MODHERA

Prime Minister has declared the Modhera village in Gujarat as India's first 24x7 solar-powered village.

CLIMATE TRANSPARENCY REPORT 2022

142 million people in India may be exposed or roughly 10% of the population to summer heatwaves at 1.5 Degrees Celsius.

TIGER RELOCATION PROJECT

The much-awaited relocation of a tiger from the Ranthambore Tiger Reserve to the Sariska Tiger Reserve took place recently.

KADAVUR SLENDER LORIS SANCTUARY

The Tamil Nadu government has notified the sanctuary under Wildlife Protection Act of 1972.

CURRENT AFFAIRS
& PRACTICE QUESTIONS

Integrated Courses

Integrated Courses offers students an excellent opportunity to train and develop their interests in different domains. With intense competition becoming a way of life for students and profession likewise, integrated courses become quintessential in giving an impetus to learning and saving time.

The RV Training Academy provides students who have passed their PUC, a prospect to integrate with the Academy through the integrated course it offers. The course is meticulously planned and devised laying emphasis on achieving a good balance on subject knowledge as well as activity based learning. The course covers a wide gamut of concepts and aims at making students competent to attempt any competitive examinations at the end of the course.

- ## Course Highlight

    - **SKILL AND PERSONALITY DEVELOPMENT**

    - **ETHICS AND VALUES**

    - **HEALTH AND WELLNESS**

    - **COMMUNICATION SKILLS**

    - **CURRENT AFFAIRS AND GENERAL AWARENESS**

   - **PREPARATORY MODULES FOR COMPETITIVE EXAMINATIONS**

EMINENT PERSONALITIES

Date: 3rd Nov   Nobel Laureate   **AMARTYA SEN**

Did you know?

> He was born and raised in Viswa-Bharati campus and he was named by RabindranathTagore on the request of his mother Amita Sen
> He was the youngest to head the Department of Economics at Jadavpur University
> He worked on the United Nations Human Development Index (HDI) that is used to assess a country's development
> He was named the first chancellor of the proposed Nalanda University (NU)
> In his work, while writing about any abstract person, he ensures he uses feminine pronouns like 'she' and 'her' instead of 'he' and 'him'
> Amartya Sen received the Nobel Prize in Economics in the year 1998 and was awarded the Bharat Ratna by the Indian government in the year 1999. He has received over 90 honorary degrees from universities around the world

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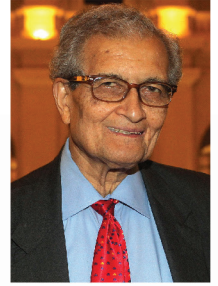
MAULANA AZAD

Date: 11th Nov   Independent India's first education minister

Abul Kalam Ghulam Muhiyuddin Ahmed Azad commonly remembered as 'Maulana Azad'

Did you know?

> Abul Kalam Azad's birth anniversary is celebrated as the National Education Day in India
> He was an Urdu poet. At a very young age, Maulana Azad started composing poetry in Urdu language
> At the age of 35, Maulana Abul Kalam Azad became the youngest person to serve as the President of the Indian National Congress
> Azad was the most prominent Muslim leader to oppose the creation of the Islamic state of Pakistan. He favoured the idea of a united and secular India
> In 1992, Maulana Azad was posthumously awarded India's highest civilian honour, Bharat Ratna

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Date: 19th Nov   **RANI LAKSHMI BAI**

One of the first women freedom fighters of India who revolted against the British in 1857

Did you know?

> She was named Manikarnika Tambe and was nicknamed Manu
> She was educated at home, able to read and write, and was more independent in her childhood than others of her age; her studies included shooting, horsemanship, fencing which was in contrast to the cultural expectations for women in Indian society at the time
> She got married to Gangadhar Rao Newalkar, the Maharaja of Jhansi who gave her the name Rani Lakshmibai
> She refused to accept the 'Doctrine of Lapse' imposed by the British Government. Lakshmibai gave a great fight to the British as the siege of Jhansi lasted for about two weeks
> The Queen Rani Lakshmibai turned the traditional attire of a saree into her uniform and wore it to the battleground dressed like a cavalry leader. She always fought while riding on horseback
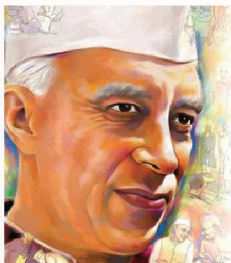

JAWAHARLAL NEHRU

Date: 14th Nov   First Prime Minister of independent India

Did you know?

> A socialist by belief, Nehru's ideologies were vastly inspired by the Bolshevik Revolution of 1917 and his visit to USSR in 1927
> Nehru was among the prominent faces of the Congress's left-wing faction since the 1920s, and it was around that time when he became the first to table the demand for a completely 'independent India' to the British.
> He became the President of the Indian National Congress on two occasions - in 1919 and 1928
> In the 60s, he played a key role in the formation and operation of the Non-Aligned Movement (NAM)
> Nehru survived four recorded assassination attempts - in 1947, 1955, 1956, 1961

Date: 19th Nov   First lady Prime Minister of India   **INDIRA GANDHI**

Did you know

> After Lal Bahadur Shastri's abrupt death in 1966, she succeeded him as the Prime Minister
> She is the second longest serving PM of India, after her father
> In 1975, after she was convicted of an election offence and barred from politics for 6 years, she imposed Emergency
> She went to war with Pakistan in support of the independence movement and war of independence in East Pakistan, which resulted in an Indian victory and the creation of Bangladesh
> In 1984, her Sikh bodyguards assassinated her a few months after she ordered the storming of the Harmandir Sahib in Amritsar to counter the Punjab insurgency
> Her bodyguards had fired 31 bullets at her, of which 30 had hit; 23 had passed through her body while 7 were trapped inside her

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
BBC

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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 & Ecology, Science & Technology, International Relations, etc. for easy and efficient study.
- Lead articles on burning issues are included.

Practice Questions

- Prelims Practice Questions
- Mains Practice Questions

Table of Contents

Table of Contents

Polity and Governance

GOVERNOR

In News: The Governor of Kerala said that the Finance Minister of the state has ceased to enjoy the Governor's pleasure in continuing in office as he had "stoked regionalism and challenged national unity".

More on the Topic:

- Part VI of the Constitution of India deals with the state executive. The state executive consists of the governor, the chief minister, the council of ministers and the advocate-general of the state
- Governor is the nominal head at the state level.
- The governor is appointed by **the president under his hand and seal**
- The SC in 1979 said that the office of governor is not an employment under the central government. It is an independent constitutional office and is not under the control of or subordinate to the central government

The Pleasure of the Governor:

- Article 164 of the Constitution says the Chief Minister shall be appointed by the Governor and other Ministers shall be appointed by the Governor on the Chief Minister's advice.
- It also adds that "the Ministers shall hold office during the pleasure of the Governor".
- There have been instances of Governors dismissing Chief Ministers, but those were related to constitutional situations in which the legislative majority of the incumbent ministry was in doubt.
- It is also now judicially determined that the question of majority can be answered only on the floor of the legislature through a confidence vote.
- Nothing in the Article means that the Governor may independently dismiss a Minister.

Concerns Related to Governor's Office:

- **Misuse of discretionary powers**: States allege that the Governor acts on behalf of the Union government for political gains.

- **Appointment by Centre**: The post has become a retirement package for politicians.
- **Arbitrary removal before the expiration of their tenure:** Even after the Supreme Court Judgement in B.P. Singhal v/s Union of India, a fixed tenure for Governors to encourage neutrality and fairness in the discharge of their duties, is not being implemented on the ground.
- **Appointment of Governor:** Article 155 says that governor should be appointed (not elected) from amongst persons of high status with eminence in public. The elected government at the state is not even consulted while making appointment of the Governors. Further successive governments have reduced this important constitutional office to a sinecure and resting place for loyal and retired / about to retired / about to retire politicians apart from docile bureaucrats.

Recommendations to improve Governor's Office:

- **SR Bommai vs. Union of India, 1994**: The floor of the Assembly is the only forum that should test the majority of the government of the day, and not the subjective opinion of the Governor.
- **Rameshwar Prasad Case, 2006**: The SC held that the Governor could not decide based on his subjective assessments.
- **Sarkaria Commission Report (1988)**: Governor should be a detached figure without intense political links or should not have taken part in politics in recent past, Governors must not be removed before completion of their five-year tenure, except in rare and compelling circumstances
- **Venkatachaliah Commission (2002):** Governor's appointment should be entrusted to a committee comprising the prime minister, the home minister, the speaker of the Lok Sabha and the chief minister of the concerned state, if governor to be removed before completion of term, the central government should do so only after consultation with the Chief Minister.
- **Punchhi Commission (2010):** The phrase "during the pleasure of the President" should be deleted from the Constitution; Governor should be removed only by a resolution of the state legislature.

COMPETITION COMMISSION OF INDIA

In News: The Competition Commission slapped a penalty of Rs 936.44 crore.

More on the Topic:

- The decision was taken as Google was abusing its dominant position with respect to Play Store policies and directed the company to cease and desist from unfair business practices.

- Google was found **abusing its dominant position in multiple markets with its Android mobile operating system (OS)**.

- Google had **mandated pre-installation of the entire Google Mobile Suite (GMS)** by OEMs under Mobile Application Distribution Agreement (MADA), which could not be uninstalled.

- It has used its dominant position in the online search market, resulting in the denial of market access to competing apps.

- It has done the same in the Android app store market to protect its position in online general search, which violates competition law.

CCI's Order:

- CCI asked makers of devices that run on Android shouldn't be forced to pre-install Google services on their devices.

- Google has to provide **fair access to all stakeholders.**

- Google shall **not deny access to its Play Services APIs to disadvantage OEMs** (mobile manufacturers), app developers, and its existing or potential competitors.

- Google should not deny access to its Play Services plugins to "disadvantaged" original equipment manufacturers (OEMs).

About Competition Commission of India

- CCI was formed under **The Competition Act (Amendment) 2007 by the union government,** consisting of a Chairperson and 6 Members.

- The Act follows the philosophy of modern competition laws.

- The Act **prohibits anti-competitive agreements,** abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which causes or likely to cause an appreciable adverse effect on competition within India.

- It is the duty of the Commission **to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.**

- The Commission is also required to give opinion on competition issues on a reference received from any statutory authority.

REPORT CARD ON THE PERFORMANCE OF INFORMATION COMMISSIONS IN INDIA

In News: Satark Nagrik Sangathan has released a report tiltled "Report Card on the Performance of Information Commissions in India, 2021-22."

More on the Topic:

- **Backlogs:** Nearly 3.15 lakh complaints or appeals pending with 26 information commissions across India.

- The backlog of appeals or complaints is steadily increasing in commissions every year.

- The highest number of pending cases were in Maharashtra at 99,722 followed by Uttar Pradesh at 44,482, Karnataka at 30,358, the Central Information Commission at 26,724 and Bihar at 21,346.

- **Defunct Commissions:** Two out of 29 information commissions across the country are completely defunct, four of them headless at the moment and only 5% of the positions being occupied by women.

- **Penalties Imposed:** An analysis of penalties imposed shows that the commissions did not impose penalties in 95% of the cases where penalties were potentially imposable.

- **Vacancies:** According to a separate report by the Transparency International, one-fourth information commissioner posts are vacant and there are only 5% (only 8) women information commissioners in the country.

- **Digitalisation:** The entire system was also in need of digitisation. Only 11 information commissions out of 29 provide e-filing facility for RTI applications or appeals, but only five are functional.

About Right to Information Act:

- Right to Information Act 2005 mandates **timely response to citizen requests for government information by various Public Authorities under the government of India as well as the State Governments.**

- The law imposes a penalty for wilful default by government officials. Citizens can ask for anything that the government can disclose to Parliament.

- BUT, Information that can prejudicially impact internal security, relations with foreign countries, intellectual property rights, breach of parliamentary privilege and impedes investigations cannot be shared with the public.

- Cabinet papers are exempt until a decision has been implemented. However, discussions within the Cabinet can never be disclosed.

NHRC ON OCULAR TRAUMA

In News: The National Human Rights Commission issued an advisory to the Union and State Governments to prevent and minimise the impact of ocular trauma, which it said causes 5% of permanent blindness.

More on the Topic:

- The NHRC asked the government to identify the industries that have a high potential of ocular trauma and make it mandatory for such units with 50 workers or more to have **accident cover of 15 lakhs for each worker.**

- The commission also asked the government to **set up an online portal to record details of each case of ocular trauma** and make it mandatory for hospitals and medical practitioners to upload details of such cases onto the portal.

Suggestions by NHRC:

- Ocular Trauma is a broad term used to describe a physical or chemical wound to the eye or eye socket.

- The suggestions include **public awareness campaign** as well as an examination of the existing laws for mandatory use of eye safety gear worn by workers involved in hazardous activities.

- Ban on sale of fire-crackers that have the potential to cause eye trauma; ban on sale of bows, arrows, pellet guns and toys that have sharp edges.

- Introduction of technology to reduce eye injuries due to road accidents; and mandatory safe packaging and labelling of chemicals for domestic use.

NATIONAL GENERIC DOCUMENT REGISTRATION SYSTEM (NGDRS)

In News: The states have been asked to set up a local server for the National Generic Document Registration System (NGDRS).

More on the Topic:

- NGDRs is intended to improve the internet speed **for better upkeep of the digital data and ensure more digital tracking of land records.**

- This system provides **ample options for online property registration.**

- Even though the NGDRS system is specifically designed for the use of sub registrars and officials from registration departments, it can also be used by other citizens for land registration purposes.

- Many states are still doing land registration processes with private vendors and private partners. These states are yet to shift to NGDRS.

Significance:

- NGDRS system is **a government's flagship program to digitalise the land record system in the country.**

- The system will provide **a major shift from the existing ways of land registration and even transaction.**

- With NGDRS, **people would be able to perform all the processes digitally,** be it sales or land or transfer of land.

THE PARLIAMENTARY COMMITTEE ON OFFICIAL LANGUAGE

In News: Parliamentary Committee on Official Language has submitted its report recently.

More on the Topic:

- The committee has recommended the removal of English as one of the languages in examinations held for recruitment to the Central services.

- It has stated that the requisite knowledge of Hindi among candidates should also be ensured.

- English, as a medium of instruction in all technical and non-technical institutions, will be permitted only where it is absolutely essential, as the idea is to replace the language gradually with Hindi in those institutions.

- While IITs, IIMs and All India Institute of Medical Sciences are considered technical institutions, Kendriya Vidyalayas and Navodaya Vidyalayas fall under the other category.

- High Courts in non-Hindi speaking states, where proceedings are recorded in English or a regional language, must make translations available in Hindi since they are often cited in judgements.

- Government officials and other employees in the central government not using Hindi in Hindi-speaking states will face consequences in the Annual Performance

Assessment Report (APAR).

- If imposed, these rules will be applicable only in states where Hindi is the official language.
- States like Tamil Nadu and Kerala are exempted under The Official Languages Act, 1963 and the Rules and Regulations (of the Act), 1976.

About Official Language Committee:

- The Official Language Committee, headed by the Union Home Minister, was set up **to review and promote the use of Hindi language in official communication,** as mandated by Article 351 of the Indian Constitution.
- It was constituted in **1976 under Section 4 of The Official Languages Act, 1963** The first report of the Committee was submitted in 1987.

GRIEVANCE REDRESSAL INDEX

In News: The Unique Identification Authority of India (UIDAI) has topped Grievance redressal Index.

More on the Topic:

- The Index ranks all Group A Ministries, Departments and Autonomous Bodies for resolving public grievances.
- The report is published by Department of Administrative Reforms and Public Grievances

Centralised Public Grievance Redress and Monitoring System (CPGRAMS):

- Centralised Public Grievance Redress and Monitoring System (CPGRAMS) is **an initiative of the Department of Administrative Reforms and Public Grievances (DARPG).**
- It is an online platform available to the citizens 24x7 to lodge their grievances to the public authorities on

any subject related to service delivery.

- It is a single portal connected to all the Ministries/ Departments of Government of India and States.
- CPGRAMS also provides appeal facility to the citizens if they are not satisfied with the resolution by the Grievance Officer.
- After closure of grievance if the complainant is not satisfied with the resolution, he/she can provide feedback. If the rating is 'Poor' the option to file an appeal is enabled.

What is UIDAI?

- UIDAI was founded in 2009 but became a statutory body in 2016 under the Aadhar act.
- It is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.
- It comes under the Ministry of Electronics & Information Technology.

ELECTION SYMBOLS (RESERVATION AND ALLOTMENT) ORDER, 1968

In News: The Election Commission of India (ECI) froze the 'bow and arrow' election symbol of the Shiv Sena until the competing claims for recognition by the two rival factions is decided.

More on the Topic:

- Para 15 of the Symbols Order, 1968 **empowers EC to decide on the claim of rival factions in case of split.**
- EC decides on the issue after taking into account all **the available facts and circumstances of the case and hearing their representatives.**
- The decision of the Commission **shall be binding on all such rival sections or groups.**
- This applies to disputes in recognised national and state parties.
- For splits in registered but unrecognised parties, the ECI usually advises the warring factions to resolve their differences internally or to approach the court.

THE QUALITY COUNCIL OF INDIA

In News: The Quality Council of India has celebrated its Silver Jubilee recently.

More on the Topic:

- QCI got established under the Societies Registration Act in 1996 to provide accreditation services in various sectors for product, services and persons.

- It was **jointly organised by the government, Associated Chambers of Commerce and Industry (ASSOCHAM), Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI).**

- The Chairman of the Quality Council of India (QCI) **is appointed by the Prime Minister on the recommendation of the industry to the government.**

Objectives:

- **To create awareness** amongst citizens, empowering them to demand quality in all spheres of activities.

- **To develop appropriate capacities** at the level of Governments, Institutions, and enterprises for implementing & institutionalizing continuous quality improvement.

- To develop, establish & operate **National Accreditation programs** by the relevant international standards & guides.

- To develop, establish and operate National Accreditation Programmes for various service sectors such as education, healthcare, etc.

- To build capacities in the areas of regulation, conformity assessment, and accreditation to overcome TBT/SPS constraints;

- To promote **quality competitiveness of India's enterprises** especially MSMEs through adoption of and adherence to quality management standards and quality tools.

- To encourage the development & application of third-party assessment models for use in government, regulators, organizations, and society.

CHIEF OF DEFENCE STAFF

In News: The government has amended service rules of the armed forces, making all serving and recently retired three-star officers — Lt General, Air Marshal and Vice Admiral — under the age of 62 eligible for the post of Chief of Defence Staff (CDS).

More on the Topic:

- According to the new rules, all three-star and four-star officers from the three services, including those who retired in the last two years, will be eligible for consideration. The government, however, has put an age limit of 62 years.

- The mandate of the CDS include:

- **Principal Military Advisor to the Defence Minister** on all tri-services (Army, Navy and Indian Air Force) matters.

- **The permanent Chairman of the Chiefs of Staff Committee** which will also have three service chiefs as members.

- **Advisory role in the Nuclear Command Authority (NCA).**

- Creating jointness among the armed forces

- Creation of integrated theatre commands

- Prioritising capital acquisition for the modernisation of the forces.

- The CDS is also appointed as **Secretary of the Department of Military Affairs.**

- CDS is considered as one of the most significant reforms in the top echelons of the military.

REMOTE VOTING FOR MIGRANT VOTERS

In News: The Election Commission of India (EC) has said it will start exploring possibilities of remote voting on a pilot basis.
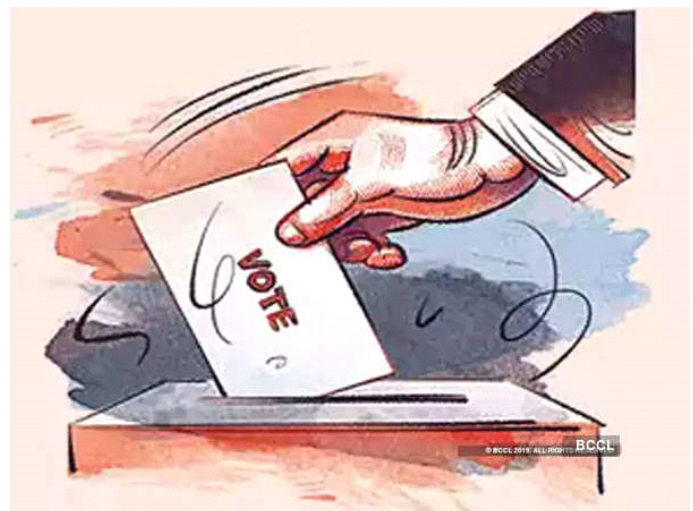
More on the Topic:

● Voters migrate from the place of their registration to cities and other places for education, employment and other purposes.

● **India accounts for over 400 million internal migrants,** with an estimated 120 million circular migrant workers.

● It becomes difficult for them to return to their registered polling stations to cast their vote.

● A committee will be set up to examine the issues of migrant voters.

● The EC has been working with IIT-Madras on using **Blockchain technology for remote voting.** A technical advisory committee has also been formed.

Election Commission of India:

● The Election commission of India is a **permanent, autonomous, quasi-judicial and constitutional body created under Article 324 in part 15 of the constitution.**

● It is the supreme body vested with powers of supervision, control and direction over all aspects of electoral governance in the country.

● The body administers elections to the Lok Sabha, Rajya Sabha, State Legislative Assemblies, State Legislative Councils and the offices of the President and Vice President of the country.

NATIONAL INFORMATICS CENTRE (NIC)

In News: The government has issued a Request for Proposal (RFP) for selection of a consultant for NIC's organizational restructuring.

More on the Topic:

● The National Informatics Centre (NIC) is **an Indian government department under the Ministry of Electronics and Information Technology (MeitY).**

● The NIC provides infrastructure, IT Consultancy, IT Services including but not limited to architecting, design, development and implementation of IT Systems to Central Government Departments and State Governments thus enabling delivery of government services to Citizens and pioneering the initiatives of Digital India.

● SVAMITVA, Bhavishya, PM-KISAN, National Judicial Data Grid etc. are provided by NIC.

● It also provides services such as Command and Control Centre, Domain Registration, National Knowledge Network etc.

ATTORNEY GENERAL OF INDIA

In News: Senior advocate R Venkataramani appointed as new Attorney General of India for a period of 3 years

More on the Topic:

● The Attorney General for **India is the Indian government's chief legal advisor,** and is its chief advocate in the courts.

● They are **appointed by the President of India at the instance of the Union Cabinet under Article 76(1) of the Constitution** and hold office during the pleasure of the President.

● He/she must be **a person qualified to be appointed as a Judge of the Supreme Court.**

● Hence, must have been a judge of a high court for five years or an advocate of a high court for ten years, or an eminent jurist in the opinion of the President.

● **Term of the Office is not fixed by the Constitution.**

● **Procedures and grounds for the removal of AG are not stated in the Constitution.**

UNLAWFUL ACTIVITIES (PREVENTION) ACT

In News: The Centre declared the Popular Front of India (PFI) an "unlawful association" and banned PFI and its affiliate and associated bodies under the Unlawful Activities (Prevention) Act, for a period of five years.
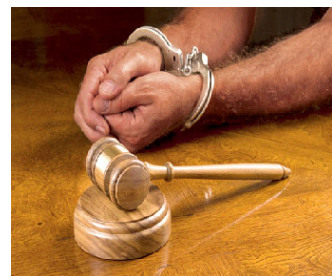
More on the Topic:

● The notification of PFI as an unlawful association was made under **Section 3 of the UAPA.**

● The UAPA is **India's main law against terrorism and terrorist activities that allows the government to declare an organisation an "unlawful association" or a "terrorist organisation".**

- An amendment in the UAPA in 2019 added a provision by which individuals can be designated as terrorists.

BHARAT SKILLS FORUM

In News: The Directorate General of Training (DGT) has launched Bharatskills Forum, a digital knowledge-sharing platform for the ITIs' trainees, trainers and industry.

More on the Topic:

- This facility shall act as **a digital warehouse for the skilling community** by allowing sharing of contents in various forms like handwritten trainers' or trainees' notes, PDFs, scanned copies, or recorded videos in any language.
- The Directorate General of Training (DGT) in the Ministry of Skill Development and Entrepreneurship (MSDE) is the apex organisation for development and **coordination at national level for the programmes relating to vocational training.**
- DGT in Oct 2019 had launched an online learning platform called the Bharatskills, a Central Digital Repository for the trainees and trainers of the ITI ecosystem, providing easy access to updated curriculum, e-books, Question Banks, mock/practice papers, learning videos, etc. enabling anytime, anywhere learning outside the classrooms.
- This platform presents **unique access to a centralized, scalable, and thriving support ecosystem through its industrial partners for the students and teachers** who can now learn the new age (Industrial Revolution 4.0) skills to meet the demands of the industry.

GOVERNMENT SCHEMES

MISSION LIFE

In News: Prime Minister Narendra Modi, in the presence of U.N. Secretary-General Antonio Guterres, launched 'Mission LiFE' (Lifestyle For Environment), a new initiative for sustainable and healthy lifestyle at the Statue of Unity in Gujarat.

More on the Topic:

- Mission LiFe is a global initiative by India **to help the world in its fight against climate change and lead to a sustainable way of life** to achieve the sustainable development goals set by the U.N.
- It was introduced by the Indian Prime Minister **at COP26 in Glasgow.**
- It aims to **nudge individuals and communities to practice a lifestyle that is synchronous with nature** and does not harm it.

How sustainable is Mission LiFE?

- It envisages a **circular economy through people's participation.**
- It also plans **to nurture a global network of individuals,** namely "pro-planet people" or P3, who will have a shared commitment to adopt and promote environment-friendly lifestyles.
- It identifies **the sustainable actions across 7 categories** i.e., Energy Saved, water saved, Single Use Plastic Reduced, Sustainable Food Systems Adopted, Waste Reduced (Swachhata Actions), Healthy Lifestyles Adopted, and E-Waste reduced.

Mission Life Strategy:

- Mission LiFE aims at following a **three-pronged strategy** for changing our collective approach toward sustainability.
- **Demand Side (Phase):** First is by nudging individuals to practice simple yet effective environment-friendly actions in their daily lives.
- **Supply Side:** Second is by enabling industries and markets to respond swiftly to the changing demand (supply) and.
- **The Policy Side:** The third is to influence government and industrial policy to support both sustainable consumption and production.

Implementation of the Programme:

- The mission will be incubated, curated and piloted by **Niti Aayog and subsequently implemented by the Union Ministry of Environment, Forest and Climate Change.**

- The mission will be implemented till 2027-28 with annual targets.
- In 2022-23, the mission will focus on Phase I.

PRADHAN MANTRI JAN AROJYA YOJANA-MUKHYAMANTRI AMRUTAM (PMJAY-MA)

In News: Pradhan Mantri Jan Arojya Yojana-Mukhyamantri Amrutam (PMJAY-MA) beneficiaries in Gujarat (a Gujarat government Scheme) will be provided with Ayushman Cards.

Mukhyamantri Amrutum Yojana (MA Yojana)

More on the Topic:

- As the then Chief Minister of Gujarat, Prime Minister had started the "Mukhyamantri Amrutam (MA)" scheme in 2012 to protect poor citizens from the catastrophic costs of medical treatment and illness.
- In the year 2014, MA Yojana was extended to cover those families who are having an annual income limit of Rs. 4 lakh.
- Later, this scheme was extended to several other groups as well. The scheme was rebranded as Mukhyamantri Amrutam Vatsalya (MAV) Yojana.
- The scheme is considered as the inspiration behind Ayushmann Bharat Yojana.

GRAMEEN UDYAMI PROJECT

In News: The Ministry of Skill Development and Entrepreneurship (MSDE) recognised 165 students under the second phase of the Grameen Udyami Project.

More on the Topic:

- In order **to promote skill development in tribal communities for inclusive and sustainable growth,** the Ministry of Skill Development and Entrepreneurship, Government of India is running the Grameen Udyami Project.
- Students were upskilled and acquired multiple skills as part of the drive to improve their employability.
- Additionally, it emphasises creating jobs for the local and rural economies.
- The candidates are receiving training in occupations such as organic farming, mushroom cultivation, IT/ITeS with e-governance, electrician and solar PV installation technician.

SALT PROJECT - ANDHRA PRADESH

In News: The World Bank has extended unconditional loan of $250 million for SALT project in Andhra Pradesh.

More on the Topic:

- The project was undertaken by Government of Andhra Pradesh aimed to transform the state's school education system by strengthening the quality of foundational learning through various pathways
- Train teachers, facilitate State-level assessment and establish an effective education management & information system.

PM-DEVINE SCHEME

In News: The Union Cabinet has approved a Rs 6600-crore scheme in a bid to fund infrastructure projects in the northeastern states.

More on the Topic:

- It will be applicable for the next four years of the 15th Finance Commission from 2022-23 to 2025-26, as per government data.
- The new scheme will get **100% central funding and will be implemented by the Ministry of Development of North Eastern Region (DoNER).**
- The infrastructure projects will be funded in line with the

priorities laid down under the **PM Gati Shakti program**.

- It is to be noted that PM-DevINE was announced in the Union Budget 2022-23 to address development gaps in the North Eastern Region (NER).
- **The scheme will lead to the creation of infrastructure, support industries, social development projects, and create livelihood activities for youth and women, thus leading to employment generation.**
- PM-DevINE will provide support to infrastructure and social development projects which may be larger in size and will also provide an end-to-end development solution instead of isolated projects.

24×7 TELE-MENTAL HEALTH SERVICE

In News: The Union Health Ministry has launched a 24×7 tele-mental health service called Tele Mental Health Assistance and Networking Across States (Tele-MANAS) initiative on the occasion of World Mental Health Day.

More on the Topic:

- The service will start with 20 states and UTs and will subsequently be expanded to the entire country.
- Tele-MANAS aims to increase access to mental healthcare across the country, including the hard-to-reach areas.
- The country-wide network will **provide counselling, consultation with a specialist, and e-prescriptions.**

How the Service will Work?

- The service can be accessed **by calling the helpline number 14416 and 1-800-91-4416.** Callers will first reach an IVRS and then be transferred to a trained counsellor in their areas. If needed, they will be connected online to mental health specialists such as clinical psychologists, psychiatric social workers, a psychiatric nurse, or a psychiatrist.
- In case the caller needs **in-person services, they will be referred to a health and wellness centre or primary health centre, or a tertiary care centre.**

- The nodal centre for Tele MANAS, which will be the digital arm of the **National Mental Health Programme, will be National Institute of Mental Health and Neuroscience (NIMHANS) with technological support from IIT-Bombay.**
- There will be **five regional coordination centres and 23 mentoring institutes** such as various AIIMS, PGIMER, Institute of Human Behaviour and Allied Sciences-Delhi.

NATIONAL GENERIC DOCUMENT REGISTRATION SYSTEM (NGDRS)

In News: The states have been asked to set up a local server for the National Generic Document Registration System (NGDRS).

More on the Topic:

- NGDRs is intended to improve the internet speed for **better upkeep of the digital data and ensure more digital tracking of land records.**
- This system provides **ample options for online property registration.**
- Even though the NGDRS system is specifically designed for the use of sub registrars and officials from registration departments, it can also be used by other citizens for land registration purposes.
- Many states are still doing land registration processes with private vendors and private partners. These states are yet to shift to NGDRS.

Significance:

- NGDRS system is **a government's flagship program to digitalise the land record system in the country.**
- The system will provide a **major shift from the existing ways of land registration and even transaction.**
- With NGDRS, **people would be able to perform all the processes digitally,** be it sales or land or transfer of land.

PRADHAN MANTRI KAUSHAL VIKAS YOJANA

In News: The Parliamentary standing committee on Labor, Textiles and Employment has raised serious concern about the poor placement record and underutilization of funds in the government's flagship scheme PMKVY.

More on the Topic:

- Under PMKVY 3.0, out of four lakh candidates, only 8% have been placed. Delay in release of funds from State Treasury is also observed.
- Approx 20% of the total enrolled candidates dropped out of the training programme.

Way ahead suggested by committee:

- Making the certification process more transparent to facilitate more self-employment.
- Identify the area of intervention to prevent dropouts. Training courses, curriculum, and practical skills imparted are not aligned with industry requirements.
- On-job training and courses in partnership with the industry and organisation of Rozgar Mela.

About Pradhan Mantri Kaushal Vikas Yojana (PMKVY):

- Skill India Mission was launched by the government in 2015 under which the flagship scheme Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is run.
- It aims to train over 40 crore people in India in different skills by 2022. It aims at vocational training and certification of Indian youth for a better livelihood and respect in the society.
- PMKVY is implemented by the National Skills Development Corporation (NSDC) under the guidance of the Ministry of Skill Development and Entrepreneurship (MSDE).

AIM-ILEAP PROGRAMME

In News: NITI Aayog's Atal Innovation Mission (AIM) has successfully concluded the 5th edition of AIM-iLEAP programme on 'Innovations in Audio-Tech'.

More on the Topic:

- The programme is an effort towards using technology to solve the audio industry's most pressing problems and boost the Indian culture.
- AIM iLEAP (Innovative Leadership for Entrepreneurial Agility and Profitability) is a series of Enterprise and Investor Demo Days.
- AIM iLEAP was launched to support #startupsuccess by overcoming two major bottlenecks they face - market and investor access.

Atal Innovation Mission:

- **NITI Aayog's flagship program** - Atal Innovation Mission (AIM) has been at the forefront of promoting a culture of innovation and entrepreneurship.
- The program aims to seek, select, support and nurture technology-based innovations that solve sectoral challenges of national importance and societal relevance.

IEC CAMPAIGN ON FORTIFIED RICE

In News: In order to popularise and create awareness about the benefit of Fortified Rice specially in Tribal Areas of the country, the Department of Food and Public Distribution (DFPD) and States which have tribal population.

More on the Topic:

- Fortification is the process of adding Fortified Rice Kernels (FRK), containing FSSAI prescribed micro-nutrients (Iron, Folic Acid, Vitamin B12) to normal Rice (Custom Milled Rice) in the ratio of 1:100 (Mixing 1 Kg of FRK with 100 Kg custom milled rice).
- Fortified rice is nearly identical to traditional rice in aroma, taste, and texture. This process is done in the rice mills at the time of milling of rice.
- **Fortification of rice is found to be a cost-effective and complementary strategy** to increase vitamin and mineral content in diets with low turnaround time (TAT) and a step towards **nutritional security and helps in fighting anemia and malnutrition in the country.** This strategy is implemented in many parts of the world.

Fortified rice is being distributed under:

- Saksham Anganwadi and Poshan 2.0 (erstwhile Integrated Child Development scheme).

- Centrally sponsored pilot scheme on Fortification of Rice & its Distribution under Public Distribution System.

JALDOOT APP

In News: JALDOOT App was launched recently to enable monitoring of ground water tables across the country.

More on the Topic:

- JALDOOT app has been jointly developed by Ministry of Rural Development and Panchayati Raj. This app will be used across the country to capture the water level of selected 2-3 wells in a village.

- This Mobile app will work in both online and offline mode.

- The regular data to be input by the Jaldoots would be integrated with the database of National Water Informatics Centre (NWIC), which can be utilised for analysis and display of various useful reports for the benefit of various stakeholders.

- This app will facilitate **in observing water tables across the country and the resulting data can be utilised for Gram Panchayat Development Plan and Mahatma Gandhi NREGA Plans.**

INDIAN ECONOMY

FOREIGN CONTRIBUTION REGULATION ACT (FCRA)

In News: The Rajiv Gandhi Foundation (RGF), a non-governmental organisation linked with the Gandhi family, had its Foreign Contribution Regulation Act (FCRA) licence revoked by the Centre for alleged violation of the foreign funding law..

More on the Topic:

- The FCRA law sought to regulate foreign donations to individuals and associations so that they functioned "in a manner consistent with the values of a sovereign democratic republic".

- Foreign funding in India is regulated under FCRA act. Individuals are permitted to accept foreign contributions without permission of MHA.

- However, the monetary limit for acceptance of such foreign contributions shall be less than Rs. 25,000.

- The FCRA was enacted during the Emergency in 1976 amid apprehensions that foreign powers were interfering in India's affairs by pumping money into the country through independent organisations.

India and Palm Oil:

- India is the **largest importer of palm oil in Asia, accounting for 15% of global imports, followed by China (9%), Pakistan (4%) and Bangladesh (2%).**

- India's annual imports of edible oil is around 13-14 million tonne (MT). Around 8 MT of palm oil is imported from Indonesia and Malaysia, while other oils, such as soya and sunflower, come from Argentina, Brazil, Ukraine and Russia.

- Asia accounts for around 40% of the global palm oil consumption while Europe accounts for 12% of palm oil trade. Indonesia and Malaysia are the biggest palm oil exporters in the world.

Foreign Contribution (Regulation) Amendment Act, 2020:

- **Prohibition to accept foreign Contributions:** Certain persons are prohibited to accept any foreign contribution. These include:

- Election candidates, editors or publishers of a newspaper, judges, government servants, members of any legislature, and political parties, among others.

- **The Bill adds public servants (as defined under the Indian Penal Code) to this list.** A public servant includes any person who is in service or paid by the government or remunerated by the government for the

performance of any public duty.

- **Transfer of foreign Contributions**: Foreign contributions cannot be transferred to any other person unless such person is also registered to accept foreign contributions (or has obtained prior permission under the Act to obtain foreign contributions).

- The Act prohibited the transfer of foreign contributions to any other person. The term 'person' under the Act includes an individual, an association, or a registered company.

- **Aadhar for registration**: Any person seeking registration (or renewal of such registration) or prior permission for receiving a foreign contribution must make an application to the central government in the prescribed manner.

- The Act adds that any person seeking prior permission, registration or renewal of registration must provide the Aadhar number of all its office bearers, directors or key functionaries, as an identification document.

- In the case of a foreigner, they must provide a copy of their passport or the Overseas Citizen of India card for identification.

- **Specific Account: Foreign contributions must be received only in an account designated by the bank as an "FCRA account"** in such a branch of the State Bank of India, New Delhi, as notified by the central government.

- A person who receives a foreign contribution **must use it only for the purpose for which the contribution is received**.

- They **must not use more than 20% of the contribution for meeting administrative expenses (earlier it was 50%)**.

RBI LIQUIDITY INFUSION

In News: The Reserve Bank of India (RBI) has injected Rs 72,860.7 crore of liquidity into the banking system.

More on the Topic:
- The reasons for reduction in the liquidity are:
- **Improvement in demand for credit** is one reason. The recent advance tax outflow has further aggravated the situation.

- Besides, there is the **continuous intervention of the RBI to counter the fall in the rupee against the US dollar.**

- The advance tax payments by corporates and also incremental deposit growth not keeping pace with credit demand has also led to the situation.

About Liquidity in the Banking System:
- Liquidity in the banking system **refers to readily available cash that banks need to meet short-term business and financial needs.**

- On a given day, if the banking system is a net borrower from the RBI under Liquidity Adjustment Facility (LAF), the system liquidity can be said to be in deficit and if the banking system is a net lender to the RBI, the system liquidity can be said to be in surplus.

- The LAF refers to the RBI's operations through which it injects or absorbs liquidity into or from the banking system.

- RBI also uses the **Marginal Standing Facility, in which banks can borrow overnight money** from RBI by offering government securities as collateral at the MSF rate. The RBI also uses the Standing Deposit Facility to absorb liquidity from banks without collateral.

Other ways to infuse Liquidity in the market:
- There are two other ways in which the RBI infuses liquidity into the system.

- The first method is called **the Open Market Operations (OMO).** When the RBI wants to infuse liquidity, it will buy bonds to that extent and when it pays for these bonds, the liquidity gets infused in the system.

- OMOs work both ways. **RBI buys bonds to infuse liquidity and sells bonds to suck out liquidity.**

- The other method is **through dollar swap auctions**. RBI buys bonds to infuse liquidity and sells bonds to suck out liquidity. The second method is through dollar swap auctions.

- In this method, the RBI absorbs the dollar deposits with the banks and gives them rupee funds instead.

PRICE STABILISATION FUND

In News: NAFED has been creating a buffer stock of onion on behalf of the government under the Price Stabilisation Fund (PSF) for the last few years.

Buffer stock of Tur, Urad, Moong, Chana and Onion are maintained under Price Stabilisation Fund (PSF).
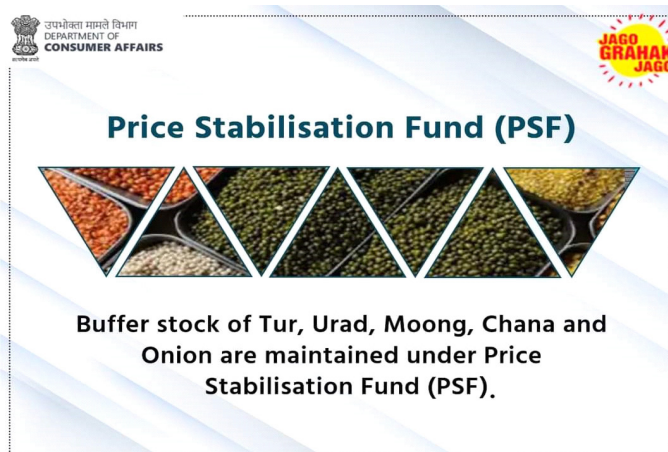
More on the Topic:

- PSF is any fund created to absorb extreme volatility in selected commodity prices.
- Such goods will be procured directly from farmers or farmers' organisations at the farm gate/mandi, and made available to consumers at a more affordable price.

Objective of the Scheme:

- Maintaining a strategic buffer of commodities such as pulses, onion and potato for subsequent calibrated release.
- This would moderate price volatility. Discourage hoarding and speculation.

FOREX EXCHANGE RESERVES

In News: India's forex reserves have tumbled to around $530 bn from a peak of $642 billion in September last year.

More on the Topic:

- Two reasons are sighted as the reason for the fall of Forex reserves.
- **Fall in the value of holdings in dollars** and other currencies by RBI.
- Central bank's intervention in the currency market to protect the rupee.

Possible Impacts:

- It may lead to **Widening Current Account deficit.**
- Balance of payment crisis is expected: Volatile Capital flows, economists expect the balance of payments to be negative, depleting reserves further.
- While reserves at current levels are adequate to cover more than eight months of imports, a fall below eight months of import cover (about $500 billion) could start catching the market's attention.

Possible Measures to Mitigate the challenge:

- The RBI had announced measures to **liberalise foreign exchange inflows, including giving foreign investors access to a larger portion of government debt and banks wider room to raise more deposits from non-residents.**

- Strengthening structural natural buffers is also important.
- **Floating sovereign bonds,** like the Resurgent India bonds (RIBs) and India Millennium Deposit bonds (IMDs) in the past will help boost forex reserves.

DEBTS RECOVERY TRIBUNALS (DRTS)

In News: The government has created exclusive benches to deal with cases above 100 crore at debts recovery tribunals (DRTs) in Chennai, Mumbai and Delhi, agreeing to a long-standing demand by banks to get more focus on high-value cases.

More on the Topic:

- The The Debts Recovery Tribunals (DRTs) and Debts Recovery Appellate Tribunals (DRATs) were established under **the Recovery of Debts and Bankruptcy Act (RDB Act), 1993 with the specific objective of providing expeditious adjudication and recovery of debts due to Banks and Financial Institutions.**
- At present, 39 Debts Recovery Tribunals (DRTs) and 5 Debts Recovery Appellate Tribunals (DRATs) are functioning across the country.
- Each DRT and DRAT are headed by a Presiding Officer and a Chairperson respectively.

Mandates of Debt Recovery Tribunal:

- The Debt Recovery Tribunal enforces the **RDB Act, 1993, and the SARFAESI ACT, 2002.**
- The DRT has to resolve the claim within six months. An appeal against the order of the DRT can be made to the DRAT within 45 days of the judgment
- DRTs are empowered **to pass comprehensive orders that can travel beyond civil procedures to render complete justice.** They can also hear cross-suit counterclaims and allow set-offs.
- However, **it cannot listen to claims of damages, deficiency of service, breach of contract, or criminal negligence on the lender's part.**
- **DRTs have the power to examine their own decisions.** They can also hear appeals against orders passed by their Recovery Officers.
- Debt Recovery Tribunals can now also consider **cases of bankruptcy from individuals and unlimited liability partnerships under the Insolvency and Bankruptcy Code.**

DIGITAL BANKING UNITS

In News: Across India, as many as 75 digital banking units were launched recently.

24X7 Digital Branches In Self-Service Mode

What are Digital Banking Units?

- They are specialised units or hubs set up by scheduled commercial banks
- They will be open 24x7 in self-service mode and will offer **cash withdrawal and deposit services, net banking**
- Customers can also use the **digital assistance zones** in each unit during banking hours, when there will be special emphasis on education and awareness
- Minimum offerings to include **account opening** (including FDs), kiosks for e-KYC and updates, fund transfer via NEFT/RTGS
- Banks have to allow applications to onboard

customers for identified retail, MSME or schematic loans. It can include end-to-end digital processing, from online application to disbursal
- In future, **RBI expects DBUs to offer more structured and custom-made products**, using hybrid and high-quality interactive capabilities
- Digital business facilitators, business correspondents can be used to expand the virtual footprint of DBUs
- Banks have been asked to **ensure cyber security in** these units
- Currently only 75 units set up, and are **limited to district headquarters**

PM Narendra Modi

More on the Topic:

- It is a joint initiative of Government, RBI, Indian Banks Association and participating banks.
- A digital banking unit is **a specialised fixed point business hub, which houses digital infrastructure for delivering digital banking products and services.**
- It also provides assistance to existing financial products digitally in self-service mode at any time.
- In April 2022 the Reserve Bank of India (RBI) announced the guidelines for DBUs, following the report of a working group of the Indian Banks Association (IBA).

DBU's will have 2 distinct features:

- **Self-service Zone:** customers can access ATM, Cash Deposit Machine, accessing internet banking, etc.
- **Digital Assistance Zone:** assists customers to undertake the services including opening of savings account, current account, etc.

Who will set up these DBUs?

- The units were set up **in collaboration with over 20 public and private banks.**
- The brick-and-mortar outlets are equipped with tablets and internet services which will help individuals and small businesses open their savings accounts, access government schemes, make transactions and avail of loans and insurance.
- **Self-service mode will be available 24x7x365 days.**
- The banks are also **free to engage the services of digital business facilities and correspondence to expand the footprint of DBUs.**

MULTI-STATE COOPERATIVE SOCIETIES ACT

In News: The Union Cabinet has approved amendments to the Multi-State Cooperative Societies Act to bring transparency in the sector and reform the electoral process.

More on the Topic:

- To make the governance of multi-state cooperative societies more democratic, transparent and accountable, **the bill has provisions for setting up of Cooperative Election Authority, Cooperative Information Officer and Cooperative Ombudsman.**
- The Bill will **incorporate the provisions of the 97th** Constitutional Amendment.
- The Bill also seeks to **improve the composition of board and ensure financial discipline,** besides enabling the raising of funds in the multi-state cooperative societies.

97th Amendment Act:

- The Constitution (97th Amendment Act), 2011 makes provisions for Co-operative societies in India.
- The Amendment provided **legal status and protection to Co-operative societies,** and it makes an effort to address all of their issues and develop effective management techniques.

About MSCS Act:

- The Act was passed **to govern Multi State Cooperative Societies.**
- Administrative and financial control of these societies is with the central registrar. No state government official can wield any control on them.
- Maharashtra has the highest number (567) followed by Uttar Pradesh (147) and New Delhi (133).
- Credit societies constitute the bulk of registered societies followed by agro-based ones. (96 multistate cooperative dairies and 66 multistate cooperative banks)

About MSCS:

- Cooperatives are a state subject. But many societies

have their members and areas of operation spread across more than one state.

- For example, sugar mills along the districts on the Karnataka-Maharashtra border. They are thus registered under the MSCS Act.

- **Their board of directors has representation from all states they operate in.**

INTEROPERABLE REGULATORY SANDBOX

In News: The Reserve Bank of India (RBI) has announced a standard operating procedure (SOP) for interoperable regulatory sandbox to regulate newer fintech products and services falling in the ambit of more than one regulator.
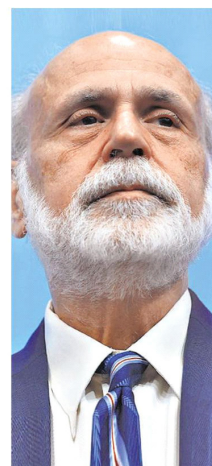
More on the Topic:

- The move is aimed at developing a clear jurisdiction where there are overlapping areas involving multiple regulators.

- The overlapping regulators include the RBI, Securities and Exchange Board of India (Sebi), Insurance Regulatory and Development Authority (Irdai), Pension Fund Regulatory and Development Authority (PFRDA).

- The initial scrutiny of the product or the service will be done by the coordination group, which is the fintech department of the RBI while detailed examination will be done by the principal regulator based on its framework.

- The latter will have the final say in admitting a product or service in the sandbox and other regulators will provide their inputs in 30 days.

About Regulatory Sand Box:

- A regulatory sandbox **usually refers to live testing of new products or services** in a controlled/test regulatory environment for which regulators may permit certain regulatory relaxations for the limited purpose of the testing.

- The objective of the sandbox is **to foster responsible innovation in financial services, promote efficiency and bring benefits to consumers.**

- The framework will **likely be a positive step for financial technology start-ups and companies looking to innovate in the fast changing and highly regulated sector.**

- Also, it will **enable authorities to take a considered view on the regulatory changes or new regulations** that may be needed to support useful innovation, while containing the attendant risks.

NOBEL PRIZE IN ECONOMICS

In News: The Sveriges Riksbank Prize in Economic Sciences for 2022 was awarded to three American economists: Ben S Bernanke, Douglas W Diamond and Philip H Dybvi.

More on the Topic:

- The researchers have been awarded for their role in research related to how banks function.

- The foundations of research in this subject was laid by Ben Bernanke, Douglas Diamond and Philip Dybvig in the early 1980s.

- **Their analyses have been of great practical importance in regulating financial markets and dealing with financial crises.**

- Later, when the pandemic hit in 2020, significant measures were taken to avoid a global financial crisis. **The laureates' insights have played an important role in ensuring these latter crises** did not develop into new depressions with devastating consequences for society.

The Contributions:

- Through statistical analysis and historical source research, **Bernanke demonstrated how failing banks played a decisive role in the global depression of the 1930s,** the worst economic crisis in modern history.

- The collapse of the banking system explains why the downturn was not only deep, but also long-lasting.

- It added the importance of well-functioning bank regulation is also understood thanks to this research.

- Both **Diamond and Dybvig worked together to develop theoretical models explaining why banks exist, how their role in society makes them vulnerable to rumours about their impending collapse, and how society can lessen this vulnerability.**

- These insights form the foundation of modern bank regulation.

WORLD ECONOMIC OUTLOOK

In News: The International Monetary Fund (IMF) sharply lowered India's economic growth forecast to 6.8% in its latest World Economic Outlook, compared to 7.4%it had estimated earlier in July.

More on the Topic:

- It highlighted that **the global economy continues to face challenges including inflation, tightened financial conditions, Russia's invasion of Ukraine, and the lingering COVID-19 pandemic.**

- The report pointed out that **more energy and food price shocks might cause inflation to persist for longer** while global tightening in financing conditions could trigger widespread emerging market debt distress.

- Despite the growth forecast downgrade, **India will remain one of the fastest growing key economies in the world in 2022 and 2023.** China's growth is estimated to slow to 3.2% in 2022 and by 4.4% in 2023.

Global Scenario:

- Global growth is forecast **to slow from 6% in 2021 to 3.2% in 2022 and 2.7% in 2023.** This is the weakest growth profile since 2001, except for the global financial crisis and the acute phase of the Covid-19 pandemic.

- The global growth is expected to **slow further in 2023.** The worst is yet to come and, for many people 2023 will feel like a recession.

- A slowdown in the Euro area is expected to deepen in 2023, and growth in China is projected to hit its lowest rate in decades apart from during the initial coronavirus outbreak.

- Global inflation is forecast to rise from 4.7% in 2021 to 8.8% in 2022 but to decline to 6.5% in 2023 and to 4.1% by 2024.

World Economic Outlook:

- It is a survey by the IMF that is usually published twice a year in the months of April and October.

- It analyzes and predicts global economic developments during the near and medium term.

GLOBAL LIGHTHOUSE NETWORK

In News: The World Economic Forum announced the addition of 11 factories and industrial sites, including three from India, to its Global Lighthouse Network.

More on the Topic:

- The GLN is a community of manufacturers who are applying **Fourth Industrial Revolution (4IR) technologies to increase efficiency and productivity, along with environmental stewardship.**

- The GLN is **a platform to develop, replicate and scale innovations, creating opportunities for cross-company learning and collaboration.**

- It sets new benchmarks for the global manufacturing community.

- The Global Lighthouse Network (GLN) **was pioneered by the World Economic Forum in 2018.**

- **Lighthouses are industries which use Industry 4.0 or 4IR technologies** to transform factories, value chains and business models, for compelling financial and operational returns.

CRYPTO-ASSET REPORTING FRAMEWORK OF OECD

In News: OECD has Released New Global Tax Reporting Framework for Crypto Assets.

More on the Topic:

- The framework ensures **the collection and automatic exchange of information on transactions for relevant crypto.**

- The definition of crypto assets **"includes assets that can be held and transferred in a decentralised manner, without the intervention of traditional financial intermediaries, including stablecoins, derivatives issued in the form of a crypto-asset and certain non-fungible tokens."**

- Intermediaries and other service providers facilitating exchanges between relevant crypto assets, such as exchanges, brokers and ATM operators, will also be included in the scope.

- **The CARF sets rules that crypto asset firms must report in the country that they conduct business in.**

- Exchanges between relevant crypto assets and fiat currencies, along with exchanges between one or more type of crypto and transfers of crypto (including retail payment transactions), will need to be reported.

INTERNATIONAL FINANCE CORP. (IFC)

In News: Responding to rising food insecurity, the International Finance Corp. (IFC) has launched a new, $6 billion financing facility to strengthen private sector's ability to respond to the crisis and help support food production.

Creating Markets, Creating Opportunities

More on the Topic:

- A core part of the financing, which will be provided through the new Global Food Security Platform (the Platform), will support **sustainable production and delivery of food stocks to countries affected by food instability.**

- Support will be aimed at **facilitating trade of food commodities, delivery of inputs to farmers, supporting efficient production in major origins,** including Ukraine, and **effective distribution of food products in destination countries.**

Why the Food Insecurity has increased:

- The war in Ukraine and an uneven global recovery from the COVID-19 pandemic have added to rising levels of hunger and malnourishment.

- This condition is already have been worsened by climate change and increasingly severe weather events that are damaging harvests and reducing yields.

About International Finance Corp:

- IFC is World Bank's private sector investment arm.

- It offers **investment, advisory, and asset-management** services to encourage private-sector development in less developed countries.

- The IFC is a **member of the World Bank Group and is headquartered in Washington, D.C.** in the United States.

POST DEVOLUTION REVENUE DEFICIT (PDRD) GRANT

In News: The Department of Expenditure, Ministry of Finance has released the 7th monthly instalment of Post Devolution Revenue Deficit (PDRD) Grant to 14 States.

More on the Topic:

- The grant has been released as per the recommendations of the Fifteenth Finance Commission.

- **The Post Devolution Revenue Deficit Grants are provided to the States under Article 275 of the Constitution.**

- The grants are released to the States **as per the recommendations of the successive Finance Commissions to meet the gap in Revenue Accounts of the States post devolution.**

- The eligibility of States to receive this grant and the quantum of grant for the period from 2020-21 to 2025-26 was decided by the Fifteenth Finance Commission based on the gap between assessment of revenue and expenditure of the State after taking into account the assessed devolution during this period.

PRIMARY AGRICULTURAL CREDIT SOCIETIES (PACS)

In News: Union Home and Cooperation Minister Amit Shah on Friday said that primary agricultural credit societies (PACS) will be set up in all panchayats of the country to boost various activities over the next five years.

Activities of PACS

- Short term loans to members
- Accepting Savings deposits from members
- Running PDS shops
- Selling agricultural inputs
- Running Janata Bazar

More on the Topic:

- There are only 65,000 active PACS in the country at present, and it is imperative that all panchayats must have one such body by 2027 to promote farming and dairy activities at the grassroots level.

- The eastern and north eastern states will benefit the most from the establishment of the PACS **as its farm and dairy products will be efficiently marketed,** thus generating optimum financial benefits for people engaged in animal husbandry and allied sectors.

About Click Primary Agricultural Cooperative credit societies:

- The Primary Agricultural Cooperative credit societies (PACS) constitute the lowest tier of the three-tier Short-term cooperative credit (STCC) in the country comprising of approx.13 Cr. farmers as its members.

- PACS is crucial for the development of the rural economy.

- Other two tiers are State Cooperative Banks at state level and District Central Cooperative Banks at district level.

- PACS are outside the purview of Banking Regulation Act, 1949 and hence not regulated by RBI.

- PACS account for **41% of the Kisan Credit Card (KCC) loans given by all entities** in the Country and 95% of

these KCC loans through PACS are to the Small and Marginal farmers.

- Earlier, Cabinet Committee had approved **Computer-ization of PACS with the objective of increasing efficiency of PACS, bringing transparency and accountability in their operations.**

PACS, registered as cooperative societies, provide the following facilities to their members:

- Input facilities in form of cash or kind component
- Agriculture implements on hiring basis
- Storage facility

CENTRAL BANK DIGITAL CURRENCY

In News: The Reserve Bank of India (RBI) on October 7, 2022 released a concept note on the Central Bank Digital Currency (CBDC).

More on the Topic:

- The concept note explains the objectives, choices, benefits, and risks of issuing a Central Bank Digital Currency in India.

What is Digital Rupee?

- The Central Bank Digital Currency (CBDC) can be defined as the legal tender issued by the Reserve Bank of India.
- Touted as Digital Rupee or e-Rupee, RBI's CBDC is the same as a sovereign currency and is exchangeable one-to-one at par with the fiat currency.

Features of Digital Rupee:

- CBDC is a sovereign currency issued by central banks in alignment with their monetary policy.
- It appears as **a liability on the central bank's balance sheet.**
- It must be **accepted as a medium of payment, legal tender, and a safe store of value by all citizens, enterprises, and government agencies.**
- CBDC is **freely convertible against commercial bank money and cash.**
- CBDC is **a fungible legal tender** for which holders need not have a bank account.
- CBDC is **expected to lower the cost of issuance of money and transactions**

How is Digital Rupee different from money in digital form?

- As per RBI, "A CBDC would differ from existing digital money available to the public because a **CBDC would be a liability of the Reserve Bank, and not of a commercial bank.**"

Why is RBI introducing CBDC?

- CBDC is **aimed to complement, rather than replace, current forms of money** and is envisaged to provide an additional payment avenue to users, not to replace the existing payment systems.
- RBI believes that the digital rupee system will **"bolster India's digital economy, enhance financial inclusion, and make the monetary and payment systems more efficient."**
- **Reduction in cost associated with physical cash management**
- To further the cause of **digitisation to achieve a less cash economy.**
- **Supporting competition, efficiency, and innovation in payments**
- To explore the use of CBDC for **improvement in cross-border transactions**
- Support **financial inclusion**
- **Safeguard the trust of the common man in the national currency vis-à-vis proliferation of crypto assets.**

Digital rupee vs cryptocurrency:

- Developing CBDC could **provide the public with a risk-free virtual currency** that will provide them with legitimate benefits without the risks of dealing in private virtual currencies.
- It may, therefore, **fulfil the demand for secured digital currency besides protecting the public from the abnormal level of volatility** that some of these virtual digital assets experience.
- Thus, safeguarding the trust of the common man in the Indian Rupee vis-à-vis proliferation of crypto assets is another important.

Threats related to Crypto Currencies:

- The proliferation of crypto assets **can pose significant risks related to money laundering and financing of terrorism.**
- Further, **the unabated use of crypto assets can be a threat to the monetary policy** objectives as it may lead to the creation of a parallel economy and will likely undermine the monetary policy transmission and stability of the domestic currency.
- It will also **adversely affect the enforcement of foreign exchange regulations,** especially, the circumvention of capital flow measures

NATIONAL ASSET RECONSTRUCTION COMPANY

In News: Sale of non-performing assets (NPA) to National Asset Reconstruction Company (NARCL), the government-promoted bad bank, has finally kicked off with the newly formed ARC making an offer for loans of troubled firm.

FAQs regarding Central Government guarantee to back Security Receipts issued by NARCL for acquiring of stressed loan assets

What is National Asset Reconstruction Company Limited (NARCL)? Who has set it up?

NARCL has been incorporated under the Companies Act and has applied to Reserve Bank of India for license as an Asset Reconstruction Company (ARC). NARCL has been set up by banks to aggregate and consolidate stressed assets for their subsequent resolution. PSBs will maintain 51% ownership in NARCL.

More on the Topic:

- NARCL has been incorporated under the Companies Act and has applied to Reserve Bank of India for license as an Asset Reconstruction Company (ARC).

- NARCL has been set up by banks **to aggregate and consolidate stressed assets for their subsequent resolution.** PSBs will maintain 51% ownership in NARCL.

- IDRCL is a service company/operational entity which **will manage the asset and engage market professionals and turnaround experts.** Public Sector Banks (PSBs) and Public FIs will hold a maximum of 49% stake and the rest will be with private sector lenders.

Why is NARCL-IDRCL type structure needed when there are 28 existing ARCs?

- Existing ARCs have been helpful in resolution of stressed assets especially for smaller value loans. Various available resolution mechanisms, including IBC have proved to be useful.

- However, considering the large stock of legacy NPAs, additional options/alternatives are needed and the NARCL-IRDCL structure announced in the Union Budget is this initiative.

What benefit do banks get from this new structure?

- It will incentivize quicker action on resolving stressed assets thereby helping in better value realization.

- This approach will also **permit freeing up of personnel in banks to focus on increasing business and credit growth.** As the holders of these stressed assets and SRs, banks will receive the gains.

- Further, **it will bring about improvement in bank's valuation and enhance their ability** to raise market capital.

INDIA EMERGES AS THE WORLD'S LARGEST PRODUCER, CONSUMER OF SUGAR

In News: India has emerged as the world's largest producer and consumer of sugar as well as the world's second largest exporter of sugar by producing more than 5000 Lakh Metric Tonne (LMT) sugarcane.

India is now the world's leading producer and consumer of sugar, as well as the world's second largest exporter.

More on the Topic:

- This is outcome of synchronous and collaborative efforts of the Centre and the state governments, farmers, sugar mills, ethanol distilleries with very supportive overall ecosystem for business in the country.

- Timely government interventions since last five years have also been crucial in building the sugar sector step by step from taking them out of financial distress in 2018-19 to the stage of self-sufficiency in 2021-22.

About Indian Sugar Industry:

- Sugar Industry is one of the agricultural based industries. A larger portion of rural labourers in the country largely rely upon this industry.

- Sugar Industry in India is well developed with a consumer base of more than billions of people. India is also the second largest producer of sugar in the world.

Geographical Distribution of Sugar Industry in India:

- **Uttar Pradesh:** It is the leading producer of sugar in India and one of the largest sugar industries in the Indian economy.

- **Bihar, Punjab, Haryana, Maharashtra, Karnataka**

- **Tamil Nadu:** This state is responsible for 10% of the total sugar production in India.

- **Andhra Pradesh:** Along with Sugar Production it is regarded as the 'granary of the south' and once it was called as 'Rice Bowl of India'.

North India vs. South India Sugar Industry:

- Peninsular India has tropical climate which gives higher yield per unit area as compared to north India.

- The sucrose content is also higher in tropical variety of sugarcane in the south.

- The crushing season is also much longer in the south than in the north.

The FRP and SAP:

- At present, the Central Government along with the CACP (Commission of Agricultural Costs and Prices) releases an all-India sugarcane price called Fair and remunerative Price every year before the start of the sugar season.

- This FRP is a formula-linked cane price to encourage

higher productivity.

- This FRP is what the mills would have to pay to the cane farmers. But some states would like to fix a cane price over and above the FRP, which the mills would have to pay to the farmers.
- This price is called State Advised Price (SAP).

ENGINEERING, PROCUREMENT AND CONSTRUCTION (EPC) MODEL

In News: Cabinet cleared Rs 10,000 crore for redevelopment of 3 railway stations (New Delhi, Mumbai (Chhatrapati Shivaji Maharaj Terminus), Ahmedabad) under EPC model.
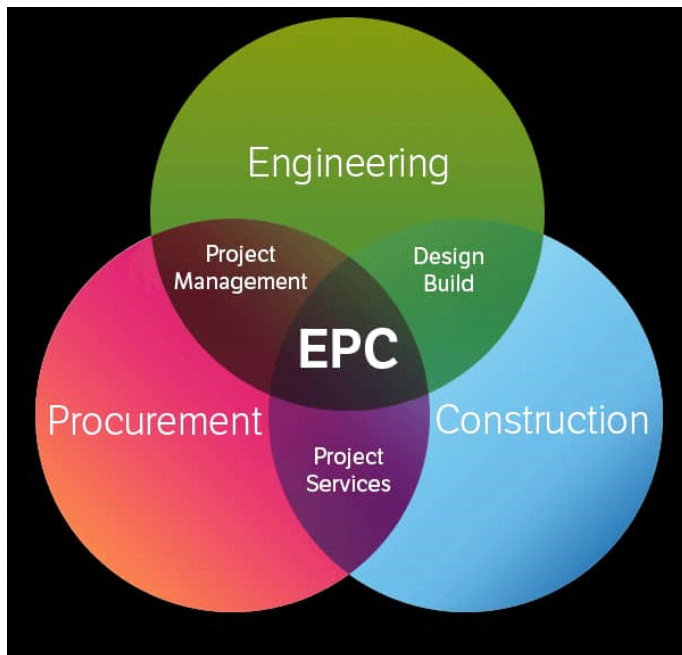
More on the Topic:

- Engineering, procurement, and construction (EPC) contracts (a type of turnkey contract) are a form of contract used to undertake construction works by the private sector on large-scale and complex infrastructure projects.
- Under an EPC contract, a contractor is obliged to deliver a complete facility to a developer who needs only "turn a key" to start operating the facility; hence EPC contracts are sometimes called turnkey construction contracts.
- In addition to delivering a complete facility, the contractor must deliver that facility for a guaranteed price by a fixed date and it must perform to the specified level.
- Failure to comply with any requirement will usually result in the contractor incurring monetary liabilities.
- The EPC contractor coordinates all design, procurement and construction work and ensures that the whole project is completed as required and in time.

THE EXCHANGE-TRADED COMMODITY DERIVATIVES

In News: Capital markets regulator SEBI has allowed Foreign Portfolio Investors (FPIs) to participate in the exchange-traded commodity derivatives segment, a move that will further increase depth and liquidity in the market.

More on the Topic:

- An Exchange Traded Derivative is a standardised financial contract that is traded on stock exchanges in a regulated manner.
- They are subject to the rules drafted by market regulators such as the Securities and Exchange Board of India (SEBI).
- E.g. gold, crude oil, silver etc.
- Advantages of ETCDs: Standardization, Presence of an Intermediary, Market Depth due to Liquidity, and Elimination of default risk.

RBI HIKES REPO RATES

In News: Reserve Bank of India has hiked repo rate by 50 basis points.

More on the Topic:

- Home, auto and other loans are set to become costlier as the Reserve Bank of India (RBI) raised the bench-mark lending rate 50 basis points to 5.90 %, the highest since April, 2019.
- The move is intended to control inflation.
- This is the fourth time since May the monetary policy committee (MPC) of the RBI has raised the repo rate, with the total increase at 190 basis points.

About Repo Rate:

- Repo rate is defined as **the rate of interest at which the Reserve Bank of India (RBI) lends money to commercial banks.**

- Repo stands for **Repurchase Agreement or Repurchasing Option**. Banks avail loans from the central bank (the RBI) by selling eligible securities.

- An agreement between the central bank and the commercial bank will be made to **repurchase the securities at a price that is predetermined.**

- This is done when banks face a shortage of funds or need to maintain liquidity in volatile market conditions.

- The RBI uses the repo rate to control inflation rates.

About Inflation:

- The term "inflation" refers to a rise in a broad price index representing the overall price level for goods and services in the economy.

WORLD GREEN ECONOMY SUMMIT

In News: The 8th World Green Economy Summit (WGES) was organised recently.

More on the Topic:

- The two-day event, organised by Dubai Electricity and Water Authority (DEWA), the World Green Economy Organization (WGEO) and the Dubai Supreme Council of Energy.

- Ministers, officials, and experts from around the world are taking part in the summit.

- It aims to propel action to deliver a sustainable future. Thematic pillars: Energy, finance, food security, youth.

ENVIRONMENT AND ECOLOGY

GM MUSTARD

In News: Genetic Engineering Appraisal Committee (GEAC) under the Union Ministry of Environment, Forest and Climate Change recommended the "environmental release" of the transgenic hybrid mustard DMH-11 for seed production and conduct of field demonstration studies with respect to its effects, on honey bees and other pollinating insects.

More on the Topic:

- Hybridisation involves **crossing two genetically dissimilar plant varieties that can even be from the same species.**

- The first-generation (F1) offspring from such crosses tend to have higher yields than what either parent can individually give.

- Such hybridisation isn't easy in mustard, as its flowers have both female (pistil) and male (stamen) reproductive organs, making the plants largely self-pollinating.

- Since the eggs of one plant cannot be fertilised by the pollen grains from another, it limits the scope for developing hybrids — unlike in cotton, maize or tomato, where this can be done through simple emasculation or physical removal of anthers.

How has hybridisation been achieved in mustard?

- By genetic modification (GM). Scientists have developed the hybrid mustard DMH-11 containing two alien genes isolated from a **soil bacterium called Bacillus amyloliquefaciens.**

- The first gene ('barnase') codes for a protein that impairs pollen production and renders the plant into which it is incorporated male-sterile.

- This plant is then crossed with a fertile parental line containing, in turn, the second 'barstar' gene that blocks the action of the barnase gene.

- **The resultant F1 progeny is both high-yielding and also capable of producing seed/ grain,** thanks to the barstar gene in the second fertile line.

CLIMATE TRANSPARENCY REPORT 2022

In News: Climate Transparency Report 2022 was released by a partnership of climate analysis organisations in G20 countries.

CLIMATE TRANSPARENCY REPORT
COMPARING G20 CLIMATE ACTION AND RESPONSES TO THE COVID-19 CRISIS

G20

❋ CORONAVIRUS RECOVERY
Includes 2020 emissions data and projections, analysis of stimulus responses, and insights for a Greener Recovery.

2020

More on the Topic:

- **India witnessed a record heatwave** which greatly affected workers, labour migrants, low-income households and the homeless, and reduced the yields of wheat crops, which would have been useful to address supply shortages caused by the war in Ukraine.

- **142 million people in India may be exposed or roughly 10% of the population to summer heatwaves at 1.5 Degrees Celsius.**

- Exposure to higher temperatures and the resulting reduction of working hours has led to substantial income losses in services, manufacturing, agriculture, and construction.

- **India suffered an income loss of 5.4% of Gross Domestic Product (GDP),** the highest among the G20 nations in 2021.

Global Emission:

- **USA ranked first,** as America contributes 25% of GE, followed by the European Union with 22%.

- **India is only responsible for 3% of global emissions.**

- G20 members account for around 85% of global GDP, 75% of international trade and two-thirds of the world's population, and are responsible for around **three-quarters of global emissions.**

Major Findings:

- To limit warming to 1.5 Degrees Celsius, the G20 carries high responsibility. For developed countries, this includes providing climate finance to assist developing countries mitigation and adaptation actions.

- The G20 members are still not taking the necessary level of accountability of action.several countries including India have submitted stronger Nationally Determined Contributions (NDC) targets over time, but their overall level of ambition and action is still insufficient to meet 1.5 Degrees Celsius.

- **The combined mitigation effect of all 2030 targets assessed is projected to lead to warming of 2.4 Degrees Celsius,** with current policies leading to a 2.7 Degrees Celsius world by 2100.

- This underlines the urgent need for G20 members to strengthen current climate policies, intensify implementation, and submit more ambitious 2030 targets that align with midcentury net zero targets.

Recommendations:

- **Increase the deployment of renewable energy** and create sustainable jobs.

- **Use targeted support for poorer households** instead of expanding subsidies for all.

- **Expand climate finance for zero-carbon investments** both domestically and through international cooperation.

SOIL CARBON

In News: A new study has has found large grazing animals as key to long-term soil carbon stability.
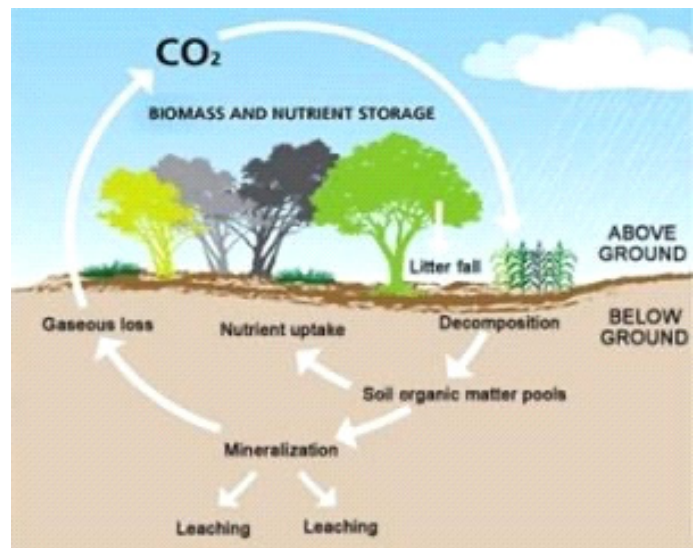
More on the Topic:

- Since soil contains more carbon than all plants and the atmosphere combined, it is important to ensure its persistence.

- When plants and animals die, dead organic matter remains in the soil for a long duration before microbes break it down and release carbon into the atmosphere as carbon dioxide.

- Carbon is the solid carbon stored in soil, i.e. the organic and inorganic.

- It is recognised as the largest store of terrestrial carbon and contains more carbon than all plants and the atmosphere combined

ONE HEALTH PLAN

In News: Four multilateral agencies have launched a global 'One Health' plan to better address threats to all living beings as well as the environment.
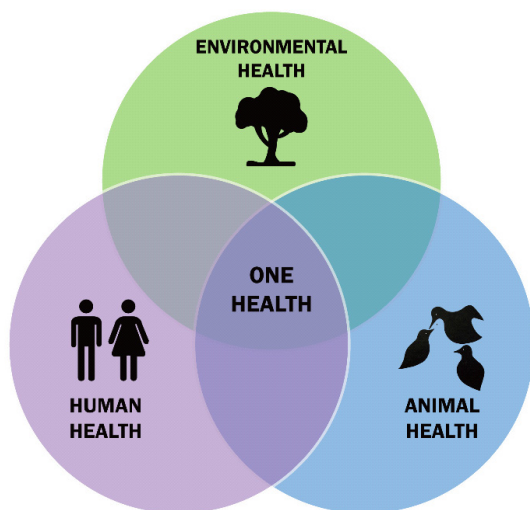
More on the Topic:

- The 'Quadripartite' — comprising the United Nations (UN) Food and Agriculture Organization (FAO), the UN Environment Programme (UNEP), the World Health Organziation (WHO) and the World Organisation for Animal Health.

- The Joint Plan of Action will create a framework and integrate systems and capacity to collectively better prevent, predict, detect and respond to health threats.

- This will help **improve the health of humans, animals, plants, and the environment, while contributing to sustainable development.**

- The One Health Joint Plan of Action, developed through a participatory process, provided a set of activities that aim to strengthen collaboration, communication, capacity building and coordination.

- These will be **equally applicable on across all sectors responsible for addressing health concerns.**

About One Health:

- One Health is an **integrated, unifying approach that aims to sustainably balance and optimise the health of humans, animals, plants and ecosystems.**

- It is the primary approach for addressing the complex health challenges facing our society, such as ecosystem degradation, food system failures, infectious diseases and antimicrobial resistance (AMR).

- The concept of One Health recognises **the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent.**

- Efforts by just one sector or speciality cannot prevent or eliminate infectious disease and other complex threats to One Health.

Six key areas were focused on in the plan are:

- One Health capacity for health system
- Emerging and re-emerging zoonotic epidemics
- Endemic zoonotic
- Neglected tropical and vector-borne diseases
- Antimicrobial resistance and the environment
- Food safety risks

KADAVUR SLENDER LORIS SANCTUARY

In News: Tamil Nadu is gearing up to set up Kaduvur Slender Loris Sanctuary in an area shared by Karur and Dindigul districts.

More on the Topic:

- The Tamil Nadu government has notified the sanctuary under **Wildlife Protection Act of 1972.**

- Recently, the Tamil Nadu government has also notified India's first Dugong Conservation Reserve in Palk Bay, an elephant reserve at Agasthyamalai (Tirunelveli), Nanjarayan Tank Birds Sanctuary in Tiruppur and Kazhuveli Bird Sanctuary in Villipuram.

- Also, a total of 13 wetland areas were declared recently as Ramsar Sites in Tamil Nadu.

About Slender Loris:

- The slender lorises are a genus of loris native to India and Sri Lanka.

- The genus comprises two species, the red slender loris found in Sri Lanka and the gray slender loris from Sri Lanka and India.

- Slender lorises spend most of their life in trees, traveling along the tops of branches with slow and precise movements.

Protection Status:

- IUCN: Endangered
- Wildlife (Protection) Act of India, 1972: Schedule I
- CITES: Appendix II

WORLD GREEN CITY AWARD - HYDERABAD

In News: Hyderabad has been named the World Green City Award 2022 recently.

More on the Topic:

- Hyderabad received the award at the International Association of Horticulture Producers (AIPH) 2022.

- Hyderabad won "Living Green for Economic Recovery and Inclusive Growth" during the AIPH event.

- "Living Green for Economic Recovery and Inclusive Growth" category focuses on creating systems and solutions that allow all of the city's residents overcome economic distress and grow.

- In this category, the greening of the Outer Ring Road was submitted for Hyderabad's nomination.

- The city was recognized as the global leader in nature-oriented approaches to city design, form and function.

TIGER RELOCATION PROJECT

In News: The much-awaited relocation of a tiger from the Ranthambore Tiger Reserve to the Sariska Tiger Reserve took place recently.

More on the Topic:

- The shifting came at a time when the majority of the male and female tigers in Sariska have aged. The STR had witnessed country's first tiger reintroduction programme in 2008.

- The relocation of Tigers usually meant to serve two purposes:

- to reduce the tiger population in areas with excess tigers to majorly reduce territorial disputes and

- to reintroduce tigers in areas where the population has considerably reduced due to various reasons

Ranthambore Tiger Reserve:

- Ranthambore Tiger Reserve lies in the eastern part of Rajasthan state in Karauli and Sawai Madhopur districts, at the junction of the Aravali and Vindhya hill ranges.

- Parks and Sanctuaries Included: It comprises of the Ranthambore National Park as well as Sawai Mansingh and Keladevi Sanctuaries.

Sariska Tiger Reserve:

- Sariska Tiger Reserve is located in **Aravali hills and forms a part of the Alwar District of Rajasthan.**

- The Reserve houses ruined temples, forts, pavilions and a palace.

- The Reserve is immensely rich in flora and fauna, and is famous for Royal Bengal Tiger.

- The park has **populations of leopards, Nilgai, Sambar, chital etc.**

About Tiger Specie:

- There are currently between 3,726 and 5,578 tigers in the wild worldwide, according to the latest figures by the International Union for Conservation of Nature (IUCN).

- Tiger populations are stable or increasing in India, Nepal, Bhutan, Russia and China.

- **India is home to over 70% of the global tiger population.**

- The tiger is a unique animal which plays a pivotal role in the health and diversity of an ecosystem.

- It is a top predator which is at the apex of the food chain and keeps the population of wild ungulates (primarily large mammals) in check.

- Thus, **Tiger helps in maintaining the balance between prey herbivores and the vegetation upon which they feed.**

Protection Status:

- Indian Wildlife (Protection) Act, 1972: Schedule I

- International Union for Conservation of Nature (IUCN) Red List: Endangered.

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Appendix I.

SLOTH BEAR

In News: The first-ever World Sloth Bear Day celebrations were held by Wildlife SOS in Agra in collaboration with the IUCN and the UP Forest Department.
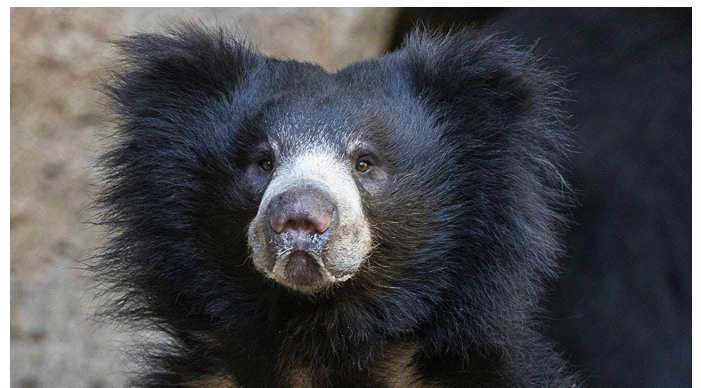
More on the Topic:

- Sloth bear is a **unique bear species found in India.**

- It is the least researched bear species and is **listed as 'vulnerable' on the IUCN Red List.**

- Wildlife SOS India involved in sloth bear protection, rescue and rehabilitation for over two decades, in collaboration with IUCN, has declared October 12 as 'World Sloth Bear Day' to promote the conservation and protection of this unique bear species.

- They are endemic to the Indian sub-continent with small populations in Nepal and Sri Lanka.

LIVING PLANET REPORT

In News: The Living Planet Report was published by World Wide Fund for Nature (WWF).

More on the Topic:

- There has been **a 69% decline in the wildlife populations** of mammals, birds, amphibians, reptiles and fish, across the globe in the last 50 years.
- **Biodiversity loss and climate crisis should be dealt with as one instead of two different issues as they are intertwined.**
- The highest decline (94%) was in the Latin America and the Caribbean region.
- **Freshwater species populations globally reduced by 83%,** confirming that the planet is experiencing a "biodiversity and climate crisis".
- **About 50% of warm water corals have already been lost** and warming of 1.5 degrees celsius will lead to a loss of 70-90% of warm water corals.
- Mangroves continue to be lost to aquaculture, agriculture and coastal development at a rate of 0.13% per year, according to the findings.
- Many mangroves are also degraded by overexploitation and pollution, alongside natural stressors such as storms and coastal erosion.

About Living Planet Report:

- Living Planet Report is WWF's flagship publication.
- It is released every two years.

Suggestions:

- The Living Planet Report 2022 shows how climate change and biodiversity loss are not only environmental issues but economic, development, security and social issues too.
- They must therefore be addressed together.
- Climate Change in India will impact key areas, such as water resources, agriculture, natural ecosystems, health and the food chain.
- **We need an all-inclusive collective approach** that empowers each of us to act, that can put us on a more sustainable path, and ensures that the costs and benefits from our actions are socially just and equitably shared.
- We have to **manage our existing dams and reservoirs better,** keeping in mind the ecology of the rivers as well us as flood risk from last minute releases.
- We have to reduce our dependence on a few water guzzling crops in favour of diversity and seriously reconsider proposed new dams.

LEAD POISONING

In News: A report prepared jointly by government think tank Niti Aayog and the Council of Scientific & Industrial Research (CSIR) has stated that India bears world's highest health, economic burden due to lead poisoning.

More on the Topic:

- Bihar, Uttar Pradesh, Madhya Pradesh, Jharkhand, Chhattisgarh and Andhra Pradesh had the highest average blood lead levels (BLL) among Indian states.
- These states account for 40% of India's population that is plagued with this poor health indicator.
- Some 23 states have an average BLL that goes beyond five microgram per decilitre (µg / dl) — the standard used to gauge poisoning.
- A Unicef report also noted that **lead poisoning shaved off an estimated 5% of Indian Gross Domestic Product (GDP) due to lower economic productivity and reduced lifetime earnings.** It also caused 230,000 premature deaths in India.

Source of Lead:

- Deaths due to lead poisoning have continued to rise in India even though **lead use in petrol — a key source — was phased out by 2000 in the country. This indicates other sources.**
- The government report includes **battery recycling, occupational sources such as lead mining, smelting, welding, soldering and automobile repatriating.**
- Other inconspicuous sources include adulterated spices, cosmetics and traditional medicines.

Way Ahead:

- There is a **desperate need for policy changes** at the national and state levels given the severe health implications including, but not limited to, the central nervous, hematopoietic, hepatic and renal systems.
- We **need to devise implementable strategies on a state level,** through regional bureaucracy, local press and vernacular language to have a tangible impact.
- Undertake **targeted research and intervention studies** to identify potential newer sources which policy makers and the scientific community can address head on.
- **Identifying at-risk populations** through BLL monitoring, investigating sources of elevated BLLs and healthcare workforce training to sensitise them to monitor, detect and treat lead poisoning.

PADDY STRAW TORREFACTION

In News: The Union Environment Ministry announced a 50 crore scheme to incentivise industrialists and entrepreneurs to set up paddy straw pelletisation and torrefaction plants.

Dried rice straw · Chopped rice straw · Torrefied rice straw pellet · Torrefied rice straw

More on the Topic:

- Under this incentive scheme, one-time financial assistance will be given to individuals and companies to set up torrefaction and pelletisation plants.

- This financial assistance can be availed for setting up new plants and units using only paddy straw generated in Delhi, Punjab and Haryana, and NCR districts of Rajasthan and Uttar Pradesh.

What is Torrefaction?

- Torrefaction is a thermochemical process typically at 200-350 °C in the absence of oxygen, at atmopsheric pressure with low particle heating rates and a reactor time of one hour.

- The process causes biomass to partly decompose, creating torrefied biomass or char, also referred to as 'biocoal'.

Background:

- Paddy stubble burning is practised mainly in the Indo-Gangetic plains of Punjab, Haryana, and UP.

- The farmers clear their fields for sowing the winter crop, burns straw stubble after harvesting paddy.

- The emissions from stubble burning add to the air pollution crisis in Delhi.

BASMATI RICE

In News: Five new varieties of seeds of Basmati rice was developed by a group of scientists led by the Indian Agriculture Research Institute (IARI).

More on the Topic:

- Three of the five varieties can **resist two common diseases of paddy (one bacterial and one fungal)**.

- The other two varieties can save 35% of water as the method of Direct Sowing of Rice (DSR) can be used to raise them.

- Researchers developed genetically resistant varieties- **Pusa Basmati 1885; Pusa Basmati 1847; Pusa Basmati 1886**. All these varieties have two genes to resist BLB and two genes to resist blast disease.

- In the next three years, **all of the five seeds will have the combined qualities of disease and herbicide resistance**.

- This will help in **increasing farmers' income by reducing the cost of cultivation,** by improving production and by realising price of their labour and input cost. It will reduce the use of pesticides and water.

- If the production is free from residue, it will get better prices.

- This is set to bring revolutionary changes in the way Basmati rice is cultivated in the country.

About Basmati Rice:

- It is long grain rice which has its origin from India and some parts of Pakistan.

- Basmati rice has **a unique fragrance and flavour caused due to the presence of a chemical called 2-acetyl-1-pyrroline.**

- This chemical is found in basmati rice at about 90 parts per million (ppm) which is 12 times more than non-basmati rice varieties.

- **Basmati rice needs specific climatic conditions to grow which is why it is cultivated in selected regions of India.**

- India is the largest producer of Basmati rice with about 70% share in global production.

POKKALI RICE

In News: Pokkali, a GI-tagged rice variety, could be on the verge of extinction.

More on the Topic:

- Pokkali rice is a **saline-tolerant, indigenous rice variety** grown in some districts of Kerala.

- Pokkam means height and Aali means plant. This lesser-known rice variety is developed in low-lying coastal areas and employs one of the oldest organic farming techniques.

- **Pokkali is a system in which the farming alternates between rice and prawn;** the fields are used alternately for rice farming and prawn and shrimp cultivation.

- Fish excreta and scales, along with the decomposed stubble, provide excellent natural manure for another season of Pokkali.

LIGHT POLLUTION AND MIGRATORY BIRDS

In News: Light pollution was recognized as "artificial light is an emerging issue for interfering with a migratory species' ability to undertake long distance migrations integral to its life cycle".

By turning off excess lighting, we can help to provide migrating birds safe passage between their nesting and wintering grounds.

Audubon

IDA
INTERNATIONAL DARK-SKY ASSOCIATION

More on the Topic:

- Every year, light pollution contributes to the death of millions of birds. It alters the natural patterns of light and dark in ecosystems.

- It can change birds' migration patterns, foraging behaviours, and vocal communication. Attracted by artificial light at night, particularly when there is low cloud, fog, rain or when flying at lower altitudes, migrating birds become disorientated and may end up circling in illuminated areas.

- Depleted energy reserves put them at risk of exhaustion, predation, and fatal collision with buildings.

About Light Pollution:

- Light pollution is **the presence of unwanted, inappropriate, or excessive artificial lighting.**

- In a descriptive sense, the term light pollution refers to the effects of any poorly implemented lighting, during the day or night.

- Light pollution can be understood not only as a phenomenon resulting from a specific source or kind of pollution, **but also as a contributor to the** wider, collective impact of various sources of pollution.

- Light pollution is blamed for compromising health, disrupting ecosystems, and spoiling aesthetic environments.

Solutions and recommendations to mitigate light pollution:

- Moderation of lights, especially during migration months

- Use of light shields or cut-off lights

- Use of warm lighting in place of cold lights

- Use of motion sensors to turn on only lights only when motion etc.

SOLAR GEOENGINEERING

In News: Even the Solar geoengineering work, the local temperatures could keep rising for years.
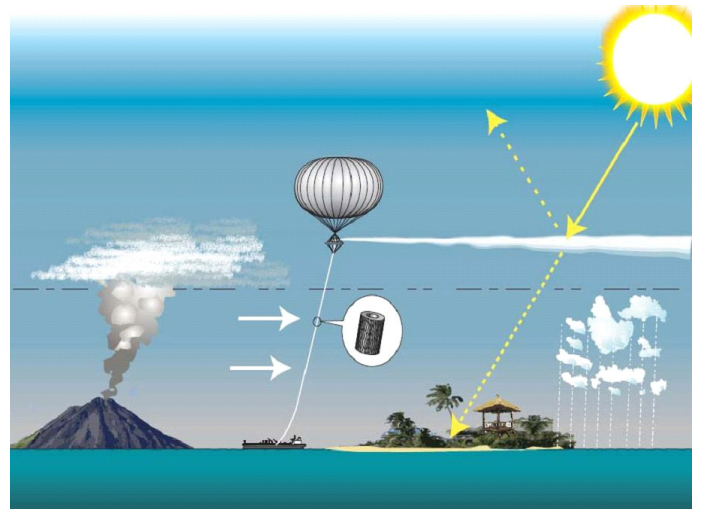
More on the Topic

- Although Solar engineering **technologies could theoretically lower global warming, they do not aim to reduce the amount of greenhouse gases in the atmosphere.**

- Without addressing the root cause the beneficial effects will be minimum.

- Climate engineering, or commonly geoengineering, is deliberate and large-scale intervention in the Earth's climate system.

- The main category of climate engineering is solar geoengineering or solar radiation management.

- Solar geoengineering, or solar radiation modification, would reflect some sunlight (solar radiation) back to space to limit or reverse human-caused climate change.

Solar geoengineering methods may include:

- **Stratospheric aerosol injection,** in which small particles would be injected into the upper atmosphere.

- **Marine cloud brightening,** which would spray fine sea water to whiten clouds and thus increase cloud reflectivity.

- **Cirrus cloud thinning,** which is strictly not solar geoengineering but shares many of the physical and especially governance characteristics as the other methods.

- **Passive daytime radiative cooling,** in which sky-facing thermally-emissive surfaces would be extensively installed on the Earth to radiate enough heat back into outer space to reduce the Earth's rising temperature.

NATIONAL CLEAN AIR PROGRAMME

In News: The Centre has set a new target of 40% reduction in particulate matter concentration in cities covered under the National Clean Air Programme (NCAP) by 2026, updating the earlier goal of 20 to 30% reduction by 2024.

More on the Topic:

- The National Clean Air Programme or NCAP is **a government programme launched by the Union Ministry of Environment, Forests and Climate Change in 2019.**
- Goal of NCAP is to meet the prescribed annual average ambient air quality standards at all locations in the country in a stipulated timeframe.
- The tentative national level target of 20%−30% reduction of PM2.5 and PM10 concentration by 2024 is proposed under the NCAP taking 2017 as the base year for the comparison of concentration.
- The NCAP also aims to have a feasible plan for **the prevention, management and control of air pollution.**
- At the national level, **the implementation of the programme will be done by an apex committee at the Environment Ministry level.**
- At the state level, committees at the Chief Secretary level will oversee the implementation of the scheme.
- PRANA (Portal for Regulation of Air-pollution in Non-Attainment cities) portal monitors the implementation of NCAP.

Achievements:

- The target was updated due to **an overall improvement in PM10 levels in 2021.** 20 cities, have met the national standards for annual average PM10 concentration (60 microgram per cubic metre).

- 95 of the 131 non-attainment cities (NACs) have witnessed an **"overall improvement" in PM10 levels in 2021.**
- NACs are cities whose air quality did not meet the national ambient air quality standards (NAAQS) of 2011 to 2015.

STOCKHOLM CONVENTION

In News: The 18th meeting of the Persistent Organic Pollutants (POP) Review Committee (POPRC-18) to the Stockholm Convention has concluded recently.
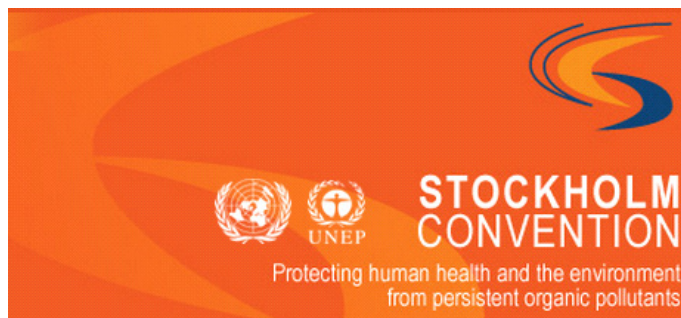
More on the Topic:

- The meeting included five more chemicals in its agenda.
- It recommended listing of **Dechlorane Plus (flame retardant) and UV-328 (stabiliser) under Annex A of the Stockholm Convention.**
- On **medium chain chlorinated paraffins (flame retardant) and Long-Chain Perfluorocarboxylic Acids (PFCAs),** risk management evaluations will be prepared for consideration at the next Committee meeting.
- **On chlorpyrifos (Pesticide),** committee decided to defer its consideration of the draft risk profile

About Stockholm Convention:

- Stockholm Convention is **an international environmental treaty that aims to eliminate or restrict the production and use of POPs** or the substances that persist in the environment and pose risk to our health.
- It was Signed in 2001 and effective from May 2004 (Ninety days after the ratification by at least 50 signatory states).
- It is legally binding.
- **India ratified the Stockholm Convention in 2006.** Ministry of Environment had notified the '**Regulation of POP Rules**' in 2018, under the Environment (Protection) Act, 1986.

Characteristics of POPs:

- POPs are **lipophilic, which means that they accumulate in the fatty tissue** of living animals and human beings.
- **In fatty tissue, the concentrations can become magnified by up to 70,000 times** higher than the background levels.
- As you **move up the food chain, concentrations of POPs tend to increase** so that animals at the top of the food chain such as fish, predatory birds,

mammals, and humans tend to have the greatest concentrations of these chemicals.

- They adversely affect human health/ environment.

ROTTERDAM CONVENTION

In News: International trade of two new hazardous pesticides — Iprodione and Terbufos — has been recommended for "prior informed consent" (PIC) procedure under the Rotterdam Convention.

More on the Topic:

- The recommendations were made by the Chemical Review Committee at the 18th meeting of the Rotterdam Convention's Chemical Review Committee (CRC 18) held at Rome, Italy.
- The committee has recommended to include the pesticides in the Annex III of the Rotterdam convention.
- Annex III includes pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by two or more parties.
- CRC 18 has also recommended two other pesticides, **paraquat and methyl bromide, to be listed in Annex III.**

About Iprodione and Terbufos:

- **Iprodione, a fungicide** used on vines, fruits, trees and vegetables, has been classified as carcinogenic and toxic for reproduction.
- **Terbufos is a soil insecticide used commonly on sorghum, maize, beet and potatoes.** It has also been found to pose risk to aquatic organisms due to its toxicity.
- Both the pesticides, which are used in agriculture, are known for their harmful impacts on human health and the environment.

About Rotterdam Convention:

- The Rotterdam Convention (formally, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade) is **a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals.**
- The convention promotes **open exchange of information and calls on exporters of hazardous chemicals to use proper labeling, include directions on safe handling, and inform purchasers of any known restrictions or bans.**
- Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged to make sure that producers within their jurisdiction comply.

WHITE FLY ATTACK

In News: Punjab and Rajasthan reported white fly attack on the crops.

More on the Topic:

- Whitefly is **a serious pest of cotton that lowers yield by feeding on the underside of the leaf and spreading diseases like Cotton Leaf Curl Virus.**
- **They feed on the sap of the leaves** and release fluid onto the leaves on which a black fungus grows, this affects photosynthesis, the food-making process of the plant, and so lowers the strength of the plant.
- Whiteflies **reduce the production yield** and also damage crops. Approximately 1.35 lakh hectares of coconut and oil palm in India are affected by the rugose spiralling whitefly.
- They are **currently being controlled by naturally occurring insect predators, parasitoids** (natural enemies of pests, provide biological control of pests in greenhouses and crop fields) and entomopathogenic fungi (fungi that can kill insects).
- Whiteflies have been **difficult to control by using available synthetic insecticides.**

MADHYA PRADESH'S MADHAV NATIONAL PARK

In News: Tigers will be reintroduced in the Madhav National Park (MNP) of Madhya Pradesh more than six decades after they were last seen there.

More on the Topic:

- To ensure wild animal's health and well-being, it is necessary to move them from one place to another at regular intervals to promote more genetic diversity.
- The tiger (Panthera tigris) is the **largest living cat species and a member of the genus Panthera.**
- It is most recognisable for its dark vertical stripes on orange fur with a white underside. An apex predator, it primarily preys on ungulates, such as deer and wild boar.
- Since the early 20th century, **tiger populations have lost at least 93% of their historic range** and have been extirpated from Western and Central Asia, the islands of Java and Bali, and in large areas of Southeast and South Asia and China.

- What remains of the range where tigers still roam free is fragmented, stretching in spots from Siberian temperate forests to subtropical and tropical forests on the Indian subcontinent, Indochina and a single Indonesian island, Sumatra.
- **The tiger is listed as Endangered** on the IUCN Red List.

INTEGRATED TIGER HABITAT CONSERVATION PROGRAMME

In News: German Development Cooperation provides an additional €12.5 million in funding for IUCN's Integrated Tiger Habitat Conservation Programme.

More on the Topic:

- Divided into different phases, the ITHCP contributes to the Global Tiger Recovery Programme endorsed in St Petersburg in 2010, which aims to double tiger numbers in the wild by 2022.
- The programme's brand-new Phase Four will fund projects that aim to protect tigers but also other Pantherine species, in particular leopards and clouded leopards, a first for the Tiger Programme.

About International Union for Conservation for Nature (IUCN)

- IUCN is an **international organization (Non-Governmental in nture)** working in the field of nature conservation and sustainable use of natural resources.
- It is involved in data gathering and analysis, research, field projects, advocacy, lobbying and education.
- The organization is best known for compiling and publishing the **IUCN Red List,** which assesses the conservation status of species worldwide.
- Its headquarters are in Gland, Switzerland.

GEOGRAPHY

KERCH STRAIT

In News: The road-and-rail bridge linking Russia and the Crimean peninsula named Kerch Strait was damaged in a powerful blast recently.

More on the Topic:

- The 19-km (12-mile) Crimea Bridge over **the Kerch Strait is the only direct link between the transport network of Russia and the Crimean peninsula,** which Moscow annexed from Ukraine in 2014.
- The bridge is **crucial for the supply of fuel, food and other products to Crimea,** where the port of Sevastopol is the historic home base of Russia's Black Sea Fleet.
- It also became a major supply route for Russian forces after Moscow invaded Ukraine on Feb. 24, sending forces from Crimea to seize most of southern Ukraine's Kherson region and some of the adjoining Zaporizhzhia province.

ARAVALLI

In News: The Haryana government plans to develop the 10,000-acre curated safari park in the Aravalli range and cover parts of Gurugram and Nuh districts.

More on the Topic:

- It would include **a large herpetarium** (a zoological exhibition space for reptiles and amphibians), aviary/bird park, four zones for big cats, a large area for herbivores, an area for exotic animal birds, an underwater world, nature trails, visitors, tourism zones, botanical gardens, biomes, equatorial, tropical, coastal, desert, etc,.

About Aravalli Range:

- The Aravallis of Northwestern India, one of the oldest fold mountains of the world, now form residual mountains with an elevation of 300m to 900m.
- Guru Shikhar Peak on Mount Abu is the highest peak in the Aravalli Range (1,722 m).
- It has been formed primarily of folded crust, when two convergent plates move towards each other by the process called orogenic movement.

- Aravalli stretch for a distance of about 720 km from Himmatnagar in Gujarat to Delhi, spanning Haryana, Rajasthan, Gujarat, and Delhi.

DIBANG HYDEL PROJECT

In News: The National Green Tribunal (NGT) has dismissed the case it took up suo motu on the grant of forest clearance for the 3000-MW Dibang hydel project without meeting the precondition of declaring a national park.

More on the Topic:

- Pegged at a capacity to yield 2,880 megawatts, the project is going to be India's largest hydropower venture.
- When completed, it would reach the elevation of a staggering 278 metres – also making it the world's tallest concrete gravity dam.

Associated News:

- Arunachal's Dibang Valley, home to the minuscule Idu Mishmi tribe, borders Tibet and China.
- The Idu Mishmis, who comprise about 1.3% of the state's population, were in the news last year when the Gujarat government invited some members of the tribe to participate in the annual Madhavpur Mela, linking the tribe to Lord Krishna's wife Rukmini.

SAPTA KOSI HIGH DAM PROJECT

In News: India and Nepal have agreed to take forward the Sapta Kosi high dam project through further studies.

More on the Topic:

- Sapta Kosi High Dam is a multipurpose project proposed to be constructed on the Saptakoshi River of Nepal.
- The ambitious multi-billion dollar project will provide irrigation, control floods and generate 3,000 MW of electricity. The Saptakoshi River has seven tributaries and is one of the biggest rivers in Nepal.

About India Nepal Water Cooperation:

- Water cooperation between Nepal and India have been agreements signed on **major rivers like Kosi, Gandaki, Karnali or Mahakali,** essentially for large hydroelectric and irrigation projects by building dams or barrages.
- No project except the Kosi barrage has been completed yet. Smaller rivers have also been ignored.
- India and Nepal have **traditionally disagreed over the interpretation of the Sugauli Treaty** signed in 1816 between the British East India Company and Nepal, which delimited the boundary along the **Maha Kali River in Nepal.**
- India and Nepal differ as to which stream constitutes the source of the river.
- The dispute between India and Nepal might seem minor but it gains strategic importance, because the disputed area lies near the Sino Indian border.

About Sapta Kosi:

- It is a **transboundary river which flows through China, Nepal and India.** It drains the northern slopes of the Himalayas in Tibet and the southern slopes in Nepal.
- From a major confluence of tributaries north of the Chatra Gorge onwards, **the Kosi River is also known as Saptakoshi for its seven upper tributaries.**
- These include **the Tamor River originating from the Kanchenjunga area** in the east and Arun River and Sun Kosi from Tibet.
- The Sun Koshi's tributaries from east to west are **Dudh Koshi, Bhote Koshi, Tamakoshi River, Likhu Khola and Indravati.**
- **The Saptakoshi crosses into northern Bihar, India** where it branches into distributaries before joining the Ganges near Kursela in Katihar district

TRIPLE DIP LA NINA AND ITS IMPACT ON INDIA'S MONSOON

In News: The Australian Bureau of Meteorology has confirmed the occurrence of La Niña phenomenon for the third consecutive year in the Pacific Ocean.

More on the Topic:

- El Nino and La Nina, which mean 'the boy' and 'the girl' in Spanish, are mutually opposite phenomena, during which **an abnormal warming or cooling of sea surface temperatures is observed in the Pacific Ocean along the equator,** off the coast of South America.
- Together they constitute what is known **as the El Niño-Southern Oscillation system, or ENSO for short.**
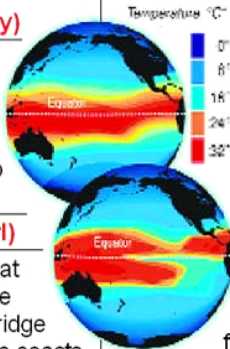
EL NINO AND LA NINA

Forecasters say EL Nino weather pattern may develop later this year

EL NINO (the boy)
An irregular event of warming of Pacific waters. Occurs at intervals of two to seven years

LA NINA (the girl)
A cold episode that usually follows the warm equatorial ridge cools between the coasts of South America and Oceania

Temperature °C

Effects on climate
The warm currents flowing towards the east displace the cooler currents to Oceania. Rainfall occurs over Central and eastern Pacific, and drought in Indonesia and Australia

Currents contribute to form a warm pool in Oceania, increase rainfall in Asia and Australia, lower the temperature on the American coasts and increase aridity

- ENSO conditions **can alter both temperatures and rainfall globally,** due to their strong interference on global atmospheric circulations.

- It is **a recurring phenomenon and the change in temperature** is accompanied by changes in the patterns of upper and lower level winds, sea level pressure, and tropical rainfall across the Pacific Basin.

How does La Nina impact India's monsoon?

- La Nina years are known to favour the Indian summer monsoon. This year, India has received 740.3 mm of rainfall, quantitatively 7% higher than the seasonal average till August 30.

- Among the 36 states and union territories, 30 have received rainfall that is categorised as either 'normal,' 'excess' or 'large excess.'

- The continuing La Niña is a good sign for the Indian monsoon.

Why have La Nina conditions continued for three years?

- Climate change could be a driving factor behind such uncommon conditions. El Niño has been associated with rising heatwaves and extreme temperatures, such as in parts of the US, Europe and China recently.

La Nina conditions and cyclone formation:

- Intense hurricanes and cyclones have frequently occurred **in the Atlantic Ocean and the Bay of Bengal during La Nina years.**

- Over the North Indian Ocean as well, the chances of an increased number of cyclones are due to multiple contributing factors, including high relative moisture and relatively low wind shear over the Bay of Bengal.

- The post-monsoon months, from October to December, are the most active months for cyclonic developments over the North Indian Ocean, with November as the peak for cyclonic activity.

INTERNATIONAL RELATIONS

CHINA PLUS ONE STRATEGY

In News: Globally more companies and countries are following China Plus Policy.
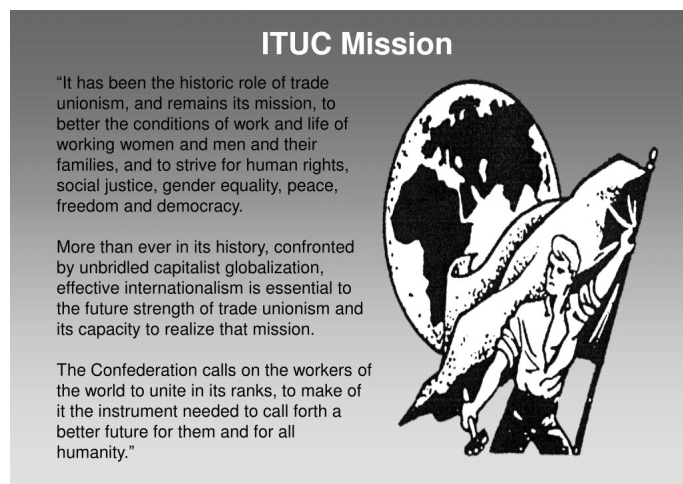

More on the Topic:

- Jeevan Pramaan is **a biometric-enabled digital service for pensioners.**

- Pensioners of Central Government, State Government or any other Government organization can take benefit of this facility.

- The scheme was launched on November 10, 2014.

- The beneficiaries of the scheme are over three crore retired employees of government and PSUs.

- **The identity of a person will be established through Face Authentication technique** and the Life Certificate can be submitted from any Android based smart phone.

- It reduced Pensioners' dependence on external bio-metric devices and has made the process more accessible and affordable.

INTERNATIONAL TRADE UNION CONFEDERATION (ITUC)

In News: The Bharatiya Mazdoor Sangh (BMS) is seeking affiliation with ITUC.

ITUC Mission

"It has been the historic role of trade unionism, and remains its mission, to better the conditions of work and life of working women and men and their families, and to strive for human rights, social justice, gender equality, peace, freedom and democracy.

More than ever in its history, confronted by unbridled capitalist globalization, effective internationalism is essential to the future strength of trade unionism and its capacity to realize that mission.

The Confederation calls on the workers of the world to unite in its ranks, to make of it the instrument needed to call forth a better future for them and for all humanity."

More on the Topic:

- ITUC is an international body of independent trade unions from 187 countries.

- The support of ITUC is crucial for any union to be elected to the workers' representatives in the governing body of the International Labour Organisation (ILO).

- The International Trade Union Confederation (ITUC) [a] is the world's largest trade union federation.

- It is headquartered at Brussels, Belgium.

COLLECTIVE SECURITY TREATY ORGANIZATION

In News: Kyrgyzstan has canceled the military drill of the Collective Security Treaty Organization (CSTO) recently.

Collective Security Treaty Organization (CSTO)

More on the Topic:

- The Collective Security Treaty Organization is a Russia-led intergovernmental military alliance of six post-Soviet states: Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, and Tajikistan.

- Similar to Article 5 of the North Atlantic Treaty and the Inter-American Treaty of Reciprocal Assistance, Article 4 of the Collective Security Treaty (CST) establishes that an aggression against one signatory would be perceived as an aggression against all.

- The CSTO charter reaffirmed the desire of all participating states to abstain from the use or threat of force. Signatories are prohibited from joining other military alliances.

JUST ENERGY TRANSITION PARTNERSHIP

In News: India has opposed the G7 nations' plan of persuading India to start negotiations on a Just Energy Transition Partnership (JETP).

More on the Topic:

- It is an initiative of the rich nations to accelerate phasing out of coal and reducing emissions.

- **The Power Ministry has refused to give its consent to the negotiations so far,** as it argues that **coal cannot be singled out as a polluting fuel, and energy transition talks need to take place on equal terms.**

- According to India's updated NDC, it stands committed to reduce the emission intensity of its GDP by 45% by 2030, from 2005 level and achieve about 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

INTERPOL RED NOTICE

In News: Interpol has sent back India's request to issue a Red Notice against Sikhs for Justice (SFJ) founder Gurpatwant Singh Pannun. Pannun has been declared as an 'individual terrorist' under the fourth schedule of India's Unlawful Activities Prevention Amendment Act.

More on the Topic:

- The International Criminal Police Organization, commonly known as Interpol, is an international organization that facilitates worldwide police cooperation and crime control.

- Interpol was founded on September 7, 1923, at the close of the five-day 1923 Congress session in Vienna as the International Criminal Police Commission (ICPC).

- Interpol provides investigative support, expertise, and training to law enforcement worldwide, focusing on three major areas of transnational crime: terrorism, cybercrime, and organized crime.

- **Red Notices (RN) or Red Corner Notice are issued for fugitives wanted either for prosecution or to serve a sentence.**

- An RN is a request to law enforcement worldwide to locate and provisionally arrest a person pending extradition, surrender, or similar legal action.

UN WORLD GEOSPATIAL INFORMATION CONGRESS

In News: Prime Minister Narendra Modi inaugurated the United Nations World Geospatial Congress (UNWGIC) 2022 in Hyderabad.

More on the Topic:

- The United Nations Global Geospatial Information Management (UN-GGIM) convened the conference on UNWGIC 2022 and was organised by the United Nations Department of Economic and Social Affairs.

- It was hosted by the ministry of science and technology of the government of India.

- The goal of this year's UNWGIC is to promote a broad dialogue on global geospatial information management with all relevant governments, non-governmental organisations, academia, and the private sector.

- The theme of UNWGIC 2022 is 'Geo-Enabling the Global Village: No one should be left behind', which focuses on building a community for human data and geography against the three pillars of sustainable development for a shared future and a better world, leaving no one behind within an inclusive and equitable global society.

Significance of Geospatial Technology and the congress:

- Geospatial technology can be used to create intelligent maps and models which help to collect geographically referenced data.

- Decisions based on the value and importance of resources, most of which are limited, can become easy through geospatial technology.

- The congress will provide high-quality and trustworthy geospatial data to support global and national policy agendas.

- It also stresses international cooperation and coordination in the development of human data linked to geography.

UN PEACE KEEPING FORCE

In News: U.N. Undersecretary General has said that the number of fatalities among United Nations Peacekeeping Forces (UNPKF) in direct attacks is growing.

More on the Topic:

- **Deteriorating political and security environments:** At many geo political front where UN Peace keeping force is engaged the political and security environment is in hostile condition.

- **Terrorist or criminal groups threat:** Peacekeeping environments now feature armed groups, terrorists, organised crime, street gangs, criminal and political exploitation, and other threats. Terrorism favours chaotic environment in areas like Africa. The efforts to establish peace and stability is vehemently threatened by terrorist or criminal groups.

- **Lack of Sufficient Resources:** Missions have sometimes lacked the personnel and equipment to meet these threats.

- **No exit strategy:** Overstretched deployment without a clear objective also increases fatalities.

- **Decision Making Issues:** Troop and police contributing countries not fully involved at all stages mission planning.

About UN Peace Keeping Force?

- The United Nations Peacekeeping Forces are employed by the World Organization to maintain or re-establish peace in an area of armed conflict

- The UN may engage in conflicts between states as well as in struggles within states.

- The first UN peacekeeping mission was established in May 1948. The UN Security Council authorized the deployment of a small number of UN military observers to the Middle East.

- Since its genesis, more than 1 million men and women have served under the UN flag in more than 70 UN peacekeeping operations.

- Also, more than 1,00,000 military, police and civilian personnel from 125 countries are currently serving in 14 peacekeeping operations.

India and UN Peacekeeping:

- India stands solidly committed to assist the UN in the maintenance of international peace and security with a proud history of UN peacekeeping dating back to its inception in the 1950s.

- India today is the largest contributor of troops to UN peacekeeping operations (UNPKOs).

- More than 200,000 Indian troops have served in 49 of the 71 UNPKOs deployed so far

- India is the second largest troop contributor [TCC] with 7,676 personnel deployed in 10 out of 16 active UN Peacekeeping Missions.

- In 2007, India became the first country to deploy an all-women contingent to a UN peacekeeping mission.

Way Ahead:

- Earlier, India has proposed a 10-point formula to address challenges faced by the mission, Some of the important suggestions:

- Missions should be given "clear and realistic mandates" that are matched with adequate resources. Missions should be "deployed prudently, with full recognition of their limitations.

- Coordination with host governments will help address misinformation and disinformation against peace-keepers and enhance their safety.

- More focus on technological improvements that are continuous and are available on the ground.

- Attention and investment in consistent training and capacity building of peacekeepers in the realm of technology.

- Those targeting UN peacekeepers should be made more accountable.

US-INDIA STRATEGIC CLEAN ENERGY PARTNERSHIP (SCEP)

In News: Progress of USISCEP was evaluated recently.

More on the Topic:

- SCEP was launched in line with U.S.-India Climate and Clean Energy Agenda 2030 Partnership that

was announced by Prime Minister Narendra Modi and President Joe Biden in April 2021 at the Leaders' Summit on Climate.

- It organizes inter-governmental engagement on the basis of five pillars of cooperation:
- Power and Energy Efficiency
- Responsible Oil and Gas
- Renewable Energy
- Sustainable Growth and
- Emerging Fuels.
- US-India Agenda 2030 Partnership:
- The aim is to create stronger bilateral cooperation on actions in the current decade to meet the goals of the Paris Agreement.
- The Partnership will proceed along two main tracks: The Strategic Clean Energy Partnership and the Climate Action and Finance Mobilization Dialogue.

THE AUKUS ALLIANCE

In News: China has withdrawn anti-AUKUS resolution at IAEA due to lack of support.

Five Eyes
Canada
New Zealand

Aukus | U.K. | Australia U.S.

Quad | India Japan
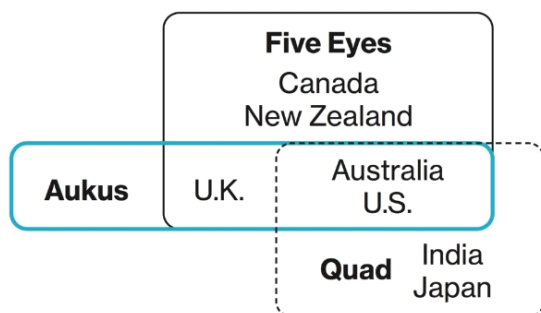
Aukus
Security pact announced Sept. 15 with initial goal of helping Australia acquire nuclear-powered submarines

The Quad
Informal alliance that began with joint relief and rescue efforts following 2004 Indian Ocean tsunami

More on the Topic:

- India worked closely with many IAEA member states to ensure that the draft resolution, which argued that the AUKUS initiative violated the responsibilities of Australia, the UK and the US under the Nuclear Non-Proliferation Treaty (NPT), did not get majority support.
- AUKUS is **a new three-way strategic defence alliance between Australia, the UK and US.**
- It aims to build **a class of nuclear-propelled submarines, work together in the Indo-Pacific region, where the rise of China is seen as an increasing threat,** and develop wider technologies.
- The alliance has largely been seen as a response by the three countries to the increasingly aggressive and assertive behaviour of China across the Indo-Pacific.

SCIENCE AND TECHNOLOGY

LAUNCH VEHICLE MARK-III

In News: The Indian Space Research Organisation (ISRO) has renamed the Geosynchronous Satellite Launch Vehicle (GSLV) Mark -III as Launch Vehicle Mark-III, mainly to identify its task of placing satellites into a variety of orbits.

More on the Topic:

- The Launch Vehicle Mark 3 (LVM3) is **ISRO's newest medium-heavy lift launch vehicle,** the heaviest rocket currently in use by the space agency.
- Formerly called the Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk III), the rocket is designed to **mainly launch satellites into geostationary orbit at 35,000km.**
- The LVM3 is capable of lifting much heavier satellites than the GSLV Mk II with a bigger cryogenic upper stage and a larger first stage.
- Both GSLV Mk II and LVM3 are **three-stage vehicles, while the PSLV, which launches to low earth polar orbits, is a four-stage vehicle.**
- The GSLV Mk-II **can place up to 2,500kg in geosynchronous orbits and up to 5,000kg to low earth orbit.**
- By comparison, **the LVM3 can lift 4,000kg to GTO and up to 8,000 kg to LEO.** Currently, America's **SpaceX's**

non-human rated Falcon Heavy, a super-heavy lift vehicle, is the heaviest rocket that is operational.

- The LVM3 also has the human-rated variant which will be used for Gaganyaan missions.

GREEN CRACKERS

In News: Based on Sc orders, only green firecrackers will be sold in the Delhi for Diwali.

More on the Topic:

- Two Green crackers are low-emission crackers, free of harmful chemicals such as sulphur, nitrates, arsenic, magnesium, sodium, lead, and barium, which reduce the emission of up to 30%.
- Emit noise in the range of 100-130 deciBels.

- Come with a green logo and Quick Response (QR) code to differentiate from conventional firecrackers.

What is the difference between green crackers and traditional crackers?

- Green crackers and traditional crackers cause pollution. People should refrain from using either.
- Only difference is that green crackers cause 30% less air pollution as compared to traditional ones.
- Green crackers reduce emissions substantially and absorb dust and don't contain hazardous elements like barium nitrate.
- Toxic metals in traditional crackers are replaced with less hazardous compounds.

COMPRESSED BIO GAS (CBG)

In News: Asia's largest Compressed Bio Gas (CBG) plant was opened at Lehragaga, Sangrur, Punjab.
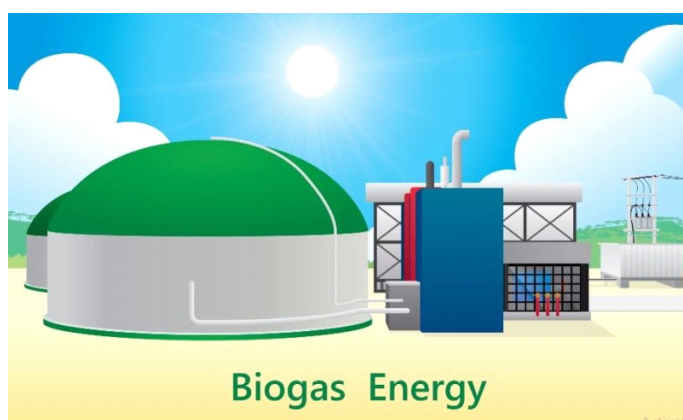
More on the Topic:

- CBG is the compressed and purified bio-gas produced from waste/bio-mass sources like agricultural residue, cattle dung etc.
- Upgraded or high-purity biogas compressed at 250 bar pressure results in a fuel called compressed biogas (CBG). This has properties similar to compressed natural gas (CNG) and could be directly used to power CNG engines.
- Biogas, a renewable fuel produced using the anaerobic digestion process from organic feed-stock, is primarily composed of methane (50-65%), carbon dioxide (30-40%), hydrogen Sulfide (1-2.5%) and a very small fraction of moisture.
- It was predominantly thought of as a rural economy product. With the advancement in research and the tremendous urge to shift to greener fuels, however, biogas came back into the picture to supplement the rising global energy demand.
- The removal of unwanted components like carbon dioxide, hydrogen sulphide and moisture from raw biogas yields pure methane (over 97% content).
- Some of the common methods to purify biogas include water scrubbing, membrane separation, pressure swing adsorption and adsorption.

Drawbacks:

- One major drawback of CBG **is its existence in the gaseous form, which demands bigger volumes for transportation.**
- Therefore, it is considered more suitable to power small-sized vehicles, though heavy engines have been used for short-distance driving.

Sustainable Alternative Towards Affordable Transportation (SATAT) scheme:

- The Indian government has been encouraging private businesses to set up CBG plants and provide CBG to oil marketing companies for sale as automotive and industrial fuels under the Sustainable Alternative Towards Affordable Transportation (SATAT) scheme launched in 2018.
- It has set **a goal to produce 15 million tonnes of CBG from 5,000 plants by 2023–24.**

ALUMINIUM FREIGHT TRAIN RAKE

**In News:** First indigenously manufactured aluminium freight train rake has been inducted into Railways.

More on the Topic:

- A rake in a train is a line of coupled passenger coaches, freight wagons, or railcars (excluding the locomotive) that typically move together. One rake can have around 40 to 58 wagons attached to it.A rake in a train is a line of coupled passenger coaches, freight wagons, or railcars (excluding the locomotive) that typically move together. One rake can have around 40 to 58 wagons attached to it.received the award at the International Association of Horticulture Producers (AIPH) 2022.
- Rakes were made up of Aluminium before.
- Aluminium rakes have the following advantages:
- It is more Lighter and aides in More speed, lower energy consumption and higher freight-carrying capacity
- It also causes lower CO2 footprint
- It is 100% age Recyclable.

RADIO CARBON DATING

In News: The technique of carbon dating has re-emerged at the centrestage in an ongoing controversy pertaining to the discovery of an alleged 'Shivling' within the premises of the Gyanvapi mosque in Varanasi.
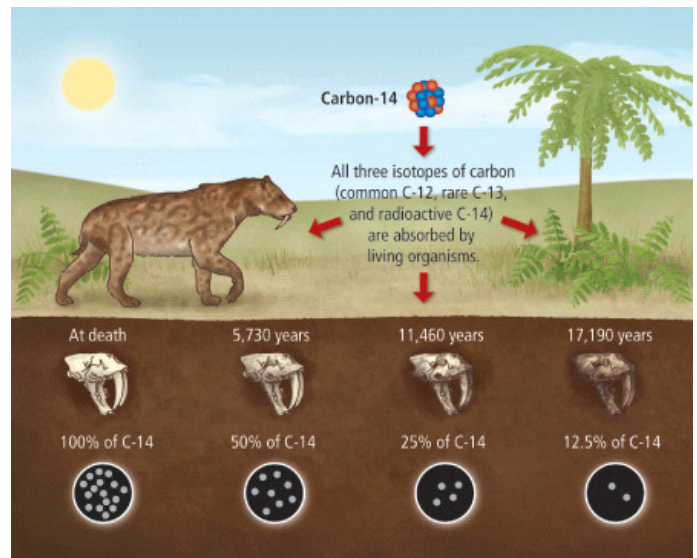
More on the Topic:

- Carbon dating, or radiocarbon dating is **simply a technique deployed by archaeologists to ascertain the age of organic objects up to 50,000 years old.**
- This method has helped historians to acquire knowledge about past civilizations, changes in the earth, and in the climate.
- The basis of radiocarbon dating is simple: **all living things absorb carbon from the atmosphere and food sources around them,** including a certain amount of natural, radioactive isotope of carbon referred to as carbon-14.
- Natural processes such as photosynthesis and respiration aid this absorption process.
- When the plant or animal dies, they stop absorbing, but the radioactive carbon that has been accumulated continues to decay at a steady pace.
- Measuring the amount left over gives an estimate as to how long something has been dead, a study published in the journal Nature has revealed.

NEXT-GEN LAUNCH VEHICLE

In News: The Indian Space Research Organisation (ISRO) is developing a Next-Gen Launch Vehicle (NGLV), which will one day replace operational systems like the Polar Satellite Launch Vehicle (PSLV).
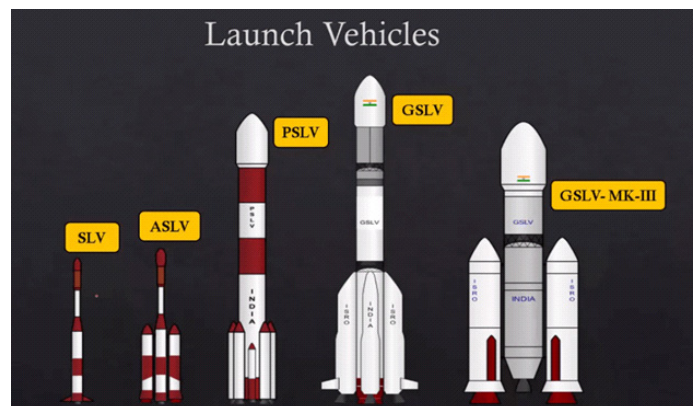
More on the Topic:

- NGLV will be a **cost-efficient, three-stage to orbit, reusable heavy-lift vehicle with a payload capability of ten tonnes to Geostationary Transfer Orbit (GTO).**

- NGLV will feature **semi-cryogenic propulsion** (refined kerosene as fuel with liquid oxygen (LOX) as oxidiser) for the booster stages which is cheaper and efficient.
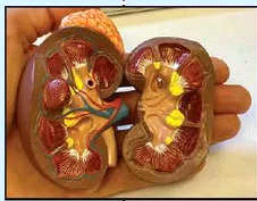
PSLV:

- The Polar Satellite Launch Vehicle (PSLV) is **an expendable medium-lift launch vehicle designed and operated by the Indian Space Research Organisation (ISRO).**

- It was developed **to allow India to launch its Indian Remote Sensing (IRS) satellites into sun-synchronous orbits,** a service that was, until the advent of the PSLV in 1993, was commercially available only from Russia.

- PSLV can also launch **small size satellites into** Geostationary Transfer Orbit (GTO).

- Some notable payloads launched by PSLV include India's first lunar probe Chandrayaan-1, India's first interplanetary mission, Mars Orbiter Mission (Mangalyaan) and India's first space observatory, Astrosat.

- The PSLV has four stages using solid and liquid propulsion systems alternately.

ABO INCOMPATIBLE TRANSPLANTS

In News: Manipal Hospital, Yeshwanthpur, became the first hospital to complete 27 ABO-incompatible kidney transplants in Karnataka.

TACKLING INCOMPATIBILITY

➤ In ABO-incompatible kidney transplant, the kidney of a donor can be transplanted to recipient regardless of blood type, which otherwise can't be done due to immune response

➤ Antibodies present in blood attack transplanted kidneys if the blood types of donor and recipient are different

➤ In ABO-incompatible transplant, antibodies

are removed through plasmapheresis. Drugs are given to suppress immune response

➤ Normal live donor kidney transplant costs ₹2.5-3 lakh in RMLIMS. ABO-incompatible will cost ₹**5-6 lakh**

➤ Hospital stay in a normal kidney transplant is 14-16 days, while it is about a month in ABO

More on the Topic:

- ABO-incompatible transplant is done when blood types of the receiver and donor are different, and therefore, incompatible.

- Such a transplant becomes very complex. **However, medical advancements over the years have made it possible to conduct such surgeries with success.**

- If there is a mismatch in the blood of donor and recipient, antibodies in recipient's body reject transplanted organs.

- In ABO-incompatible transplant, these antibodies are removed through plasmapheresis.

- Plasmapheresis is a method of **removing blood plasma from the body by withdrawing blood, separating it into plasma and cells, and transfusing the cells back into the bloodstream.** It is performed usually to remove antibodies in treating autoimmune conditions.

- The patient is given adequate medication pre and post the transplant to reduce the level of antibodies in the blood, which decreases chances of rejection of the organ.

CONVERGENT EVOLUTION

In News: More than 300 sub-variants of omicron highlight the phenomenon called convergent evolution.

All of these animals have a streamlined body shape, adapted for life underwater.

Shad (fish)   Dolphin (mammal)
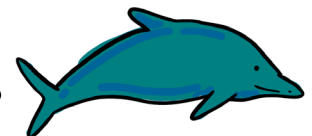
Ichthyosaur (reptile)   Puffin (bird)
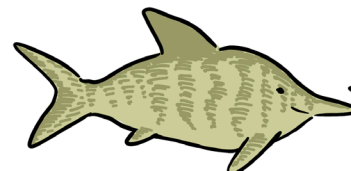
More on the Topic:

- Convergent evolution is the independent evolution of similar features in species of different periods or epochs in time.

- Convergent evolution creates analogous structures that have similar form or function but were not present in the last common ancestor of those groups. The cladistic term for the same phenomenon is homoplasy. The cladistic term for the same phenomenon is homoplasy. The recurrent evolution of flight is a classic example, as flying insects, birds, pterosaurs, and bats have independently evolved the useful capacity of flight.

UNIFORM TESTING STANDARDS FOR ELECTRIC VEHICLES

In News: To set uniform safety standards, testing of electric vehicles will begun from April 1st.

Safety considerations for electric vehicles

Compartments in electric vehicles
• Battery safety
• Protection from power outages
• Safety connector

More on the Topic:

- This comes amid concerns over multiple instances of fires in electric two-wheelers and four-wheelers in recent months.

- Currently, there are no centralised testing facilities for EVs in India and manufacturers have their own benchmarks.

- Recently the Bureau of Indian Standards issued performance norms for lithium-ion battery packs and traction systems in line with broader ISO norms.

- Also, Ministry of Road Transport and Highways released additional safety requirements for EV batteries under Central Motor Vehicles Rules of 1989 based on expert committee recommendations.

What will be included in the testing Standards?

- Pune-based **Automotive Research Association of India will set up the requisite infrastructure** for testing, certification, and development of electric and hybrid vehicles.

- The proposed testing infrastructure at ARAI is likely to cover **battery cells, battery management systems, on-board chargers, battery pack designs and screen for thermal propagation linked to internal cell short circuits** that could potentially lead to fires in EVs.
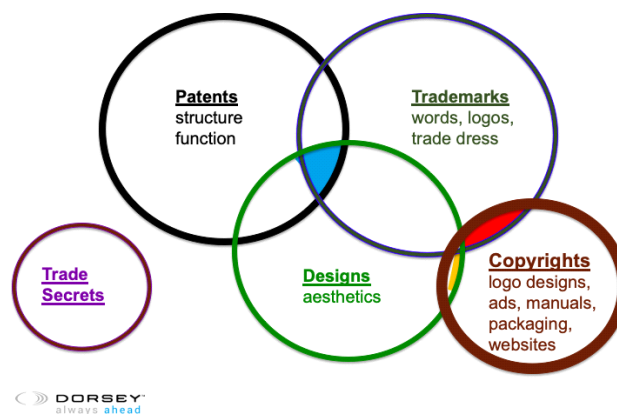
About Electric Vehicles:

- An electric vehicle (EV) operates on an electric motor, instead of an internal-combustion engine that generates power by burning a mix of fuel and gases.

- Though the concept of electric vehicles has been around for a long time, it has drawn a considerable amount of interest in the past decade amid a rising carbon footprint and other environmental impacts of fuel-based vehicles.

- Usually, it uses Lithium-ion batteries. Nickel-Metal Hydride and Solid State are other main battery types.

NATIONAL INTELLECTUAL PROPERTY CONFERENCE 2022

In News: National Intellectual Property Conference 2022 on 'Strengthening IP Ecosystem for catalysing the growth of Knowledge Economy' in New Delhi has been started recently.

Intellectual Property Arsenal

Patents structure function

Trademarks words, logos, trade dress

Trade Secrets

Designs aesthetics

Copyrights logo designs, ads, manuals, packaging, websites

DORSEY always ahead

More on the Topic:

- Intellectual property right (IPR) is the right given to persons over the creations of their minds: inventions, literary and artistic works, and symbols, names and images used in commerce.

- They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.

- These rights include patents, trademarks and geographical indications (GIs).

- The conference was organised by the department for promotion of industry and internal trade (DPIIT).

Essential things to know regarding IPR in India:

- **India is a member of the World Trade Organization.** It is committed to the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS Agreement). India is also a member of the World Intellectual Property Organization (WIPO).

- WIPO is responsible for the promotion of the protection of intellectual property rights throughout the world.

Some other important treaties or convention that India is a part of:

- **Budapest Treaty** on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure

- **Paris Convention** for the Protection of Industrial Property

- **Berne Convention** for the Protection of Literary and Artistic Works

About the national IPR policy:

- Department of Industrial Policy & Promotion (DIPP), Ministry of Commerce, Government of India, has been appointed as the nodal department to coordinate, guide and oversee the implementation and future development of IPRs in India.

- The '**Cell for IPR Promotion & Management (CIPAM)', under the aegis of DIPP,** is entrusted for the implementation of the objectives of the National IPR Policy.

- IPR regime of India is in compliance with the WTO's agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

ETHYLENE GLYCOL AND DIETHYLENE GLYCOL

In News: After the death of 66 children in Gambia, the World Health Organization (WHO) has urged the people to not use four India-manufactured fever, cough and cold syrups.
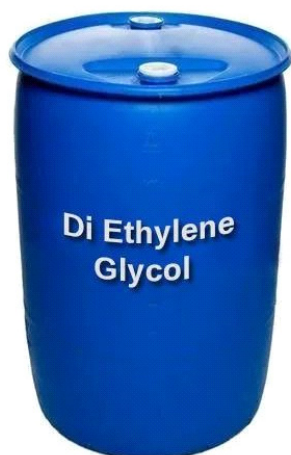
More on the Topic:

- These four products contain **unacceptable amounts of diethylene glycol and ethylene glycol as contaminants in them**.
- These chemicals can cause toxic effects, including abdominal pain, vomiting, diarrhoea, inability to pass urine, headache, altered mental state, and acute kidney injury that may lead to death.
- Currently, the Central Drugs Standard Control Organization (CDSCO) is investigating this case.
- If contaminants are found in the imported drugs, proportionate action will be taken against the company, which may include suspension of the licence to export the drug.

Diethylene glycol (DEG) and Ethylene glycol:

- Diethylene glycol (DEG) and Ethylene glycol **both are sweet-tasting, colourless, odourless liquid commonly used in the commercial preparation of antifreeze,**
- Ethylene glycol is **used in the production of polyester fibres, paints and polyethene terephthalate (PET)**
- DEG because of its hygroscopic property, is used in brake fluid, cigarettes, treatment of paper and some dyes.

GOOGLE FOR STARTUPS ACCELERATOR

**In News:** Google announced the first Google for Startups Accelerator recently.

More on the Topic:

- The program is part of **a larger effort by Google towards improving the representation of women across different sections of India's digitally-trained workforce** — be it entrepreneurship, professionals looking to upskill or young graduates seeking a head start on their career.
- It is designed **specifically for women-founded start-ups.**
- It will **improve women representation across different sections of India's digitally-trained workforce**.
- Focus on subjects like access to networks and capital, hiring challenges, mentorship and many others.
- Some selected start-ups include Aspire for Her, Elda Health, Jumping Minds, MeMeraki, OPOD Audio and PickMyWork, among others.

NOBEL PRIZE IN LITERATURE

In News: The Nobel Prize in Literature for 2022 is awarded to the French author Annie Ernaux "for the courage and clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory".
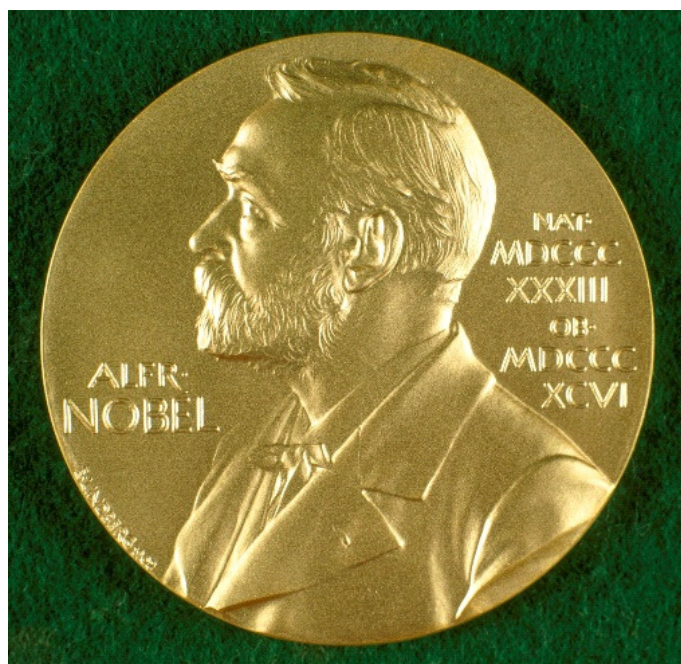
More on the Topic:

- Her work "The Years" was shortlisted for the Man Booker International prize.
- Her other major work includes "A Women's Story", "Happening", "A Girl's Story", "Getting Lost".

CHEMISTRY NOBEL PRIZE

In News: This year's Nobel Prize in Chemistry has gone to three scientists who, through their work, have made a strong case for adopting an alternative approach to producing new complex molecules in the laboratory or industry, which minimizes waste and increases overall efficiency.

THE NOBEL PRIZE
IN CHEMISTRY 2022

Carolyn R. Bertozzi   Morten Meldal   K. Barry Sharpless

"for the development of click chemistry
and bioorthogonal chemistry"

THE ROYAL SWEDISH ACADEMY OF SCIENCES
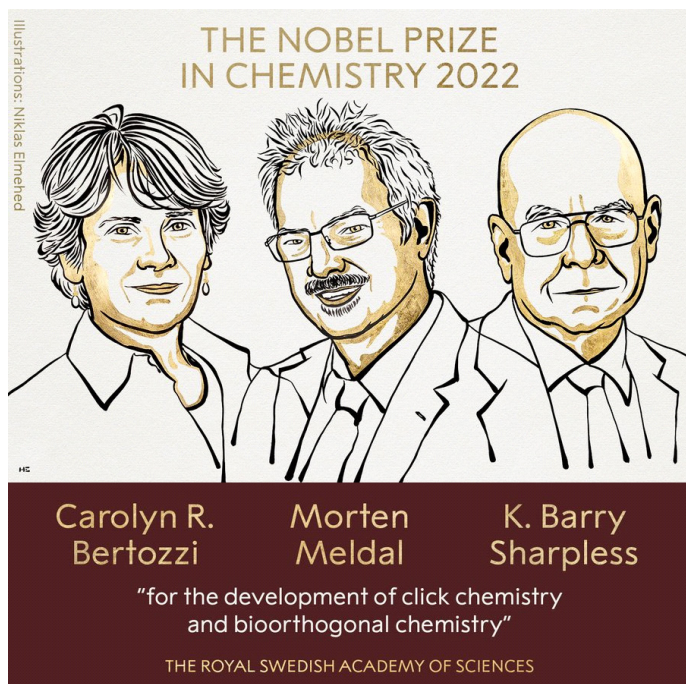
More on the Topic:

- Carolyn Bertozzi and Barry Sharpless of the United States and Morten Meldal of Denmark have been given the Prize for developing the relatively recent field of 'Click Chemistry' and demonstrating its vast potential in the pharmaceutical and other industries.

- Sharpless came up with the term 'Click Chemistry' and worked extensively on it.

- Meldal came up with a special chemical structure called 'Triazole' which has many significant applications, and Bertozzi took the next step of developing click reactions that could work inside living organisms — 'bioorthogonal' reactions take place living systems without interfering with native biochemical processes.

About Click Chemistry:

- The name has instead been **taken from the click sound that airline seat belts make when they are fastened.**

- The idea is that while trying to produce any particular compound or a complex molecule, one must look for starting molecules that easily react with each other.

- In other words, look **for molecules that easily fit into each other, or 'click' with each other**. It makes the resultant chemical reaction more efficient.

- The reacting molecules should be in a **made-for-each-other kind of situation** for this particular reaction, so that the reaction was irreversible and 100% efficiency was achieved.

Applications of Click Chemistry:

- The pharmaceutical industry uses a lot of naturally occurring but industrially synthesised molecules.

- Every kilogram of a drug produced results in the generation of nearly 25-100 kg of chemical waste. This can be reduced by click chemistry.

- For instance, Sharpless discovered that the use of copper as a catalyst eliminated all the by-products to produce a nitrogen-containing cyclic compound and ensured only the desired chemical was produced.

- **Click Chemistry could work in the chemical processes happening in the living cells as well.** This has shown the promise of treating advanced cancer.

- Cancer drugs based on this approach are now undergoing clinical trials.

VERY SHORT RANGE AIR DEFENCE SYSTEM (VSHORADS) MISSILE

In News: Defence Research and Development Organisation (DRDO) has successfully flight tested the Very Short-Range Air Defense System (VSHORADS) missile.

More on the Topic:

- A group of MANPAD & anti-aircraft weapons and techniques called Very Short Range Air Defence System (VSHORADS) missiles are used to defend against low-altitude air threats, notably helicopters and low-flying aircraft.

- It is a Man Portable Air Defence System (MANPAD) designed and developed indigenously by DRDO's Research Centre Imarat (RCI), Hyderabad in collaboration with other DRDO laboratories and Indian Industry Partners.

- The last line of defence for soldiers against hostile combat helicopters and aircraft is VSHORADS.

- Medium to Low Air Defense divides the battlespace into domes of responsibility for air defence based on altitude and defensive weapon ranges.

INTERNATIONAL MOBILE EQUIPMENT IDENTITY (IMEI)

In News: The Department of Telecommunications (DoT) has made it mandatory for mobile phone manufacturers to register the International Mobile Equipment Identity (IMEI) of all handsets made in India with the government.

International Mobile Equipment Identity (IMEI)

- Mobile station equipment identity
- Purpose of the IMEI is to prevent the theft of mobile stations.
- Burned into the Mobile phone

More on the Topic:

- Importers, too, will have to register with the government the IMEI number of each phone before importing it.

- The IMEI is **a unique number that is used to identify a device** on a mobile network. It has **15 digits and is like a phone's unique identity.**

- The number is used to verify the identity of a device when a user uses the Internet or places a call through it.

- Phones with **a dual-SIM option have two IMEI numbers,** one for each SIM. The IMEI number can help network providers track down a device in case it gets stolen or is lost.

- Once such loss or theft is reported, the carriers can deny the device access to the cellular network even with a new SIM card.

5G TECHNOLOGY

In News: The Prime Minister Narendra Modi has launched 5G services recently.

Where 5G technology can be applied

Healthcare
- Reduce pharmaceutical R&D costs
- Video/3D video appointments for non-life-threatening ailments
- Development of robotics in surgery
- More efficient health and fitness monitors

Smart cities and homes
- 3D video calls and holograms
- Innovative augmented and virtual reality applications
- Improved public safety with more efficient trackers
- Remote device control

Transport
Connected vehicles which allow data collection from traffic signals and road-side sensors will lead to
- Reduced congestion
- Intelligent fleet and logistics management
Autonomous cars with little or no help from humans can
- Improve road safety
- Increase mobility

More on the Topic:

- The launch of 5G services follows years of intense preparation. Recently, 5G spectrum auctions were conducted successfully and 51,236 MHz was allocated to telecom service providers with a gross revenue of 1,50,173 crore.

- It is expected that 5G services will be available across the country over the next couple of years.

About 5G Technology:

- The fifth-generation mobile network is popularly known as 5G.

- The 5G network will operate in the **millimetre-wave spectrum (30-300 GHz)** which can send large amounts of data at very high speeds as the frequency is very high, and it experiences little interference from surrounding signals.

- 5G is the latest upgrade in **the long-term evolution (LTE) mobile broadband networks.**

- In the high-band spectrum of 5G, **internet speeds have been tested to be as high as 20 Gbps (gigabits per second).**

Significance of 5G:

- 5G has the potential to create a **cumulative economic impact of $1 trillion in India by 2035,** according to a report by a government-appointed panel.

- 5G is would form the backbone of emerging technologies such as **the Internet of Things (IoT) and machine to machine communications.**

- It is expected to be supporting a much larger range of applications and services, including driverless vehicles, tele-surgery and real time data analytics.

- One of the primary applications of 5G will be **implementation of sensor-embedded network that will allow real time relay of information across fields** such as manufacturing, consumer durables and agriculture.

- 5G can also help make **transport infrastructure more efficient** by making it smart.

Challenges for 5G Rollout in India:

- There is a need **to upgrade fibre connectivity across India,** which at present connects only 30% of India's telecom towers. It should be at least double.

- The **ban on certain foreign telecom OEMs** (original equipment manufacturer) upon which most of the 5G technology development depends, presents a hurdle in itself.

- In India, the telecom sector is **facing capital augmentation issues** which need to be resolved. Non-availability of funds for investment: Many of the Indian operators are also weighed down by debt.

Way Ahead:

- There is need to **bridge rural urban divide** in the telecom technologies including 5G.

- The country needs to encourage and boost its local 5G hardware manufacturing at an unprecedented rate if it needs to realise the 5G India dream.

- Appropriate test-beds and technology platforms needed to enable and help Indian technical ecosystem to have an edge in 5G.

PINAKA MULTI-BARREL ROCKET LAUNCHER (MBRL) SYSTEM

In News: Armenia has placed the first export order of Pinaka Multi-Barrel Rocket Launcher (MBRL) System from India.
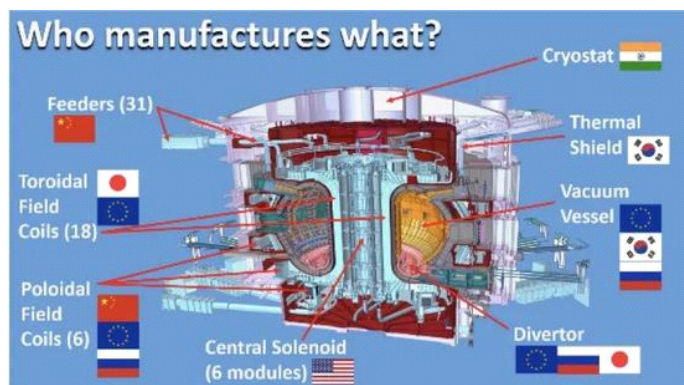
More on the Topic:

- It is a mobile rocket launching system (mounted on a Tatra truck) with maximum range varying from around 40 km (Pinaka Mk-1) to 75 km (Pinaka-ER or Extended Range).

- The Pinaka multi-barrel rocket launcher (MBRL) is an important indigenous project aimed at providing the army with firepower superiority that would reduce casualties to soldiers in war.

- Pinaka MBRL can launch 12 high explosive rockets in 44 seconds.

INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR

In News: India has supplied four km of cryolines, capable of operating at temperatures ranging from minus 269 degrees Celsius to minus 193 degrees Celsius, for the ITER nuclear fusion project taking shape in France.

More on the Topic:

- ITER International Thermonuclear Experimental Reactor is **an international nuclear fusion research an engineering megaproject** aimed at creating energy by replicating the fusion processes of the Sun.

- Upon completion of construction of the main reactor and first plasma, planned for late 2025, it will be the **world's largest magnetic confinement plasma physics experiment and the largest experimental tokamak nuclear fusion reactor.**

- It is being built next to the Cadarache facility in southern France.

- ITER will be **the largest of more than 100 fusion reactors** built since the 1950s, with ten times the plasma volume of any other tokamak operating today.

**ITER is funded and run by seven member parties:**

- China, the European Union, India, Japan, Russia, South Korea and the United States.

- Institute for Plasma Research (IPR), an aided institute of Department of Atomic Energy, is India's collaborating agency.

Nuclear Fusion Reaction:

- Nuclear Fusion reactions power the Sun and other stars.

- In a fusion reaction, **two light nuclei merge to form a single heavier nucleus.**

- The process releases energy because **the total mass of the resulting single nucleus is less than the mass of the two original nuclei.** The leftover mass becomes energy.

- Advantages of fusion reactors are that they release abundant energy without source of fuels which are nearly inexhaustible. **It also don't emit harmful gases like CO_2 etc.**

KAMIKAZE DRONES

In News: Russia is escalating its use of Iranian-supplied "kamikaze" drones in southern Ukraine.
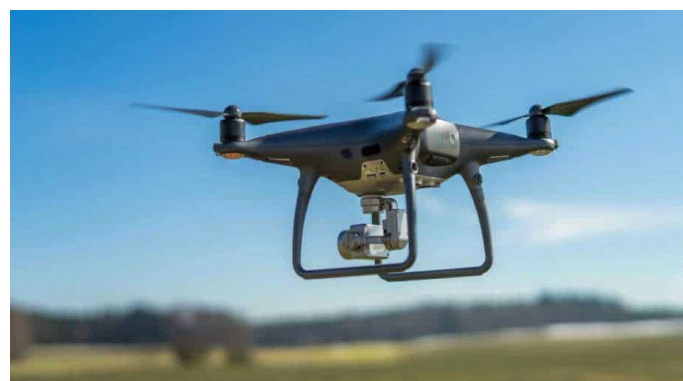
More on the Topic:

- Kamikaze Drones are small unmanned aircraft that are packed with explosives that can be flown directly at a tank or a group of troops that are destroyed when it hits the target and explodes.

- Able to remain airborne for several hours and circle over potential targets, the drones are designed to be flown into enemy troops, armour or buildings, exploding on impact.

NAVIC NAVIGATION SYSTEM

In News: The Indian government is pushing smartphone makers to enable support for its NavIC navigation system in new devices sold in the country from next year.

More on the Topic:

- NavIC, or Navigation with Indian Constellation, is an independent stand-alone navigation satellite system developed by the Indian Space Research Organisation (ISRO).

- **NavIC consists of eight satellites and covers the whole of India's landmass** and up to 1,500 km (930 miles) from its boundaries.

- Currently, NavIC's use is limited. It is being used in public vehicle tracking in India, for providing emergency warning alerts to fishermen venturing into the deep sea where there is no terrestrial network connectivity, and for tracking and providing information related to natural disasters.

- Enabling it in smartphones is the next step India is pushing for.

NavIC and GPS comparison:

- The main difference is the serviceable area covered by these systems. **GPS caters to users across the globe and its satellites circle the earth twice a day, while NavIC is currently for use in India and adjacent areas.**

- Like GPS, there are three more navigation systems that have global coverage – Galileo from the European Union, Russia-owned GLONASS and China's Beidou. QZSS, operated by Japan, is another regional navigation system covering Asia-Oceania region, with a focus on Japan.

- India's 2021 satellite navigation draft policy stated the government will work towards "expanding the coverage from regional to global" to ensure availability of NavIC signal in any part of the world.

Why is India promoting NavIC?

- NavIC is conceived with the aim of **removing dependence on foreign satellite systems for navigation service requirements, particularly for "strategic sectors."**

- Relying on systems like GPS and GLONASS may not always be reliable, as those are operated by the defence agencies of respective nations and it is possible that civilian services can be degraded or denied.

- NavIC is an indigenous positioning system that is under Indian control. There is no risk of the service being withdrawn or denied in a given situation.

- India also **wants to encourage its ministries to use NavIC applications to promote local industry engaged in developing indigenous NavIC-based solutions.**

INDIAN SOCIETY / SOCIAL ISSUES / SOCIAL JUSTICE

NATIONAL CURRICULUM FRAMEWORK FOR FOUNDATIONAL STAGE

In News: Union Minister for Education and Skill Development launched the National Curriculum Framework for Foundational Stage.

5 layers of Panchakosha

Annamaya Kosha	01	Focusses on the physical development of the child
Provides the vital energy required for smooth functioning for the various systems of the body	02	Pranamaya Kosha
Manomaya Kosha	03	Addresses the feeling realm and fosters the understanding of relationships
Facilitates the development of the intellect, decision making and ability to discriminate	04	Vigyanamaya Kosha
Anandmaya Kosha	05	Connects us to the spiritual realm

Follow @vrma_vedicroots for more info about Vedic education during modern times

More on the Topic:

- Foundational, Preparatory, Middle & Secondary are the four stages of NCF for school education.

- Developing the foundational framework was one of the most important and challenging aspect under NEP 2020, as it has a huge bearing on shaping the future of our country.

- National Curriculum Framework for Foundational Stage, uses 'play,' at the core of the conceptual, operational, and transactional approaches to curriculum organization, pedagogy, time and content organization, and the overall experience of the child.

- National Curriculum Framework will provide stimulating experiences for the child's **development in all dimensions – cognitive, social-emotional, physical,** and will also enable the achievement of Foundational Literacy and Numeracy for all our children.

Important Highlights:

- For ages three to six, **there should not be any prescribed textbooks** for the children, and activity books can guide teachers to sequence activities and learning experiences.

- **Learning through Play, toy based learning, avoiding stereotypes, gender representation in textbooks, ethical and moral awareness.**

- Children exposed to age-appropriate, physical, educational, and social activities through play-based methods learn better and grow better.

- **The primary medium of instruction would optimally be the child's home language/mother tongue/**

familiar language.

- Curriculum must reflect the cultural and social context in which the child is growing.

- Empowering teachers in terms of training, infrastructure and other facilities. The framework has listed the **'panchakosha' concept for children's education.**

SIGNIFICANCE OF HUMAN RIGHTS

In News: Addressing the 30th Foundation Day celebration of the National Human Rights Commission, the Vice President appreciated NHRC for being guardian of the human rights of underprivileged and vulnerable sections of society.

More on the Topic:

- Human rights are rights we have simply because we exist as human beings - they are not granted by any state. These universal rights are inherent to us all, regardless of nationality, sex, national or ethnic origin, color, religion, language, or any other status.

- They range from the most fundamental - the right to life - to those that make life worth living, such as the rights to food, education, work, health, and liberty.

Universal Declaration of Human Rights (UDHR):

- The Universal Declaration of Human Rights (UDHR), adopted by the UN General Assembly in 1948, was the first legal document to set out the fundamental human rights to be universally protected.

- The UDHR, which turned 70 in 2018, continues to be the foundation of all international human rights law.

- Its 30 articles provide the principles and building blocks of current and future human rights conventions, treaties and other legal instruments.

National Human Rights Commission of India (NHRC):

- The National Human Rights Commission (NHRC) of India is a statutory public body constituted on 12 October 1993 under the Protection of Human Rights Ordinance of 28 September 1993.

- It was given a statutory basis by the Protection of Human Rights Act, 1993 (PHRA).

- The chairperson is retired chief justice of India or a judge of the Supreme Court.

- They are appointed by the President on the recommendations of a six-member committee consisting of:Prime Minister (head), Speaker of the Lok Sabha, Deputy Chairman of the Rajya Sabha,

Leaders of the Opposition in both the Houses of Parliament and Union Home Minister.

MANIPUR GOVERNMENT POLICY ON POPULATION

In News: Manipur has followed Assam in restricting the number of children for a family to be eligible for government jobs or beneficiary schemes.

More on the Topic:

- Several other states such as Rajasthan, Madhya Pradesh, Gujarat etc have similar laws aimed at controlling population.

- According to the 2022 edition of the United Nations' World Population Prospects (WPP), India is projected to surpass China as the world's most populous country in 2023. India is currently at a stage of demographic transition with a substantial percentage of the youth population.

Arguments Favouring Population Control:

- More people means an **increased demand for food, water, housing, energy, healthcare, transportation, and more.**

- And all that consumption contributes **to ecological degradation, increased conflicts, and a higher risk of large-scale disasters like pandemics.**

- Unfortunately, the "average person" at any part of on Earth consumes at a rate over 50% above a sustainable level.

Arguments Against Population Control:

- India is a country with a booming technology industry, one that relies on young people.

- There is a fear that **restrictions on having children will produce a shortage of the educated young people needed to carry on India's technological revolution.**

- Most importantly, there is increasing evidence that India's birth rate is slowing down to sustainable levels.

- In 2000, the fertility rate was still a relatively high 3.3 children per woman. **By 2016, that number had already fallen to 3 children.**

- Furthermore, **India's economy was growing 6% per year in the years leading up to 2019, more than enough to support modest population growth.**

- **Desire for male** children could lead to unsafe abortions and female feticide. Penalising vulnerable section because of their inability to afford contraceptives or abortion

EQUALITY IN RIGHT TO HAVE SAFE ABORTION

In News: Supreme Court has ruled that Even single, unmarried women have the right to safe and legal abortion.

More on the Topic:

- In a significant ruling on reproductive rights, the Supreme Court extended the right to safe and legal abortion up to 24 weeks of pregnancy to unmarried and single women, saying it is the **"right of every woman to make reproductive choices without undue interference from the State".**
- Now, all women in the country, regardless of marital status, can undergo an abortion up to 24 weeks into pregnancy.

Associated Articles of the Constitution:

- Prohibiting unmarried or single women with pregnancies between 20 and 24 weeks from accessing safe and legal abortion care is violative of her:
- Rights of reproductive autonomy, dignity and privacy **(Article 21),** and Right to equality before law and equal protection **(Article 14).**

Article 21 and Right to safe Abortion:

- Article 21 of the Constitution recognises and protects the right of a woman to undergo termination of pregnancy if her mental or physical health is at stake.
- Importantly, it is the woman alone who has the right over her body and is the ultimate decision-maker on the question of whether she wants to undergo an abortion.
- Depriving women of autonomy not only over their bodies but also over their lives would be an affront to their dignity.
- The bench also said that the meaning of rape must include marital rape for the purpose of the MTP Act.

REPORTS AND INDICES

MULTIDIMENSIONAL POVERTY INDEX

In News: Global Multidimensional Poverty Index (MPI) 2022 was released by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).
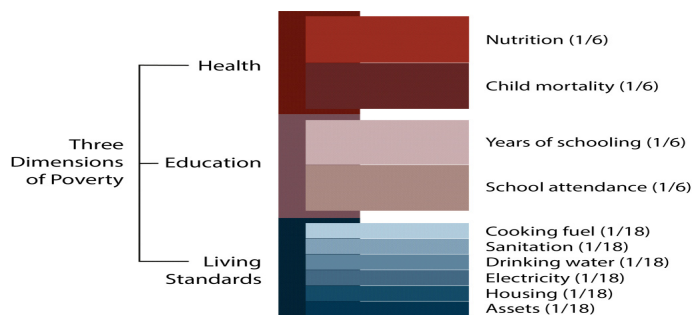
More on the Topic:

- Across 111 countries which were assessed using the most recent comparable data available, **1.2 billion people (19.1 %) live in acute poverty**
- Almost half of these people (593 million) **are children under the age of 18 years.**
- The developing region with the **largest number of poor people is Sub-Saharan Africa (nearly 579 million),** followed by South Asia (385 million).
- The population groups which were impacted by poverty higher saw a more rapid fall in the MPI score. Children from the age group of 0 to 17 years, saw the fastest reduction in their MPI scores.

India Specific Findings:

- **India still has the world's highest number of poor at 228.9 million,** followed by Nigeria (96.7 million projected in 2020).
- India is the only country in South Asia where **female-headed households are poorer than male-headed households.**
- Bihar continues to be the poorest state in the country. Others among the top 10 poorest states were Jharkhand, Meghalaya, Madhya Pradesh, Uttar Pradesh, Assam, Odisha, Chhattisgarh, Arunachal Pradesh and Rajasthan.
- West Bengal was the only state among the top-10 poorest in India in 2015-16, and not in 2019-21.
- The poor in India remain vulnerable amid rising food and fuel prices.

India Specific Findings:

- The report indicated India's performance in lifting the poor out of poverty. **In the last 15 years, it lifted over 41.5 crore people out of poverty.** About Multi Dimensional Poverty Index:

About Multi Dimensional Poverty Index:

- The report indicated India's performance in lifting the poor out of poverty. **In the last 15 years, it lifted over 41.5 crore people out of poverty.**

- The Multidimensional Poverty Index **looks at poverty in a holistic manner, rather than as a simple outcome of income levels**. The MPI thus measures a person's deprivations across 10 indicators in three dimensions — health, education, and standard of living. All the sections are equally weighted.

HUNGER HOTSPOTS REPORT

In News: The Food and Agriculture Organization (FAO) and the World Food Programme (WFP) released a report named Hunger Hotspots.

More on the Topic:

- **Major Hunger Hotspots:** Ethiopia, Madagascar, South Sudan, northern Nigeria and Yemen are among 23 countries where acute food insecurity worsen from 2021.

Factors Causing Food Insecurity:

- **Poverty:** The percentage of people living below the poverty line is extremely high. There won't be enough resources to spend on food and nutrition.

- **Inadequate food distribution:** The balance between surplus and deficient food distribution has been varied in urban and rural areas as well as different states, regions etc.

- **Inadequate storage facilities:** Inadequate and improper storage facilities for grains, which are often stored outside under tarps that provide little protection from humidity and pests

- **Climatic Change:** Farming and agricultural activities have been severely affected by negative externalities of climatic change. Some regions face floods while some experience drought. Similar changes have severely affected livestock, forestry, fisheries and aquaculture.

India's initiatives in Ensuring Food Security:

- **National Food Security Mission:** It is a Centrally Sponsored Scheme that was established in 2007. It aims to increase rice, wheat, pulses, coarse cereals, and commercial crop production through area expansion and productivity improvement. It works to restore soil fertility and productivity on individual farms while also improving farm economics

- **PM Garib Kalyan Ann Yojana (PM-GKAY):** It aimed at providing each person who is covered under the National Food Security Act 2013 with an additional 5kg grains (wheat or rice) for free, in addition to the 5kg of subsidised foodgrain already provided through the Public Distribution System (PDS).

- **One Nation One Ration Card:** It will address the poor state of hunger in India, as highlighted by the Global Hunger Index, where India has been ranked 102 out of 117 countries

- **Pradhan Mantri Kisan Samman Nidhi:** It intends to supplement the financial needs of the Small and Marginal Farmers (SMFs) in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each cycle.

GLOBAL HUNGER INDEX

In News: India ranked 107 out of 121 countries in the Global Hunger Index 2022 with its child wasting rate at 19.3%, being the highest in the world.

GHI Score Trend for India
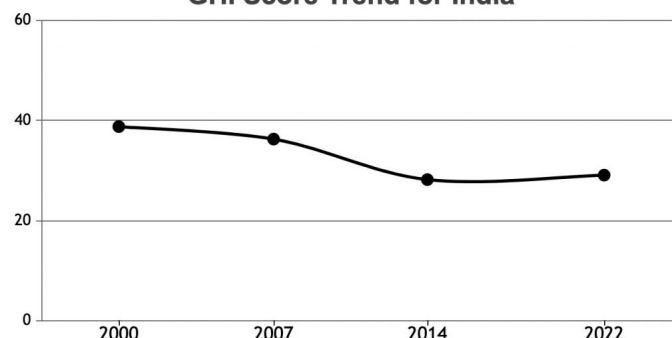
More on the Topic:

- With a score of 29.1, the level of hunger in India has been labelled "serious".

- **Undernourishment prevalence rose in India from 14.6 % in 2018-2020 to 16.3 % in 2019-2021.** This translates into 224.3 million people in India being undernourished out of the total 828 million people globally.

- **Child wasting which is a strong predictor of mortality among children under five years of age also worsened** from 15.1% in 2012-16 to 19.3% in 2017-21.

- India, however, **noted improvement in two parameters of child stunting from 38.7% in 2012-16 to 35.5% in 2017-21 and child mortality from 4.6% in 2014 to 3.3% in 2020.**

- In Asia, Afghanistan with a rank of 109 is the only country behind India. All other neighbouring countries have fared better than India.

Global Scenario:

- Africa South of Sahara and South Asia have highest hunger levels and are most vulnerable to future shocks and crises

- The world is facing a serious setback in efforts to end hunger with conflict, the climate crisis and the economic consequences of the **COVID-19 pandemic, compounded by the war in Ukraine - are major drivers of hunger.**

- The report warned that the situation is expected to deteriorate further as global crises overlap.

Solutions:

- It is importance to consider **the subnational context when designing programs and policies** to target child stunting.

- It is important to improve the coverage of health and nutrition interventions and household conditions (such as socioeconomic status and food security)

- Focussing on maternal factors (such as mothers' health and education) will also play an important role.

About Global Hunger Index:

- GHI is published by **Concern Worldwide (international humanitarian organization) and Welthungerhilfe (private aid organisation in Germany).**

- The GHI is calculated based on four key indicators to

gauge and track hunger at global, regional, and national levels. These indicators are **undernourishment, child stunting, child wasting and child mortality.**

STATE FOOD SAFETY INDEX

In News: State Food Safety Index awards were announced on World Food Safety day.

The State Food Safety Index ranks States/UTs annually on five parameters of food safety through rigorous evaluation process.

More on the Topic:

- Tamil Nadu topped the list among larger states followed by Gujarat and Maharashtra.

- Among smaller states, Goa was the winner, followed by Manipur and Sikkim, while Jammu and Kashmir emerged top among Union Territories, followed by Delhi and Chandigarh.

- State Food Safety Index award was started in 2018-19 with the aim of creating a competitive and positive change in India's food safety ecosystem.

- The **report has been prepared by the Food Safety and Standards Authority of India (FSSAI)** to measure the performance of States across five parameters of food safety.

World Food Safety Day:

- In 2018, the United Nations General Assembly proclaimed that every June 7 would be celebrated as World Food Safety Day.

- It is observed annually on 7 June to help **prevent, detect and manage foodborne risks.**

- This year's World Food Safety Day theme – **'Safe Food for a healthy tomorrow'**

- It highlights that the production and consumption of safe food has immediate and long-term benefits for people, the planet and the economy.

Indian Governments Food Safety Initiatives:

- **Eat Right India,** aligned to the National Health Policy 2017 with its focus on preventive and promotive healthcare and flagship programmes like Ayushman Bharat, POSHAN Abhiyaan, Anemia Mukt Bharat and Swachh Bharat Mission.

- **The Eat Right Research Awards and Grants** to encourage and recognize high-quality research in the area of food safety and nutrition in India;

- **A logo for Vegan Foods** for easy identification and distinction from non-vegan foods for empowering consumers to make informed food choices.

- **PAN-India survey for identifying the presence of industrially produced trans fatty acid content** in the selected foods.

GLOBAL INNOVATION INDEX

In News: India has climbed to the 40th rank in the Global Innovation Index of the World Intellectual Property Organization

More on the Topic:

- India has become one of the topmost innovative lower middle-income economy in the world.

- For the twelfth consecutive year, Switzerland ranks first in GII followed by the US.

About 5G Technology:

- The Global Innovation Index (GII) is **an annual ranking of countries by their capacity for, and success in, innovation.**

- It is **published by Cornell University, INSEAD, and the World Intellectual Property Organization, in partnership with other organisations** and institutions.

- It is based on both subjective and objective data derived from several sources, including the International Telecommunication Union, the World Bank and the World Economic Forum.

Ranking is based on two sub-indices:

- Innovation Input Sub-Index

- Innovation Output Sub-Index

- **Innovation inputs:** Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication.

- **Innovation outputs:** Knowledge and technology outputs; Creative outputs

- Each of these pillars describe an attribute of innovation, and comprise up to five indicators, and their score is calculated by the weighted average method.

ART & CULTURE, ANCIENT AND MODERN INDIA

NATIONAL MARITIME HERITAGE COMPLEX

In News: Prime Minister Narendra Modi has reviewed the construction of the National Maritime Heritage Complex (NMHC) site at Gujarat's Lothal via video conferencing.

More on the Topic:

- Lothal was one **of the southernmost sites of the Indus Valley civilization, located in the Bhāl 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) thal in Gujarati is "the mound of the dead".

- Incidentally, the name of the city of Mohenjo-daro (also part of the Indus Valley Civilisation, now in Pakistan) means the same in Sindhi.

Significance of Lothal:

- The excavated site of Lothal is the only port-town of the Indus Valley Civilisation.

- A metropolis with an upper and a lower town had in on its northern side a basin with vertical wall, inlet and outlet channels which has been identified as a tidal dockyard.

- Its heritage value is comparable to other ancient port-towns around the world – including Xel Ha (Peru), Ostia (Port of Rome) and Carthage (Port of Tunis) in Italy, Hepu in China, Canopus in Egypt, Gabel (Byblos of the Phoenicians), Jaffa in Israel, Ur in Meso-potamia, Hoi An in Vietnam, as per the dossier. I

- In the region, it can be compared with other Indus port towns of Balakot (Pakistan), Khirasa (in Gujarat's Kutch) and Kuntasi (in Rajkot).

**The National Maritime Heritage Complex (NMHC):**

- The project began in March 2022, and is being developed at a cost of Rs 3,500 crore.

- It will have several innovative features such as **Lothal mini-recreation, which will recreate Harappan architecture and lifestyle through immersive technology;** besides four theme parks – Memorial theme park, Maritime and Navy theme park, Climate theme park, and Adventure and Amusement theme park.

- It will also house **the world's tallest lighthouse museum,** 14 galleries highlighting India's maritime heritage starting from the Harappan time till today, as well as a coastal states pavilion displaying the diverse maritime heritage of Indian states and UTs.

CHOLA DYNASTY

In News: Chola dynasty is in news related to a recent movie by Maniratnam.
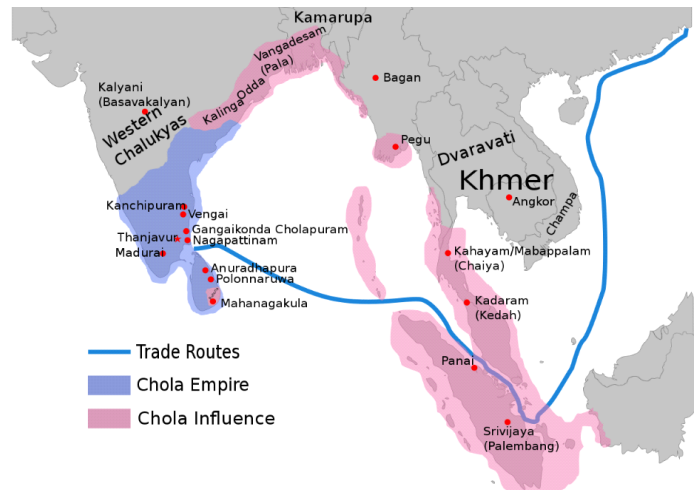
More on the Topic:

- The Chola Dynasty was a Tamil thalassocratic empire of southern India and one of the longest-ruling dynasties in world history.

- The earliest datable references to the Chola are from inscriptions dated to the 3rd century BCE during the reign of Ashoka of the Maurya Empire.

- As one of the Three Crowned Kings of Tamilakam, along with the Chera and Pandya, the dynasty continued to govern over varying territories until the 13th century CE.

- Despite these ancient origins, the rise of the Chola, as the "Chola Empire," only begins with the medieval Cholas in the mid-9th century CE.

- The heartland of the Cholas was the fertile valley of the Kaveri River.

Famous rulers:

- **Rajaraja I (985 – 1014 A.D.)-** engaged in naval expeditions and emerged victorious on the West Coast, Sri Lanka and conquered the Maldives in the Indian Ocean.

- He completed the construction of the famous Rajarajeswara temple or Brihadeeswara temple at Tanjore in 1010 A.D.

- **Rajendra I (1012-1044 A.D.) –** founded the city of Gangaikondacholapuram, annexed complete Ceylon, got the title Pandita Chola and constructed the famous Rajesvaram temple.

- **Rajendra III –** the last Chola king who was defeated by Jatavarman Sundarapandya II

- On the ruins of the Chola empire, Pandya and Hoysala kingdoms came into existence.

Administration:

- **Chola Empire was divided into mandalams** and each mandalam was into valanadus and nadus.
- In each **nadu** there were a number of autonomous villages.
- The royal princes or officers were in charge of mandalam.
- Various units of land measurement are **kuli,ma, veli, patti, padagam, etc.**
- The tax rates were fixed depending on the fertility of the soil.

TANA BHAGAT SECT TRIBALS

In News: Tana Bhagat sect is demanding complete self-rule with no role of courts or governments.

More on the Topic:

- Tana Bhag is an important sect of Oraon tribes of Jharkhand. They are ardent followers of Gandhian philosophy and are known for the Tana bhagat Movement (1914-1919).
- It was a civil disobedience movement under the leadership of **Jatra Oraon of Ranchi in the Chotanagpur region** against the exploitative practices by Britishers and the feudal lords (diku).

MAHAKAL LOK CORRIDOR PROJECT

In News: Prime Minister Narendra Modi inaugurated the United Nations World Geospatial Congress (UNWGIC) 2022 in Hyderabad.

More on the Topic:

- The Phase-I of the 'Mahakal Lok' project **will help in enriching the experience of pilgrims visiting the temple by providing them with world-class modern amenities.**
- Project aims to decongest the entire area and also put special emphasis on conservation and restoration of heritage structures.
- Under the project, the temple precinct will be expanded nearly seven times. The total cost of the entire project is around 850 crore.
- The existing footfall of the temple, which is currently around 1.5 crore per annum, is expected to be doubled. Development of the project has been planned under two phases.

Mahakal Temple:

- The Mahakal Path contains 108 stambhs (pillars) which depict Anand Tandav Swaroop (Dance form) of Lord Shiva.
- Many religious sculptures depicting the life of Lord Shiva are installed along the Mahakal Path.
- The mural wall along the Path is based on Shiva Purana stories such as the Act of creation, the Birth of Ganesha, Story of Sati and Daksha among others.
- The Plaza area, which is spread over 2.5 hectares, is surrounded by a lotus pond and contains the statue of Shiva along with fountains.
- The entire premise will be monitored 24x7 by Integrated Command and Control Centre with the help of artificial intelligence and surveillance cameras.
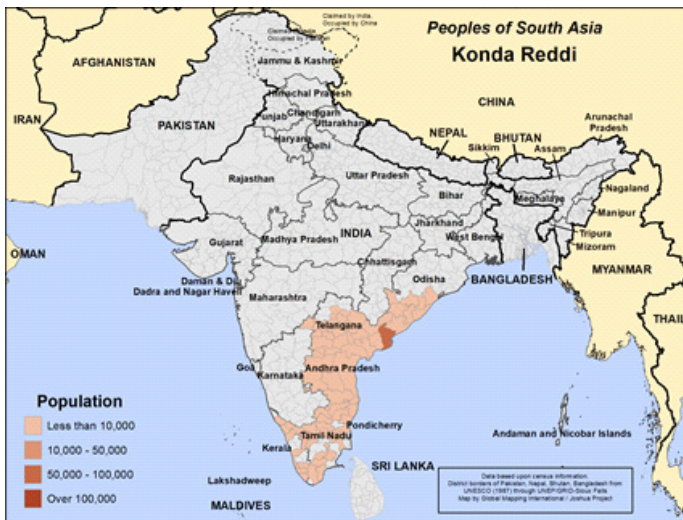
About Mahakal Temple:

- Mahakal temple is **one of the 12 jyotirlinga sites in India.** Jyotirlinga sites are considered to be the manifestation of Shiva.
- Mahakal temple is the only jyotirlinga that faces south. Other sites face east. South is held by religious belief as the direction of death.
- **Mahakaleshwar is worshipped by people to prevent untimely death.** This temple is mentioned in several ancient poetic texts that originated in India.
- It was described in the early part of **Meghadutam (Purva Megha),** which was composed by Kalidasa in the 4th century.

KONDA REDDI COMMUNITY

In News: Konda Reddi tribe have bamboo shoots as part of their diet to boost immunity.

Peoples of South Asia
Konda Reddi

Population
Less than 10,000
10,000 - 50,000
50,000 - 100,000
Over 100,000

More on the Topic:

- The Konda Reddis or Hill Reddis are a designated Scheduled Tribe in the Indian state of **Andhra Pradesh and neighboring states of Odisha, Tamil Nadu.**

- They are classified as **Particularly Vulnerable Tribal Group (PVTG)** among 75 PVTGs identified in India.

- They have been **inhabiting in the forest and hill ranges and are entitled to collect every form of bamboo tree, which is classified as Minor Forest Produce.**

ARCHAEOLOGICAL SURVEY OF INDIA'S RECENT FINDINGS IN BANDHAVGARH TIGER RESERVE

In News: The Archaeological Survey of India (ASI) reported 26 Buddhist caves in Madhya Pradesh's Bandhavgarh Tiger Reserve, after a month-long exploration conducted this summer.

More on the Topic:

- Besides the caves, which date back to the 2nd-5th century BCE, other archaeological remains of the **Mahayana sect of Buddhism,** such as chaitya-shaped doors and cells containing stone beds, were also reported by the ASI team.

- The 26 caves that were found are associated with the Mahayana sect of Buddhism, these **date back to the same time as the Ajanta caves in Aurangabad,** a UNESCO World Heritage Site.

- Besides the caves, the team also found the remains of 26 temples, two mathas, two stupas, 46 idols and sculptures, 26 fragments and 19 water bodies.

- It also identified **a Buddhist pillar fragment containing a miniature stupa carving,** dating to the 2nd-3rd century CE, and 24 Brahmi inscriptions from the 2nd-5th century CE.

- The temples are from **more recent times the Kalachuri period (9th-11th century),** while the water bodies range between 2nd-15th centuries CE.

- The places **Kaushami, Mathura, Pavata (Parvata), Vejabharada and Sapatanaairikaa are mentioned in the Brahmini inscriptions,** while the inscribed names of kings include **Shri Bhimsena, Maharaja Pothasiri and Bhattadeva.**

Bandhavgarh Tiger Reserve:

- Bandhavgarh reserve spread at Vindhya hills of the Umaria district in Madhya Pradesh. It was declared a national park in the year 1968.

- The Bandhavgarh region also unveils the history to find the major dynasties that ruled the Bandhavgarh regions including Sengars, the Kalchuris and the Baghels.

- The Bandhavgarh National Park was declared a Tiger Reserve in 1993 under the Project Tiger.

MODHERA

In News: Prime Minister has declared the Modhera village in Gujarat as India's first 24x7 solar-powered village.

More on the Topic:

- This initiative came about from a programme led by both the centre and state, called the "Solarisation of Modhera Sun Temple and Town."

- As part of the project, they developed a ground-mounted solar power plant in addition to installing 1,300 rooftop solar systems on top of residential and government buildings.

- The solar systems are integrated with a 15Mwh battery energy storage system. This makes up a 6MW grid.

- Solar energy is thus available to Modhera round the clock.

- The village residents will be able to save 60 to 100% on their electricity bills with the solar push.

Modhera Sun Temple:

- The Sun Temple is dedicated to the solar deity Surya located at Modhera village of Mehsana district, Gujarat, India.

- It is situated on the bank of the river Pushpavati and falls near the Tropic of Cancer.
- It was built after 1026-27 CE during the reign of Bhima I of the Solanki dynasty.
- The temple complex has three components: Gudhamandapa, the shrine hall; Sabhamandapa, the assembly hall and Kunda, the reservoir.
- The other 3 main sun temples are: Konark Sun Temple (Odisha), Martand Sun Temple (Jammu and Kashmir) and Dakshinaarka Sun Temple (Gaya)

HARIJAN SEVAK SANGH (HSS)

In News: Recently, 90th Foundation Day of Harijan Sevak Sangh was celebrated.

More on the Topic:

- Harijan Sevak Sangh is a non-profit organisation founded by Mahatma Gandhi in 1932 to eradicate untouchability in India, working for Harijan or Dalit people and upliftment of Depressed Class of India.
- The founding president was **Ghanshayamdas Birla and the secretary was Amritlal Thakkar.**
- It is headquartered at Kingsway Camp in Delhi, with branches in 26 states across India.

UNESCO - 50 ICONIC INDIAN HERITAGE TEXTILES

In News: The UNESCO has released a list of 50 exclusive and iconic heritage textile crafts of the country.
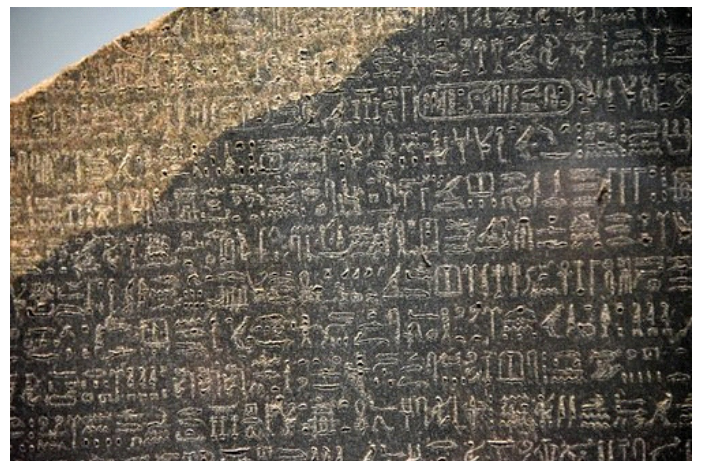

More on the Topic:

- According to UNESCO, one of the major challenges to the safeguarding of Intangible Cultural Heritage in the South Asia is lack of proper inventory and documentation.
- Handmade for the 21st Century: Safeguarding Traditional Indian Textile lists the histories and legends behind the textiles, describes the complicated and secret processes behind their making, mentions the causes for their dwindling popularity, and provides strategies for their preservation.

Some of the textiles from the list:

- Toda embroidery and Sungadi - Tamil Nadu
- Himroo weaves - Hyderabad
- Bandha tie and dye weaving - Sambalpur in Odisha
- Khes - Panipat
- Chamba Rumal - Himachal Pradesh
- Thigma or wool tie and dye - Ladakh
- Awadh Jamdani - Varanasi
- Ilkal and Lambadi or Banjara embroidery - Karnataka
- Sikalnayakanpet Kalamkari - Thanjavur
- Himroo - Maharashtra
- Kunbi weaves - Goa
- Mashru weaves and Patola - Gujarat

ROSETTA STONE

In News: UK is being asked to return the Rosetta Stone, a large stone slab that has fascinated the world since its discovery around two centuries ago.

More on the Topic:

- The Rosetta Stone is a large stone slab with inscriptions on it and is believed to be a piece of a bigger rock.
- **It has inscriptions in three scripts, all of which convey a decree or public message.**
- This is **similar to how in Ancient India, King Ashoka ordered stambhas or edicts that had messages of Buddha's teachings and news about victory in a war inscribed.**
- These were then placed throughout the kingdom for the public to see.
- The Rosetta Stone stands out for being the discovery that helped develop the specific field of ancient Egypt studies, Egyptology.
- **Before it was found, there was no knowledge of what Egyptian hieroglyphs meant and how they were translated.**
- But as the stone conveyed the same information in three languages, including Ancient Greek that was understood by scholars, information on hieroglyphics was finally within the grasp of modern historians.

PERSONLITIES IN NEWS

DADASAHEB PHALKE AWARD

In News: The Dadasaheb Phalke Award for the year 2020 would be conferred on veteran Bollywood actor Asha Parekh.
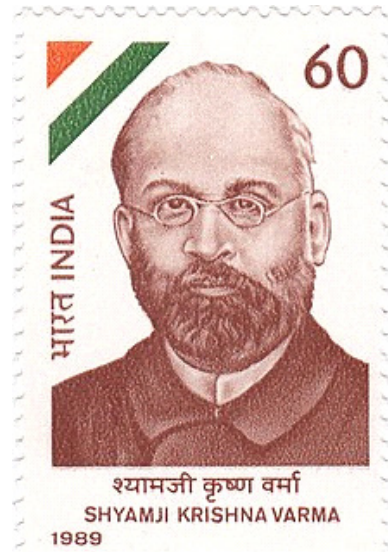
More on the Topic:

- The Dadasaheb Phalke Award is India's highest award in the field of cinema.
- It is presented annually at the National Film Awards ceremony by the Directorate of Film Festivals, an organisation set up by the Ministry of Information and Broadcasting.
- The award comprises a Swarna Kamal (Golden Lotus) medallion, a shawl, and a cash prize of 1,000,000.
- Presented first in 1969, the award was introduced by the Government of India to commemorate Dadasaheb Phalke's contribution to Indian cinema.
- Phalke (1870–1944), who is popularly known as and often regarded as "the father of Indian cinema", was an Indian filmmaker who directed India's first full-length feature film, Raja Harishchandra (1913).

SHYAMJI KRISHNA VARMA

In News: Prime Minister Modi paid tributes to the brave Shyamji Krishna Varma on his birth anniversary, October 4.

More on the Topic:

- Shyamji Krishna Varma was an Indian revolutionary fighter, an Indian patriot, lawyer and journalist who founded **the Indian Home Rule Society, India House and The Indian Sociologist in London.**
- A graduate of Balliol College, Krishna Varma was a **noted scholar in Sanskrit and other Indian languages.**
- Indian Home Rule Society and the India House worked towards inspiring youngsters in Britain to take up revolutionary activities against their own representatives in India.
- The monthly Indian Sociologist became an outlet for nationalist ideas and through the Indian Home Rule Society, he criticised the British rule in India.
- He became the first President of Bombay Arya Samaj.

Practice Questions

1) Gaia BH1 recently appeared in news is?
(a) Golden Nanoparticle Mushroom   (b) Blackhole
(c) DNA modifier   (d) e-governance tool

2) Which of the following statement/s is/are true?
1. ExoMars 2022 mission will be launched by European Space Agency.
2. The primary aim of the mission is to check if there has ever been life on Mars and also understand the history of water on the planet.
(a) 1 only   (b) 2 only
(c) Both 1 and 2   (d) Neither 1 nor 2

3) Which of the following statement/s is/are true?
1. Genetic Engineering Appraisal Committee (GEAC) functions in the Union Ministry of Environment, Forest and Climate Change.
2. It operates as per the Rules, 1989, under Genetic Engineering Appraisal Committee Act.
(a) 1 only   (b) 2 only
(c) Both 1 and 2   (d) Neither 1 nor 2

4) Which of the following are the criteria for identifying Particularly Vulnerable Tribal Groups?
(a) Pre-agricultural level of technology   (b) Low level of literacy
(c) Economic backwardness   (d) All of the above

5) Which of the following statement/s is/are true?
1. Lake Victoria is the world's largest tropical lake.
2. It world's largest fresh water lake by surface area.
(a) 1 only   (b) 2 only
(c) Both 1 and 2   (d) Neither 1 nor 2

6) The Kalpa Sūtra is a?
(a) Jain Text   (b) Buddhist Text
(c) Hindu text   (d) None of the above

7) Global Information Technology Report is published by?
(a) World Economic Forum   (b) World Bank
(c) Microsoft   (d) Google

8) Which of the following countries is not a member of BIMSTEC?
(a) Myanmar   (b) Bhutan
(c) Bangladesh   (d) Maldives

9) Which of the following statement/s is/are true?
1. GNP (Gross Domestic Product) is a measure of national income produced in a particular country.
2. GDP (Gross National Product) takes into account net income receipts from abroad.
(a) 1 only   (b) 2 only
(c) Both 1 and 2   (d) Neither 1 nor 2

10) The Vishnuprayag and Srinagar hydro-electric projects are built on
(a) Kabini   (b) Alakananda
(c) Bhagirathi   (d) Kosi

Mains Questions

1) The nature of economic growth in India in the recent times is often described as a jobless growth. Do you agree with this view? Give arguments to support your arguments.

2) Discuss the role of Self-help groups in achieving financial inclusion in India.

1. b   2. c   3. a   4. d   5. a

6. a   7. a   8. d   9. d   10.b

FIND
ANSWERS

TEST SERIES TO ENHANCE PRELIMS 2023 PREPARATION

The Prelims exam is a decisive prerequisite in moving on to the next stage of Mains in UPSC. The Prelims exam is that stage in UPSC where the screening process is the most dynamic. One sure shot way of clearing the Prelims exam for an aspirant is through a vigorous Prelims Test Series. The RV Training Academy has put together a well-integrated Prelims Test Series to assist students in their Prelims Exam preparations.

Test series comprises of:
TOTAL 35 TESTS (6 NCERT TESTS + 11 SECTIONAL TESTS + 4 CURRENT AFFAIRS TESTS + 4 CSAT TESTS + 10 FULL LENGTH TESTS)

- **NCERT TEST SERIES**
- **SECTIONAL TEST SERIES**
- **CSAT TEST SERIES**
- **CURRENT AFFAIRS TEST SERIES**
- **SIMULATION TEST SERIES / FULL LENGTH TESTS**

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