted to launch only one ESG scheme under the thematic category for equity schemes.
- The concept of ESG investments is emerging and therefore consistent, comparable, and decision-useful scheme disclosures are desirable to enable investors to make an informed investment decision and to prevent greenwashing.
- In this regard, SEBI has decided to permit the launch of multiple ESG schemes with different strategies by mutual funds.
- A scheme can be introduced under the ESG category with any of the six strategies provided by the market regulator. This includes:
 - Exclusion
 - Integration
 - Best-in-class and positive screening
 - Impact investing
 - Sustainable objectives
 - Transition or transition-related investments

About SEBI ESG Funds:

- ESG Mutual Funds are Thematic Mutual Funds that invest in socially responsible companies.
- ESG funds are those funds whose asset

allocation mostly includes shares and bonds of companies that are evaluated based on environmental, social, and governance factors.

- An organisation is said to be ESG compliant if it meets all the criteria of environmental, social, and governance standards.
- The ESG companies are assessed on their sustainability before they are given the tag.
- The ESG parameters reflect an organisation's culture, the risk involved, and management, among other things.

ESG Criteria:

- Criteria included, among others
- **Environment:** Companies that - put out carbon or sustainability reports, Limit harmful pollutants and chemicals, Seek to lower greenhouse gas emissions and Use renewable energy sources
- **Social:** Companies that - operate an ethical supply chain, support LGBTQ rights and encourage diversity, have policies to protect against sexual misconduct, pay fair wages
- **Governance:** Companies that – embrace diversity on their board, embrace corporate transparency, and employ a CEO independent of the board chair.

REGIONAL RURAL BANKS

In News: The Centre has exempted RRBs from the purview of the Competition Commission of India's merger control regime.



More on the Topic:

- The exemption dispensation from prior scrutiny and approval of the Competition Commission of India (CCI) would be available for five years.
- The decision is seen as a prelude to the next round of consolidation among RRBs.

- The process of consolidation of RRBs was initiated in a phased manner in 2005 in light of the high number (196) of RRBs at that time.
- Currently, there are about 43 RRBs (as of 2021).

About Consolidation of Regional Rural Banks:

- Consolidation of RRBs refers to the process of merging or amalgamating two or more RRBs to form a single entity. There are several reasons why the consolidation of RRBs might be considered:
- **Improved efficiency:** Consolidation can lead to economies of scale, reducing operational costs and improving overall efficiency. It may allow the combined bank to provide better services to customers at a lower cost.
- **Strengthening financial stability:** Some RRBs might be facing financial challenges due to various factors like low capital base, limited resources, or inadequate technology. Merging weaker RRBs with stronger ones can enhance the financial stability of the combined entity.
- **Enhancing capital base:** Consolidation can lead to a larger capital base for the merged RRB, which, in turn, enables it to expand its operations and offer a broader range of financial products and services to rural customers.
- **Technology upgradation:** Consolidation can facilitate technology upgradation, leading to better digital banking services for customers.
- **Risk diversification:** Merging RRBs from different regions can help in diversifying risks. If one region faces adverse economic conditions, the impact on the overall bank will be mitigated due to the geographic spread.
- **Regulatory compliance:** Consolidation might help in complying with regulatory requirements and guidelines more effectively. It can streamline reporting processes and ensure adherence to the norms set by the Reserve Bank of India (RBI) and other regulatory bodies.

About RRBs:

- They were established in 1975 on the recommendation of the Narasimham Working Group. RRBs are jointly owned by the Central Government, the State Government, and the sponsoring bank (usually a nationalized commercial bank).
- The primary objective of RRBs is to promote financial inclusion and rural development by providing banking facilities and credit to the

rural population.

- RRBs are regulated by the Reserve Bank of India (RBI) and must comply with the banking regulations and guidelines issued by the RBI.

ADVANCE AUTHORISATION SCHEME

In News: To enhance trade facilitation and ease the process for exporters, the Directorate General of Foreign Trade (DGFT) has introduced new measures under the advance authorisation scheme.

More on the Topic:

- The scheme enables the duty-free import of inputs for export purposes, with the eligibility of inputs determined by sector-specific norms committees based on input-output norms.
- Advance Authorisation covers manufacturer exporters or merchant exporters tied to supporting manufacturer(s).
- They are not allowed to sell the products in the domestic market.
- Advance Authorization is valid for 12 months from the date of issue of such Authorization.

GLOBAL REGULATORY FRAMEWORK FOR CRYPTO ASSETS

In News: G20 Financial Stability Board has published the Global Regulatory Framework for Crypto Assets.



More on the Topic:

- Framework is based on the principle of 'same activity, same risk, same regulation' and ensures that crypto-asset activities and stablecoins are subject to consistent and comprehensive regulation.
- The framework comprises two separate sets of comprehensive guidelines aimed at regulating and overseeing crypto-asset activities and markets, as well as global

stablecoin arrangements (GSCs).

- The FSB has enhanced both sets of recommendations in three key areas:
- Ensuring sufficient protection of client assets.
- Mitigating risks associated with conflicts of interest.
- Reinforcing cooperation across borders.
- Central Bank Digital Currencies are not subject to these recommendations.

About Crypto Assets and Stablecoin:

- **Crypto assets:** These are digital or virtual currencies that utilize cryptography for secure transactions and operate on decentralized networks, typically based on blockchain technology.
- Bitcoin is the most well-known example of a crypto-asset, but there are thousands of other cryptocurrencies with varying features and purposes.
- **Stablecoins:** Stablecoins are a type of cryptocurrency designed to have a stable value, usually by pegging their worth to a reserve of assets like fiat currencies (e.g., USD, EUR) or commodities (e.g., gold).
- This stability is achieved by mechanisms such as collateralization, algorithmic control, or a combination of both.

About The Financial Stability Board (FSB):

- The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system to promote stability and safeguard against systemic risks.
- It was established in April 2009 under the aegis of G20, in response to the global financial crisis that began in 2007-2008.
- FSB is not a treaty-based organisation and its decisions are not legally binding.

SOARING GLOBAL PUBLIC DEBT

In News: The United Nations Secretary-General António Guterres has presented the report "A world of debt. A growing burden to global prosperity" recently.

More on the Topic:

- Global public debt has reached an all-time high of \$92 trillion in 2022.
- The five-fold surge in public debt levels since 2000 demands immediate action to tackle the

escalating crisis affecting developing countries in particular.

- Developing countries have experienced a significantly faster increase in debt over the past decade compared to developed countries.
- Nearly 30% of the world's public debt is attributed to them.
- In more than 50% of developing countries, a higher proportion of their GDP (over 1.5%) and government revenues (around 6.9%) is allocated towards interest payments rather than investments in education or healthcare.
- Currently, developing countries are increasingly dependent on private creditors, leading to higher costs of credit and increased complexity in debt restructuring processes.

About Public Debt:

- Public debt refers to the total amount of money owed by the government of a country or any public sector entities, such as state-owned enterprises or local governments, to domestic or foreign creditors.
- It is the accumulated borrowing by the government to finance budget deficits, infrastructure development, social programs, or any other government expenditures.
- Public debt can be in the form of government bonds, treasury bills, loans, or other financial instruments.
- The repayment of public debt is typically backed by the government's ability to generate revenue through taxes or other sources of income.

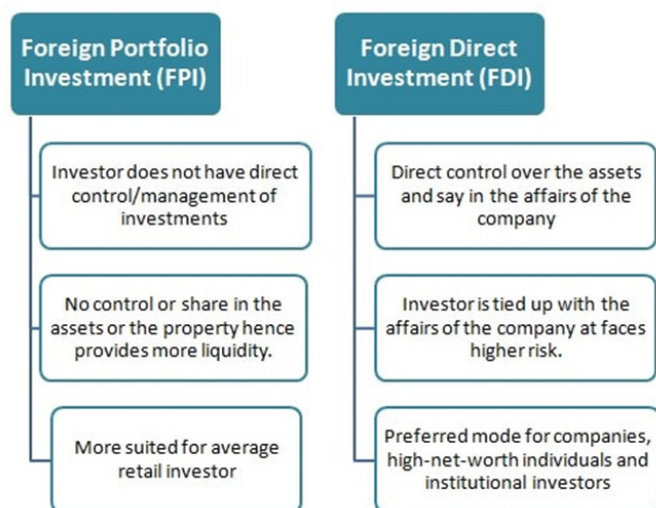
Recommendations to address Public Debt:

- The report has recommended the following,
- A comprehensive reform of the international financial architecture including the debt architecture is the need of the hour to foster a more inclusive system that empowers developing countries to actively participate in the governance of the international financial system.
- Addressing the high cost of debt and the mounting risk of debt distress is of utmost importance.
- Establishing a debt workout mechanism is crucial to expedite progress under the G20 Common Framework for Debt Treatment, which has faced challenges due to creditor coordination issues and the absence of automatic debt service suspension clauses.

- Developing countries, especially those with high debt burdens, require **increased liquidity during times of crisis**.
- This can be achieved by **expanding contingency finance**.
- The global safety net must work. Measures such as enhancing the use of Special Drawing Rights, temporarily suspending IMF surcharges, and broadening access to emergency financing through increased quotas must be pursued.
- A substantial increase in **affordable long-term financing** is also required.
- To get there, we will need to **transform and expand multilateral development banks** to support sustainable long-term development and mobilize more private resources on more equitable terms.
- Additionally, there is an **urgent need for more concessional finance** to fulfil aid and climate finance commitments.

FOREIGN PORTFOLIO INVESTMENTS (FPI)

In News: The SEBI responded to the Supreme Court that even though SEBI has tightened FPI regulations, tax havens pose a global challenge.



More on the Topic:

- The response was made by SEBI in the Supreme Court (SC) in response to various suggestions made by SC appointed expert committee in the wake of the Hindenburg report against Adani Group on potential breaches of securities laws.
- The challenges involved in FPI regulation include FPIs using multiple platforms, each individually below the limit for identification

as a beneficial owner (BO), to hold stakes and **presence in tax havens jurisdictions** leaves ambiguity around their ownership and control.

What are FPIs?

- Foreign Portfolio Investment (FPI) involves **holding financial assets from a country outside of the investor's own**.
- FPI holdings can include stocks, ADRs, GDRs, bonds, mutual funds, and exchange-traded funds.
- Foreign Portfolio Investors have only **passive ownership**.
- Investors have **no control over ventures or direct ownership of property or a stake in a company**.
- Investments in NRIs don't come under FPI.
- Regulated by SEBI, the FPI regime is a route for foreign investment in India.
- SEBI has authorized **National Securities Depository Limited (NSDL)** to issue registration numbers and certificates to FPIs on its behalf.

There are three categories of FPIs registered with NSDL:

- **Category I:** Government entities, central banks, sovereign wealth funds, and international organizations such as World Bank and IMF.
- **Category II:** Financial institutions such as banks, asset management companies, investment managers, and pension funds.
- **Category III:** All other investors who do not fall under Category I or II, including hedge funds and private equity funds.

UNIFIED PAYMENTS INTERFACE (UPI)

In News: After a successful launch in Singapore and France, India's Unified Payments Interface (UPI) is likely to enter the North America market and other Middle-eastern countries in the coming months.



More on the Topic:

- Unified Payments Interface is an instant

payment system developed by the National Payments Corporation of India.

- The interface facilitates inter-bank peer-to-peer and person-to-merchant transactions. It is used on Mobile devices to instantly transfer funds between two bank Accounts.
- NPCI is an initiative of RBI and the Indian Banks Association under the Payment and Settlement Systems Act, of 2007.
- It is the umbrella organization for operating retail payments and settlement systems in India.

Significance of international use of UPI:

- International adoption of UPI enables **simplified cross-border transactions** by providing a seamless and standardized platform for transferring funds across different countries.
- UPI's international use can contribute to **enhancing financial inclusion**, particularly in regions with limited access to formal banking services.
- UPI's international expansion aligns with the **global trend of transitioning towards cashless economies**.
- UPI's international use can foster **stronger partnerships between countries and financial institutions**, facilitating collaboration in areas such as financial technology, cyber-security, and regulatory frameworks.
- UPI uses a virtual ID for a transaction, making it more secure as bank account details are not shared.

CONSOLIDATED CYBER SECURITY AND CYBER RESILIENCE FRAMEWORK (CSCRF) FOR SEBI REGULATED ENTITIES

In News: SEBI came out with a consultation paper on boosting the cyber security framework for entities regulated by it.



More on the Topic:

- The consultation paper on 'Consolidated Cyber Security and Cyber Resilience Framework (CSCRF) for SEBI Regulated Entities' looks at providing a **common structure for multiple approaches to cyber security** to prevent any cyber-risks/incidents.
- The framework is based on **five concurrent and continuous functions of cyber security** as defined by the National Institute of Standards and Technology (NIST).
- They are as follows,
- **Identify**
- **Protect**
- **Detect**
- **Respond**
- **Recover**

Highlights from the Consultation Paper:

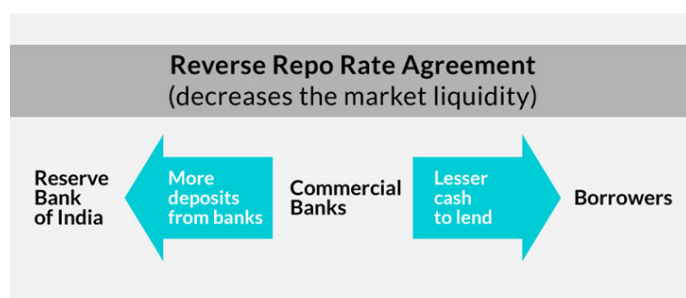
- **Critical Assets:** Market Infrastructure Institutions (MIIs) should **identify and classify or designate critical assets** based on their sensitivity and criticality for business operations, services, and data management.
- The critical assets should include **business-critical systems, Internet-facing applications /systems, systems that contain sensitive data, sensitive personal data, sensitive financial data, and personally identifiable information (PII) data, among others.**
- All the ancillary systems used for accessing or communicating with critical systems either for operations or maintenance should also be classified as critical systems.
- To this end, MII should maintain an **up-to-date inventory** of its hardware and systems, software and information assets (internal and external), details of its network resources, connections to its network and data flows.
- **Vulnerability Assessment:** Every MII should carry out **periodic vulnerability assessment and penetration testing (VAPT)**, which includes all critical assets and infrastructure components like servers, networking systems, security devices, load balancers, and other IT systems about the activities done as a role of MII.
- This vulnerability testing should be done **at least once in a financial year**. But those MIIs whose systems have been identified as protected systems by the National Critical

Information Infrastructure Protection Centre (NCIIPC), should conduct VAPT at least twice in a financial year.

- **Vendors:** The vulnerability tests should only be conducted by Indian Computer Emergency Response Team (CERT-In) empanelled organisations, and the final report of this VAPT test should be submitted to SEBI after approval from the Standing Committee on Technology (SCOT) of respective MII, within one month of completion of VAPT test.
- **Cyber Audit:** SEBI has also made it mandatory for all MIIs to conduct a comprehensive cyber audit at least two times in a financial year.

VARIABLE RATE REVERSE REPO (VRRR)

In News: The Reserve Bank of India (RBI) has said it will conduct an overnight variable rate reverse repo auction for a notified amount.



More on the Topic:

- A reverse repo is a fixed or variable interest rate at which banks lend to RBI.
- The Variable Repo Rate (VRR) auction is usually undertaken to **withdraw excess liquidity from the system**. It is done to tackle inflation. The rate at which RBI issues loans to commercial banks when there is a shortage of funds is the repo rate.

INTERNATIONALISATION OF INDIAN RUPEE

In News: The Reserve Bank of India's (RBI) inter-departmental group (IDG) has published a report on the Internationalisation of the Indian Rupee.



More on the Topic:

- Internationalisation is a process that involves increasing the use of the rupee in cross-border transactions.
- It involves promoting the rupee for import and export trade and then other current account transactions, followed by its use in capital account transactions.
- These are all transactions between residents in India and non-residents.
- The internationalisation of the currency, which is closely interlinked with the nation's economic progress, requires further opening up of the currency settlement and a strong swap and forex market.
- More importantly, it will require **full convertibility of the currency on the capital account and cross-border transfer of funds without any restrictions**.
- India has allowed **only full convertibility on the current account as of now**.

The relevance:

- Currently, the US dollar is said to enjoy an 'Exorbitant Privilege', which refers to the innumerable benefits that accrue to the US on account of all other countries of the world using the US dollar as their currency in most of their international transactions, among global currencies.
- In the wake of the sanctions imposed on the Russian government, other countries have become cautious about the price they may have to pay if they are subjected to similar sanctions by the Western governments.
- They would like to **reduce their reliance on the US dollar and its financial markets** as well as their dependence on dominant international payment mechanisms based on the Society for Worldwide Interbank Financial Telecommunications (SWIFT) messaging system.
- While the Asian crisis of 1997-1998 underscored the necessity of emerging market economies having strong foreign exchange reserves to manage external shocks, in an increasingly polarised world, it no longer seems a sufficient defence against the threat of economic sanctions.

Advantages of internationalisation of the rupee:

- The use of the rupee in cross-border transactions **mitigates currency risk** for

Indian businesses.

- Protection from currency volatility not only reduces the cost of doing business, it also enables better growth of business, improving the chances for Indian businesses to grow globally.
- Internationalisation of the rupee reduces the need for holding foreign exchange reserves.
- Reducing dependence on foreign currency will make India less vulnerable to external shocks.
- As the use of the rupee becomes significant, the bargaining power of Indian businesses would improve, adding weight to the Indian economy and enhancing India's global stature and respect.

Recommendation By RBI:

Short-Term Measures:

- Adopt a standardised approach for examining the proposals on bilateral and multilateral trade arrangements for invoicing, settlement and payment in the rupee and local currencies.
- Encourage the opening of the rupee accounts for non-residents both in India and outside India.
- integrating Indian payment systems with other countries for cross-border transactions.
- Strengthening financial markets.

Middle Terms Measures:

- A review of taxes on masala (rupee-denominated bonds issued outside India by Indian entities) bonds.
- International use of Real Time Gross Settlement (RTGS) for cross-border trade transactions.
- Inclusion of Indian Government Bonds in global Bond indices.

Long-Term Measures:

- Inclusion of the rupee in IMF's (International Monetary Fund) SDR (special drawing rights).
- The SDR is an international reserve asset created by the IMF to supplement the official reserves of its member countries.
- The value of the SDR is based on a basket of five currencies — the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.

SMALL FINANCE BANKS

In News: RBI has rejected three applications for small finance bank licenses.



More on the Topic:

- Small finance banks provide basic bank facilities to the economic sections which are not supported by the other banks.
- It helps to provide financial aid to small business units, small or marginal farmers, and micro or small industries. It includes small-scale businesses, the unorganized sector, low-income households, farmers, etc.
- Small finance banks are registered as public limited companies under the companies act in 2013. It is licensed under section 22 of the banking regulation act 1949.
- It is governed by the provisions of the banking regulation act 1949 and the Reserve Bank of India Act 1934.

BHARAT 6G ALLIANCE

In News: The government has launched the Bharat 6G alliance to drive innovation and collaboration in next-generation wireless technology.

More on the Topic:

- Bharat 6G Alliance (B6GA) is a collaborative platform consisting of public and private companies, academia, research institutions, and standards development organizations.
- According to the government, Bharat 6G Alliance will forge coalitions and synergies with other 6G Global Alliances.
- The primary objective of it is to understand the business and societal needs of 6G beyond technical requirements, foster consensus on these needs, and promote high-impact open research and development (R&D) initiatives.

- B6GA aims to bring together Indian startups, companies, and the manufacturing ecosystem to establish consortia that drive the design, development and deployment of 6G technologies in India.

Funding for 6G technology projects:

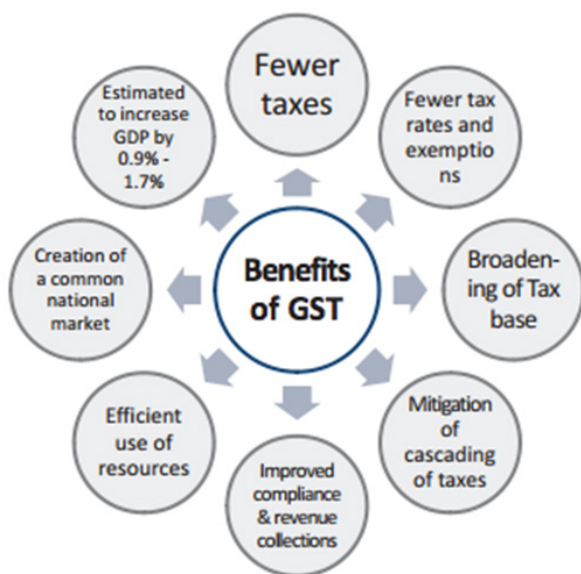
- To support the advancement of 6G technology, the government has allocated a grant of 240.51 crores through the Telecom Technology Development Fund scheme.

About TTDF:

- TTDF aims to fund R&D in rural-specific communication technology applications and form synergies among academia, start-ups, research institutes, and the industry to build and develop the telecom ecosystem.
- The scheme entails grants to Indian entities to encourage and induct indigenous technologies tailor-made to meet domestic needs.

GOODS AND SERVICES TAX (GST)

In News: GST has completed 6 years.



More on the Topic:

- GST is a destination-based taxation system established by the 101st Constitutional Amendment Act.
- It is an indirect tax for the whole country on the lines of "One Nation One Tax" to make India a unified market.
- It is a single tax on the supply of Goods and Services in its entire product cycle or life cycle i.e. from manufacturer to the consumer.
- It is calculated only in the "Value addition" at any stage of goods or services.

- The final consumer will pay only his part of the tax and not the entire supply chain which was the case earlier.
- There is a provision of the GST Council to decide upon any matter related to GST whose chairman is the finance minister of India.

Achievements of GST:

- GST has increased the tax base from 63.9 lakh taxpayers in 2017 to 1.40 crore currently.
- Through the institution of the GST Council, GST has established fiscal federalism.
- GST has eliminated the cascading effect of tax.
- GST has promoted the Ease of Doing Business. The Government has been proactively issuing circulars and clarifications to clear doubts regarding taxation under GST and ensure ease of doing business. Easy compliance, uniformity of tax rates and structures, Reduced logistics cost, an E-invoicing system to check fake invoicing etc. has also helped in improving the ease of doing business.

Concerns:

- GST has multiple tax rates instead of the proposed three-rate GST structure with frequent changes.
- With petrol, diesel, and ATF outside GST, a large part of the economy is still not covered by the indirect tax regime.
- A lot of States have been dependent upon the GST compensation. Since the clause has ended, many States are demanding an extension. The Union Government had delayed GST compensation to the States from 2019-20 when the economy started slowing down. It was paid in May 2022 after much delay.
- The GST council has an unequal power distribution structure between the centre and the states, which hampers true fiscal federalism.

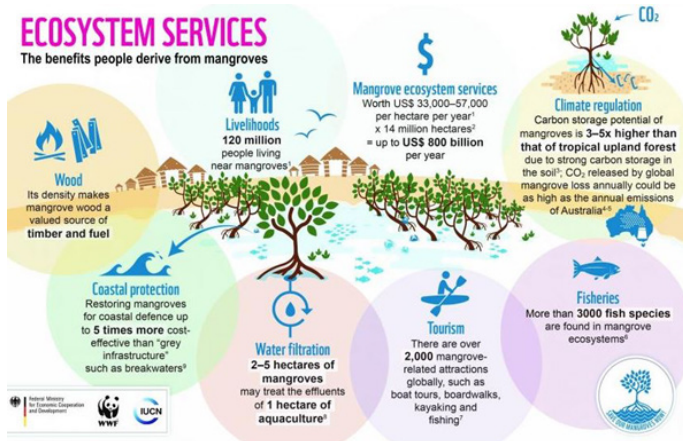
Way Ahead:

- Bring Petroleum products and electricity under GST.
- A simpler tax slab structure limiting commodities to three tax slabs is the need of the hour. Experts have recommended a three-slab structure that will help rationalize this indirect tax system.
- The Center has to be more accommodating to State's needs such as granting compensation amounts without delays etc.

ENVIRONMENT AND ECOLOGY

MANGROVE MITRA PROGRAM

In News: At least 25 families in Odisha's coastal Kendrapara district have donated over 25 acres of their land near Bhitarkanika National Park (BNP) for a mangrove plantation.



More on the Topic:

- The donations have been made under the Mangrove Mitra Programme and the park has 82 mangrove species.
- The Bhitarkanika mangrove ecosystem is India's second-largest.
- It suffered a loss of forest cover from 1951–1961 due to the resettlement of refugees from Bangladesh.
- The influx led to mangrove deforestation as people reclaimed land for houses, agriculture, and aquaculture.

About Mangroves:

- Mangroves are a unique type of coastal ecosystem found in tropical and subtropical regions, consisting of salt-tolerant trees, shrubs, and other plants.
- These dense forests occur in intertidal zones, where the land is regularly flooded by seawater during high tide.
- Mangroves play a crucial role in coastal protection, providing a buffer against storm surges and erosion.
- They also serve as important habitats for a diverse range of wildlife, including various fish species, birds, and invertebrates.
- Moreover, mangroves are valuable in sequestering carbon dioxide and are considered vital in mitigating climate change.

ISSUES ASSOCIATED WITH QUICK-FIX SOLUTIONS TO ADDRESS INDIA'S GROWING WATER WOES

In News: Nonprofits and civil society organisations are increasingly opting for quick-fix solutions to all issues including water stress, a tendency that needs to be moderated.



More on the Topic

- There is a mindset change in our approaches, evident in the past two decades. Compared to the 1980s and 1990s, many civil society organisations, states and central governments are now after quick-fix solutions.
- Initiatives like Jalyukt Shivar Abhiyan, a Maharashtra government initiative of 2014 that targeted river widening, deepening and straightening to make the state drought-free by 2019; Water Cups, a competition initiated by non-profits in 2016 to incentivise Maharashtra villages to harvest water for drought-proofing the state; and planting trees along the banks to rejuvenate rivers are all examples of such quick-fix solutions.
- Watershed-based development, which involves the management of land and vegetation to conserve the quality and supply of water, is no longer actively pursued because it takes seven-eight years to complete, stabilise and show results.
- Nonprofits known for their good watershed development projects, which would earlier have argued for longer watershed projects, are now queuing up for quick-fix solutions like the Jalyukt Shivar Abhiyan.
- This is also aided by access to quick and easy money through the corporate social responsibility (CSR) route for such works.

Concerns Associated with Quick Fix Solutions:

- **Sustainability:** Quick fixes may not address the root causes of water stress, such as

over-extraction, pollution, or inefficient water management.

- **Environmental Impact:** Some quick-fix solutions might involve exploiting water resources in ways that could harm the environment, such as drilling deeper wells or diverting water from sensitive ecosystems.
- **Social Inequity:** Quick fixes may not always consider the needs and rights of all stakeholders. Certain communities or vulnerable groups might be disproportionately affected by the implementation of such solutions, leading to social conflicts and inequities.
- **Cost:** Rapid solutions might be expensive to implement, especially if they involve large-scale infrastructure projects.
- **Lack of Planning:** Hasty solutions might not be part of a comprehensive water management plan. Without proper planning, they may lead to unintended consequences, including further exacerbation of water stress issues or inefficient use of resources.
- **Neglect of Conservation:** Focusing on quick fixes may divert attention from essential water conservation efforts. Long-term solutions often involve sustainable water management practices, water conservation, and promoting responsible water usage behaviours.

Some of the Government Schemes to Mitigate Water Stress:

- **Jal Shakti Abhiyan:** Launched in 2019, the Jal Shakti Abhiyan is a flagship program aimed at water conservation and water resource management.
- It focuses on rainwater harvesting, rejuvenation of traditional water bodies, watershed development, and water conservation practices.
- **National Water Mission:** As part of India's National Action Plan on Climate Change, the National Water Mission aims to enhance water security by promoting water use efficiency, sustainable water management, and increasing water storage capacity.
- **Atal Bhujal Yojana:** This scheme was launched in 2020 with the objective of sustainable management of groundwater resources.
- It focuses on community-based groundwater management and encourages the adoption of efficient water-use practices.
- **Namami Gange Mission:** One of the most well-known initiatives, the Namami Gange

Mission, aims to clean and rejuvenate the River Ganges and its tributaries. It focuses on reducing pollution and promoting sustainable use of water resources along the river.

- **Swachh Bharat Abhiyan (Clean India Mission):** While this program primarily focuses on sanitation, it indirectly impacts water resources by reducing pollution and improving water quality in rivers and water bodies.
- **Smart Cities Mission:** The government's Smart Cities Mission includes provisions for the development of efficient water supply and management systems in selected cities, promoting sustainable urban water practices.
- **Per Drop More Crop:** This initiative is part of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) and focuses on optimizing water use in agriculture through improved irrigation practices and technologies.

STEEL SLAG

In News: The Union Minister of State Science & Technology announced that India has developed the world's latest Steel Road technology.



More on the Topic:

- **CSIR- Central Road Research Institute (CRRI), New Delhi,** which was founded in 1952, has pioneered the development of a revolutionary Steel slag road technology which facilitates the large-scale utilization of waste steel slag of steel plants in road construction.

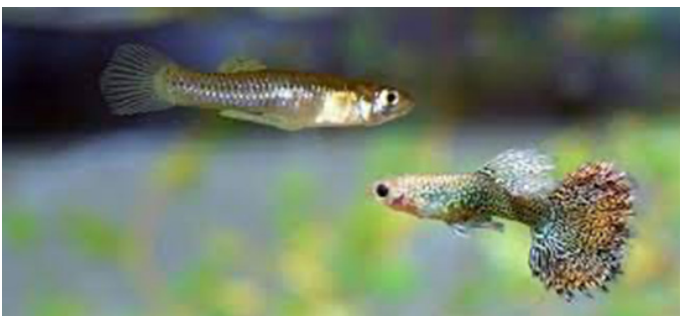
- Steel slag is a **byproduct of steel production** and is **generated during the process of refining iron ore into iron** and then further processing it into steel.
- It is a **type of industrial waste material** that is formed when the impurities present in the iron ore, such as silica, alumina, and phosphorus, combine with the fluxes used in the steel-making process.

Some common uses of steel slag include:

- **Construction materials:** Steel slag can be crushed and used as aggregates in construction materials like road bases, railroad ballast, and concrete.
- Due to its high hardness and excellent stability, it can provide good load-bearing capacity and resistance.
- Steel slag can be used as a raw material in **cement production**, helping to reduce the need for traditional raw materials like limestone.
- Steel slag can be used as a **soil amendment to improve soil fertility and structure**.
- Steel slag has been used in **environmental applications like wastewater treatment** due to its ability to remove certain pollutants from water.
- Steel slag can be used as **fill material for land reclamation** or in embankments for infrastructure projects.

GAMBUSIA FISH

In News: The Andhra Pradesh government has released approximately 10 million Gambusia fish into the state's water bodies to combat mosquito-borne diseases like malaria and dengue.



More on the Topic:

- The fish, also known as mosquitofish, is widely used as a biological agent for controlling mosquito larvae.
- However, the release of these invasive alien

fish species has raised concerns about the potential harm that will be sustained by native species that abound in the state's freshwater bodies.

- *Gambusia affinis* (*G. affinis*) is native to the waters of the southeastern United States and a full-grown per day,
- *Gambusia* has been a part of **mosquito-control strategies** for over a century in various parts of the world, including India. *G. affinis* has a sister species, *Gambusia holbrooki* (*G. holbrooki*), also known as the eastern mosquito fish.
- Mosquitofish has been part of various malaria control strategies in India since 1928, including the Urban Malaria Scheme.

SAND AND DUST STORMS (SDS)

In News: According to the United Nations, Sand and dust storms (SDS) have increased dramatically in frequency and severity in recent years.



More on the Topic

- The growing intensity and frequency of sand and dust storms present a **formidable challenge to achieving sustainable development**.
- These will especially affect **Africa and the Middle East** where desertification is most common.
- In 2022, dust storms affected countries from **Turkey to Oman**, hitting Iraq particularly badly. Iraq was hit by 10 dust storms between April and June 2022 and over 5,000 people were hospitalised.
- Human-induced climate change has increased the frequency and intensity of SDS.

About Sand and Dust Storms:

- Sand and dust storms, also known as **haboobs**, are atmospheric phenomena characterized by strong winds carrying large amounts of sand, dust, and other fine particles.
- These storms typically occur in arid or

semi-arid regions where loose, dry soil and sand are abundant.

- Sand and dust storms are primarily driven by strong **weather systems, such as thunderstorms or cold fronts, which generate powerful gusts of wind.**
- Additionally, they can be influenced by other factors like drought conditions, changes in atmospheric pressure, and geographical features such as deserts or dry lake beds.

Impacts of Sand/Dust Storms:

- These storms can have various impacts, both environmental and socio-economic.
- They **reduce visibility, posing risks to transportation and aviation.**
- Dust particles act as condensation nuclei for cloud formation affecting the amount and location of precipitation.
- The inhalation of fine dust particles can be **detrimental to human health, particularly for individuals with respiratory conditions.**
- Sand and dust storms also contribute to **soil erosion, affect agricultural productivity, and deposit layers of dust on surfaces, impacting infrastructure and daily activities.**
- They have a positive impact too. Dust deposits on the Earth's surface serve as a **valuable source of micronutrients for both terrestrial and marine ecosystems.**
- Notably, Saharan dust has been recognized for its potential to provide fertilization to the Amazon rainforest.

Efforts to Mitigate Sand/Dust Storms:

- The UN Convention to Combat Desertification (UNCCD) observed the first-ever **International Day of Combatting Sand and Dust Storms on July 12, 2023.**
- In 2015, the United Nations General Assembly acknowledged that sand and dust storms present a significant challenge to the sustainable development of countries and regions affected by them.

Way Ahead:

- **Efforts to monitor and predict sand and dust storms have been made to mitigate their effects.**
- **Early warning systems and improved meteorological forecasting help in alerting communities and implementing precautionary measures to minimize the potential risks**

associated with these storms.

- To effectively address the impacts of sand and dust storms (SDS), it is crucial to implement a multi-sectoral approach that promotes information-sharing, incorporates both short-term and long-term interventions, engages various stakeholders, and enhances awareness of SDS.

NATURE RESTORATION LAW

In News: The European Union has passed the Nature Restoration Law recently.



More on the Topic

- It aims to repair the damage done to Europe's nature by 2050.
- The nature restoration law will place recovery measures on 20% of the EU's land and sea by 2030, rising to cover all degraded ecosystems by 2050.

COASTAL REGULATION ZONE

In News: The government has extended the validity of coastal regulation zone clearance to 10 years.

More on the Topic:

- CRZ clearance – approval for projects that fall in the vicinity of coastlines was valid for seven years which could be **extended for a maximum of three years through an application by the project proponent (any industry/infrastructure project), with a recommendation for an extension by the State Coastal Zone Management Authority.**
- But now CRZ clearances are being harmonised with environmental clearances, which will be granted for 10 years.
- In a notification issued in July 2023, the

Union environment ministry also made **CRZ clearance transferable to another project proponent** and made provisions for the CRZ clearance granted for a specific project to be split amongst two or more project proponents.

- The norms restrict certain kinds of activities – like large constructions, setting up of new industries, storage or disposal of hazardous material, mining, reclamation and bunding – within a certain distance from the coastline.

COAST CUTTER

CLASSIFICATION

CRZ I | Ecologically sensitive areas like sanctuaries, reserve forests, mangroves, coral reefs, turtle-nesting grounds, which could be inundated due to rise in sea level


CRZ II | Areas which have already been developed up to the shoreline within municipal or corporn limits

CRZ III A | CRZ III areas with a population of more than 2,161 per sqkm. Here, 50m from high tide will be no-development zone (NDZ)

CRZ III B | Other CRZ III areas with less population. Here area up to 200m from the HTL on the landward side will be earmarked as NDZ

BOOST FOR TOURISM

➤ With the freeze on constructions along the coastal zone more or less lifted, the tourism sector will be the biggest beneficiary



➤ Toilets, changing rooms, drinking water facility and temporary shacks can be constructed even on beaches

➤ Existing residential buildings can be converted into homestays without increasing the plinth area

➤ CRZ will not be a bar for public utilities like roads even if it passes through mangrove forests

➤ Introduction of CRZ-III into A and B clauses will address state's main concern of issuing permission to dwelling units as well

BACKGROUND

➤ Under Environment Protection Act, 1986 a notification was issued in February 1991 for regulation of activities in coastal area by the ministry of environment and forests

➤ Coastal land up to 500m from the high tide line (HTL) and area of 100m along banks of estuaries, backwater, creeks and rivers which are subject to tidal fluctuations are called coastal regulation zone (CRZ)

NATIONAL CLEAN AIR PROGRAMME

In News: National Clean Air Program implemented cities have shown a dip in the concentration levels of particulate matter (PM2.5) in both rural and urban areas.

National Clean Air Programme

National Clean Air Programme was launched on 10th January 2019 to tackle the increasing air pollution across the country.



About Coastal Regulation Zone:

- By the Environment Protection Act of 1986, the Environment Ministry created the Coastal Regulation Zone rules (CRZ rules) in February 1991.
- The notification of the rules was issued in 2011. In 2018, the government released the Coastal Regulation Zone Notification 2018 to lift building limitations, speed up the clearance procedure, and boost tourism in coastal areas.
- According to the CRZ regulations, the land between the low tide line (LTL) and the high tide line (HTL), as well as the coastal areas of creeks, seas, bays, rivers, and backwaters that are subject to tides up to 500 metres from the high tide line (HTL), are designated as coastal regulatory zones (CRZ).

What are CRZ norms?

- The Coastal Regulation Zone (CRZ) norms in India are regulations and guidelines established by the Ministry of Environment, Forest and Climate Change (MoEFCC) under the Environment (Protection) Act, 1986.
- These norms aim to protect and manage the coastal areas of India, ensuring sustainable development while preserving the fragile coastal ecosystem.

More on the Topic:

- The goal of NCAP is to meet the prescribed annual average ambient air quality standards at all locations in the country in a stipulated time frame.
- NCAP targets to achieve a reduction in Particulate Matter (PM10) levels by up to 40% or achievement of national standards (60 microgram/cubic meter) by 2025-26 in targeted 131 cities of 24 States.
- 2017 is taken as the base year for the comparison of concentration.

Objectives:

- To augment and evolve effective and proficient ambient air quality monitoring networks across the country for ensuring a comprehensive and reliable database
- To have efficient data dissemination and public outreach mechanism for timely measures for prevention and mitigation of air pollution and inclusive public participation in both planning and implementation of the programmes and policies of government on air pollution
- To have a feasible management plan for

the prevention, control and abatement of air pollution.

UNDERGROUND CLIMATE CHANGE

In News: Live cultures of *Candida auris* have been isolated and documented in the ear canals of hospitalised stray dogs in New Delhi.

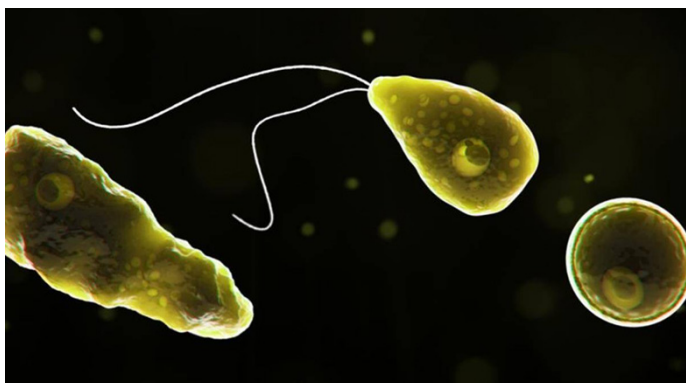


More on the Topic:

- *Candida auris* is an emerging multidrug-resistant oval-shaped fungus causing life-threatening outbreaks, often in health-care settings.
- This fungal pathogen has been rated as an urgent threat by the U.S. Centers for Disease Control and Prevention (CDC) and classified as a critical priority group by the World Health Organisation (WHO).
- It belongs to the genus *Candida* which causes candidiasis in humans.
- Often, candidiasis is acquired in hospitals by patients with weakened immune systems.

NAEGLERIA FOWLERI

In News: Kerala boy dies due to 'brain-eating amoeba'.



More on the Topic:

- A brain-eating amoeba, specifically *Naegleria fowleri*, is a rare but highly dangerous organism that can cause a rare and often fatal infection called primary amebic meningoencephalitis (PAM).
- When contaminated water enters the body through the nose, the amoeba can travel to the brain, leading to severe brain inflammation.
- Initial symptoms include headache, fever, nausea, and vomiting, which may progress to seizures, altered mental state, and coma.
- Unfortunately, PAM is usually fatal, with only a few cases of survival.

CANDIDA AURIS

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More on the Topic:

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- Often, candidiasis is acquired in hospitals by patients with weakened immune systems.

CHINKARA

In News: In a first-of-its-kind judgement, a sessions court in Rajasthan's Hanumangarh district has ordered the payment of half of the fine amount, imposed on a convict in a chinkara killing case, to the informer as a prize for helping in the detection of crime against wildlife.



More on the Topic:

- Chinkara or Indian gazelle is the State animal of Rajasthan.
- The chinkara (*Gazella bennettii*), also known as the Indian gazelle, is a gazelle species native to Iran, Afghanistan, Pakistan and India.
- Most of the global population is found in the Thar Desert of western India.
- Chinkara are very shy creatures and avoid human habitation. Most of the time they spend alone, however, can sometimes gather in small groups of up to four animals. Males are territorial and will chase other males away from their territory. These gazelles are very agile; they run in leaps and bounds and can jump up to 6-7m in height. When feeling threatened, they will stamp their forefoot and produce a sneeze-like hiss through the nose. Chinkara prefers to feed at nighttime and are most active just before sunset and during the night.
- They can go for a long time without water.
- It has been listed as Least Concern under the IUCN Red List of Threatened Species and in CITES Appendix III.

MHADEI WILDLIFE SANCTUARY

In News: The Goa bench of the Bombay High Court has directed the Goa government to notify the Mhadei Wildlife Sanctuary and other areas as a tiger reserve under the Wildlife Protection Act.



More on the Topic

- Spread over 208 sq km, Mhadei Wildlife Sanctuary is located in the northeastern part of Goa adjoining Karnataka.
- This area has waterfalls such as Vazra Sakla Falls and Viridi Falls.
- One of its significant features is the presence of nesting sites for critically endangered Long-billed vultures, particularly near Vazra Falls.
- The landscape is characterized by a diverse mix of thick moist deciduous forests and evergreen species.
- Notably, the region is also renowned for its sacred groves, which play a crucial role in safeguarding rare and indigenous trees.
- Mhadei River, a lifeline of Goa, originates in Karnataka, passes through the sanctuary, and meets the Arabian Sea at Panaji.
- The sanctuary acts as a catchment area for the Mhadei River.

Tiger Conservation in India:

- **Project Tiger:** India launched "Project Tiger" in 1973, which was one of the world's most successful and pioneering wildlife conservation programs. The project aims to identify and protect tiger reserves across the country, providing a safe habitat for tigers to thrive.
- **Tiger Reserves:** India has established numerous tiger reserves across various states to provide protected areas for tigers and other wildlife. These reserves are carefully managed to ensure the well-being of tigers and their prey species.
- **National Tiger Conservation Authority (NTCA):** The NTCA was established in 2005 to oversee

and implement tiger conservation efforts at the national level.

- It works in collaboration with state governments, NGOs, and other stakeholders to formulate and execute conservation policies.
- **Tiger Census:** India conducts regular tiger population surveys using advanced methods. The All India Tiger Estimation is carried out once in every four years to assess the tiger population and the effectiveness of conservation efforts.
- **International Cooperation:** India collaborates with international organizations and neighbouring countries to tackle transboundary issues related to tiger conservation and illegal wildlife trade.

CANNABIS

In News: Jammu is going to pioneer India's first cannabis medicine project.



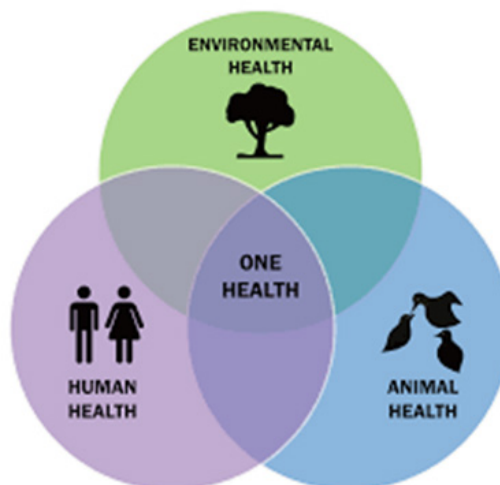
More on the Topic

- The project undertaken by the CSIR-IIIM will produce export-quality medicines meant for different kinds of neuropathies and diabetic pains.
- Cannabis-based products are derived from the dried flowering tops, leaves, stems, and seeds of the Cannabis sativa (hemp) plant.
- These products contain compounds that offer medicinal benefits, including euphoric, pain-relieving, and psychoactive effects, among others.

- The primary psychoactive component in cannabis is Δ -9 tetrahydrocannabinol (THC).
- It is important to note that cannabis remains the most extensively cultivated, trafficked, and misused illicit drug.

ONE HEALTH

In News: FAO, UN Environment Programme (UNEP), WHO and World Organisation for Animal Health (WOAH) together have launched the One Health Priority Research Agenda on Antimicrobial Resistance through a webinar.



More on the Topic:

- It aims to guide a variety of stakeholders in generating new evidence to address antimicrobial resistance, with a focus on low- and middle-income countries.
- The agenda will serve as a guide for countries, research institutes and funding bodies to support One Health AMR research.
- It will also allow policymakers, researchers, and the multidisciplinary scientific community to collaborate across sectors.

About One Health Concept:

- It defined 'One Health' as an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems.
- The concept acknowledges the health of humans, domestic and wild animals, plants, and the larger environment, including ecosystems, are inextricably linked and interdependent.

Agenda presented a five pillar based one health approach to tackle the growing threat of AMR:

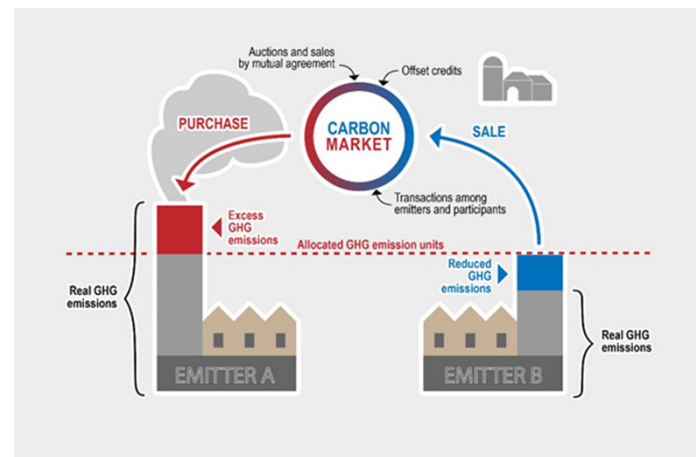
- **Transmission:** This pillar focuses on the environment, plant, animal, and human

sectors where AMR transmission, circulation and spread occur.

- This includes what drives this transmission across these areas, where these interactions occur, and the impact on different sectors.
- **Integrated surveillance:** This pillar aims to identify cross-cutting priority research questions to improve common technical understanding and information exchange among One Health stakeholders.
- The surveillance aims for harmonisation, effectiveness, and implementation of integrated surveillance with a focus on LMICs.
- **Interventions:** This pillar focuses on programmes, practises, tools, and activities aimed at preventing, containing, or reducing the incidence, prevalence, and spread of AMR.
- This also calls for the best use of existing vaccines, as well as other One Health-related measures to reduce AMR.
- **Behavioural insights and change:** The priority research areas under this pillar are concerned with comprehending behaviour across various groups and actors involved in the development and spread of AMR at the One Health interface.
- It focuses on research addressing human behaviour that affects AMR, including ways to combat it.
- **Economics and policy:** From a One Health standpoint, this pillar addressed investment and action in AMR prevention and control.
- This pillar also takes into account the cost-effectiveness of an AMR investment case, financial sustainability, and long-term financial impact.
- This research agenda aims to direct future research in One Health AMR with a focus on low-resource settings. The agenda also emphasises the importance of developing research capacity in LMICs, which will be critical for addressing research gaps and developing evidence.
- The agenda at the regional and national levels requires tailoring and the development of specific research questions.

POWER MINISTRY - DOMESTIC CARBON MARKET FRAMEWORK

In News: The Power Ministry has notified the domestic carbon market framework.



More on the Topic:

- The Energy Conservation (Amendment) Act, 2022 provides for a carbon trading scheme, and obligations framework for new fossil energy or feedstock, and brings in large buildings under energy conservation and sustainable building code.

Highlights from the Notification:

- The government will set up an **Indian Carbon Market Governing Board** with the secretary of the Ministry of Environment, Forest and climate change as its chairperson for direct oversight of its administrative and regulatory functioning of the market.
- **Bureau of Energy Efficiency (BEE)** would be the administrator for the carbon market and set targets for reduction in emissions, issue carbon credit certificates and accredit carbon verification agencies.
- **Central Electricity Regulatory Commission (CERC)** will be the regulator for all trading activities.
- **Grid Controller of India** will be the registry of ICM.

About Carbon Markets:

- Carbon markets are trading systems in which carbon credits are sold and bought. Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions.
- One tradable carbon credit equals one tonne of carbon dioxide or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.
- When a credit is used to reduce, sequester, or avoid emissions, it becomes an offset and is no longer tradable.

GLOBAL BIODIVERSITY FRAMEWORK FUND

In News: Global Environment Facility's (GEF) governing board has approved plans to establish the Global Biodiversity Framework Fund.

More on the Topic:

- The new fund is intended to finance the implementation of the **Kunming-Montreal Global Biodiversity Framework** adopted in December 2022.
- The proposed fund allocations are as follows:
- 20 percent will go to **Indigenous Peoples and local communities (IPLC)**. This is an aspirational goal.
- 25 per cent will go to GEF agencies and must be enforced.
- GBFF will draw in capital from **governments, the private sector, and philanthropic organisations** and will focus on eight thematic Action Areas namely Biodiversity conservation, restoration, land/sea use and spatial planning, etc.
- GBFF acknowledges the important roles and contributions of indigenous peoples as custodians of biodiversity and in the conservation, restoration and sustainable use.

Kunming-Montreal Global Biodiversity Framework (GBF):

- Through the Kunming-Montreal Global Biodiversity Framework (GBF), countries agreed to protect **30 percent of the planet by 2030**.
- The countries pledged to achieve **23 targets to reverse ecosystem degradation** under four overarching goals for the survival of the natural world.
- Under the Global Biodiversity Framework (GBF), countries also agreed to reduce harmful government subsidies worth 500 billion dollars annually, while vowing to **identify subsidies that are harmful to biodiversity by 2025**.
- Its other targets include reducing the use of pesticides by half and **raising annual international financial flows from developed to developing countries to at least 20 billion dollars by 2025, and to at least 30 billion dollars by 2030**.

Global Environment Facility (GEF):

- The Global Environment Facility (GEF or the Facility) was established in the International

Bank for Reconstruction and Development (IBRD or World Bank) as a pilot program to assist in the protection of the global environment and promote environmentally sound and sustainable economic development.

- It was established by a resolution of the Executive Directors of the World Bank and related interagency arrangements between the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and the World Bank.
- It is based in Washington DC, United States.

WHITE-RUMPED VULTURE

In News: Despite the protective measures, the future remains extremely perilous for the critically endangered white-rumped vulture (*Gyps bengalensis*) in the Sigur plateau in the Nilgiris.



More on the Topic

- Nilgiris is the **last southernmost viable breeding population** for the species in India.
- The white-rumped and other vulture species in India have been decimated by the use of diclofenac and a few other Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) in cattle.
- Vultures in Sigur are also becoming the **unwitting victims of retaliatory poisoning of tigers and leopards**.
- Anthropogenic pressures, such as cattle grazing and poorly designed check-dams, have depleted the habitats over the last few years.

LUDWIGIA PERUVIANA

In News: Ludwigia peruviana, the weed native to some countries in Central and South America, including Peru, is threatening elephant habitats and foraging areas in Valparai, Tamil Nadu.



More on the Topic:

- Ludwigia peruviana, which grows fast along water bodies, has infested the majority of the hill station's swamps, locally known as vayals, where elephants used to find lush grass even in the summer.
- Most of these swamps are located in private estates, which are responsible for the tricky process of removing the weed; if not done correctly, trying to pull it out will simply help it spread even more.
- Ludwigia Peruviana is listed as one of the **22 priority invasive plants in Tamil Nadu**, emphasizing the urgency of containment and control measures.
- The elimination of Ludwigia presents a unique challenge compared to other invasive plants because it grows in swamps, limiting the use of machinery to tackle the problem without damaging the ecosystem further.

RED ALGAE

In News: Marine-life experts believe the harmful algal bloom has led to the killing of hundreds of Sea Lions and Dolphins.

More on the Topic:

- The algae, Pseudo-Nitzschia, produces a **neurotoxin called domoic acid**, which can be poisonous to seabirds and fish once ingested.
- It can then travel across the food chain to larger marine animals like dolphins, sea lions

and even humans.

- Humans too can get sick from domoic acid if they eat contaminated food.
- An algal bloom is a term used for the **excessive growth of algae over a water body causing discolouration of the water body**.
- Blooms can proliferate mainly because of anthropogenic climate change and excess Nitrogen washing up to the shore.



INDIAN SKIMMER

In News: Six Indian Skimmer eggs laid on a sandbar on a partially exposed ridge of sand in a water body were washed away.



More on the Topic:

- The Indian skimmer is found in the coastal estuaries of western and eastern India. It resides primarily on larger, sandy, lowland rivers, around lakes and adjacent marshes and, in the non-breeding season, in estuaries and coasts.
- The bird, having an estimated population of 3,700-4,400 in South Asia, according to BirdLife International 2021, has been under threat as human activities gnaw away at its habitats.
- IUCN Conservation Status: **Endangered**

AGRICULTURE

SILVOPASTURE SYSTEMS

In News: The Silvopasture systems buffer against temperature and wind extremes, providing a favourable living environment for livestock.



More on the Topic:

- Silvopasture is an ancient and proven practice that harmoniously integrates trees, forage and livestock on the same land.
- By combining these elements, silvopasture brings numerous environmental advantages, including improved local climate resilience.
- In light of the global deterioration of natural resources and forests, silvopasture systems offer a relevant solution to deforestation trends.
- The trees on silvopasture lands act as natural carbon sinks, sequestering significantly 5-10 times more carbon than pastures without trees, all while maintaining or enhancing productivity.

TECHNOLOGICAL INITIATIVES IN THE AGRICULTURAL SECTOR

In News: Weather Information Network Data Systems (WINDS) portal, AIDE mobile app and Yield Estimation System based on Technology (YES-TECH) Manual was released by the union ministry of Agriculture.

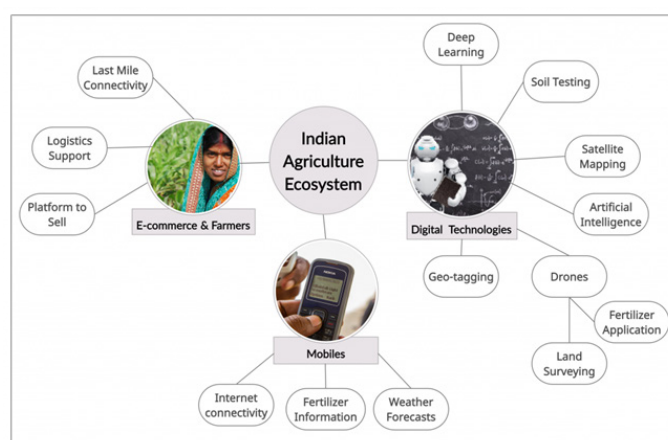
More on the Topic:

Weather Information Network Data Systems:

- Crucial weather-related information and data will be available to the farmers through WINDS.
- Keeping in view the challenges of obtaining accurate meteorological data from inadequate infrastructure, the WINDS initiative emphasizes setting up a strong network

of weather stations.

- Through this initiative, the target is to establish a wide network of weather stations at the block and gram panchayat levels.
- This strategic approach will ensure widespread access to accurate and timely weather data.
- The goal is to bridge the gap in weather information availability and empower decision-makers, farmers and stakeholders at the grassroots level.
- This extensive network of weather stations will enable accurate monitoring of weather patterns, effective planning, risk assessment and timely response to meteorological challenges.



AIDE mobile app:

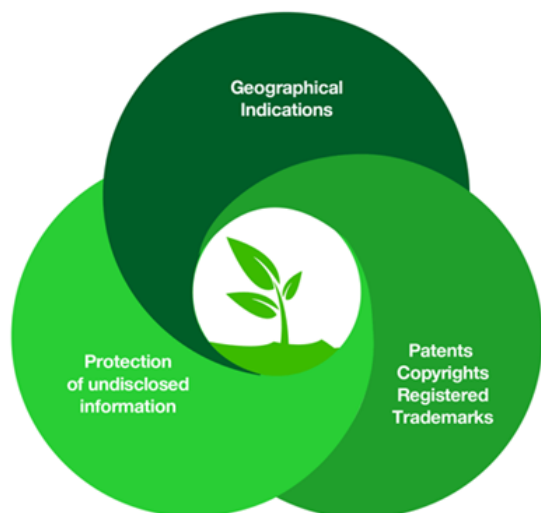
- It is a mobile application specifically developed to streamline the enrollment process for farmers in crop insurance schemes like Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather-Based Crop Insurance Scheme (RWBCIS).
- The app ensures a seamless and transparent process, making crop insurance more accessible and convenient for farmers.
- It serves as a user-friendly tool that facilitates the seamless enrollment of farmers under these insurance programs.

YES-TECH Manual:

- This comprehensive guide serves as a facilitator for the successful implementation of YES-TECH, a technology-driven yield estimation system.
- It provides in-depth methodologies, best practices, and integration insights to ensure precise yield assessments at the Gram Panchayat level.

INTELLECTUAL PROPERTY PROTECTION IN AGRICULTURE

In News: The Delhi High Court has upheld an order by the Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA), revoking the intellectual property protection granted to PepsiCo India Holdings Pvt. Ltd concerning a potato variety developed by it.



More on the Topic:

- It pertains to FL 2027, a potato variety with high dry matter and low sugar content better suited for making chips.
- Normal table potatoes have more moisture, which adds to dehydration and energy costs during processing, and higher sugar, which causes blackening on frying.
- FL 2027 was developed in 1996 by Robert W Hoopes, a US breeder employed with Frito-Lay Agricultural Research, a division of PepsiCo Inc. The latter has been manufacturing potato chips sold under its Lay's brand using this processing-grade variety, which is grown by some 14,000 farmers in India via contract cultivation and buy-back at pre-fixed rates.
- PepsiCo India Holdings was granted a certificate of registration for FL 2027 as an "extant variety" on February 1, 2016.
- The validity period – during which nobody else could commercially produce, sell, market, distribute, import or export it without the breeder's authorisation – was six years from the date of registration and extendable up to 15 years.
- PPVFRA, the authority that had earlier granted registration for FL 2027, revoked the same through an order passed in December 2021.

- PPVFRA also rejected PepsiCo India's application for renewal of its registration.
- PepsiCo challenged both the order and the letter before the Delhi High Court. The court, in its ruling in July, upheld the PPVFRA's decision.

Why was the registration revoked?

- PepsiCo had sought the registration of FL 2027 as a "new variety".
- A "new variety" had to conform to the criterion of novelty.
- That required the propagated or harvested material from it not to have been sold in India earlier than one year before the date of applying for registration. Having failed the test of novelty, FL 2027 could only have been granted registration as an "extant variety".
- Such a variety could satisfy only the criteria of distinctiveness, uniformity and stability, but not novelty.
- PepsiCo was also found to have given the first date of sale of the variety in its application as December 17, 2009, when it had already been commercialised in 2002 in Chile.
- The certificate of registration had, thus, been obtained based on incorrect information furnished by the applicant.

The Plant Variety Protection and Farmers' Rights Act 2001:

- The Govt. of India enacted "The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001".
- Indian legislation is not only in conformity with International Union for the Protection of New Varieties of Plants (UPOV), 1978, but also has sufficient provisions to protect the interests of public sector breeding institutions and the farmers.
- The legislation recognizes the contributions of both commercial plant breeders and farmers in plant breeding activity and also provides to implement TRIPs in a way that supports the specific socio-economic interests of all the stakeholders including private, public sectors and research institutions, as well as resource-constrained farmers.

Rights under the Act:

- **Breeders' Rights:** Breeders will have exclusive rights to produce, sell, market, distribute, import or export the protected variety. A breeder can appoint an agent/ licensee and

may exercise civil remedy in case of infringement of rights.

- **Researchers' Rights:** Researchers can use any of the registered varieties under the Act for **conducting experiments or research**. This includes the use of a variety as an initial source of variety to develop another variety but repeated use needs prior permission of the registered breeder.

Farmers' Rights:

- A farmer who has evolved or developed a new variety is **entitled to registration and protection in like manner as a breeder of a variety**;
- Farmers' variety can also be registered as an **extant variety**;
- A farmer can save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under the PPV&FR Act, 2001 in the same manner as he was entitled before the coming into force of this Act provided **farmer shall not be entitled to sell branded seed of a variety protected under the PPV&FR Act, 2001**;
- Farmers are eligible for recognition and rewards for the conservation of Plant Genetic Resources of landraces and wild relatives of economic plants;
- There is also a provision for compensation to the farmers for non-performance of variety under Section 39 (2) of the Act, 2001 and
- The farmer shall not be liable to pay any fee in any proceeding before the Authority or Registrar or the Tribunal or the High Court under the Act.

MOSAIC VIRUSES

In News: The current sharp increase in the price of tomatoes is due to the lower production of vegetables because of CMV and ToMV viruses in Maharashtra and Karnataka.

More on the Topic:

- The two plant pathogens have similar names and cause similar damage to crops, but **they belong to different viral families and spread differently**.
- ToMV belongs to the **Virgaviridae family and is closely related to the tobacco mosaic virus (TMV)**. ToMV hosts include tomatoes, tobacco, peppers, and certain ornamental plants.
- CMV has a much larger host pool that

includes cucumber, melon, eggplant, tomato, carrot, lettuce, celery, cucurbits (members of the gourd family, including squash, pumpkin, zucchini, some gourds, etc.), and some ornamentals.

- CMV was identified in cucumber in 1934, which gave the virus its name.
- ToMV spreads mainly through infected seeds, saplings, agricultural tools and often, through the hands of nursery workers who have failed to sanitise themselves properly before entering the fields. It would require only a few infected saplings for the virus to take over an entire field in a matter of days.
- CMV is spread by aphids, which are sap-sucking insects. CMV too can spread through human touch, but the chances of that are extremely low.

FAIR AND REMUNERATIVE PRICE (FRP)

In News: Cabinet Committee on Economic Affairs approved FRP of sugarcane for the 2023-2024 sugar season.



More on the Topic:

- Fair and remunerative price (FRP) is the minimum price at which sugarcane is to be purchased by sugar mills from farmers.
- The FRP is fixed by the Union government (Cabinet Committee on Economic Affairs (CCEA)) based on **recommendations of the Commission for Agricultural Costs and Prices (CACP)**.
- The 'FRP' of sugarcane is determined under the Sugarcane (Control) Order, of 1966.
- Recommended FRP is arrived at by taking into account various factors including cost of production, demand-supply situation, domestic & international prices, inter-crop price parity etc.

GEOGRAPHY

THE BATAGAIKA CRATER

In News: The Batagaika crater, the world's biggest permafrost crater in Russia's Far East, is thawing.



More on the Topic:

- It threatens Russian towns and cities and the planet, as scientists have noted that the "enormous quantity" of organic carbon released due to this thawing into the atmosphere may further fuel global warming.

About Permafrost:

- Permafrost refers to a type of ground that remains continuously frozen for two or more consecutive years.
- It consists of soil, rock, and other materials that remain at or below freezing temperatures (0 degrees Celsius or 32 degrees Fahrenheit) for extended periods, often for thousands of years.
- Permafrost is typically found in polar regions like the Arctic and some high-altitude mountainous areas.
- This frozen ground plays a crucial role in shaping the landscape and ecosystem of these regions.
- It affects vegetation growth, and hydrology, and even contributes to the stability of buildings and infrastructure.
- However, due to climate change, permafrost is under threat, as rising temperatures can cause it to thaw, leading to various environmental and engineering challenges.
- Thawing permafrost can release greenhouse gases like methane and carbon dioxide, potentially exacerbating global warming.

Thawing:

- Thawing refers to the process of melting or

defrosting something that was previously frozen.

- When temperatures rise above freezing point, substances such as ice or frozen ground, like permafrost, start to thaw and return to a liquid or unfrozen state.
- Thawing can occur naturally due to warmer weather or artificially through various methods such as heating or using chemical agents.
- In the context of permafrost, thawing can have significant impacts on the environment, ecosystems, and infrastructure in polar and high-altitude regions.

YELLOW SEA

In News: North Korea has fired several cruise missiles into the Yellow Sea.



More on the Topic:

- The Yellow Sea is a marginal sea located between mainland China and the Korean Peninsula.
- It is part of the Northwest Pacific Ocean and is known for its yellowish-brown colour, which is attributed to the vast amount of sediment carried by the numerous rivers that flow into it.
- To the northwest, the Yellow Sea is connected to the Bohai Sea through the Bohai Strait.
- It opens south into the Korea Strait, leading to the East China Sea.
- The Yellow Sea is an important body of

water for both China and South Korea, supporting fishing, shipping, and other economic activities.

BLACK SEA

In News: Black Sea is in news related to the Black Sea grain trade initiative.



More on the Topic:

- The Black Sea is a large inland sea located in southeastern Europe.
- It is bordered by six countries: Ukraine to the north, Russia to the northeast, Georgia to the east, Turkey to the south, and Bulgaria and Romania to the west.
- The Black Sea is connected to the Mediterranean Sea through the Bosphorus Strait and the Dardanelles Strait.
- The sea has a diverse and rich history, with ancient civilizations such as the Greeks, Romans, and Byzantines having significant influence in the region. Today, it remains an important area for trade, transportation, and tourism.
- The Black Sea is known for its unique hydrography, including a layer of anoxic water at depths, which means there is little to no oxygen in that layer. This anoxic layer preserves shipwrecks and artefacts remarkably well, making it a fascinating area for marine archaeology.
- Some of the major cities along its coast include Istanbul (Turkey), Varna (Bulgaria), Odesa (Ukraine), and Constanta (Romania).

GOMTI RIVER

In News: A three-year-old government order (GO) issued by the irrigation department of the Uttar Pradesh government declaring the Gomti as a "non-perennial river" has drawn criticism from water experts and river rights activists.



More on the Topic:

- Gomti is a tributary of Ganga river and an alluvial river of the Ganga Plain.
- It originates near Mainkot, from Gomat Taal Lake also known as Fulhar Jheel in Madhotanda.
- It meets the Ganga River at Kaithi, Ghazipur District, bordering Varanasi.
- Various Tributaries of River Gomati are Gachai, Sai, Jomkai, Barna, Chuha, Saryu, Giri, Kalyani, and Kathna.

THE KAAS PLATEAU

In News: A study conducted by Agharkar Research Institute (ARI) and the National Centre for Earth Sciences examined sediments from a seasonal lake in the Kaas plateau to decode past climate.



More on the Topic:

- Sediment profiles dating back to 8,000 years BP provided insights into climatic signatures and ecosystem modifications.
- The Kas Plateau is a plateau situated 25 kilometres west of Satara city in Maharashtra, India. It falls under the Sahyadri Sub-Cluster of the Western Ghats.
- It was designated as a UNESCO World Natural Heritage Site in 2012.
- The plateau's name is derived from the Kaasa tree, scientifically known as *Elaeocarpus glandulosus*.

Geological Features:

- The Kaas Plateau is characterized by its lateritic crust, formed by weathering of basaltic rocks over time.
- Shallow depressions and pediments (rock debris) contribute to the unique topography of the plateau.
- These geological features play a crucial role in the water retention and hydrological processes of the region.

SIACHEN GLACIER

In News: In June 1958, exactly 65 years ago, V. K. Raina, a top Indian geologist, who at that time was an Assistant Geologist with the GSI led the first GSI Survey of the Siachen glacier.



More on the Topic

- The Siachen Glacier is a glacier located in the eastern Karakoram range of the Himalayas, near the Line of Control (LoC) between India and Pakistan.
- It is considered one of the longest glaciers outside the polar regions, spanning approximately 76 kilometres (47 miles) in length.
- It is the 2nd longest nonpolar glacier in the

world, after the Fedchenko Glacier in Tajikistan.

- Siachen Glacier holds strategic significance due to its location at the northernmost point of the disputed region of Jammu and Kashmir.
- It is often referred to as the "world's highest battlefield" as military forces from both India and Pakistan have been deployed in the region since 1984.
- The conflict over Siachen Glacier stems from the unresolved territorial dispute between India and Pakistan.

NATHULA PASS

In News: Landslides triggered by heavy rain cut off large parts of northern and eastern Sikkim, including Nathula Pass.



More on the Topic:

- Nathula Pass is a mountain pass located in the Himalayas at the Indo-China border.
- It connects the Indian state of Sikkim with the Tibetan Autonomous Region of China.
- The pass is situated at an altitude of

approximately 4,310 meters (14,140 feet) above sea level and is one of the highest motorable passes in the world.

- To visit Nathula Pass, Indian citizens need to obtain a Protected Area Permit (PAP).
- The reopening of border trade through Nathula Pass took place in 2006, marking a significant event after a gap of 44 years since its closure due to the Indo-China war in 1962.

ANTHROPOCENE EPOCH

In News: In a major development that could change the Earth's official geological timeline, geologists have said sediments at Crawford Lake in Canada's Ontario have provided evidence of the beginning of the Anthropocene epoch.

Quaternary Period with the Anthropocene Epoch

Eonothem/ Eon	Erathem/ Era	System/ Period	Series/ Epoch	Stage/ Age	millions of years ago
Phanerozoic ↑ ↓	Cenozoic ↑ ↓	Quaternary ↑ ↓	Anthropocene ¹		
			Holocene		1950 CE
			Pleistocene	Upper	0.0117
				Middle	0.126
				Calabrian	0.781
				Gelasian	1.806
					2.588

¹In August 2016 the Anthropocene Working Group (AWG), a special body created within the International Commission on Stratigraphy (ICS), recommended that the Anthropocene Epoch be made a formal interval within the International Chronostratigraphic Chart. The AWG recommended that the year 1950 be used as the starting point of the Anthropocene Epoch.

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More on the Topic:

- The Anthropocene epoch is a proposed geological epoch that began when human activity started to have a significant impact on the Earth.
- Members of the Anthropocene Working Group (AWG), which has been working since 2009 to make the Anthropocene part of the planet's time scale, the 35 geologists have estimated that the new epoch started sometime between 1950 and 1954.
- They revealed the findings after analysing the lake's bottom sediments, which have over the years captured the fallouts of large-scale burning of fossil fuels, explosion of nuclear weapons and dumping of plastic and fertilisers on land and in water bodies.
- The data show a clear shift from the mid-20th century, taking Earth's system beyond the normal bounds of the Holocene (the epoch that started at the end of the last ice age 11,700 years ago).

- Notably, not every geologist agrees that the Anthropocene epoch is a reality as there are disagreements within the scientific community regarding when it began, or has it already begun, or if they have enough evidence to prove its advent.

What is the Anthropocene epoch?

- The Anthropocene epoch as a term was first coined by Nobel Prize-winning chemist Paul Crutzen and biology professor Eugene Stoermer in 2000 to denote the present geological time interval, in which the Earth's ecosystem has gone through radical changes due to human impact, especially since the onset of the Industrial Revolution.
- Numerous phenomena are associated with this epoch, such as global warming, sea-level rise, ocean acidification, mass-scale soil erosion, the advent of deadly heat waves, deterioration of the biosphere and other detrimental environmental changes.
- Many of these changes will persist for millennia or longer and are altering the trajectory of the Earth System, some with permanent effects.
- They are being reflected in a distinctive body of geological strata now accumulating, with the potential to be preserved into the far future.
- However, there are disagreements over enough evidence to prove its advent.

How is the Earth's geological time divided?

- The planet's geological time scale is divided into five broad categories: eons, eras, periods, epochs and ages.
- While eon is the broadest category of geological time, age is the smallest category.
- Each of these categories is further divided into sub-categories. For instance, Earth's history is characterised by four eons, including Hadeon (oldest), Archean, Proterozoic, and Phanerozoic (youngest).

On what basis these categories are divided?

- According to the New York-based Paleontological Research Institution, "Most of the boundaries on the geological time scale correspond to the origination or extinction of particular kinds of fossils."
- This is also related to something called the principle of faunal succession, which states that different kinds of fossils characterise

different intervals of time.

- At least now, we're officially in the Phanerozoic eon, Cenozoic era, Quaternary period, Holocene epoch and the Meghalayan age.

SHELF CLOUD

In News: Shelf cloud formation was recently witnessed in Uttarakhand.



More on the Topic:

- A "shelf cloud" or "Arcus cloud" generally forms along the leading edge of thunderstorms.
- It is a type of low-lying, horizontal cloud formation characterized by a clearly defined line of solid clouds.
- It is known for its distinctive wedge-shaped formation. They usually appear as a broad arc across the sky that can sometimes appear to be rotating horizontally.
- These clouds are sometimes seen beneath cumulonimbus clouds, the dense, towering vertical clouds that cause intense rain.
- It is formed when a cold downdraft from a cumulonimbus cloud reaches the ground, the cold air may spread rapidly along the ground, pushing existing warm moist air upwards.
- As this air rises, water vapour condenses into the patterns associated with shelf clouds.

WESTERN DISTURBANCES AND MONSOON TROUGH

In News: An interaction between a western disturbance and the monsoon trough led to heavy rainfall over Himachal Pradesh, Uttarakhand, Punjab and Haryana.

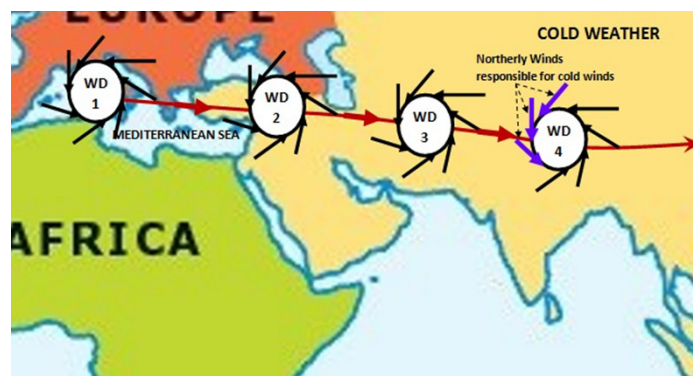
More on the Topic:

About Western Disturbance:

- A western disturbance is an extratropical

storm originating in the Mediterranean region that brings sudden winter rain to the northern parts of the Indian subcontinent, which extends as east as up to northern parts of Bangladesh and Southeastern Nepal.

- It is a non-monsoonal precipitation pattern driven by the westerlies. The moisture in these storms usually originates over the Mediterranean Sea, the Caspian Sea and the Black Sea.
- Extratropical storms are a global phenomenon with moisture usually carried in the upper atmosphere, unlike their tropical counterparts where the moisture is carried in the lower atmosphere.
- In the case of the Indian subcontinent, moisture is sometimes shed as rain when the storm system encounters the Himalayas. Western disturbances are more frequent and stronger in the winter season.
- Most winter and pre-monsoon season rainfall in North-West India is due to Western Disturbances.
- During this time, pre-monsoon rain is caused by instability in the atmosphere following the heating of the surface.
- This year, long spells of rain or thundershowers are also rare because the pre-monsoon activity is normally brief and intermittent in north India.



About Monsoon Trough:

- A trough is a belt of low pressure extending to a large area. This trough is seen during the monsoon period, hence known as the Monsoon trough.
- The monsoon trough is a part of the Inter Tropical Convergence Zone (ITCZ) where the northern hemisphere and southern hemisphere winds meet.
- This is normally shown as a line connecting the location of monsoon low-pressure areas.

- These troughs run across continents during peak monsoon periods.

PHOSPHATE ROCK DEPOSIT

In News: A massive underground deposit of high-grade phosphate rock has been discovered in Norway, containing enough minerals to meet global demand for those products for the next 50 years.



More on the Topic:

- Phosphate Rock is a **sedimentary rock** formed by the accumulation of organic matter on the ocean floor.
- Phosphate rock is used in the **production of phosphorus**, an essential component in the fertilizer industry.
- 90% of the world's mined phosphate rock goes toward agriculture.
- It's also used in the **production of lithium-iron-phosphate batteries** for electric vehicles, solar panels, and in small quantities in semiconductors and chips.
- All these products have been designated by the European Commission as "of strategic importance" in the production of key technologies for the green and digital transition.

UBINAS VOLCANO

In News: Peru has declared an emergency status in the area around the Ubinas volcano in the region of Moqueguathe.

More on the Topic:

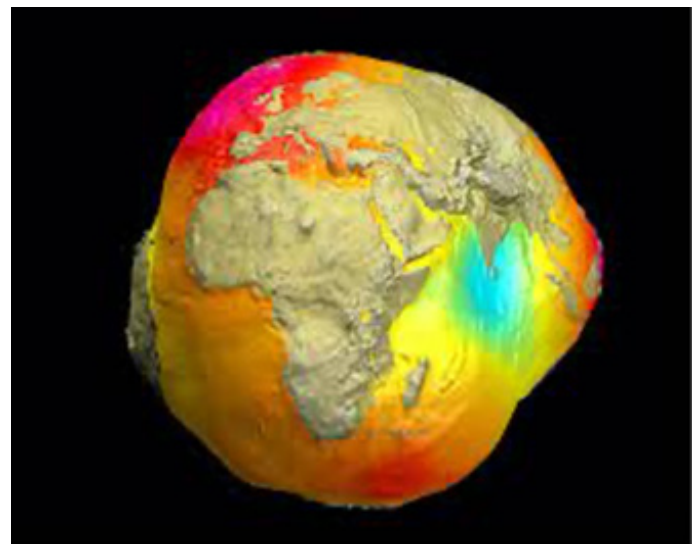
- Ubinas is a **stratovolcano** located in the Central Volcanic Zone of the Andes.
- It is one of the most active volcanoes in Peru.
- The Ubinas volcano is **part of a group of seven volcanoes** in southern Peru located

within a volcanic zone that extends from **southern Peru to northern Chile**.



INDIAN OCEAN GEOID LOW (IOGL)

In News: Researchers at the Indian Institute of Science (IISc) Bangalore have identified the cause of an over three million square kilometres-wide 'gravity hole' in the Indian Ocean.



More on the Topic:

- Located just south of Sri Lanka, it is at this location the **Earth's gravitational pull is weakest** & sea level is over 100 metres lower than the global average.
- The researchers noted that in the absence of tides and currents in the oceans, all the water would settle onto a **smoothly undulating shape called a geoid**, rising wherever there is high gravity, and sinking where gravity is low.
- The resulting unevenness in the ocean surface, known as "geoid anomalies", is generated by **uneven mass distribution within the deep Earth**.
- One such anomaly is found just south of Sri Lanka, spanning a vast extent known as the

Indian Ocean Geoid Low.

Reasons for Indian Ocean Geoid Low:

- Researchers found that IOGL was caused by plumes of molten rock rising along the edges of Tethys Ocean bed.
- Hot material from an African superplume – a large section of Earth's mantle that carries heat from near the core up to the crust – was being deflected eastwards. This material then ended under IOGL.
- Lighter elements in upper to mid-mantle under IOGL, were the cause of low gravity in this area

ORKNEY ISLAND

In News: Orkney Islands has proposed its intent to split from the U.K. and become a self-governing territory of Norway.



More on the Topic:

- Orkney is an archipelago off the northeastern coast of Scotland. The islands encompass Neolithic sites, tall sandstone cliffs and seal colonies.
- It was under Norwegian and Danish rule until the late 15th century after which it came under Scotland.
- It houses four UNESCO world heritage sites namely – Skara Brae, Ring of Brodgar, Standing Stones of Stenness, and Maeshowe chambered tomb.

SUBANSIRI

In News: National Hydroelectric Power Corporation (NHPC) Limited has completed construction of the 2,000 Mega Watt Subansiri Lower Hydroelectric Project dam.



More on the Topic:

- It is the biggest hydroelectric project undertaken in India so far.
- The Subansiri River is a trans-Himalayan river and a tributary of the Brahmaputra River.
- It flows through Tibet's Lhuntse County in the Shannan Prefecture, and the Indian states of Arunachal Pradesh and Assam.

PANGONG TSO LAKE

In News: India and China are ramping up construction at Pangong Tso Lake.



More on the Topic:

- Pangong Tso is an endorheic saline lake spanning eastern Ladakh and West Tibet.
- It has a land-locked basin separated from the Indus River basin by a small elevated ridge.

- It is divided into five sub-lakes, called Pangong Tso, Tso Nyak, Rum Tso (twin lakes) and Nyak Tso.
- The lake, a glacial melt, has mountain spurs of the Chang Chenmo range jutting down, referred to as fingers.
- Pangong Lake is a disputed territory between India and China where the Line of Actual Control passes through the lake.
- The Western end is disputed between India and Pakistan.
- Pangong has a unique feature, it changes its colour from blue to green to even grey at times.

DUQM PORT IN OMAN

In News: India's National Security Advisor Ajit Doval visits Duqm Port in Oman, which offers strategic access to Indian Navy.



More on the Topic:

- Facing the Arabian Sea and located outside the Strait of Hormuz, the Port of Duqm is perfectly positioned to serve the main Eastern and Western trade corridors.
- The port of Duqm overlooks the Gulf of Oman, the Indian Ocean, and the Arabian Sea. It will play a significant role in India's Maritime security and strategy, especially in the Indian Ocean Region as China is expanding its ever-growing footprint in this region.
- Being located northwest of the Indian Ocean, the port can provide India with access to the Red Sea and the Gulf of Aden.

INTERNATIONAL RELATIONS

G20'S RESOURCE EFFICIENCY, CIRCULAR ECONOMY INDUSTRY COALITION

In News: The Union Environment, Forest and Climate Change Minister has launched a Resource Efficiency Circular Economy Industry Coalition (RECEIC), conceptualised under India's G20 Presidency.



More on the Topic:

- This industry-driven initiative was launched at the G20 fourth Environment and Climate Sustainability Working Group and Environment and Climate Ministers meeting.
- The coalition is envisioned to be a self-sustaining entity that will continue to operate beyond India's G20 Presidency, making a lasting impact on environmental sustainability.

The mission of RECEIC:

- The mission of RECEIC is to leverage diverse and global experiences, unlock private sector action to enhance resource efficiency, and contribute towards progress on key global goals and priorities set by the G20.

Pillars of RECEIC:

- **Partnerships for Impact:** Fostering collaborations and alliances with various stakeholders to achieve meaningful and lasting results in enhancing resource efficiency.
- **Technology Cooperation:** Promoting the exchange and collaboration on technological innovations and solutions to address resource challenges and drive sustainable development.
- Resource efficiency and Circular Economy (RECE) are strategic approaches that play a vital role in minimizing our reliance on natural resources and ensuring sustainable development.

Resource Efficiency and Circular Economy (RECE):

- The circular economy focuses on the "reduce-

reuse-regenerate" model, aiming to minimize waste by designing products and systems that enable multiple cycles of use and regeneration.

- On the other hand, resource efficiency concentrates on maximizing the value obtained from resources while minimizing their environmental impacts.

FRIENDS OF BRICS MEETING

In News: National Security Advisor (NSA) Ajit Doval has attended the 'Friends of BRICS' meeting in the South African capital of Johannesburg.



More on the Topic:

- In the meeting, the issue of cybersecurity was discussed at length.
- In addition to BRICS, the following Friends of BRICS countries - Belarus, Burundi, Iran, UAE, Saudi Arabia, Egypt, Kazakhstan and Cuba - also participated in the discussions.
- The main aim of the Friends of BRICS initiative is to foster engagement between BRICS nations and their close allies, thereby strengthening their collective influence.
- India has emphasized the growing concerns related to cyber risks, particularly in light of the rapid emergence of disruptive technologies like Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT).

INDIA'S GREAT POWER AMBITIONS

In News: With the present dynamics India's power ambitions in the international arena are reassessed.



More on the Topic:

Background:

- In 1991, India was a weak and economically struggling country with a foreign exchange reserve of \$5.8 billion and a nominal GDP of \$270.11 billion.
- The collapse of its trusted partner, the Soviet Union, and strained relations with the US added to its challenges.
- Additionally, the persistent risk of an India-Pakistan conflict and the escalating violence in Kashmir heightened security concerns.
- Fast forward to 2023, India has undergone significant transformations.
- The economic reforms initiated after the 1991 crisis, known as the LPG reforms (Liberalization, Privatization, and Globalization), resulted in substantial GDP growth, making India the world's fifth-largest economy with a projected nominal GDP close to \$4 trillion.
- These reforms have also contributed to a significant reduction in poverty.

Present Scenario:

Military and Strategic Capabilities:

- India has witnessed significant growth in its military capabilities, including the possession of a substantial number of nuclear weapons.
- This has allowed the country to establish strong alliances with influential nations worldwide, most notably with the United States.
- Its strategic location and adeptness in navigating global politics have earned India the recognition of being a pivotal "swing power" in today's international system, attracting attention from major players such as the U.S., the West, and Russia.

The Mediation Role:

- India is increasingly adopting a mediation

role in global crises, positioning itself as a bridge between different regions and asserting its significance as a major player in world politics.

- There have been suggestions for India to mediate between Ukraine and Russia amid the ongoing Ukraine war.

Challenges in front of India:

- Despite making remarkable progress in areas such as national power and international reputation, India still grapples with persistent challenges related to poverty, with tens of millions of people living in impoverished conditions.
- In 2021, India's GDP per capita stood at \$1,947, while neighbouring Bangladesh had a slightly higher figure of \$2,227, and it ranked as the 40th largest military globally.
- India faces challenges stemming from infrastructural and governance issues, which are evident when even a few days of rain can bring the national capital to a complete halt.
- Furthermore, the country grapples with regional, caste, ethnic, and religious divisions, posing additional complexities to its social fabric.
- A weak domestic economy hampers India's ability to allocate adequate resources for its foreign policy objectives.
- The Ministry of External Affairs receives a relatively small percentage of the overall budget, which may not align with the country's growing global stature and aspirations.

Way Ahead:

- Despite the persistent domestic limitations that may constrain India's ability to influence the world order, it is imperative for the country to actively engage and contribute to shaping the global landscape.
- By doing so, India can effectively pursue its foreign policy objectives, which in turn will have a substantial impact on various critical aspects such as economic growth, security environment, and geopolitical and geo-economic interests.
- India's influence in world politics must be viewed in light of its domestic situation, and its involvement in international affairs should be driven by the welfare and needs of its citizens.

GLOBAL BIOFUEL ALLIANCE

In News: A consultation event was organized to discuss and provide recommendations on Global Biofuel Alliance.



More on the Topic:

- This initiative aims to reduce greenhouse gas emissions, enhance energy security, stimulate rural economies, and align with global climate goals.
- Under India's G20 Presidency, one of the key priorities is to promote cooperation and accelerate the adoption of sustainable biofuels, particularly in the transportation sector.
- Brazil, India, and the United States, as leading biofuel producers and consumers, are working together towards the development of a Global Biofuels Alliance along with other interested countries.
- The Alliance shall work in collaboration with and complement the relevant existing regional and international agencies as well as initiatives in the bioenergy, bioeconomy, and energy transition fields more broadly, including the Clean Energy Ministerial Biofuture Platform, the Mission Innovation Bioenergy initiatives, and the Global Bioenergy Partnership (GBEP).

THE 14TH CLEAN ENERGY MINISTERIAL (CEM14) AND 8TH MISSION INNOVATION (MI8)

In News: | The 14th Clean Energy Ministerial (CEM14) and 8th Mission Innovation (MI8) were inaugurated at Goa under the chairpersonship of the Union Minister for Power and New & Renewable Energy, Government of India.



More on the Topic

- The theme for the event is 'Advancing Clean Energy Together'.

About Clean Energy Ministerial (CEM):

- The Clean Energy Ministerial is an international clean energy platform.
- India is a member country.
- The current 29 members of the CEM account for 90% of the world's clean power and 80% of global clean energy investments, and the vast majority of public R&D in clean energy technologies.
- The new initiative **CEM-Hubs** was launched at the present Ministerial.
- It is an innovative collaborative initiative involving both the public and private sectors.
- Its primary goal is to **minimize the financial risks associated with investments required for the production of low- and zero-emission fuels** that are intended for transportation within the maritime industry.

About Mission Innovation:

- Mission Innovation is a **global initiative to accelerate public and private clean energy innovation** to address climate change, make clean energy affordable to consumers, and create green jobs and commercial opportunities.
- It consists of **23 countries and the EU**. India is a founding member.
- India played a leadership role in MI Steering Committee and is a member of the Analysis and Joint Research and Business & Investor Engagement sub-groups.
- Funding Opportunity Announcement 2023 for

RD&D (research, development, and demonstration) in Carbon Capture Utilization and Storage (CCUS) under MI 2.0 was launched at the present ministerial.

BLACK SEA GRAIN DEAL

In News: India has voiced support for the U.N.'s efforts in continuing the Black Sea Grain initiative and expressed hope for an early resolution to the present impasse after Russia announced it was terminating the deal.



More on the Topic

- The Black Sea grain initiative was negotiated in July 2022 between Turkey, the UN and Russia as a way of ensuring that Ukraine, one of the breadbaskets of the world, could ensure that its grain could leave its southern ports via the Bosphorus.
- The grain could not be exported in the quantities required using the alternative methods of road or rail through Poland or by canal and river through Romania.
- Turkey was involved due to the close relationship between Russia and Turkey and under the **Montreux convention signed in 1936**, it oversees maritime traffic in the Bosphorus and Dardanelles straits.

What did the grain deal promise?

- The initiative, one of the few diplomatic achievements since the war started, allows for **commercial food and fertiliser (including ammonia) exports** from three key Ukrainian ports in the Black Sea –Odessa, Chorno-

morsk, and Pivdennyi (formerly known as Yuzhny).

- Ukrainian vessels guide cargo ships into international waters of the Black Sea, avoiding mined areas.
- The vessels then proceed towards Istanbul along an agreed maritime humanitarian corridor.
- Ships heading to and from the Ukrainian ports are inspected by teams composed of Russian, Turkish, Ukrainian and UN inspectors.
- Alongside this memorandum, a separate deal was signed minimising the impact of sanctions on the export of Russian food and fertiliser.
- Both memorandums were subject to four- and then two-monthly reviews.

Did it succeed?

- Despite the acute lack of trust, 33m tonnes of grain left Ukraine's ports in the year to July.
- About 61% of that has gone to low- and middle-income countries, and 65% of wheat alone.
- The World Food Programme bought about 750,000 tonnes of Ukrainian grain that was shipped immediately to places such as Afghanistan, Ethiopia, Somalia and Sudan.
- Partly as a result of this, the **price of grain stabilised** at \$800 (£620) per tonne, down from a high of \$1,360.

What went Wrong?

- Russia claims that promises made to it under the deal have not been met, and it is still facing trouble exporting its agricultural products and fertilisers because of many sanctions placed on it.
- The end of the deal may result in a hike in global food prices and an increase in global hunger and malnourishment.

How will it affect India?

- Due to the escalating prices of edible oils and food grains, India is confronted with the **risk of imported inflation**, primarily stemming from the fact that **approximately 70% of its sunflower oil is sourced from Ukraine**.

AFRICAN UNION (AU)

In News: India's G-20 Sherpa Amitabh Kant has said that Prime Minister Narendra Modi's proposal to make the African Union a permanent member of the G-20 has received an overwhelming response from the grouping.



More on the Topic

- The African Union is a continental union consisting of 55 member states located on the continent of Africa.
- The AU was announced in the Sirte Declaration in Sirte, Libya, in 1999, calling for the establishment of the African Union.
- It was officially launched in 2002 as a successor to the Organisation of African Unity.
- AU is Headquartered at Addis Ababa, Ethiopia

CHINA-PLUS-1 WINDOW

In News: World Bank's India-born president Ajay Banga said that India has an opportunity to create jobs in the manufacturing sector by tapping into the 'China plus one opportunity', but that window is available only for a short period.



More on the Topic:

- The "China Plus One" strategy refers to a business approach adopted by companies, especially manufacturers, to **diversify their operations and reduce dependence on China as their sole production or sourcing hub**.

- This strategy emerged in response to various factors, such as rising labour costs in China, geopolitical risks, supply chain vulnerabilities, and uncertainties related to trade policies and international relations.
- Companies that follow the China Plus One strategy typically maintain their existing manufacturing or sourcing operations in China, which often serve as their primary base for production due to their well-established infrastructure and skilled workforce.
- However, they also establish additional production facilities or sourcing hubs in other countries, hence the "Plus One."
- Addressing these issues through **infrastructure investment and skill development** is crucial for India to effectively compete, attract investment, and fully leverage the opportunities presented by the China Plus One strategy.

SOLAR TECHNOLOGY APPLICATION RESOURCE CENTRE [STAR C] INITIATIVE

In News: India is considering expanding its solar STAR-C initiative, run by the International Solar Alliance, to several Pacific Island countries.



More on the Topic:

- India has the potential to benefit significantly from the China Plus One strategy due to its favourable business environment, large and skilled labour force, growing manufacturing capabilities, and strategic geographic location.
- By positioning itself as an attractive alternative to China, India can attract investments and businesses looking to diversify their operations and reduce dependence on China.
- To fully realize the benefits of the China Plus One strategy, India needs to continue working on improving its infrastructure, reducing bureaucratic hurdles, enhancing the ease of doing business, and providing a stable and investor-friendly regulatory environment.
- Additionally, the Indian government must continue promoting and supporting policies that encourage foreign investments and manufacturing growth.
- STAR C is a stellar example of the International Solar Alliance's capacity-building and institutional strengthening initiative in developing Member Countries.
- STAR C initiative aims to cultivate the desired human capacity and skills among a Member Country's populace to encourage the significant undertaking of energy transition activities, creating jobs and ultimately contributing to the country's economic growth.
- The International Solar Alliance (ISA) and the United Nations Industrial Development Organization (UNIDO), with funding from the Government of France, are implementing the project.
- It performs four primary functions. Capacity Building, Testing, Innovation and Knowledge Management.

How can India benefit from China Plus One?

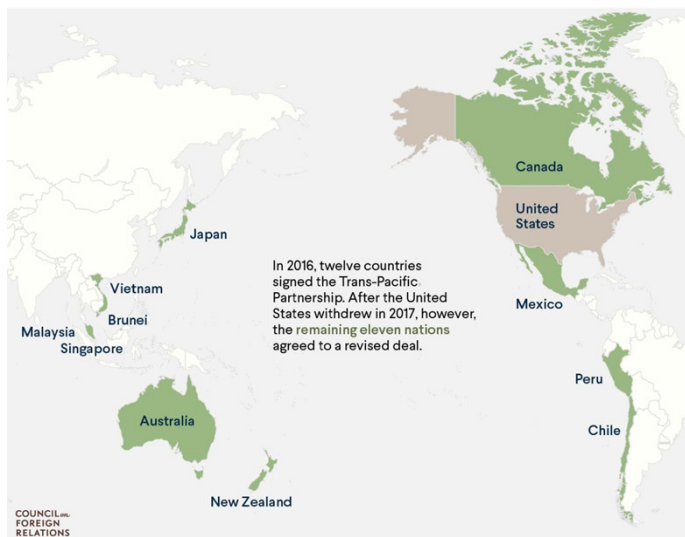
Challenges to India in utilizing this opportunity:

- India faces stiff competition from other emerging markets in Southeast Asia, including Vietnam, Thailand, and other countries, as they also allure businesses adopting the China Plus One strategy.
- Mega trade agreements like the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) add to the appeal of these South-east Asian nations as investment destinations.
- Nonetheless, India must contend with challenges like inadequate physical infrastructure and labour force skill shortages.

COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP (CPTPP)

In News: Britain formally signed the treaty to join a major Trans-Pacific Trade Pact, Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

The Trans-Pacific Partnership Nations



More on the Topic:

- It makes the United Kingdom the first new member and the first European nation to join the Trans-Pacific Partnership since it was created in 2018.
- The CPTPP comprises the U.K.'s fellow G-7 members Canada and Japan, plus long-standing allies Australia and New Zealand, alongside Brunei, Chile, Malaysia, Mexico, Peru, Singapore and Vietnam.
- It has been seen as a bulwark against Chinese dominance in the region, although Beijing has applied to join.

INDIA-UAE AGREEMENT ON TRADE SETTLEMENT IN LOCAL CURRENCIES

In News: India and the United Arab Emirates (UAE) have inked agreements to start trade settlements in their respective national currencies – Rupee and Dirham.



More on the Topic:

- The creation of the Local Currency Settlement System (LCSS) would enable exporters and importers to invoice and pay in their respective domestic currencies, enabling the development of an INR-AED foreign exchange market.

- This arrangement would also promote investments and remittances between the two countries.
- The use of local currencies would optimise transaction costs and settlement time for transactions, including for remittances from Indians residing in UAE.
- India could use this mechanism to pay for imports of oil and other commodities from the UAE, its 4th largest energy supplier (in FY 22-23).

Other significant New Initiatives:

- Both parties have mutually agreed to establish a connection between their respective Card Switches, specifically the RuPay switch from India and the UAESWITCH from the United Arab Emirates.
- This connection aims to facilitate the acceptance of domestic cards from both countries and enable seamless processing of transactions involving these cards.
- Furthermore, India's Structured Financial Messaging System (SFMS) will be integrated with the messaging system in the UAE.
- This integration aims to simplify and streamline financial messaging between the two countries, making cross-border transactions and communication more efficient and effective.
- Both sides signed an MoU to establish the IIT-Delhi campus in Abu Dhabi, which would be the second IIT abroad after Tanzania.

About India-UAE Bilateral Relations:

- India and the UAE established diplomatic relations in 1972.
- India-UAE trade rose to USD 85 billion in 2022, making UAE India's third-largest trading partner for 2022-23 and India's second-largest export destination.
- UAE has been one of India's leading sources of FDIs.
- The UAE accounts for 8 per cent of India's oil imports and was the fifth largest supplier of crude oil to India.
- In 2022, UAE signed a Comprehensive Economic Partnership Agreement (CEPA) with India (the first country).
- The number of Indian nationals in the country is estimated to be 3.5 million as of 2021.
- This constitutes roughly 30% of the UAE's total population.

MEKONG GANGA COOPERATION

In News: India and its partner countries decided to establish Mekong Ganga Cooperation Business Council to expand exchanges in agriculture & water resource management.



More on the Topic:

- The Mekong-Ganga Cooperation was established in November 2000.
- It comprises six member countries - India, Thailand, Myanmar, Cambodia, Laos and Vietnam.
- The areas of cooperation are tourism, culture, education, and transportation.
- The Mekong River is a transboundary river that flows from the Tibetan Plateau through southwest China, Myanmar, Thailand, Cambodia, Laos and southern Vietnam to the South China Sea.
- **Aim of the Organisation:** Both the Ganga and the Mekong are civilizational rivers, and the MGC initiative aims to facilitate closer contact among the people inhabiting these two major river basins.

About the Significance of Mekong Ganga Cooperation:

- **Strengthening Regional Ties:** The MGC fosters closer ties and understanding between India and the countries of the Mekong River Basin.
- By promoting cooperation in different fields, it enhances cultural and people-to-people connections, leading to improved diplomatic relations.
- **Cultural Exchange:** The MGC emphasizes cultural exchange and heritage preservation.
- It facilitates collaborations in areas such as art, music, dance, and language, promoting appreciation and understanding of each

other's rich cultural diversity.

- **Economic Cooperation:** The cooperation between India and the Mekong River Basin countries provides opportunities for economic collaboration and trade. It supports India's Act East Policy as well.
- **Connectivity:** India is committed to enhancing connectivity within the region through infrastructure projects like the India-Myanmar-Thailand Trilateral Highway and Motor Vehicles Agreement.

25 YEARS OF THE INDIA-FRANCE STRATEGIC PARTNERSHIP

In News: India and France are celebrating 25 years of Strategic partnership.



More on the Topic:

- The France-India strategic relationship is built on respect for each other's strategic autonomy.
- France has remained steadfast in its refusal to comment on India's internal affairs or its foreign policy choices.
- While France has taken a leading role in the Western pushback to Russia's war in Ukraine, it has not joined other Western countries in publicly exhorting India to change its stand.
- In 1974, and 1998, France did not join the Western push to sanction India for its nuclear tests either; it even stepped in with uranium supplies to power the Tarapur reactors.

More on India-France Partnership:

- **Strategic and Defence Cooperation:** India and France have been engaged in joint military exercises (Exercise Shakti (Army); Varuna (Navy) and Garuda (Air Force)), defence technology transfers, and naval cooperation.
- They have also collaborated on defence equipment and technology development, including the procurement of Rafale fighter jets by India.

- **3 Scorpene submarines under Project-75** were approved by the Ministry of Defence.
- **International Solar Alliance (ISA)** is a joint initiative of both countries, launched during COP21 to promote solar energy.
- **Economy:** India and France have a robust trade relationship, with bilateral trade reaching significant levels.
- They have collaborated in sectors such as **aerospace, renewable energy, infrastructure development, and information technology.**
- French companies have made substantial investments in India, contributing to job creation and technology transfer.
- **International cooperation:** France supports India's claim for permanent membership of the **United Nations Security Council (UNSC)** and UN reforms.
- France has also helped India's accession to the **Missile Technology Control Regime (MTCR), Wassenaar Arrangement (WA)** and **Australia Group (AG).**
- India and France have established a **civil nuclear agreement**, which was signed in 2008, signifying their cooperation in the nuclear energy sector.
- Furthermore, France is actively involved in supporting India's **Gaganyaan project**, which focuses on training for India's human space flight program.

EXECUTIVE BOARD OF ASSOCIATION OF WORLD ELECTION BODIES (A-WEB)

In News: The Chief Election Commissioner of India, Rajiv Kumar attended the 11th meeting of the (A-WEB) in Colombia to underscore the importance of international collaboration in safeguarding election integrity.



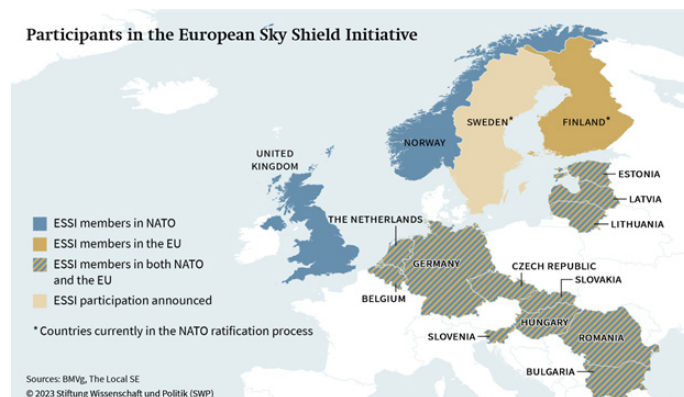
More on the Topic:

- A-WEB, which comprises 119 Electoral management bodies (EMBs) as members and 20 regional associations/organizations as associate members, provides a platform for EMBs to learn from one another and enhance their electoral management processes.
- By sharing expertise and strategies, **EMBs can effectively address common challenges and improve election integrity globally.**
- **The Election Commission of India served as the Chair of A-WEB from 2019 to 2022 and currently holds a position on its Executive Board for the 2022-24 term.**
- In New Delhi, an India A-WEB Centre has been established to facilitate the exchange of best practices, as well as provide training and capacity building for officials from A-WEB member organizations.

EUROPEAN SKY SHIELD INITIATIVE (ESSI)

In News: Switzerland and Austria have signed a declaration of intent to join the European air defence system, Sky Shield.

Participants in the European Sky Shield Initiative



More on the Topic:

- The system was initiated by Germany following Russia's invasion of Ukraine.
- ESSI aims to create a European air and missile defence system through the common acquisition of air defence equipment and missiles by European nations to strengthen NATO's Integrated Air and Missile Defence.
- The number of ESSI members has gone up to 19 including Belgium, Bulgaria, Czech Republic, Norway, Slovakia, UK etc.

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS

In News: The Organisation for the Prohibition of Chemical Weapons (OPCW) has confirmed that the last chemical weapon from the stock-piles declared by all States Parties to the Chemical Weapons Convention (CWC) was verified as destroyed.



OPCW

More on the Topic:

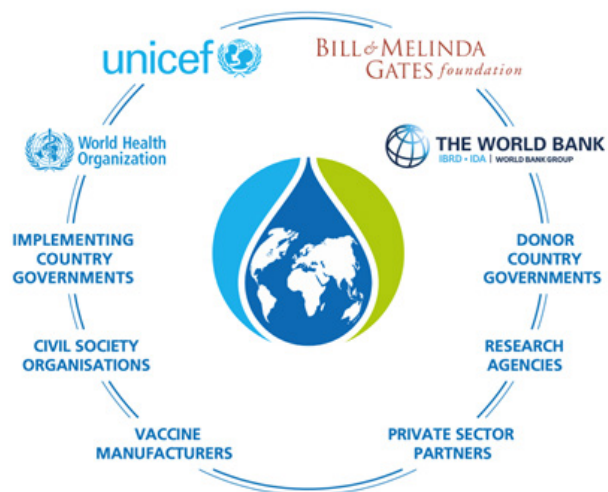
- The Organisation for the Prohibition of Chemical Weapons (OPCW) is an inter-governmental organisation and the implementing body for the Chemical Weapons Convention (CWC), which entered into force on 29 April 1997.
- The OPCW, with its 193 member states, has its seat in The Hague, Netherlands; it oversees the global endeavour for the permanent and verifiable elimination of chemical weapons.
- The organisation promotes and verifies adherence to the Chemical Weapons Convention, which prohibits the use of chemical weapons and requires their destruction.
- Verification consists both of evaluation of declarations by member states and onsite inspections.
- The organisation was awarded the 2013 Nobel Peace Prize.

GLOBAL ALLIANCE FOR VACCINES AND IMMUNISATION

In News: Gavi, the vaccine alliance will be providing 18 million doses of malaria vaccine to African countries.

More on the Topic:

- Malaria is one of the leading causes of death in the African continent and these vaccines will play a critical role in saving lives.
- GAVI, officially Gavi, the Vaccine Alliance is a public-private global health partnership to increase access to immunization in poor countries.



- Partner organisations of GAVI include WHO, UNICEF, the World Bank, and the Bill & Melinda Gates Foundation.

TAIPEI ECONOMIC AND CULTURAL CENTER (TECC)

In News: In a significant move to strengthen bilateral ties between Taiwan and India, the establishment of the Taipei Economic and Cultural Center (TECC) in Mumbai has been announced.



More on the Topic:

- The establishment of the TECC in Mumbai will complement the existing TECC in Chennai, which has been instrumental in promoting Taiwanese investments and industrial collaboration in southern India.
- Overall, the establishment of the TECC in Mumbai represents a significant step forward in the bilateral relations between Taiwan and India.
- It reflects Taiwan's recognition of India's

economic potential and the importance of Mumbai as a key gateway to this thriving nation.

- The decision is seen as part of Taiwan's 'China-Plus-one' strategy, which encourages businesses to expand outside of China while maintaining their presence there.

What Is The China Plus One Strategy?

- The "China Plus One" strategy is a **business approach that encourages companies to diversify their operations by expanding outside of China** while still maintaining a presence in the country.
- For the past three decades, Western businesses have heavily invested in China due to its low labour and manufacturing costs, as well as its growing consumer market.
- However, this has led to an **over-reliance on China for their business interests, which can be risky given geopolitical tensions and unforeseen disruptions.**
- The concept of "China Plus One" was first introduced in 2013 as a response to these risks.
- This strategy involves **investing in additional countries to mitigate risk and diversify supply chains.**
- By doing so, companies can reduce their dependence on China while still taking advantage of its benefits.

About India-Taiwan Relations:

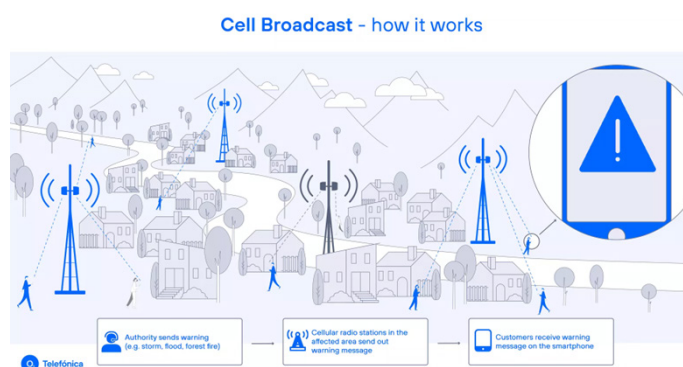
- **India recognises only the People's Republic of China** (in mainland China) and not the Republic of China's claims of being the legitimate government of Mainland China, Hong Kong, and Macau – a conflict that emerged after the Chinese Civil War (1945–49).
- However, India's economic and commercial links as well as people-to-people contacts with Taiwan have expanded in recent years.
- Mutual efforts between Delhi and Taipei have enabled a range of bilateral agreements covering agriculture, investment, customs cooperation, civil aviation, industrial co-operation and other areas.
- India and Taiwan do not enjoy formal diplomatic ties as New Delhi recognizes the "one-China" policy, although it does have a Taipei office to carry out diplomatic

functions.

- As a part of its **"Look East" foreign policy**, India has sought to cultivate extensive ties with Taiwan in trade and investment as well as developing cooperation in science & technology, environmental issues and people-to-people exchanges.
- Under Taiwan's **New Southbound Policy**, it will promote exchanges and cooperation in science and technology, education, culture, and people-to-people ties between Taiwan and India.

CELL BROADCAST ALERT SYSTEM

In News: The Department of Telecommunications in collaboration with the National Disaster Management Authority, will be conducting a Cell Broadcast Alert System testing to enhance emergency communication during disasters and ensure the safety and well-being of valued citizens.



More on the Topic:

- The Cell Broadcast Alert System is a state-of-the-art technology that allows us to send critical and time-sensitive messages for disaster management to all mobile devices within a designated geographical area, irrespective of whether the recipients are residents or visitors.
- This ensures that important emergency information reaches as many people as possible promptly.
- It is used by government agencies and emergency services to inform the public about potential threats and keep them informed during critical situations.
- Cell Broadcast is commonly used to deliver emergency alerts, such as severe weather warnings (e.g., Tsunami, Flash Flood, Earthquake, etc), public safety messages, evacuation notices and other critical information.

SHANGHAI COOPERATION ORGANISATION (SCO)

In News: As Iran joins the Shanghai Cooperation Organisation (SCO) as its ninth member, leaders of the SCO at a virtual summit chaired by the Indian Prime Minister stressed that the formation of a "more representative" and multipolar world order is in the global interest.



More on the Topic:

- The SCO was built on the 'Shanghai Five' grouping of Russia, China, Kazakhstan, Kyrgyzstan and Tajikistan, which had come together in the post-Soviet era in 1996, to work on regional security, reduction of border troops, and terrorism.
- In 2001, the Shanghai Five inducted Uzbekistan into the group and named it the SCO. The organisation has two permanent bodies – the SCO Secretariat based in Beijing and the Executive Committee of the Regional Anti-Terrorist Structure in Tashkent.

Key Highlights from the Summit:

- **Digital Technology:** The member states have acknowledged the importance of digital technologies and issued a Statement on Cooperation in Digital Transformation to unlock the full potential of digitalization across all sectors of the economy.
- **Environment:** Members agreed to declare 2024 as the SCO Year of Environment.
- **New Delhi Declaration:** The SCO member nations have adopted the New Delhi Declaration.
- The Indian government coined the New Delhi Declaration and proposed it at the SCO Summit, aiming to fight against terrorism.

- The Declaration also proposes four other joint statements on de-radicalisation, sustainable lifestyle to tackle climate change, production of millets and digital transformation.

Significance of SCO:

- Shanghai cooperation organisation (SCO) is seen as an eastern counterbalance to NATO and India's membership will allow the country to push effective action in combating terrorism and security issues.
- With the presence of India and China, the world's most populous countries, SCO is now the organisation that has the **largest population coverage**. India's entry into the group is expected to increase the group's heft in **regional geopolitics and trade negotiations** while giving it a pan-Asian hue at the same.
- SCO is a potential platform to advance India's Central Asia policy. The SCO member states are India's extended neighbourhood where India has both economic and security imperatives.
- SCO can provide a platform to discuss **bilateral issues with Pakistan and China** even when the bilateral relations are that cordial.
- SCO can play a pivotal role in **combating terrorism, extremism and radicalisation**. For example, the New Delhi declaration aims towards de-radicalisation.

THE COLOMBO SECURITY CONCLAVE

In News: Scientists from Bangladesh and Mauritius have embarked on board India's research vessel 'Sagar Nidhi' to participate in a joint ocean expedition under the framework of the Colombo Security Conclave (CSC).



More on the Topic:

- Colombo Security Conclave (CSC), held at the

National Security Advisor (NSA)-level, the CSC brings together India, Sri Lanka, Maldives, and Mauritius, along with Bangladesh and Seychelles as observers.

- CSC was initiated in 2011 by India, Maldives, and Sri Lanka.
- Mauritius was added as a member, with Bangladesh and Seychelles as observers in 2021. Secretariat is in Colombo, Sri Lanka.
- The CSC's remit includes **maritime security, countering terrorism, and cybersecurity**.
- The small group provides an opportunity for India to address its **strategic concerns in the Indian Ocean** while providing an opportunity for the island and littoral nations to address their challenges.

INDIA-MYANMAR-THAILAND TRILATERAL HIGHWAY

In News: Almost 70% of the construction work on the ambitious India-Myanmar-Thailand Trilateral Highway (ITMTH) has been completed.



More on the Topic:

- India, Thailand, and Myanmar are constructing a 1360-kilometre-long motorway that will connect the country to Southeast Asia by land and strengthen commerce, business, health, education, and tourism relations between the three countries.
- The highway is aimed at **connecting Kolkata to Bangkok via Myanmar** and is set to significantly boost regional connectivity

and cooperation.

- It has been established under the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) initiative.

INDIA - PHILIPPINES RELATIONS

In News: India and the Philippines had organised their 5th meeting of the Joint Commission on Bilateral Cooperation (JCBC).

More on the Topic:

India - Philippine Areas of Cooperation:

Supporting the Philippines in South China Sea Conflict:

- India called for **adherence to the 2016 arbitration decision in favour of the Philippines**, which has been rejected by China.
- **Background:** The Philippines instituted an arbitration proceeding against China in the Permanent Court of Arbitration under UNCLOS on January 22, 2013.
- The court ruled in favour of Manila on July 12, 2016, but this was rejected by China, which had called it "null and void."
- China, which claims rights to most of the resource-rich South China Sea up to the nine-dash line, has become more assertive in recent years, leading to flare-ups in the region.

Defence Cooperation:

- Defence has emerged as a key pillar of the Indo-Philippines partnership amid China's territorial claims along the South China Sea region.
- India has offered a **concessional Line of Credit** to meet the Philippines' defence requirements and acquisition of naval assets.
- India also intended to expand **training and joint exercises** on maritime security and disaster response.

A shared view on Indo-Pacific:

- Both countries believe that Indo-Pacific should be a region which is free and open and a region whose members **promote peace and stability**.
- There is a lot of potential to develop co-operation in ensuring a free and open Indo-Pacific.

About South China Sea:

- The South China Sea is an arm of the western

Pacific Ocean in Southeast Asia.

- It is south of China, east & south of Vietnam, west of the Philippines and north of the island of Borneo.
- It is **connected by Taiwan Strait** with the East China Sea and by Luzon Strait with the Philippine Sea.
- **Bordering states & territories:** the People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei, Indonesia, Singapore and Vietnam.

India's Interests in SCS:

- **Strategic Importance:** This sea holds tremendous strategic importance for its location as it is the connecting link between the Indian Ocean and the Pacific Ocean (Strait of Malacca). India's commercial interest's directly linked to it.
- According to the United Nations Conference on Trade And Development (UNCTAD), one-third of global shipping passes through it.
- **The China Problem:** China is playing threatening tactics in SCS to monopolise its interests. As a key element of the **Act East Policy**, India has started internationalizing disputes in the Indo-Pacific region.

SCIENCE AND TECHNOLOGY

FLUOROchemicals PRODUCTION

In News: Scientists from the University of Oxford have come up with a new way to obtain fluorine atoms, used to manufacture important chemical compounds used in industry and research, in a much safer and less energy-intensive way.



More on the Topic:

- The novel approach draws inspiration from the **natural Biomineralisation** process responsible for the formation of teeth and bones.
- This innovative method involves the **direct synthesis of fluorochemicals** from Fluorspar, eliminating the need for producing HF separately.
- Fluorochemicals find extensive use in various industries, such as **polymers, agrochemicals, pharmaceuticals, and lithium-ion batteries**.
- Presently, all fluorochemicals are obtained through a highly energy-intensive process involving the reaction of Fluorspar (Calcium Fluoride) with toxic and corrosive HF gas.
- The new method bypasses this hazardous step and offers a more efficient and environmentally friendly way to produce essential fluorochemicals.

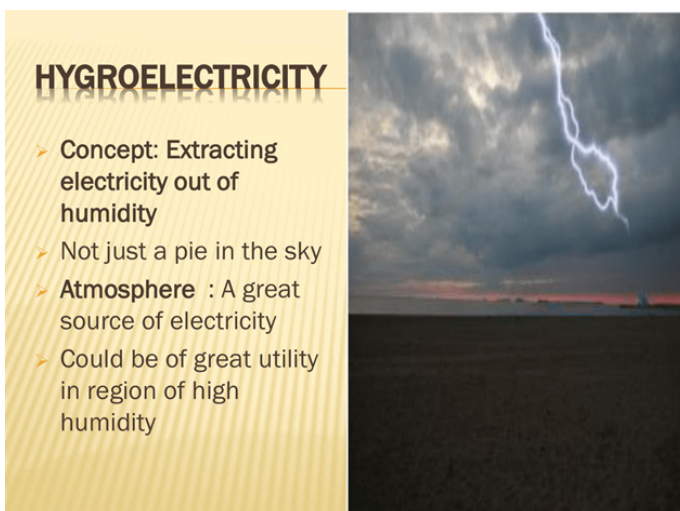
HYGROELECTRICITY

In News: Scientists achieve a remarkable milestone in renewable energy with hygroelectricity.

More on the Topic:

- The innovative technology allows for the generation of electricity from moist air, presenting a promising avenue for clean and sustainable energy solutions.

- The origins of the hygroelectricity concept can be traced back to the brilliant mind of renowned physicist **Nikola Tesla**.
- At the heart of this groundbreaking technology lies a small yet ingenious device comprising **two electrodes** and a thin layer of material infused with **nanopores**.
- These nanopores, measuring less than 100 nanometers in diameter, **facilitate the passage of water molecules from the upper chamber to the lower chamber** of the device.
- As the water molecules traverse the nanopores, they **interact with the edges**, creating an **electrical charge imbalance between the cells**.
- This phenomenon effectively transforms the device into a miniature battery, capable of generating electricity continuously.
- Analogous to a man-made cloud, the device **converts the moisture in the air into useful electricity**, much like how natural clouds produce electric charges during storms, leading to lightning.
- This pioneering technology boasts a plethora of potential applications, ranging from powering small computers and sensors to **providing a sustainable energy source for remote and resource-limited locations**.



Significance:

- Hygroelectricity stands out due to its **remarkable versatility**, unlike solar and wind energy, which depend on specific conditions.
- Moisture in the air is always available, serving as a perpetual energy source.
- Additionally, this technology is **adaptable to different materials** like wood and silicone, as long as they have the required nanopores,

res, allowing for widespread use in various industries.

CONTROLLED HUMAN INFECTION STUDIES

In News: India has taken its first step to introduce Controlled Human Infection Studies (CHIS), used in many countries for vaccine and treatment development.



More on the Topic:

- Outside of India, this relatively new research model which involves **intentionally exposing healthy volunteers to pathogens in a controlled environment**, has been used to study malaria, typhoid, dengue, etc.
- ICMR's Bioethics Unit has introduced a consensus policy statement which is now open for comment and argues the case for bringing in CHIS.
- The document talks of the need, benefits, and challenges associated with CHIS.

Background:

- ICMR notes that India has so far stayed away from CHIS because regardless of the potential scientific benefits, these studies are **ethically sensitive and raise concerns about contentious research ethics** — issues like deliberate harm, possible disproportionate payment and hence inducements, third-party risk, withdrawal from the study and research with vulnerable participants.

Why CHIS is important for India?

- India carries a high burden of morbidity and mortality from infectious diseases. They

contribute about 30% of the disease burden in the country.

- Finding novel, efficient, and cost-effective alternatives to existing methods of research in these diseases and their prevention is imperative to reduce this burden.
- CHIS is a relatively new research model that helps provide unique insights into disease pathogenesis and can accelerate the development of novel medical interventions.

Benefits of CHIS:

- CHIS offers accelerated, cost-effective, and efficient outcomes using smaller sample sizes in comparison to large clinical trials.
- Its social value includes potential contributions to public health response to diseases of concern, healthcare decision-making, policies and economic benefits, improved pandemic preparedness, and community empowerment.

AKIRA RANSOMWARE

In News: The Computer Emergency Response Team of India (CERT-In) has released a warning about Akira Ransomware.



More on the Topic:

- Ransomware is a type of malicious software (malware) that encrypts or locks the victim's files, making them inaccessible.
- The attackers then demand a ransom payment from the victim, typically in cryptocurrency, in exchange for providing the decryption key or tool to unlock the files and restore access.
- The primary goal of ransomware is to extort money from individuals, businesses, or organizations by exploiting their need to regain access to important data.

MARKARIAN 421

In News: NASA's IXPE mission has observed the supermassive black hole Markarian 421 emitting a high-energy jet directed toward Earth.



More on the Topic:

- The helical magnetic field structure of Markarian 421's jet suggests an environment where particles are being accelerated.
- Markarian 421 is a supermassive black hole in the constellation Ursa Major, situated approximately 400 million light-years away from Earth.
- Supermassive black holes possess a mass exceeding approximately 50,000 times that of our sun.
- Their immense size makes them unfeasible to have originated solely from the gravitational collapse of a single star.
- Remarkably, these cosmic entities are consistently located at the heart of galaxies, and nearly all galaxies are known to harbour a supermassive black hole at their centre.

The Imaging X-ray Polarimetry Explorer (IXPE):

- The Imaging X-ray Polarimetry Explorer (IXPE) represents a joint effort between NASA and the Italian Space Agency, aiming to investigate the universe's most enigmatic and extreme entities, including supernova remnants, supermassive black holes, and numerous other high-energy phenomena.
- This pioneering satellite holds the distinction of being the first dedicated mission designed explicitly for measuring polarized X-rays

emitted by objects like neutron stars and supermassive black holes, unveiling previously concealed aspects of the cosmos.

ADVANCED CHEMISTRY CELLS (ACC)

In News: The Indian Ministry of Heavy Industries will issue a fresh tender for the production-linked incentive scheme, inviting bids for the 18,000-crore Advanced Chemistry Cells (ACC) project.



More on the Topic:

- Advanced chemistry cells, also known as advanced energy storage systems or next-generation batteries, refer to a class of batteries that go beyond traditional lithium-ion batteries and offer improved performance in terms of energy density, safety, charging speed, and lifespan.
- These advanced chemistry cells are being developed to meet the increasing demand for more efficient and sustainable energy storage solutions in various applications, including electric vehicles (EVs), renewable energy integration, consumer electronics, and grid-scale energy storage.
- Some of the key types of advanced chemistry cells: Lithium-Sulfur (Li-S) Batteries, Solid-State Batteries, Lithium-Air (Li-Air) Batteries, Sodium-Ion (Na-Ion) Batteries etc.

GAGANYAAN MISSION

In News: The Indian Space Research Organisation (ISRO) announced that it tested the Gaganyaan Service Module Propulsion System (SMPS) at the ISRO Propulsion Complex in Mahendragiri, Odisha.

More on the Topic:

- The service module of Gaganyaan is responsible for fulfilling the needs of the Orbital Module

by executing tasks such as orbit injection, circularization, on-orbit control, de-boost manoeuvres, and more.

- The Gaganyaan mission is designed to demonstrate ISRO's human spaceflight capability by launching a crew of three members to a 400-kilometre orbit around Earth for a 3-day mission.
- The Gaganyaan mission will be launched on a human-rated version of the LVM3 (Launch Vehicle Mark 3).
- LVM3 is a three-stage vehicle including solid, liquid and cryogenic stages.



Significance of the Mission:

- The mission will propel India's ambition of establishing its space station.
- It will secure its position among developed countries in space research, the nation aspires to become the fourth country, following the United States, China, and Russia, to achieve this significant milestone.
- This mission marks a critical step in advancing India's space exploration capabilities, furthering its presence in the international space community, and re-establishing its reputation as a prominent player in cutting-edge space research and technology. refer to a class of batteries that go

CHANDRAYAAN-3

In News: The Indian Space Research Organisation (ISRO) has launched Chandrayaan-3.

More on the Topic

- Chandrayaan-3 is expected to soft-land on the lunar surface in August 2023.
- The mission is a follow-on to Chandrayaan-2 to show the capability of safe landing and roving on the moon's surface.
- Chandrayaan-3 mission has scientific

instruments to study the thermo-physical properties of the lunar seismicity, lunar regolith, lunar surface plasma environment and elemental composition.

- Data from Chandrayaan-3 will be useful for future Artemis human landings.



Composition of Chandrayaan-3:

- Chandrayaan-3 is composed of a domestically developed propulsion module, lander module, and rover, aimed at advancing and showcasing new technologies essential for inter-planetary missions.
- The lander and rover will gather precious scientific data on the lunar surface, specifically for a duration of 14 Earth days (equivalent to a single lunar day).
- Accomplishing a successful soft landing will position India as the fourth nation, following the United States, Russia, and China, to achieve this remarkable milestone.

What is LVM-3?

- Launch Vehicle Mark-3 is the launch vehicle of Chandrayaan-3. It was previously known as Geosynchronous Satellite Launch Vehicle (GSLV) Mk-3.
- LVM3 is a three-stage launch vehicle equipped with two solid strap-on motors (S200), a liquid core stage (L110), and a high-thrust cryogenic upper stage (C25).
- With a payload capacity of 8 tonnes to Low Earth Orbit (LEO) and 4 tonnes to Geosynchronous Transfer Orbit (GTO), it possesses the capability to transport significant payloads into space.

HYDRAZINE HYDRATE (HH)

In News: Gujarat Alkalies and Chemicals Limited (GACL) has flagged off the first dispatch of import substitute of Hydrazine Hydrate and Purified Phosphoric Acid.

More on the Topic:

About HH:

- India currently imports HH from Europe and other countries.
- It is a colourless liquid that is widely used as a reducing agent, a chemical intermediate, an oxygen scavenger in the treatment of boiler water, and a rocket propellant.
- It has applications in industries such as pesticides, agrochemicals, water treatment, pharmaceuticals, polymer production, and fine chemicals.

About Phosphoric Acid:

- The dominant use of phosphoric acid is for fertilizers, consuming approximately 90% of production.
- Food-grade phosphoric acid is used to acidify foods and beverages such as various colas and jams, providing a tangy or sour taste.
- Phosphoric acid also serves as a preservative.

PHOSPHINE

In News: Scientists have discovered phosphine gas in the atmosphere of Venus.

More on the Topic:

- The discovery indicates the possibility of extraterrestrial life on the planet.
- The gas, typically released by living organisms, has been found at a depth deeper than previously observed.
- The discovery was made by a team of scientists using the James Clark Maxwell Telescope.
- While some argue that the presence of phosphine is insufficient to confirm life, this breakthrough marks a significant milestone in the quest for extraterrestrial life.

GERMANIUM AND GALLIUM

In News: China is restricting exports of two rare metals, Germanium and Gallium.

More on the Topic

- China is the world's leading producer of both germanium and gallium.
- As per the Critical Raw Minerals Alliance, China is responsible for the production of 60% of the world's germanium and 80% of the world's gallium.
- China's move to curb both elements will have a significant impact on the global tech industry.
- These metals are essential for the production of semiconductors, which are used in everything from smartphones to computers to cars.
- The restrictions could also lead to higher prices for these metals, which could make it more difficult for companies to produce high-tech products.
- The move by China to restrict exports of germanium and gallium is seen as a sign of the growing tensions between China and the United States.
- These two countries are locked in a trade war, and the restrictions on exports of these metals are seen as a way for China to retaliate against the United States.

About Germanium:

- Germanium is a semi-metal which makes it a good element for use as semiconductors.
- It is used in a variety of applications, including fibre optics, infrared optics (night vision goggles), solar cell technologies, and infrared sensors.
- It is particularly used in the production of transistors and other semiconductor devices.
- Germanium has also been found to have some medicinal uses and is sometimes used as a dietary supplement.

About Gallium:

- Gallium is a soft, silvery metal that is in a liquid state near room temperature.
- It has a low melting point which helps in the production of semiconductors and electronic components.
- It is used in the manufacture of integrated circuits, light-emitting diodes (LEDs), and solar cells.
- There are some Gallium-based compounds which also have medical applications, including the treatment of certain types of cancers.

ELECTRON RAINS ON MERCURY CAUSING X-RAY AURORAS

In News: Using the observations made by the BepiColombo spacecraft, scientists discovered that electrons from the Sun raining down on the surface of the planet generates X-ray auroras on Mercury.



More on the Topic:

- On Earth, auroras are a result of charged particles from the Sun crashing into the planet's charged ionosphere.
- But Mercury has a very thin atmosphere, meaning that a lot of electrons from solar wind crash onto the surface.
- A paper published in Nature Communications on the discovery is the first time that the cause of X-ray auroras on the planet has been explained.
- Auroras on the planet are created when solar wind, the stream of particles, interacts directly with the planet's surface.

CLUSTER BOMBS

In News: The decision by the US to supply Ukraine with cluster bombs has caused concern among key US allies, such as Italy, Spain, Germany, and the UK.



More on the Topic:

- A cluster bomb is a type of weapon that is **designed to disperse smaller bombs over a large area**. They are also known as cluster munitions, with the smaller bombs referred to as submunitions or bomblets.
- Cluster bombs have been banned by over 100 countries due to the significant risk they pose to civilian populations.
- Cluster bombs, employed in World War II, can be dropped from the air or fired from the ground/sea, dispersing dozens or hundreds of bomblets across a large area. These explosions pose a grave threat to anyone in the vicinity, causing death or severe injuries.
- These munitions have a high failure rate, **leaving unexploded remnants that can remain dangerous for years and detonate unpredictably**.

The Convention on Cluster Munitions (CCM):

- The Convention on Cluster Munitions (CCM) prohibits the use, stockpiling, production, and transfer of cluster munitions.
- However, major countries like the U.S., Russia, China, India, Israel, Pakistan, and Ukraine, along with several NATO countries, are not party to the convention.
- Sixteen countries that have refused to sign the convention and who produce cluster munitions included Brazil, China, Egypt, Greece, Iran, Israel, India, North Korea, Pakistan, Poland, Romania, Russia, Singapore, South Korea, the United States and Turkey.

MAJORANA ZERO MODES

In News: Researchers at Microsoft announced that they had figured out a way to create an elusive kind of particle called Majorana zero modes, that could potentially revolutionise quantum computing.

More on the Topic:

- The particles, also known as Majorana fermions, were first proposed by Italian physicist Ettore Majorana in 1937.
- Majorana zero modes are unique particles that could make quantum computers less fragile and more computationally powerful.
- They possess special properties that make them their antiparticles, which is advantageous

for building quantum computers.

- Majorana zero modes can be used as qubits, the fundamental units of information in quantum computing, and have the potential to protect encoded information from decoherence, a major challenge in quantum computing.
- Decoherence can be viewed as the loss of information from a system into the environment (often modelled as a heat bath) since every system is loosely coupled with the energetic state of its surroundings.

About Anti Particle:

- In particle physics, every type of particle is associated with an antiparticle with the same mass but with opposite physical charges. For example, the antiparticle of the electron is the positron.

GEOCODING

In News: The GST Network (GSTN) has made the geocoding functionality live for all states and union territories.



More on the Topic:

- Geocoding, which converts an address or description of a location into geographic coordinates, has been introduced to **ensure the accuracy of address details in GSTN records** and streamline the address location and verification process.
- The main aim is to **combat fake registrations and fraudulent tax credits**.

About GSTN:

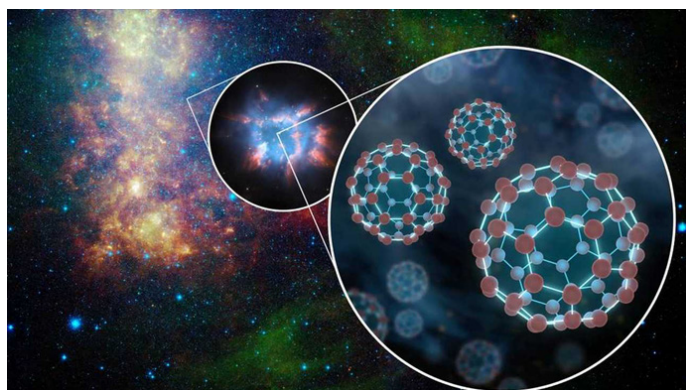
- The GST Network (GSTN) is a **non-profit organization**. It has been established to manage the entire IT system of the GST portal.
- This portal is used by the government to track every financial transaction and it also

provides taxpayers with all services from registration to filing taxes and maintaining all tax details.

- The government (Central and State) holds 49% equity in GSTN while private players hold the remaining 51% equity in the GSTN.

CARBON MOLECULES IN SPACE

In News: Scientists have claimed that the James Webb Space Telescope detected a carbon molecule in the Orion Nebula.



More on the Topic:

- The CH_3^+ molecule, which is also known as **methyl cation**, has been detected in space for the first time by the James Webb Space Telescope (JWST).
- Organic molecules are carbon-based. They contain carbon atoms bonded to hydrogen atoms but can also bond to other elements, such as oxygen, nitrogen or phosphorus.
- Everything that makes us and all life on Earth is carbon-based.
- CH_3^+ is a very simple organic molecule, with just one carbon atom and 3 hydrogen atoms. But it reacts with other molecules to form more complex ones. Its presence in space tells us that basic building blocks for life are out there.

TIME DILATION

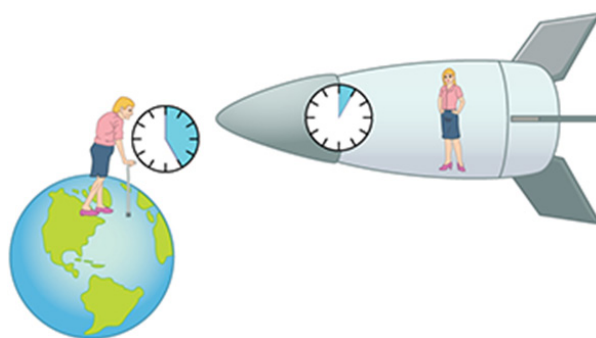
In News: Time has been observed passing more slowly in quasars in the early universe.

More on the Topic:

- Time dilation is a fascinating concept that tells us that time can behave differently depending on how fast we are moving relative to something else.
- Time dilation is a concept that arises from

Einstein's theory of relativity, which revolutionized our understanding of space, time, and gravity. According to this theory, time is not absolute but is intertwined with space in what we call spacetime.

- Time dilation occurs when the passage of time appears to be different for two observers who are moving relative to each other. This means that time can seem to move slower or faster depending on your relative motion.
- It's important to note that time dilation becomes significant **only** when objects are moving at speeds close to the speed of light or in the presence of extremely strong gravitational fields, like those near black holes.

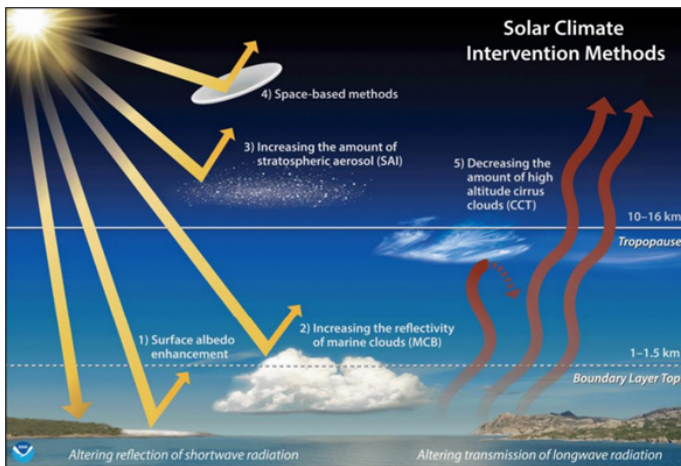


Evidence:

- Scientists have confirmed the existence of time dilation through various experiments and observations. For example, high-speed particles in particle accelerators have been observed to have longer lifetimes than expected due to time dilation effects.
- Researchers now used observations from several quasars dating to about 1.5 billion years after the Big Bang event.
- The brightness of these quasars was compared to that of quasars existing today, showing certain fluctuations about a fifth as quickly as it does today.
- Quasars are tremendously active supermassive black holes millions to billions of times more massive than our sun, usually residing at centres of galaxies.

SOLAR GEO-ENGINEERING

In News: White House has released a report on Solar Geo-Engineering (SGE) to study how blocking sunlight can aid in climate change.



More on the Topic:

- Solar geoengineering refers to proposed approaches to cool the Earth by reflecting solar radiation to space.
- The two main approaches being researched are stratospheric aerosol injection (SAI) and marine cloud brightening (MCB).

Stratospheric Aerosol Injection:

- In effect, SAI simulates what happens during large volcanic eruptions, when volcanoes emit small particles into the upper atmosphere (called the stratosphere).
- These particles reflect sunlight and lead to cooling for as long as they remain in the stratosphere, which may be up to a few years after injection.
- By injecting sulfate or other aerosol particles into the stratosphere, SAI would mimic the cooling effect of a large volcanic eruption's effect on lower global temperatures.
- If ever deployed, SAI would have global impacts, reducing temperatures and altering precipitation patterns across the planet.

Marine Cloud Brightening:

- MCB would involve spraying sea salt into low-lying marine clouds to enhance their brightness and reflectivity to increase regional-scale cooling.

Pros of Geo-Engineering:

- It aims to actively reverse Climate damage: When it comes to climate change, methods like emissions reduction and forest conservation serve as forms of mitigation, but they do not actively reverse the damage done by human behaviour. Proponents of geoengineering argue that the technology could offer a true reversal.
- Its results could be rapid. It could lower average

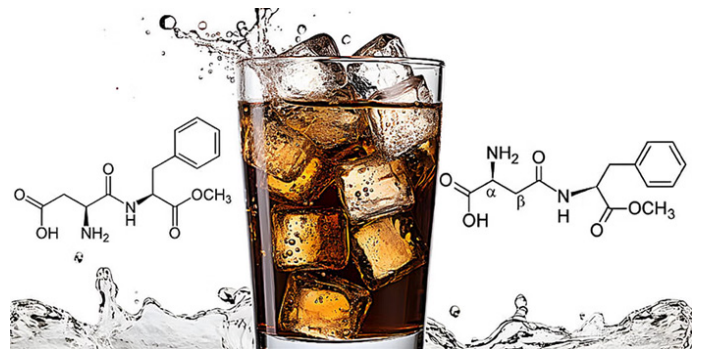
temperatures on the planet faster than could be achieved by changing human behaviours.

Disadvantages of Geoengineering:

- It introduces unknown climate risks. Geoengineering projects could alter Earth's systems in unintended ways.
- It may be financially unfeasible.

ASPARTAME

In News: The World Health Organization (WHO), is reportedly set to list the artificial sweetener aspartame as "possibly carcinogenic to humans."

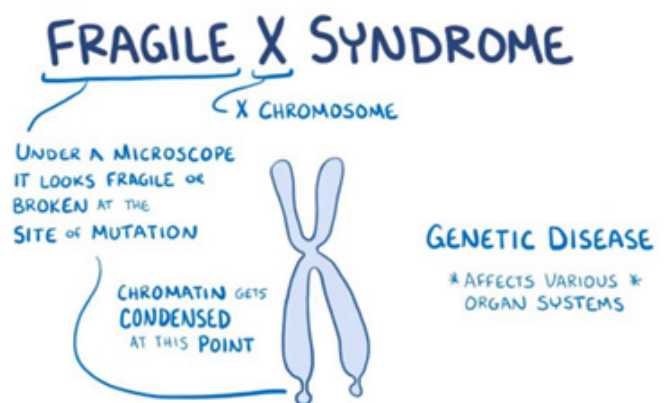


More on the Topic:

- Aspartame is an artificial non-saccharide sweetener 200 times sweeter than sucrose and is commonly used as a sugar substitute in foods and beverages.
- It is a methyl ester of the aspartic acid/phenylalanine dipeptide with the trade names NutraSweet, Equal, and Canderel.

FRAGILE X SYNDROME

In News: World Fragile X Day was observed recently.



More on the Topic:

- Fragile X or Martin-Bell syndrome causes

intellectual disability and autism.

- The condition is caused by a mutation in the FMR1 gene, located on the X chromosome.
- Fragile X syndrome is diagnosed through genetic testing, typically through a blood test that looks for changes in the FMR1 gene.
- There is currently no cure for Fragile X syndrome, but various interventions, therapies, and educational support can help manage the symptoms and improve the quality of life for individuals with the condition and their families.

NIPAH VIRUS

In News: Indian Council of Medical Research's National Institute of Virology (ICMR-NIV) has found evidence of the Nipah virus circulation in the bat population across nine states and one Union Territory.

More on the Topic

- The presence of Nipah viral antibodies has been found in bats in the states of Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra, Bihar, West Bengal, Assam and Meghalaya and the Union Territory of Pondicherry.
- The Nipah virus causes a highly fatal respiratory and encephalitic infection in humans.
- The Pteropus species of fruit bats, commonly called flying foxes, are the known carriers of the virus.
- Nipah Virus (NiV), a zoonotic virus, is a type of RNA virus transmitted in humans through its natural hosts or direct contact with infected people or contaminated food.
- One of the priority pathogens with a pandemic potential, case fatality is a big concern and Nipah's sudden emergence in 2018-19 in Kerala had warranted the need for constant surveillance.
- There is no treatment or vaccine available for either people or animals.

GULLAIN BARRE SYNDROME

In News: The Peruvian government has recently declared a state of national emergency for up to three months, due to a spike in the number of cases of a rare neurological disorder called Guillain-Barré Syndrome.

More on the Topic:

- Guillain-Barré Syndrome is a rare neurological disorder where the body's immune system which normally protects it from infections and other foreign bodies mistakenly attacks its peripheral nerve cells.
- More specifically, the myelin sheath, an insulating layer of fat and protein that surrounds the nerve cells, becomes inflamed.
- The myelin sheath enables signals to pass through the nerve tracts at breakneck speed under normal conditions. If the sheath is inflamed, the nerves can hardly transport stimuli.
- A person with this syndrome will have difficulty speaking, walking, swallowing, excreting or performing other normal functions of the body.
- The condition can get progressively worse.
- Thus, the peripheral nerves, the nerves that branch out from the brain and the spinal cord get damaged as a result, and the muscles can become weak or paralyzed.

Causes:

- The exact reasons for Guillain-Barré Syndrome are not yet understood.
- However, it often develops shortly after a person gets an infectious disease. Rarely, vaccinations can cause it.
- Guillain-Barré Syndrome, or GBS, also was linked to the cytomegalovirus, Epstein Barr virus, Zika virus and even the COVID-19 pandemic.

HERVH GENE

In News: A newly discovered mechanism quietly eliminates unsuitable cells that fail to express a specific gene before embryo development initiates.

More on the Topic:

- HERVH, a virus-like gene, plays a crucial role in preserving pluripotency.
- Human embryonic stem cells contain the HERVH gene, which functions as a transposon but lacks the ability to transpose, serving a protective function.
- Transposons, also known as jumping genes, are small segments of DNA that pose a potential risk as they can insert themselves into various regions of the genome, causing

damage and potentially leading to cell death.

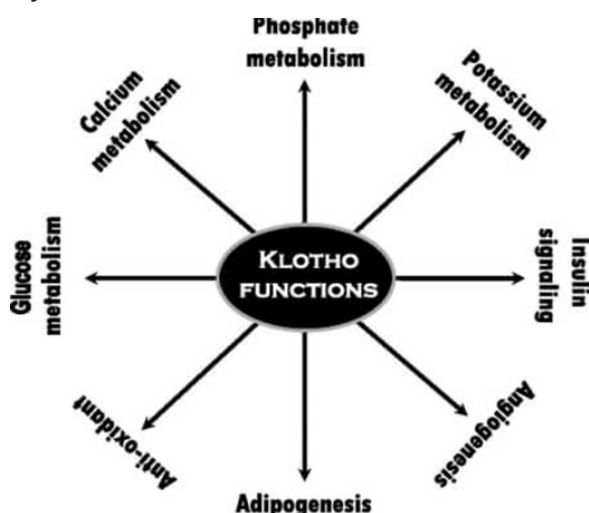
- Research findings indicate that the inner cell mass expresses HERVH, while the non-committed cells lack this expression, resulting in their elimination during development.
- HERVH plays a protective role in shielding the cells within the inner cell mass from damage caused by transposons.
- On the other hand, the non-committed cells, which do not express HERVH, are susceptible to uncontrolled transposon activity, leading to their death and elimination during the developmental process.

Pluripotency:

- Pluripotency refers to the ability of a cell to differentiate into various cell types of the body.
- Pluripotent cells have the potential to give rise to all three germ layers: ectoderm, mesoderm, and endoderm, which subsequently give rise to different tissues and organs in the developing embryo.
- Embryonic stem cells and induced pluripotent stem cells are examples of pluripotent cells.
- These cells are essential in early development and hold great promise in regenerative medicine and tissue engineering due to their ability to differentiate into a wide range of specialized cell types.

KLOTHO PROTEIN

In News: A team of health care specialists and neuroscientists affiliated with several institutions in the U.S., has found that injecting a protein called klotho into older rhesus macaques led to improvements in working memory and their ability to do certain tasks.



More on the Topic:

- The findings indicate that giving the protein to the monkeys led to **cognitive improvement**.
- Klotho is a '**longevity factor**' protein, a **naturally occurring protein** that declines in our bodies with age.
- Previous research on mice had shown that injections of klotho can extend the animals' lives and increase **synaptic plasticity** (the capacity to control communication between neurons, at junctions called synapses).

SAGAR SAMPARK DIFFERENTIAL GLOBAL NAVIGATION SATELLITE SYSTEM TO STRENGTHEN MARITIME SECTOR

In News: The Union Minister of Ports, Shipping and Waterways has inaugurated an indigenous Differential Global Navigation Satellite System (DGNSS) called Sagar Sampark.



More on the Topic:

- It is an enhancement system that corrects the errors and inaccuracies in the Global Navigation Satellite System (GNSS) and provides more accurate positioning information.
- The launch of Sagar Sampark at six locations will assist the **Director General of Lighthouses and Lightships (DGLL)** to provide radio aids to ships for marine navigation.
- The navigation system helps mariners to improve their positioning within 5 meters after recapitalisation with multiple satellite constellations like the Global Positioning System (GPS) and the Global Navigation Satellite System (GLONASS).
- Sagar Sampark significantly improves the accuracy of GPS positioning and reduces errors caused by atmospheric interferences, satellite clock drift, and other factors.
- The error correction accuracy has been

improved from 5 to 10 meters to less than 5 meters for 100 Nautical Miles (NM) from Indian coastlines.

Global Navigation Satellite Systems:

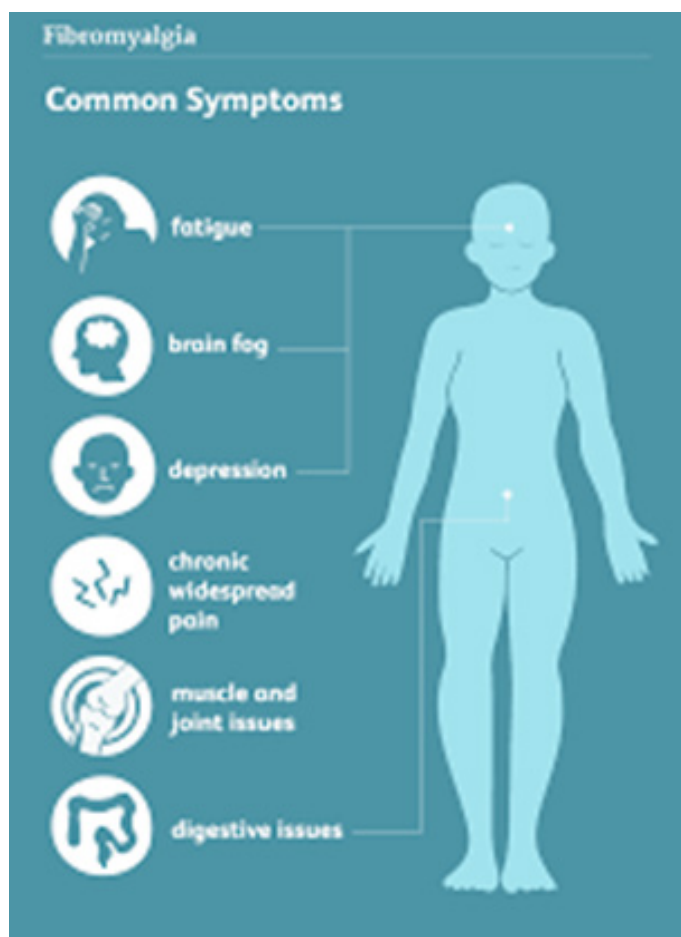
- Global Navigation Satellite Systems (GNSS) include constellations of Earth-orbiting satellites that broadcast their locations in space and time, networks of ground control stations, and receivers that calculate ground positions by trilateration.
- GNSS are used in all forms of transportation: space stations, aviation, maritime, rail, road and mass transit.
- Positioning, navigation and timing (PNT) play a critical role in telecommunications, land surveying, law enforcement, emergency response, precision agriculture, mining, finance, scientific research and so on.
- They are used to control computer networks, air traffic, power grids and more.
- At present GNSS include two fully operational global systems, the United States Global Positioning System (GPS) and the Russian Federation's GLONASS, as well as the developing global and regional systems, namely Europe's European Satellite Navigation System (GALILEO) and China's COMPASS/Bei-Dou, India's Regional Navigation Satellite System (IRNSS) and Japan's Quasi-Zenith Satellite System (QZSS).
- Once all these global and regional systems become fully operational, the user will have access to positioning, navigation and timing signals from more than 100 satellites.

FIBROMYALGIA

In News: Fibromyalgia, a disorder that produces persistent, widespread pain and exhaustion, may be associated with an elevated risk of mortality owing to sensitivity to accidents, infections, and, in particular, suicide.

More on the Topic:

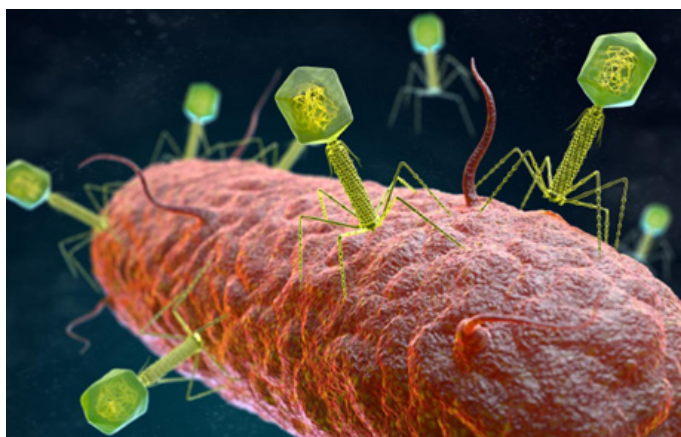
- Fibromyalgia is a chronic condition that causes widespread pain and fatigue, as well as other symptoms such as cognitive difficulties, sleep problems, and mood disorders.
- The cause of fibromyalgia is still unknown, but it may involve genetic, environmental, and psychological factors.



- It affects more women than men, and it can have a significant impact on the quality of life of those who live with it.
- While there is no cure for fibromyalgia, a variety of medications can help control symptoms.
- Treatment typically involves a combination of exercise or other movement therapies, psychological and behavioural therapy, and medications.

BACTERIOPHAGES

In News: With antibiotic resistance rising, scientists think bacteriophages – which hunt and kill bacteria could cure bacterial infections.



More on the Topic

- The vast majority of viruses inside us are **bacteriophages** – viruses that kill bacteria in our microbiomes.
- Bacteriophages, also known as phages, are harmless to human cells as they do not recognize them as their bacterial prey.
- They work by hunting down bacteria and attaching themselves to the surface of a bacterial cell, before injecting viral DNA material into the cell.
- The viral DNA then replicates inside the bacteria, sometimes by borrowing the DNA replication hardware of the bacteria.
- Once enough new viruses have been created inside the bacterial cell, the cell then bursts to release the new viral particles.
- All this takes just 30 minutes, meaning one virus can become many in a couple of hours.

CRIMEAN-CONGO HAEMORRHAGIC FEVER

In News: In India, one person succumbed to Crimean-Congo haemorrhagic fever recently in Gujarat.



Crimean-Congo Haemorrhagic Fever: Introduction
Outbreak channel

More on the Topic:

- According to the WHO, “Crimean-Congo haemorrhagic fever (CCHF)” is a viral haemorrhagic fever usually transmitted by ticks.
- It can also be contracted through contact with viraemic animal tissues (animal tissue where the virus has entered the bloodstream) during and immediately post-slaughter of animals.
- CCHF outbreaks constitute a threat to public health services as the virus can lead to epidemics, has a high case-fatality ratio (10–40%), potentially results in hospital and health facility outbreaks, and is difficult to prevent and treat.

REPORTS AND INDICES

GLOBAL EDUCATION MONITORING REPORT 2023

In News: The U.N. body's Global Education Monitoring Report 2023, titled 'Technology in Education: A Tool on Whose Terms' has endorsed banning smartphones in schools.



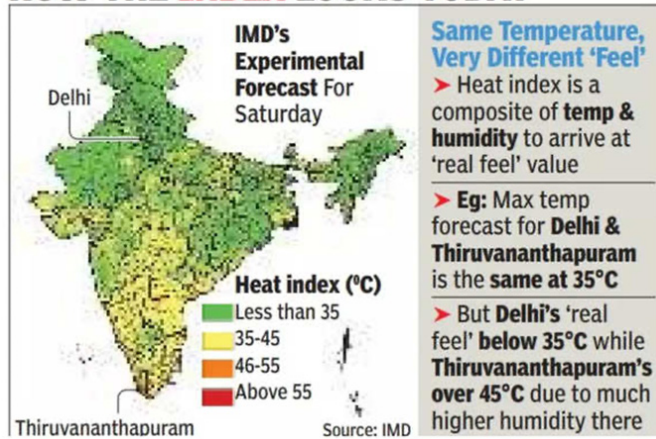
More on the Topic:

- The report highlighted that mere proximity to a **mobile device was found to distract students** and to have a negative impact on learning in 14 countries, yet less than one in four have banned smartphone use in schools.
- It also cited research studies to point out that “banning mobile phones from schools improves academic performance, especially for low-performing students”.
- The report highlighted that in regions relying on the establishment of digital infrastructure, the expenses associated with providing fundamental education are elevated.
- This could exacerbate the issue of unequal accessibility in economically disadvantaged nations.
- Additionally, a significant concern surrounding the widespread adoption of digital technology in education is the lack of **children's privacy protection**.
- Alarmingly, only 16% of countries have **explicit legal provisions to safeguard children's data privacy** in the educational context.

HEAT INDEX

In News: In the Rajya Sabha, Kiren Rijiju, the Union Minister of Earth Sciences, announced that the India Meteorological Department (IMD) has introduced a heat index on a trial basis.

HOW THE INDEX LOOKS TODAY



More on the Topic:

- The heat index, modelled after the equation used by the National Weather Service of the National Oceanic and Atmospheric Administration (NOAA) in the USA, has been developed and implemented in India.
- Under the Heat Action Plan, specific heat indexes have been created for Bhubaneswar and Ahmedabad, with the project being carried out by the National Disaster Management Authority (NDMA).
- Collaborating with the NDMA on this initiative are local agencies such as the Indian Institute of Public Health (IIPH).

Significance of the Index:

- The heat index will be included in the daily weather bulletins for the entire country.
- It will help people in understanding the impact of humidity on high temperatures.
- The information provided by this index could be utilized to identify the heat implications to humans and to understand temperature ranges which are causing discomfort.

STATE OF FOOD SECURITY AND NUTRITION IN THE WORLD (SOFI) REPORT

In News: FAO, International Fund for Agriculture Development, UNICEF, UN world food Programme and WHO have jointly released SOFI 2023.

More on the Topic:

Highlights from the Report:

- Over 122 million more people have gone hungry in the world since 2019 due to the COVID-19 pandemic, repeated weather shocks and conflicts, including the Russia-Ukraine

conflict.

- The prevalence of moderate or severe food insecurity in 2022 was still far above pre-COVID-19-pandemic levels, although it remained unchanged compared to 2021.
- If trends remain as they were, the **UN-mandated Sustainable Development Goal (SDG) of ending hunger by 2030 will not be reached.**
- About 29.6 percent of the global population 2.4 billion people were moderately or severely food insecure in 2022, of which about 900 million (11.3 percent of people in the world) were severely food insecure.
- Almost 600 million people will be chronically undernourished in 2030.



Important Trends/Projections from the Report:

- The analysis featured increasing urbanisation as one of the megatrends that were driving changes in agrifood systems and, as a consequence, their capacity to deliver affordable, healthy diets for all, across the rural-urban continuum.
- With almost seven in ten people projected to live in cities by 2050, the simple concept of a rural-urban divide was no longer useful to

understand the growing links across urban, peri-urban and rural areas.

- This growing connectivity across the rural-urban continuum is a key aspect today to understanding the functioning of value chains.
- Only then can the challenges and the opportunities that urbanisation creates for agri-food systems be mapped onto appropriate policy, technology and investment solutions.

Recommendations:

- Enhancing connectivity among urban, peri-urban, and rural areas to expand the availability of affordable nutritious diets.
- Enhancing accessibility to agricultural inputs and improving irrigation infrastructure to support food production.
- Scaling up public investment in research and development to foster the creation of technologies and innovations that promote healthier food environments.

EXPORT PREPAREDNESS INDEX (EPI) 2022

In News: NITI Aayog has released the third edition of the report titled 'Export Preparedness Index (EPI) 2022' for States/UTs of India.



More on the Topic:

- The EPI 2022 Report observed that most 'Coastal States' have performed well, with the states of Tamil Nadu, Maharashtra, Karnataka and Gujarat being the top performers in the Export Preparedness Index across the country, in all categories of states.
- The efforts of state governments in improving the policy ecosystem have led many states to create export promotion policies and district-level export action plans.
- It is noted in the report, there is a scope for

improvement in the business and export ecosystem in many states which is necessary to improve their export performance.

- The report encourages state governments to create solutions to their context-specific challenges to exports.
- The states can also exploit their innate diversity by promoting products unique to them and helping them reach the global market.
- Consistent investment in research and development can foster innovation, which in turn can facilitate higher efficiency in exports, and diversification of India's export basket.
- Further efforts in the identification of new markets and exporting diversified products according to the state's competitive advantage can help India in improving its global footprint.
- The report aims to facilitate competitive federalism in the country which creates a spirit of healthy competition among the states and encourages peer-learning among the states.

About Export Preparedness Index:

- The report presents a comprehensive analysis of India's export performance in FY22, along with its sector-specific and district-level merchandise export trends.
- The EPI 2022 Report evaluates the performance of the states across four pillars – Policy, Business Ecosystem, Export Ecosystem, and Export Performance.
- The index uses 56 indicators which holistically capture the export preparedness of States and UTs in terms of exports at both the state and district level.

The overview of the four pillars in the index is:

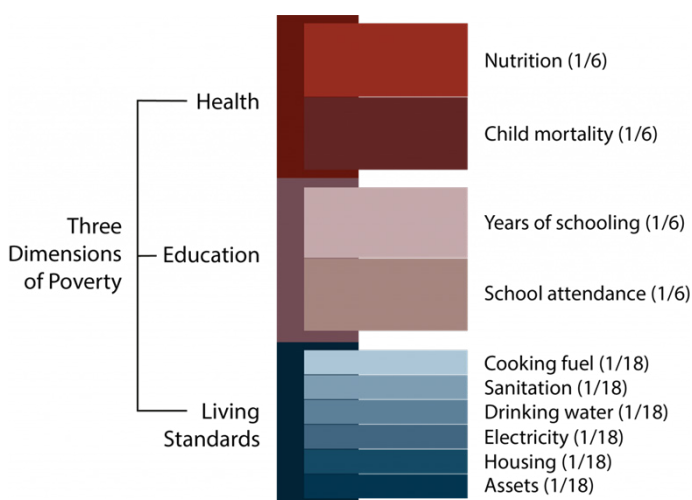
- **Policy Pillar** evaluates states' and UTs' performance based on its adoption of export-related policy ecosystems at a state and district level as well as the institutional framework surrounding the ecosystem.
- **Business Ecosystem** assesses the prevailing business environment in a state/UT, along with the extent of business-supportive infrastructure, and a state/UTs' transport connectivity.
- **Export Ecosystem** focuses on the export-related infrastructure in a state along with

the trade support provided to the exporters, and the prevalence of Research and Development in the state to foster innovation.

- **Export Performance** is an output-based indicator that gauges the growth of a state's export over the previous year and analyses its export concentration and footprint on the global markets.

MULTIDIMENSIONAL POVERTY INDEX (MPI)

In News: The latest update of the global Multidimensional Poverty Index (MPI) was released by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford.



More on the Topic:

- 25 countries, including India, successfully halved their global MPI values within 15 years, showing that rapid progress is attainable.
- These countries include Cambodia, China, Congo, Honduras, India, Indonesia, Morocco, Serbia, and Vietnam.
- 1.1 billion out of 6.1 billion people (just more than 18%) live in acute multidimensional poverty across 110 countries.
- Sub-Saharan Africa (534 million) and South Asia (389 million) are home to approximately five out of every six poor people.
- Nearly two-thirds of all poor people (730 million people) live in middle-income countries, making action in these countries vital for reducing global poverty.
- Although low-income countries constitute only 10% of the population included in the MPI, these are where 35% of all poor people reside.

- Children under the age of 18 account for half of MPI-poor people (566 million).
- The poverty rate among children is 27.7%, while among adults, it is 13.4%.
- Poverty predominantly affects rural areas, with 84% of all poor people living in rural areas. Rural areas are poorer than urban areas across all regions of the world.

India-Specific Data:

- In April 2023, India surpassed China to become the world's most populous nation with 142.86 crore people. (UN data)
- In India, 415 million poor people moved out of poverty from 2005/2006 to 2019/2021, with the incidence falling from 55.1% in 2005/2006 to 16.4% in 2019/2021.
- Deprivation in all indicators declined in India and "the poorest States and groups, including children and people in disadvantaged caste groups, had the fastest absolute progress."

Achievement of India under Various Indicators:

- People who are multidimensionally poor and deprived under the nutrition indicator in India declined from 44.3% in 2005/2006 to 11.8% in 2019/2021, and child mortality fell from 4.5% to 1.5%.
- Those who are poor and deprived of cooking fuel fell from 52.9% to 13.9% and those deprived of sanitation fell from 50.4% in 2005/2006 to 11.3% in 2019/2021.
- In the drinking water indicator, the percentage of people who are multidimensionally poor and deprived fell from 16.4 to 2.7 during the period, electricity (from 29% to 2.1%) and housing from 44.9% to 13.6%.

About MPI:

- It is a key international resource that measures (annually) acute multidimensional poverty across more than 100 developing countries.
- First launched in 2010 by UNDP and Oxford Poverty and Human Development Initiative (OPHI), the global MPI advances SDG 1 – ending poverty in all its forms everywhere.
- It also measures interconnected deprivations across indicators related to SDGs 1, 2, 3, 4, 6, 7 and 11.
- It takes into account education, health, living standards, and access to necessities.
- This comprehensive approach provides a more

nuanced understanding of poverty and enables policymakers to formulate targeted strategies.

NITI AAYOG ON AGRICULTURE REFORMS

In News: NITI Aayog has released a working paper titled 'From Green Revolution to Amrit Kaal'.



More on the Topic

- The working paper aims to revitalise India's agriculture industry, setting the groundwork for a more prosperous future for farmers.
- The paper also underscores the essential role of agriculture in meeting the United Nations' Sustainable Development Agenda 2030.
- It emphasizes that 11 out of the 17 Sustainable Development Goals (SDGs) are directly linked to agriculture, emphasizing the need to prioritize this sector for sustainable development.

The Challenges Faced by Indian Agriculture:

- **Ecological Challenges:** declining groundwater level, frequent pest attacks, Declining land fertility, Climate change induced frequent drought and floods.
- **Economic Challenges:** declining farmer income, declining farm productivity, post-harvest loss, huge debt.
- **Social Challenges:** Unskilled and illiterate farming activities linked with growing crops not suitable to the area or weather conditions, ineffective land reform etc.

Recommendations by the NITI Ayog Working Paper:

- Create a conducive regulatory environment and responsible investments, both public and private, in agriculture.
- Introducing a competitive framework among states to enhance the ease of doing farming and farm business.
- Use a combination of procurement and price deficiency payment, to pay the Minimum

Support Price to farmers.

- Integrate science-led technology.
- Encouraging private sector participation in pre and post-harvest phases.
- Promote liberalized output markets.
- Foster an active land lease market.
- Prioritizing efficiency.

GLOBAL SURVEY ON DIGITAL AND SUSTAINABLE TRADE FACILITATION

In News: United Nations Economic and Social Commission for Asia Pacific (UNESCAP) has released Global Survey on Digital and Sustainable Trade Facilitation.



UN Global Survey on Digital and Sustainable Trade Facilitation

More on the Topic:

- The Global Survey on Digital and Sustainable Trade Facilitation conducted by UNESCAP covers the WTO Trade Facilitation Agreement (TFA) along with a set of nearly 60 trade facilitation measures categorized into eleven sub-groups, namely: Transparency; Formalities; Institutional arrangement and cooperation; Transit facilitation; Paperless trade; Cross-border paperless trade; Trade facilitation for SMEs; Agricultural trade facilitation; Women in trade facilitation; Trade finance for trade facilitation; and Trade facilitation in times of crisis.
- The survey is fact-based rather than perception-based. A three-step approach to data collection and validation is generally followed, implemented over 6 months every 2 years.

India's Performance:

- India's score increased to 93.55 percent in 2023 from 90.32 per cent in 2021.
- The 2023 Survey has recognized India's exceptional progress across various sub-indicators, with the country achieving a perfect

score of 100% in four key areas: Transparency, Formalities, Institutional Arrangement and Cooperation, and Paperless Trade.

- These remarkable scores are a testament to India's relentless efforts in streamlining trade processes, enhancing transparency, and promoting cooperation among stakeholders through initiatives such as Turant Customs, Single Window Interface for Facilitation of Trade (SWIFT), Pre-Arrival data processing, e- Sanchit, Coordinated Border Management etc.
- India has witnessed a substantial improvement in the score for the "Women in Trade Facilitation" component from 66.7% in 2021 to 77.8% in 2023 thereby indicating commitment to gender inclusivity and the empowerment of women in the trade sector.
- India is now the best-performing country amongst all the countries of the South Asia region.
- The overall score of India has been greater than many developed countries including Canada, France, the UK, Germany etc.
- The Survey reflects the efficacy of Trade facilitation measures taken by Indian Customs such as Turant Customs comprising Faceless Customs, Paperless Customs and Contactless Customs, in enhancing India's ease of doing Business and promoting trade facilitative environment in the country.

About United Nations Economic and Social Commission for Asia Pacific:

- The United Nations Economic and Social Commission for Asia and the Pacific is one of the five regional commissions under the jurisdiction of the United Nations Economic and Social Council.
- It was established to increase economic activity in Asia and the Far East, as well as to foster economic relations between the region and other areas of the world.
- **Head Quarters: Bangkok, Thailand.**
- (The Economic and Social Council (ECOSOC), under the overall authority of the General Assembly, coordinates the economic and social work of the United Nations and the UN family of organizations).

GLOBAL PEACE INDEX (GPI)

In News: The 2023 Global Peace Index (GPI) recently released its annual ranking of the most peaceful countries in the world.



More on the Topic:

- Published by the Institute for Economics and Peace (IEP), the 17th edition of the GPI ranked 163 independent states and territories according to their level of peacefulness.
- The GPI covers 163 countries comprising 99.7 percent of the world's population, using 23 qualitative and quantitative indicators from highly respected sources.

It measures the state of peace across three domains:

- Societal Safety and Security
- Ongoing domestic and international conflict
- Militarisation

Highlights from the report:

- The average level of global peacefulness deteriorated by 0.42 per cent.
- "This is the thirteenth deterioration in peacefulness in the last fifteen years, with 84 countries improving and 79 deteriorating in peacefulness in 2022."
- Iceland is the most peaceful country in the world – a title it has held since 2008.
- It is accompanied at the top by Denmark, Ireland, New Zealand, and Austria.
- Conversely, Afghanistan is the least peaceful country in the world for the eighth consecutive year.
- India has occupied the 126th spot in the rankings, two higher than its previous position.
- The report stated that India experienced an improvement of 3.5 percent in overall peacefulness over the past year, owing to improvements in violent crime, neighbouring country's relations, and political instability.

- Neighbouring countries like Bhutan (17), Maldives (23), etc. performed better than India.

PERFORMANCE GRADING INDEX 2.0

In News: Ministry of Education has released a report on Performance Grading Index 2.0 for States/UTs for the year 2021-22.



More on the Topic:

- To have a more updated base with quality indicators, to align with new initiatives of the **National Education Policy (NEP) 2020**, to monitor indicators relating to Goal 4 of Sustainable Development Goals (SDGs), and to replace existing indicators which have achieved the optimal target, the PGI – State structure for 2021-22 has been revised and renamed as PGI 2.0.
- The new PGI structure covers **73 indicators** and **focused more on qualitative assessment** besides including digital initiatives and teacher education.
- The grades/level obtained by States/UTs in the previous edition of the PGIs are thus not comparable to the grades/levels obtained by States/UTs in this new edition.
- In PGI 2.0, data for many of the indicators have been sourced from **Unified District Information System for Education Plus (UDISE+)**, **National Achievement Survey (NAS)**, **PM POSHAN portal**, **PRABAND portal** and **Vidyanjali Portal**.

More about Performance Grading Index 2.0:

- The PGI 2.0 structure comprises 1000 points across 73 indicators grouped into 2 categories viz., **Outcomes**, **Governance Management**

(GM).

- These categories are further divided into 6 domains, viz., **Learning Outcomes (LO)**, **Access (A)**, **Infrastructure & Facilities (IF)**, **Equity (E)**, **Governance Process (GP)** & **Teachers Education and Training (TE&T)**.
- PGI 2.0 for 2021-22 classified the States/UTs into ten grades viz., the highest achievable Grade is **Daksh**, which is for State/UT scoring more than 940 points out of a total of 1000 points. The lowest grade is **Akanshi-3** which is for a score up to 460.

Significance of Performance Grading Index 2.0:

- Indicators of PGI 2.0 have been aligned to policy initiatives and interventions introduced post-implementation of **National Education Policy (NEP) 2020** for proper tracking of the progress.
- The PGI 2.0 is expected to help States and UTs to pinpoint the gaps and accordingly prioritize areas for intervention to ensure that the school education system is robust at every level.

PANCHAYAT DEVELOPMENT INDEX (PDI)

In News: Panchayat Development Index (PDI) has been released by the Ministry of Panchayati Raj.



More on the Topic:

- It is a new initiative by the Ministry of Panchayati Raj to assess the progress of local development through panchayats, the rural self-government institutions in India.
- The PDI is based on the concept of **Localization of Sustainable Development Goals (LSDGs)**, which aims to align the national and global development goals with the local context and priorities.

- It is designed to be a compact and comprehensive statistical tool that captures various aspects of development at the panchayat level.
- It covers nine themes that reflect the vision of an ideal village, such as; **Poverty-free, Healthy, Child-friendliness, Water-sufficiency, Clean and green, Self-sufficiency, Socially just and security, Well-governed, and Women-friendliness.**
- The PDI takes into account the inputs, outputs, and outcomes of development interventions in each theme.

Significance:

- It provides a matrix to **monitor and evaluate the progress of panchayats** through the scores achieved by them.
- It ranks panchayats based on scores and categorizes them into four grades. Grades include A (75 to 90%), B (60-75%), C (40-60%) and D (under 40%).
- The PDI has several applications for **policymaking, planning, monitoring, evaluation, and learning.**
- It can help identify the strengths and weaknesses of panchayats in different themes and indicators, and suggest areas for improvement.
- It serves as a tool for social accountability.

INDIAN SOCIETY / SOCIAL ISSUES / SOCIAL JUSTICE

SCHEDULE TRIBE (ST)

In News: A Bill to amend the Constitution (Schedule Tribes) Order, 1950 and include specific communities in the list of Schedule Tribes of Chhattisgarh was passed by the Rajya Sabha.



More on the Topic:

- The communities added to the ST include Dhanuhar, Dhanuwar, Kisan, Saundra, Saonra, and Binjhia and three Devanagari versions of the Pando community.
- It is done by **Article 342 of the Constitution.**
- The President may, concerning any State/UT and where it is a State after consultation with the Governor may notify the STs about that State/UT.
- The Parliament may by law include or exclude from the list of STs specified in a notification issued.

MINIMUM GUARANTEED INCOME

In News: Rajasthan introduced Minimum Guaranteed Income Bill, 2023.



More on the Topic:

- Minimum Guaranteed Income, also known as Universal Basic Income (UBI), is a social welfare concept where every citizen or resident of a country receives a regular, unconditional cash payment from the government.
- The payment is typically given without any means test or work requirement, meaning it is provided to all individuals, regardless of their income level or employment status.
- The main idea behind Minimum Guaranteed Income is to provide a safety net for every member of society, ensuring that their basic needs are met and reducing poverty and inequality.
- It aims to address issues such as unemployment, technological displacement, and economic instability by providing a stable source of income for individuals

DISASTER MANAGEMENT

MINISTRY OF JAL SHAKTI - MANUAL FOR DISASTER MANAGEMENT PLAN

In News: Union Minister for Jal Shakti has released the Manual for Disaster Management Plan (DMP).



More on the Topic

- It was developed by the Department of Drinking Water and Sanitation.
- It aims to ensure safety, uninterrupted supply and minimum loss of Water, Sanitation and Hygiene (WASH) assets and services involving stakeholders at the national, state, district and village levels.
- The plan is developed based on the Advisory issued by the National Disaster Management Authority (NDMA) which under Section 37 of the Disaster Management Act, 2005 desires every Ministry/ Department to develop its disaster plan to counter and be prepared for any emergency arising in future.

Key provisions of the Disaster Management Plan (DMP):

- **Preparedness:** Emphasizing capacity building, strategically pre-positioning supplies and service providers, engaging communities, conducting risk assessments, and implementing early warning systems are all crucial elements of preparedness.
- **Response:** Disaster response entails providing emergency services during or shortly after a disaster. Its primary objectives are to preserve lives, mitigate health consequences, ensure public safety, and address essential needs.

- Specifically, in the case of a **WASH (Water, Sanitation, and Hygiene) disaster response**, immediate actions are taken to restore water supply, address water quality concerns, and implement sanitation and hygiene solutions.
- **Recovery and Reconstruction:** Recovery and Reconstruction encompass the process of reinstating and enhancing, if necessary, the facilities, livelihoods, and living conditions of the communities affected by a disaster.
- In the context of WASH, this entails not only restoring water, sanitation, and hygiene systems to their pre-disaster state but also adopting a "build back better" approach to make them more resilient against similar future disasters.
- The aim is to improve these systems, ensuring they are less vulnerable and better equipped to withstand potential challenges.
- **Mitigation:** Mitigation involves the implementation of measures to **reduce the vulnerability of WASH infrastructure and services to potential future disasters.**
- **Assessment:** Assessment involves three distinct types of evaluations that should be carried out at different stages:
 - **a) Before the disaster:** A Hazard-Vulnerability-Capacity mapping is conducted to identify the most essential preparedness activities required. This helps in understanding the potential hazards, vulnerabilities, and existing capacities within the community.
 - **b) During Response:** A Rapid Needs Assessment (RNA) is performed, typically completed within a day, to swiftly identify and address the immediate needs of the affected population. It provides crucial insights during the initial response phase.
 - **d) During Recovery & Reconstruction:** A detailed Post-Disaster Needs Assessment (PDNA) is undertaken to assess the long-term requirements of the community. This evaluation helps in "building back better" by addressing damaged infrastructure and updating service delivery mechanisms to enhance resilience against future disasters.



More on the Topic

- The number of deaths due to lightning has been increasing of late.
- if it joins the list of natural disasters, victims will be entitled to compensation under the State Disaster Response Fund.
- The Centre is not in favour of it as deaths can be prevented through awareness programmes.

Existing Classification of Disasters:

- Present norms consider cyclones, drought, earthquakes, fire, floods, tsunamis, hailstorms, landslides, avalanches, cloud-bursts, pest attacks, frost, and cold waves as covered disasters under the SDRF.

About Lightning:

- Lightning is a phenomenon of natural electrical discharge that takes place in the atmosphere during thunderstorms. It manifests as a visible and extremely powerful flow of electricity, either between the Earth's surface and the atmosphere or within cloud systems.

LIGHTNING AS A NATURAL DISASTER

In News: The Union government is against declaring lightning as a natural disaster.

ANCIENT AND MODERN INDIA, ART AND CULTURE

JANJATIYA DARPAN

In News: The President has inaugurated a gallery titled 'Janjatiya Darpan' in the Marble Hall Museum of Rashtrapati Bhavan.



More on the Topic

- It is a gallery to showcase the common and connecting cultural traits of various tribal communities.
- The aim of this gallery is to provide a glimpse of rich art, culture and the contributions of tribal communities in building this nation.
- The gallery consists of different themes such as unsung Tribal Freedom Fighters, Traditional Natural Resource management practices like Halma, Dokra Art, Musical Instruments, Gunjala Gondi Script, Agricultural and Household implements, Bamboo Baskets, Textiles, Paintings such as Warli, Gondi and Mud Art, Scroll, Masks and Jewellery, Metalwork, Weapons, Contemporary Photographs depicting the Tattoos, Diorama depicting an ecological setting and sceptres.
- This gallery was established by Rashtrapati Bhavan in collaboration with Indira Gandhi National Center for the Arts (IGNCA).

TANKAI SHIPBUILDING METHOD

In News: The Ministry of Culture and the Indian Navy have signed an MoU to revive the "ancient stitched shipbuilding method (Tankai method)".

More on the Topic:

- The Tankai method, traditional craftsmanship found in coastal regions of India, involves the meticulous stitching together of wooden planks instead of using nails.
- This technique has stood the test of time

and remains prevalent in the construction of local fishing boats.

- The method's resilience and sturdiness have played a crucial role in ensuring the longevity of these vessels, allowing them to withstand harsh maritime conditions with ease.



KER PUJA

In News: Tripura has observed the auspicious Ker Puja with due devotion.



More on the Topic:

- Ker Puja is an annual festival celebrated in the state of Tripura. The puja takes place two weeks after Kharchi Puja and honours Ker, a guardian god.
- During the festival entrances to Agartala are closed to create a protected area and people are not allowed to light fires, dance, sing or even wear shoes.
- During Ker Puja offerings, sacrifices are made to please gods for the welfare of the villages so that they can save them from calamities, epidemics and external aggression.

ZO PEOPLE

In News: Zo people called for a reunification of Zo people given the continuing ethnic violence between the dominant Meiteis and the Kuki-Zomi tribes in the neighbouring state.



More on the Topic:

- The Zo peoples include all tribes of the **Chin-Kuki-Mizo ethnic group** spread across Myanmar, India, and Bangladesh, along with many sub-tribes and clans such as the Chin, Kuki, Mizo, Lushei, Zomi, Paitei, Hmar, Ralte, Pawi, Lai, Mara, Gangte, Thadou, etc.
- The tribes are believed to have **migrated from China through Tibet** to settle in Myanmar and speak a group of Tibeto-Burman languages.
- Constant feuds among the tribal clans and their kings (chieftains) drove many of the clans westward to modern-day Mizoram and parts of Manipur in the 17th century.
- They settled in new villages, but even so, remained socially and emotionally enmeshed with the Chin tribes of Myanmar.
- They speak a group of Tibeto-Burman languages.

GUTTI KOYA TRIBES

In News: Gutti Koyas, also known as Gotti or Gotte Koyas, are an Adivasi tribe of Chhattisgarh, who fled to Andhra Pradesh to avoid being forcibly taken to government-run camps or having their youth made to join Salwa Judum.



More on the Topic

- Gutti Koyas are not considered tribals in Telangana. This means they are not eligible for any social welfare programmes.
- Salwa Judum was a militia that was mobilised and deployed as part of **counterinsurgency operations in Chhattisgarh**, aimed at countering Naxalite activities in the region.
- They practised 'podu' or shifting cultivation, and then shifted to paddy and cash crops from dryland agriculture.
- The Guttikoyas held ST status in Chhattisgarh but they were not granted ST status in their migrated states such as Telangana.
- They earn a living through animal husbandry and minor forest produce.

BONALU FESTIVAL

In News: Banal festival was celebrated in Golconda Fort.



More on the Topic

- It is a traditional Hindu festival centred on

the Goddess Mahakali from Telangana.

- The festival is also considered a thanksgiving to the Goddess for the fulfilment of vows.
- The word "Bonalu" is derived from the Telugu word "Bhojanalu," which means "feast" or "meal."
- Bonalu involves worship of Kali in her various forms such as Mysamma, Pochamma, Yellamma, Dokkamma, Pedamma, Poleramma, Ankamma, Maremma, Nookamma etc.

LAMBANI EMBROIDERY

In News: Lambani artisans set the Guinness World Record for making the highest number of embroidery patches.



More on the Topic

- Lambani embroidery is a vibrant and intricate form of textile embellishment characterised by colourful threads, mirror work, and a rich array of stitch patterns.
- It is practised in several villages of Karnataka such as Sandur, Keri Tanda, Mariyammanahalli, Kadirampur, Sitaram Tanda, Bijapur, and Kamalapur.
- It received the status of Geographic Indication (GI) tag in 2010 from Karnataka.
- It has been named after the Lambani tribe.
- Lambanis, also called Lambadis or Banjaras, were nomadic tribes who came from Afghanistan to Rajasthan and have now spread themselves across Karnataka, Andhra Pradesh, Rajasthan, Madhya Pradesh, Gujarat and Maharashtra.

NAMDA ART OF JAMMU AND KASHMIR

In News: The Union Minister of State for Skill Development and Entrepreneurship has flagged off the first batch of Namda Art products for export to the United Kingdom (UK).



More on the Topic

- The Namda craft of Kashmir is being successfully revived under Skill India's Pilot Project as part of the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), with candidates from the state, receiving training in the dying art form.

About NAMda Craft:

- Namda craft is a rug made of sheep wool through the felting technique instead of the normal weaving process.
- Due to the low availability of raw materials, lack of skilled manpower and marketing techniques, the export of this craft declined by almost 100 per cent between 1998 and 2008.
- It originated in the 16th century and was introduced by a Sufi saint named Shah-e-Hamdan.
- Namda rugs provide warmth and are used as floor coverings and home decor.

About Pradhan Mantri Kaushal Vikas Yojana (PMKVY):

- Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the Ministry of Skill Development and Entrepreneurship (MSDE) implemented by the National Skill Development Corporation (NSDC).
- The objective of this Skill Certification Scheme is to enable Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood.

- Individuals with **prior experience** are also assessed and certified under **Recognition of Prior Learning (RPL)**.

HAMPI

In News: The third G20 Culture Working Group (CWG) meeting commenced in Hampi, Karnataka.



More on the Topic:

- Hampi is a UNESCO World Heritage Site located on the **bank of Tungabhadra River in Karnataka**. Emperor Ashoka's Rock Edicts suggest this region was part of the Mauryan Empire during the 3rd century BCE.
- Hampi comprises mainly the remnants of the **Capital City of the Vijayanagara Empire (14th-16th Century CE)**.

Important Archeological Structures at Hampi:

- Vittala Temple (God Vittala - a form of Lord Vishnu); Virupaksha Temple (Lord Shiva); Kadalekalu Ganesha statue (14ft); Lakshmi Narasimha statue; Lotus Mahal and Hazara Rama Temple (depicting Ramayana themes).

PORPANAIKOTTAI EXCAVATIONS

In News: The Tamilnadu State Archaeology Department began excavation at Porpanaikottai seeking to unearth an ancient fort in the village.

More on the Topic:

- Studies carried out at the site using Light Detection and Ranging (LIDAR), a remote sensing method, have indicated that a fort existed at Porpanaikottai.
- Potsherds engraved with graffiti, Tamil-Brahmi inscribed potsherds, shell bangles, bone tools and hopscotches were unearthed during an excavation conducted in 2021.
- A gold stud, a bone point and a carnelian

bead belonging to Sangam Age have also been excavated. The discovery of bone point tools indicated that Porpanaikottai was a



NATIONAL MARITIME HERITAGE COMPLEX (NMHC)

In News: The Union Minister of Ports, Shipping and Waterways (MoPSW) has reviewed the progress of the National Maritime Heritage Complex (NMHC) which is being constructed at the historic Indus Valley civilisation region of Lothal in Gandhinagar, Gujarat.



More on the Topic:

- NMHC is to be developed as a first of its kind in the country dedicated to the **legacy of the Maritime Heritage of India**, to showcase India's rich and diverse maritime glory.
- It will also highlight the **robust maritime history and vibrant coastal tradition** of our country in one place and would uplift the image of India's Maritime Heritage in the international forum.

Features of NMHC:

- The unique feature of NMHC is the **recreation of ancient Lothal city**, which is one of the prominent cities of the ancient Indus Valley civilization dating to 2400 BC.
- Apart from that, the evolution of India's Maritime Heritage during various eras

would be exhibited through various galleries.

- NMHC would have a pavilion for each coastal state and union territory to showcase the artefacts/maritime heritage of the respective states and union territories.
- It is also planned to provide digital experiences to the visitors including Touch screen kiosks, Short films on important events related to Maritime history etc.
- Various theme parks would be developed at NMHC such as Maritime & Naval Theme Park, Monuments Park, Climate Change Theme Park, and Adventure & Amusement Theme Park through a public-private partnership.
- It is funded by Ports, Shipping and Waterways (MoPSW) and the Ministry of Culture through National Culture Fund by way of grants.

About Lothal:

- Lothal was one of the southernmost sites of the Indus Valley civilization, located in the Bhal region of what is now the state of Gujarat.
- The port city is believed to have been built in 2,200 BC. Lothal was a thriving trade centre in ancient times, with its trade of beads, gems and ornaments reaching West Asia and Africa.
- The meaning of Lothal (a combination of Loth and (s) that) in Gujarati is "the mound of the dead".
- Archaeologist SR Rao led the team which discovered several Harappan sites at the time, including the port city of Lothal.

PERSONALITIES IN NEWS

LOKAMANYA TILAK

In News: The Prime Minister, Shri Narendra Modi has paid tributes to Lokmanya Tilak on his Jayanti and said that the story of his courage, struggle and dedication to the freedom movement will always inspire the countrymen.



More on the Topic:

- Bal Gangadhar Tilak has been referred to as "the Maker of Modern India" by Mahatma Gandhi, and Jawaharlal Nehru has hailed him as "the Father of the Indian Revolution".
- However, the epithet Tilak is most identified with is 'Lokmanya' (beloved of the people), and it also best encapsulates his contribution to the Indian freedom struggle: taking the movement to the masses.
- Tilak has been criticised for giving the freedom struggle a communal shade – his mass mobilisation programmes like the celebration of Ganesh Chaturthi and Shivaji Jayanti revolved around Hindu festivals and heroes – and for his conservative stand on women's emancipation and caste reforms.
- But in the words of Gandhi, "No man preached the gospel of Swaraj with the consistency and the insistence of Lokmanya".
- It was in this unstinting pursuit of swaraj (self-governance, or freedom from foreign rule) that Tilak uttered his famous line: "Swaraj is my birthright and I shall have it".

Highlights of his contributions:

- In response to Lord Curzon's Partition of Bengal in 1905, Tilak played a major role in promoting the Swadeshi Movement to counter the British strategy of dividing and

weakening the Indian nationalist movement.

- In 1916, He co-founded the **All India Home Rule League** with **G. S. Khaparde** and **Annie Besant**, which aimed to achieve self-rule for India and played a vital role in rallying public support for the freedom movement.

Important Literary Works:

- "The Arctic Home in the Vedas"
- "The Orion"
- "**Shrimadh Bhagavad Gita Rahasya**" (The Secret of the Bhagavad Gita)
- Newspapers: **Kesari** (Marathi) and **Mahratta** (English)

ALLURI SITARAMA RAJU

In News: President Droupadi Murmu has attended the closing ceremony of the 125th-year celebrations of Alluri Sitarama Raju.



More on the Topic:

- Alluri Sitarama Raju launched the **Rampa rebellion** in 1922, which was also referred to as "**Manyam Veerudu**".
- Alluri Sitarama Raju's revolt against the British gained momentum after he opposed the strict implementation of the **Madras Forest Act, of 1882** which makes the life of

tribal people miserable by prohibiting them from **Podu cultivation** (age-old-cultivation by the tribal where they cannot use the cultivation process of the plains).

- By believing in the armed struggle, **Alluri Sitarama Raju led raids on police stations** to seize ammunition and firearms in broad daylight. After seizing the arms and ammunition, he left a note at the police station mentioning the details of the items taken.
- His relentless and selfless struggle in protecting the livelihood of the tribe from the British rulers has gained their admiration and respect. The British police arrested him in 1924 and was later shot dead by them.

ARUNA ASAF ALI

In News: Aruna Asaf Ali's birth anniversary was celebrated recently.



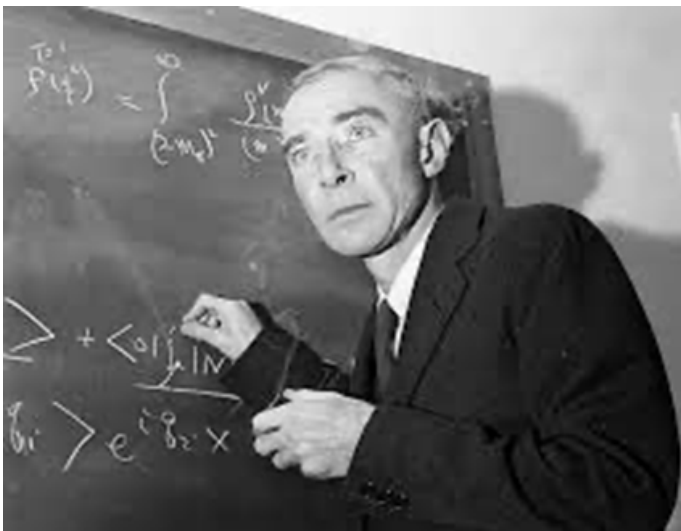
More on the Topic:

- She played a vital role in organizing and leading various protests and movements against the British Raj.
- One of the significant events that catapulted Aruna into the national spotlight was her participation in the **Salt Satyagraha (Salt March)** led by **Mahatma Gandhi** in 1930. She actively participated in the nonviolent civil disobedience campaign against the British monopoly on salt production and distribution.

- She is known for hoisting the Indian flag at Gowalia Tank Maidan in Mumbai during Quit India Movement in 1942.
- After India gained independence in 1947, Aruna Asaf Ali continued to work for social causes.
- She was associated with various organizations and worked for the welfare of women, children, and the marginalized sections of society. She also served as the mayor of Delhi from 1958 to 1964.
- She was awarded the Bharat Ratna, India's highest civilian award, posthumously in 1997 for her extraordinary contributions to the nation.

J ROBERT OPPENHEIMER

In News: American theoretical physicist J Robert Oppenheimer, the subject of Christopher Nolan's newest film, is known as the father of the atomic (nuclear) bomb.



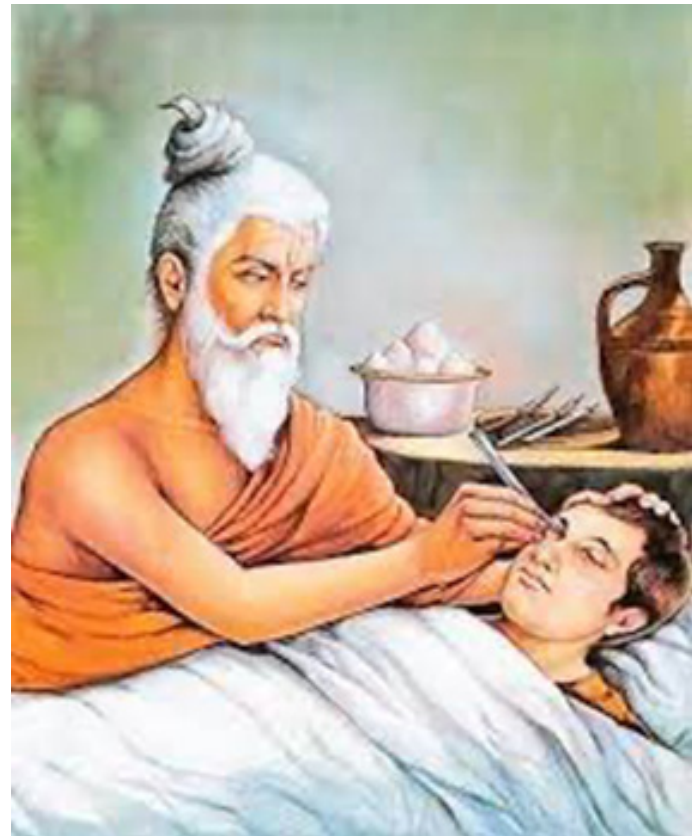
More on the Topic:

- He was a distinguished American physicist who played a pivotal role in the success of the Manhattan Project, the codename for the American-led initiative to develop a functional atomic weapon during World War II.
- His groundbreaking research was instrumental in the creation of the first nuclear bombs, earning him the title "father of the atomic bomb."
- Additionally, he made significant contributions to fast neutron physics and was honoured with the Enrico Fermi Award by the Atomic Energy Commission.
- However, in later years, he became a vocal advocate against nuclear weapons and their

unrestricted spread.

SUSHRUTA JAYANTI

In News: All-India Institute of Ayurveda has organised a three days seminar on the occasion of Sushruta Jayanti.



More on the Topic:

- Sushruta Jayanti is celebrated every year on 15th July to honour the legendary Sushruta, hailed as the father of surgery.
- Sushruta is the listed author of the Sushruta Samhita (Sushruta's Compendium), a treatise considered to be one of the most important surviving ancient treatises on medicine and is considered a foundational text of Ayurveda.
- He described 60 types of upakarma for the treatment of wounds, 120 surgical instruments and 300 surgical procedures.
- Sushruta considered surgery the first and foremost branch of medicine and stated that surgery has the superior advantage of producing instantaneous effects using surgical instruments and appliances and hence is the highest in value of all the medical tantras.
- Presently there is an ongoing debate regarding the authorization of postgraduate Ayurveda students to perform specified surgical procedures.

PLACES IN NEWS

NIGERIA

In News: Nigeria has declared a state of emergency to tackle rising food prices and shortages.



More on the Topic:

- A UN report in January projected that 25 million Nigerians were at high risk of food insecurity this year - meaning they would not be able to afford enough nutritious food every day.
- It is Africa's most populous country.
- Nigeria is an African country in the Gulf of Guinea.
- It shares a border with Benin, Niger, Chad and Cameroon.
- Nigeria is one of the largest suppliers of crude oil to India, accounting for about 12% of India's oil imports.
- India also provides technical assistance and training to Nigerian personnel in the oil and gas sector.

SPORTS

WIMBLEDON TENNIS CHAMPIONSHIP

In News: Spain's Carlos Alcaraz celebrated with the trophy after beating Serbia's Novak Djokovic to win the final of the men's singles at the Wimbledon tennis championships in London.



More on the Topic:

- The Wimbledon Tennis Championships are the oldest and most prestigious tennis tournament in the world.
- They are held annually in late June and early July in Wimbledon, London, United Kingdom.
- The tournament is one of the four Grand Slam events, along with the Australian Open, the French Open, and the US Open, and is the only one still played on natural grass courts.
- The tournament was first held in 1877, with only a men's singles event. The women's singles event was added in 1884.
- The men's and women's doubles events were introduced in 1884 and 1913 respectively, while the mixed doubles event was added in 1914.

Practice Questions



1) Gulf of Oman connects?

- (a) Arabian Sea with the Strait of Hormuz
- (b) Arabian Sea with Red Sea
- (c) Red Sea with Mediterranean Sea
- (d) Black Sea with Red Sea

2) Which one of the following countries have been suffering from decades of civil strife and food shortages and was in the news in the recent past for its very severe famine?

- (a) Angola
- (b) Costa Rica
- (c) Ecuador
- (d) Somalia



3) Porpanaikottai Archelological site is located at?

- (a) Kerala
- (b) Karnataka
- (c) Tamil Nadu
- (d) Andhra Pradesh

4) Which of the following statement/s is/are true?

- 1. The Directorate of Enforcement (ED) is mandated with the investigation of offences of money laundering and violations of foreign exchange laws.
- 2. It functions under the Department of Revenue of the Ministry of Finance.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



5) Ker Puja is celebrated in?

- (a) Maharashtra
- (b) Telangana
- (c) Tripura
- (d) Manipur

6) Nathula Pass cojoins?

- (a) Sikkim and China
- (b) Sikkim and Nepal
- (c) Sikkim and Bhutan
- (d) Ladakh and China





7) Phosphate is a?

- (a) Sedimentary Rock
- (b) Metamorphic Rock
- (c) Igneus Rock
- (d) Igneus Rock

8) Which of the following Fundamental Rights deal with the Right to silence?

- (a) Article 19
- (b) Article 20
- (c) Article 21
- (d) Article 22



9) Which of the following statement/s is/are true?

- 1. Siachen Glacier is located in the eastern Karakoram Range in the Himalayas.
 - 2. It is 2nd longest nonpolar glacier in the world, after Fedchenko Glacier in Tajikistan.
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2



10) Kaas Plateau is located at?

- (a) Maharashtra
- (b) Arunachal Pradesh
- (c) Laksha Dweep
- (d) Puducherry



Mains Questions

1. Marine heatwaves (MHWs) have emerged as a global concern, impacting marine ecosystems and coastal communities. Discuss the causes and consequences of MHWs, emphasizing their devastating effects on marine life, coral reefs, and coastal regions. (150 words)
2. The Western media recently carried news items such as 'India is snapping up cheap Russian oil' to censure India. What is the economic logic of India's decision to purchase Russian oil? Also, it is time global leaders looked at reducing OPEC's oligopolistic control over oil supplies to make energy accessible but also affordable. Justify. (250 words)

- 1. a 2. d 3. c 4. c 5. c
- 6. a 7. a 8. b 9. c 10. a



Purpose of the magazine

The purpose of Varthaman is to focus solely on issues which are relevant to the actual as well as applied aspects of the General Studies syllabus. The unique way the "Varthaman" team puts forward the facts and analysis would help you understand, retain and reproduce the information during the journey towards toppers' list.

The sources relied for selection and application of issues

The Hindu
The Indian Express
Times of India
PIB
Live Mint
Hindustan Times
News on Air
Prasar Bharati website
IDSA Website
NASA website
PRS India Website
Down to Earth
Rajya Sabha TV website
Lok Sabha TV website
Economic and Political Weekly
Yojana
Kurukshetra
NITI Aayog reports
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Features of the magazine

Current Affairs Analysis

- This month's edition covers the analysis of news from the immediately preceding month.
- The news are categorized subject wise viz. Polity, Economics, Environment and Ecology, Science and Technology, International Relations, etc. for easy and efficient study.
- Lead articles on burning issues are included.

Practice Questions

- Prelims Practice Questions
- Mains Practice Questions

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