DARK SKY RESERVE

In a first-of-its-kind initiative, the Department of Science & Technology (DST) has announced the setting up of India's first Dark Sky Reserve in Hanle, Ladakh as a part of Changthang Wildlife Sanctuary.

MOHANJO-DARO

In flood-stricken Pakistan, where an unprecedented monsoon season has killed hundreds of people, the rains now threaten a famed archaeological site Mohanjo-daro.

CARACAL

The species caracal, which was used by India's nobility in the sport of coursing like the cheetah, is struggling to survive.

MARTAND TEMPLE

ASI had objected to the 'Navgrah Ashtamangalam Puja' on the premises of Martand Temple.

RAMON MAGSAYSAY AWARD

Former Kerala Health Minister K K Shailaja has declined to receive the Ramon Magsaysay Award recently.

CURRENT AFFAIRS
& PRACTICE QUESTIONS

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.
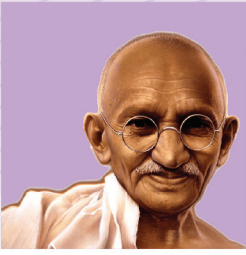
Test series comprises of:

Total 35 tests (6 NCERT Tests + 11 Sectional Tests + 4 Current Affairs Tests + 4 CSAT Tests + 10 Full Length Tests)

01 NCERT Test Series

02 Sectional Test Series

03 CSAT Test Series

04 Current Affairs Test Series

05 Simulation Test Series / Full Length Tests

EMINENT PERSONALITIES

Mahatma Gandhi

Date: 2nd Oct

(Mohandas Karamchand Gandhi) also known as "Bapu" or "Rashtrapita" and "The Father of Nation"

Did you know?

- His birthday is commemorated worldwide as 'International Day of Nonviolence'.
- He not only fought for Independence but also demanded fair treatment for the untouchables, lower caste, and also did several fasts in support of them. He also called untouchables Harijans meaning "Children of God".
- Gandhiji was nominated for the Nobel Peace Prize in 1937, 1938, 1939, 1947, and, finally, a few days before he was murdered in January 1948.
- Gandhiji was given the title of 'Mahatma' by the Nobel Prize-winning Bengali poet Rabindranath Tagore.

Date: 5th Oct

The Queen of Gondwana, a notable icon of feminism in India

Rani Durgavati

Did you know?

- The queen was born on the auspicious Hindu festival of Durgashtami, which is why she was given the name Durgavati.
- Rani Durgavati was born into the family of the Chandelas who built the Khajuraho temples, presently a UNESCO World Heritage Site.
- Rani Durgavati successfully governed the Gondwana Kingdom for 16 years. The queen was well-trained in horseback riding, archery, and other sports, and she was well-known for her martial abilities.
- Rani Durgavati fought 51 gallant wars against many invaders including the Mughals three times and never lost.
- 24th June, the day Rani Durgavati died is considered as 'Martyrdom Day' in her honour.

Jayaprakash Narayan
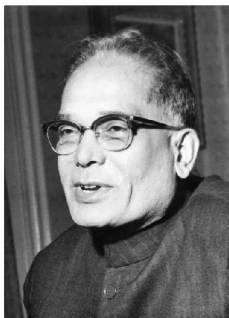
Date: 11th Oct

Popularly known as JP was also called the "King without the crown"

Did you know?

- One of the prominent faces of the Quit India Movement, the 'Lok Nayak' is still remembered for leading the mid-1970s opposition against Prime Minister Indira Gandhi.
- During the freedom struggle, the 'Lok Nayak' joined the Congress party.
- He played a pivotal role in Gandhi-led Quit India Movement and formed the Congress Socialist Party.
- When Indira Gandhi's government was accused of fuelling unemployment and corruption, JP led various protests under the slogan of "Sampoorna Kranti" or Total Revolution.
- He was widely known as the mass leader who showed the country that youth wanted employment, development and dedication to good governance from the government instead of meeting ideological motives.
- He was posthumously awarded the Bharat Ratna, India's highest civilian award, in recognition of his social work.


Date: 15th Oct

India's Missile Man

Dr APJ Abdul Kalam

Did you know?

- Abdul Kalam had 7 doctorates and during his lifetime he received honorary doctorates from 40 national and international universities.
- He was in charge of the Agni and Prithvi missiles' development and deployment. It is for this reason that he is known as India's Missile Man.
- Dr. Kalam has been awarded the Padma Bhushan (1981) and Padma Vibhushan (1990) civilian awards, as well as the highest civilian honour, the Bharat Ratna (1997).
- President Kalam was well-known among children. His email account was open to all children in India, making him one of India's most accessible presidents.
- APJ Abdul Kalam's autobiography, 'Wings of Fire,' was first published in English and has since been translated and published in 13 languages including French and Chinese. His life has also been documented in six biographies.
- Kalam missed out on a chance to join the Indian Air Force as a fighter pilot. He was 9th on the list, and there were only 8 spots available.
- Abdul Kalam became the first scientist and the first bachelor to occupy the office of Rashtrapati Bhawan.
- Scientists from NASA had named a new microbe Solibacillus kalamii in honour of Dr. Kalam who had his early training at NASA
- Kalam was well-versed in Hindu traditions, learning Sanskrit and reading the Bhagavad Gita in addition to his faith in the Quran and Islamic practice. Every day, he used to practice the veena and listen to Carnatic devotional music.
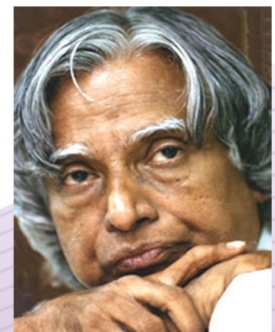
Purpose of the magazine

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

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Polity and Governance

NITI AAYOG LIKE BODIES IN STATES

In News: NITI Aayog, the think-tank at the Central level will handhold each state to set up similar bodies, replacing their planning boards for faster and inclusive economic growth, in tandem with the vision of becoming a developed nation by 2047.

More on the Topic:

- The move is in recognition of the fact that except for sectors like defence, railways and highways, **the national gross domestic product (GDP) growth is an aggregation of states' rates of growth.**

- **Health, education and skilling are primarily with the state government.**

- State governments' role is critical to improving ease **of doing business, land reforms, infrastructure development, credit flows and urbanisation,** all of which are vital for sustained economic growth.

Implementation Plan for State Institution for Transformation (SIT):

- Lateral entry of professionals will be encouraged in SITs to undertake high-quality analytical work and policy recommendations.

- Besides reorienting state planning boards as SITs, a blueprint will be made on how it will guide states in policy formulation, take up monitoring and evaluation of government policies and programmes, and suggest better technology or models for delivery of schemes.

About NITI Aayog:

- The National Institution for Transforming India, also called NITI Aayog, was formed via a resolution of the Union Cabinet on January 1, 2015.

- NITI Aayog is the premier policy 'Think Tank' of the Government of India, providing both directional and policy inputs.

- While designing strategic and long term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States.

About Composition of NITI Aayog?

- **Chairperson:** Prime Minister

- **Vice-Chairperson:** To be appointed by Prime-Minister

- **Governing Council:** Chief Ministers of all states and Lt. Governors of Union Territories.

- **Regional Council:** To address specific regional issues, Comprising Chief Ministers and Lt. Governors Chaired by Prime Minister or his nominee.

- **Adhoc Membership:** 2 member in ex-officio capacity from leading Research institutions on rotational basis.

- **Ex-Officio membership:** Maximum four from Union council of ministers to be nominated by Prime Minister.

- **Chief Executive Officer:** Appointed by Prime-Minister for a fixed tenure, in rank of Secretary to Government of India.

- **Special Invitees:** Experts, Specialists with domain knowledge nominated by Prime-Minister.

REGISTERED UNRECOGNISED POLITICAL PARTIES

In News: The Election Commission said the 86 registered unrecognised political parties that have been delisted were found to be non-existent either after a physical verification carried out by the respective Chief Electoral Officers (CEOs) of concerned states/UTs.

More on the Topic:

- The EC said "immediate corrective measures" were required to be taken in larger public interest as well as for the "purity" of electoral democracy and hence it has also declared an additional 253 registered unrecognised political parties (RUPPs) as "inactive".

- The 253 RUPPs marked as inactive "shall not be eligible to avail any benefit of the Election Symbols (Reservation and Allotment) Order, 1968."

- EC does not have power to deregister a political party. However, it can take up issue of financial irregularities and seek mandatory compliance from parties like sources and manner of donations, details of bank account etc.

Registered unrecognised political parties:

- Registered Unrecognised Political Parties (RUPP) are **either newly registered parties or those which have not secured enough percentage of votes in the assembly or general elections to become a state party, or those which have never contested elections since being registered are considered unrecognised parties.**

- Such parties don't enjoy all the benefits extended to the recognised parties.

- The recognition granted by the Commission to the parties determines their right to certain privileges like allocation of the party symbols, provision of time for political broadcasts on the state-owned television and radio stations and access to electoral rolls.

Concerns Associated with Registered unrecognised political parties:

- Crowd out political parties actually contesting elections and also creating confusing situation for voters.
- Occupying available pre-election political space by taking benefits of admissible entitlements without contesting elections as many were found to be existing only on paper.
- Misuse of Income Tax exemption on donations given to registered parties.

FAST TRACK COURTS AND FAST TRACK SPECIAL COURTS

In News: Union Law Minister Kiren Rijiju has pointed out under-utilisation of funds earmarked to establish FTCs and FTSCs and urged the chief justices to personally look into the matter.

More on the Topic:

- The 14th Finance Commission had recommended setting-up of 1,400 FTCs by the state governments to fast-track criminal cases of heinous crimes.
- At present these courts were set-up under a Centrally Sponsored Scheme (CSS) for expeditious trial of rape and POCSO cases (involving juvenile victims).
- Their setting up and functioning falls within **domain of State Government in consultation with their respective High Courts.**

Present Scenario:

- Of the sanctioned 1800 FTCs, 896 were functional as of July 31 and more than 13.18 lakh cases were pending in these courts. Of the 1,023 sanctioned FSTCs, 731 were operational as of July 31.
- During the analysis, it was also noticed that while 88,000 monthly cases are registered, **case disposal is approximately 35,000, leading to an ever-increasing pendency of cases.**

Challenges faced by FTCs and FTSCs:

- Inadequate staff and IT infrastructure
- Delay in getting reports from understaffed forensic science laboratories
- Frivolous adjournments, etc.

DOCTRINE OF PRECEDENCE: ARTICLE 145(5)

In News: Supreme Court has given expression to Doctrine of Precedence recently.

"Has the time come to tear the judicial veil and hold that in reality a view of five learned Judges cannot be overruled by a view of four learned judges speaking for a bench of seven learned judges?"
Justices Rohinton F Nariman / Justice Sanjay K Kaul
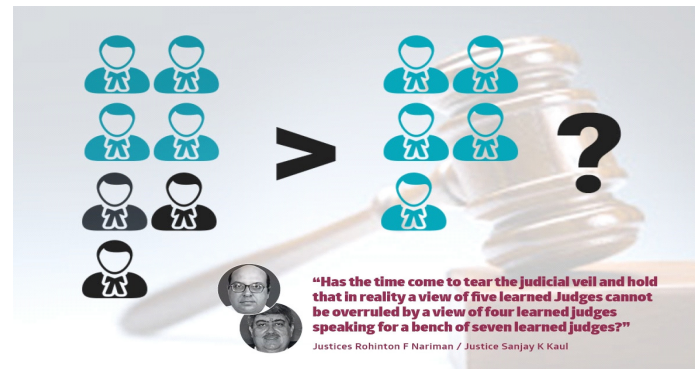
More on the Topic:

- Under Doctrine of Precedence courts refer to their older ruling as precedence on related matters. The precedential legitimacy of a larger bench ruling must be considered a thumb rule for stability in the law.
- Article 145(5) states that no judgment shall be delivered by the Supreme Court without the concurrence of a majority of the judges present at the hearing of the case, but nothing in this clause shall prevent a judge from delivering a dissenting judgment.
- Supreme court clarified that **Majority view of a larger bench will prevail over a judgement passed by a lesser strength bench in case of conflict,** even if a lesser strength bench saw a greater number of judges agreeing with each other.
- Simply put, **the court verdict establishes that a 4-3 majority view will overrule a unanimous view of a bench of 5 judges** — only because the former is a numerically superior bench.

SOCIAL AUDITS OF MGNREGA

In News: The Union Rural Development Ministry (MoRD) has told States that failure to carry out social audit of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) will invite action.

More on the Topic:

- Only 14.29% of the planned audits have been completed

in this financial year.

- The original MGNREG Act had provisions for social audit, though the auditing standards were laid down by the Comptroller and Auditor General were issued only on December 19, 2016.
- Every Social Audit Unit is **entitled to funds equivalent to 0.5% of the MNREGA expenditure incurred by the State in the previous year.**
- The audit involves quality checks of infrastructure created under the MNREGA, financial misappropriation in wages, and checking for any procedural deviations.

Why the Delay in the Funds?

- The Social Audit Units were formed to check corruption in the MGNREGA implementation. To ensure their autonomy, they were to be funded by the Centre and not the State.
- This administrative funds have been delayed by the central government.
- It has been sighted as the reason for delay in social audits by the state governments.

About Social Audits:

- Social Audit is **the audit of a scheme jointly by the Government and the people, especially by those who are affected by the scheme or its beneficiaries.**
- It is a powerful tool **to promote transparency, accountability and people's participation in** the schemes meant for them.
- A social audit helps **to narrow gaps between vision/goal and reality, between efficiency and effectiveness.**
- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was the first Act to mandate Social Audit** by the Gram Sabha of all the projects taken up in the Gram Panchayat.

NATIONAL BUILDING CODE OF INDIA 2016 (NBC 2016)

In News: Union Minister for Commerce & Industry, Consumer Affairs, Food & Public Distribution and Textiles has released handbook on Safety in Electrical Installations and Guide for Using National Building Code of India 2016.

More on the Topic:

- National Building Code of India 2016 (NBC 2016) **is a technical document in which all provisions relating to planning, design, construction and operation and maintenance of buildings are covered.**
- Implementation of these codes' provisions ensures minimum required level for the safety, health, amenity, accessibility and sustainability of buildings.
- **It is designed by Bureau of Indian Standards (BIS).**

PREVENTIVE DETENTION

In News: According to NCRB data, Preventive detentions in 2021 saw a rise of over 23.7% compared to the year before.

Behind bars | A look at the number of preventive detentions under the National Security Act over the past five years

DETENTIONS | RELEASED

Year	Detentions	Released
2017	501	229
2018	697	568
2019	489	279
2020	741	410
2021	483	242
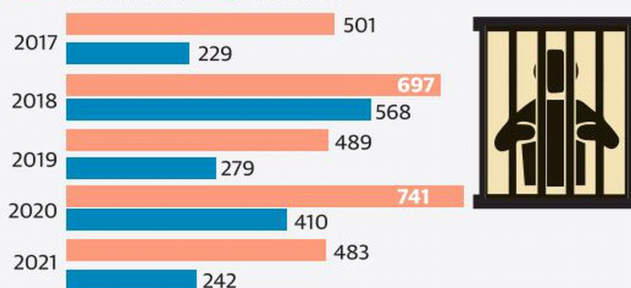
More on the Topic:

- Over 1.1 lakh people being placed under preventive detention.
- Of these, 483 were detentions under the National Security Act, of which almost half (241) were either in custody or still detained as of the end of 2021.
- A total of over 24,500 people placed under preventive detention were either in custody or still detained as of the end of last year.
- Among other laws under which the NCRB has recorded data on preventive detentions are t**he Goonda Act (State and Central) (29,306), Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988 (1,331), and a category classified as "Other Detention Acts",** under which most of the detentions were registered (79,514).
- Several laws like **the Unlawful Activities (Prevention) Act and Maharashtra Control of Organised Crime Act** also provide for making preventive detentions.
- **District magistrates and the police also often make preventive detentions to control law and order** in emerging communal clashes or clashes between any two communities even when it might not always lead to public disorder.

About Preventive Detention:

- Preventive Detention is the most contentious part of fundamental rights in the Indian constitution.
- The Article 22 (3) of the Indian constitution provides that if a person is arrested or detained under a law providing for preventive detention, then the protection against arrest

and detention under Article 22 (1) and 22 (2) shall not be available.

The grounds for Preventive detention are:

- Security of state.
- Maintenance of public order.
- Maintenance of supplies and essential services and defence.
- Foreign affairs or security of India.

Views Against Preventive Detention:

- **Arbitrariness is involved in the process.** The police determinations of whether a person poses a threat are not tested at a trial by leading evidence or examined by legally trained persons.
- Quiet often, there is no trial (up to 3 months), no periodic review, and no legal assistance for the detained person. **This is violation of Basic fundamental rights.**
- It does not provide any procedural protections such as to reduce detainees' vulnerability to torture and discriminatory treatment, and to prevent officials' misusing preventive detention for subversive activities.
- **Many times governments have used it as a tool for suppression.** In the absence of proper safeguards, preventive detention has been misused, particularly against the Dalits and the minorities.

Supreme Court's View on Preventive Detention:

- The Supreme Court has observed that these powers accorded to the State were **"exceptional" and that since they affect the liberty of an individual, they should be used sparingly.**
- The court had also noted that these powers **should not be used to control ordinary law and order problems.**
- **In the case of Banka Sneha vs State of Telangana,** the Supreme Court held that Preventive Detention Order can only be passed against a Detenu if his activities adversely affect or are likely to adversely affect the maintenance of public order.

Way Ahead:

- There is a need for security and human rights to go hand in hand.
- A proper system should be made which will make sure that the rights are being made available to the detenu during the detention period.
- If any accusations for coercive actions are made, it should be taken in a serious way and should be followed by a proper investigation by an appropriate authority.
- The preventive detention laws are **not completely just fair and reasonable and need some changes or alterations** to fit in well within the scope of the Right to life and liberty.
- It should be done away in the future after due

NATIONAL CENTRE FOR DISEASE CONTROL (NCDC)

In News: The Union government has decided to establish a branch of Delhi-based National Centre for Disease Control (NCDC) in each state for effective outbreak surveillance and improved response time.

More on the Topic:

- The state branches will coordinate with NCDC head-quarter in New Delhi with real time sharing of data and information aided by cutting edge technology.
- NCDC branches would also be crucial in ensuring timely availability of updated guidelines so that accurate scientifically backed information can be disseminated easily.
- The current branches will also be repurposed and together they will perform integrated disease surveillance activities, focusing on anti-microbial resistance, multi-sectoral and entomological investigations (pertaining to insects) etc.
- The move not just improve surveillance efforts but also boost response time and measures including diagnostic capacities.
- Disease surveillance plays a crucial part in disease prevention, control and management. Towards this end the regional branches of NCDC will pay a pivotal part.

About NCDC:

- NCDC is nodal agency under MoHF for disease surveillance facilitating prevention and control of communicable diseases.
- Its mandate broadly covers three areas viz. services (including Outbreak investigations, referral services etc), trained health manpower development and research.

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.**

CONSTITUTION BENCH

In News: Justice Uday Umesh Lalit, who has sworn in as the 49th Chief Justice of India has assured there will be at least one Constitution Bench functioning throughout the year in the Supreme Court.

More on the Topic:

- The initiative comes at a time when the **Supreme Court's**

pendency has crossed over 71,000 from a little over 55,000 in 2017.

- This is despite the fact that the sanctioned judicial strength of the court was increased to 34 judges in August 2019.
- A steady rise in arrears regardless of the periodic increase in judicial strength has been a constant phenomenon since 1950.

About Constitution Bench:

- Constitution bench is the name given to the benches of the Supreme Court of India which consist of at least five judges of the court.
- The Chief Justice of India has the power to constitute a Constitution Bench and refer cases to it.
- Constitution Bench is set up only if one or more of the following circumstances exist.
- It sits to decide any case **"involving a substantial question of law as to the interpretation"** of the Constitution of India or **"for the purpose of hearing any reference"** made by the President of India under Article 143.
- This provision has been mandated by **Article 145 (3)** of the Constitution of India.
- Two or more three-judge benches of SC have delivered conflicting judgments on the same point of law, thus warranting a definitive pronouncement by a larger bench.
- Two or more three-judge benches of SC have delivered conflicting judgments on the same point of law, thus warranting a definitive pronouncement by a larger bench.

CENTRAL VIGILANCE COMMISSION AND CBI

In News: According to Central Vigilance Commission, The Central Bureau of Investigation (CBI) recorded a conviction rate of 67.56% in 2021, compared to 69.83% in 2020.

CENTRAL VIGILANCE COMMISSION

More on the Topic:

- Of the total cases instituted last year, 457 pertained to **various charges under the Prevention of Corruption Act.**
- They involved 549 public servants, of whom 221 were gazetted officers.
- According to the report, 102 cases were registered for demand of bribe by public servants for showing favour and 40 for possession of disproportionate assets.

Central Vigilance Commission:

- The Government set up the Central Vigilance Commission in February 1964 on the recommendations

of the Committee on Prevention of Corruption, **headed by Shri K. Santhanam,** to advise and guide Central Government agencies in the field of vigilance.

- In 2003, the Parliament enacted a law granting statutory status to the CVC.
- CVC is **a multi-member body consisting of a Central Vigilance Commissioner (chairperson) and not more than two vigilance commissioners.**
- They are **appointed by the President of India** by warrant under his hand and seal on the recommendation of a three-member committee; The Prime Minister is its head, The Union Minister of Home Affairs. And The Leader of the Opposition in the Lok Sabha.
- The President can remove the Central Vigilance Commissioner or any vigilance commissioner on the ground of proven misbehaviour or incapacity.

Central Bureau of Investigation:

- Central Bureau of Investigation (CBI) is the premier investigating police agency in India.
- The establishment of the CBI was recommended **by the Santhanam Committee on Prevention of Corruption.**
- The CBI is not a statutory body. It derives its powers from the Delhi Special Police Establishment Act, 1946.
- **It provides assistance to the Central Vigilance Commission and Lokpal.**
- It functions under the superintendence of the **Deptt. of Personnel, Ministry of Personnel, Pension & Public Grievances, Government of India - which falls under the Prime Minister's office.**
- However, for investigations of offences under **the Prevention of Corruption Act, its superintendence vests with the Central Vigilance Commission.**
- It is also the nodal police agency in India which coordinates **investigation on behalf of Interpol Member countries.**
- **Its conviction rate is as high as 65 to 70%** and it is comparable to the best investigation agencies in the world.
- The Central Government appoints the Director of CBI on the recommendation of a three-member committee consisting of; The Prime Minister as Chairperson. The Leader of Opposition in the Lok Sabha and The Chief Justice of India or Judge of the Supreme Court nominated by him.

CHIEF OF DEFENSE STAFF

In News: Lt general Anil Chauhan has been appointed as next Chief of Defense Staff.

More on the Topic:

- CDS, approved in 2019, is the head of Army, Navy and Air Force and is a four-star military officer.
- The Chief of Defence Staff of **the Indian Armed Forces (CDS) is the professional head and permanent Chairman of the Chiefs of Staff Committee (COSC) of the Indian Armed Forces.**
- The Chief of Defence Staff is **the highest-ranking**

uniformed officer on active duty in the Indian military and chief military adviser to the Minister of Defence.

- The Chief also heads **the Department of Military Affairs.** The CDS is assisted by a vice-chief, the Chief of Integrated Defence Staff.

Significance:

- The position was **created with the aim of improving coordination, tri-service effectiveness and overall integration of the combat capabilities** of the Indian armed forces.

Conditions:

- Not eligible to hold any Government office after demitting the office of CDS.

- No private employment without prior approval for a period of five years after demitting the office of CDS.

Committees Associated:

- First proposal for CDS came from **Kargil Review Committee (2000). Later, Naresh Chandra Committee** on defence and security (2011) and **Shekatkar Committee (2016)** mooted the idea of CDS.

SPECIAL MARRIAGE ACT, 1954

In News: The Supreme Court has dismissed a writ petition challenging provisions of the Special Marriage Act (SMA), 1954 requiring couples to give a notice declaring their intent to marry 30 days before their marriage.

More on the Topic:

- SC rejected the writ petition on the grounds that the petitioner(35- year-old Athira Sujatha) was no longer an aggrieved party as she had already solemnized her marriage under SMA.

About the Special Marriage Act:

- The Special Marriage Act (SMA), 1954 was enacted to validate and register interreligious and inter-caste marriages in India. It empowers two adult individuals to marry through a civil contract.

- **As per Sections 5 and 6,** the parties who want to marry would need to give notice to the Marriage Officer of their area.

- Significantly, **the area includes the place where one of the spouses has been living for the last 30 days.** The marriage officer publishes the notice of marriage in his office.

- If one has any objection to the marriage, he/she can file against it within a period of 30 days. If any such objection is sustained by the marriage officer, the marriage can be rejected.

- **Section 7** provides the process for making an objection such as if either party has a living spouse, is incapable of giving consent due to **"unsoundness of mind"** or is suffering from a mental disorder resulting in the person being unfit for marriage or procreation.

Objections by the Petitioner:

- This provision in the act violates the right to privacy of the parties ensured by Article 21 of the constitution.

- The requirements violate **the right to equality under** Article 14 of the Constitution since no other laws prescribe such a requirement.

How do these provisions make couples vulnerable?

- These public notices have been **used by anti-social elements to harass couples getting married.**

- There have been instances, **where marriage officers have gone over and beyond the law and sent such notices to the parents.**

- The Haryana government has laid down **16 pre-requisites which ask couples to issue a notice in a newspaper** and that such notices be sent to their parents.

- In certain States, **couples have to seek a no-objection certificate from their parents.**

- With as many as 11 States passing anti-conversion (or so called love-jihad) laws, parents and the State are now armed to punish and harass such couples.

CENTRALIZED PUBLIC GRIEVANCE REDRESS AND MONITORING SYSTEM

In News: Unique Identification Authority of India (UIDAI) has been a top performer in resolution of cases received through Centralized Public Grievance Redress and Monitoring System (CPGRAMS).

More on the Topic:

- Centralised Public Grievance Redress and Monitoring System (CPGRAMS) 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.

- **Every Ministry and States have role-based access to this system.** CPGRAMS is also accessible to the citizens through standalone mobile application downloadable through Google Play store and mobile application integrated with UMANG.

- The status of the grievance filed in CPGRAMS can be tracked with **the unique registration ID provided at the time of registration of the complainant.**

- CPGRAMS also **provides appeal facility to the citizens** if they are not satisfied with the resolution by the Grievance Officer.

GOVERNMENT SCHEMES

SCHEME FOR SPECIAL ASSISTANCE TO STATES FOR CAPITAL INVESTMENT FOR 2022-23

In News: The Government of India has launched a Scheme Special Assistance to States for Capital Investment for 2022-23.

More on the Topic:

- Under this Scheme, financial assistance is provided to the States Governments in the form of 50-year interest free loan for capital investment projects.
- The scheme launched in 2020-21 provides 50-year interest-free loans for capital investment projects to states.
- For the 2022-23 Financial Year (FY) a total financial assistance of Rs 1 lakh crore would be given to states.
- The loan under the scheme would be over and above the normal borrowing ceiling allowed to states for the FY 2022-23 and should be spent in the same year.
- Funds not used by a state within a reasonable time period may be allocated to another state.

The loan will be allocated for 7 parts of the scheme:

- For capital works (PM Gati Shakti Master Plan will receive priority);
- PM Gati Shakti related expenditure;
- PM Gram Sadak Yojana;
- Incentives for digitisation; Optical Fibre Cable;
- Urban reforms;
- Disinvestment and monetisation

NATIONAL PROGRAM ON HIGH EFFICIENCY SOLAR PV MODULES

In News: The Cabinet has approved the Ministry of New & Renewable Energy's proposal for implementation of the Production Linked Incentive Scheme (Tranche II) on 'National programme on High Efficiency Solar PV Modules' for achieving manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV Modules.

More on the Topic:

- The national programme on High Efficiency Solar PV Modules **aims to build an ecosystem for manufacturing of high efficiency solar PV modules in India,** and thus reduce import dependence in the area of Renewable Energy.
- It will strengthen **the Atamnirbhar Bharat initiative** and generate employment.

Under modified programme, a uniform fiscal support of:

- **50% of Project Cost will be provided for all technology nodes** under Scheme for Setting up of Semiconductor Fabrication in India and Scheme for Setting up of Display Fabrication;
- **50% of capital expenditure under the Scheme** for Setting up of Compound Semiconductors / Silicon Photonics / Sensors Fabrication and Semiconductor ATMP /OSAT facilities in India.
- **Aim**: Expedite investments in semiconductor and display manufacturing in India.

The outcomes/benefits expected from the scheme are as follows:

- It is estimated that about **65,000 MW per annum manufacturing capacity of fully and partially integrated, solar PV modules would be installed.**
- The scheme will bring **direct investment of around Rs.94,000 crore.**
- Creation of manufacturing capacity for Balance of Materials like EVA, Solar glass, Backsheet, etc.
- **Direct employment of about 1,95,000** and indirect employment of around 7,80,000 persons.
- **Import substitution** of approximately Rs.1.37 lakh crore.
- Impetus to Research and Development to achieve higher efficiencies in Solar PV Modules.

INDIAN NUTRITION RATING (INR)

In News: The Food Safety and Standards Authority of India (FSSAI), the country's apex food regulator, has released draft notification for front-of-pack nutrition star labelling.

Food Safety and Standards Authority of India

More on the Topic:

- Like the star-rating system for energy efficiency of electronic products, the 'Indian Nutrition Rating (INR)' will see the unhealthiest food items carry a 0-star rating and the healthiest carry a 5-star rating.

- It is **to discourage consumers from buying packaged food high in sugar, salt, and fat,** which will require pre-packaged food to carry a star graphic ranging for 0 to 5 next to the brand name.

- Items will be given scores based on contribution of energy and content of saturated fat, sugar, sodium, fruit and vegetables (FV), nuts, legumes, and millets (NLM), dietary fibre, and protein per 100 gm of solid or 100 ml liquid foods.

- Solid food with a score of more than 25 will be given 0.5 stars, and those with a score less than – (minus)11 will get 5 stars.

EARLY CHILDHOOD EDUCATION

In News: A report released by the Centre for Budget and Governance Accountability (CBGA) indicated that India spent only 0.1% of its gross domestic product (GDP) on early childhood education in 2020-21.

Early Childhood Education
Learn • Play • Grow

More on the Topic:

- India has the largest number of children between the age of 3 to 6 years – more than 9.9 crore – but is far behind rich countries which spend more than 0.7% of GDP on ECE.

- The report said that India, **on average, spends only Rs 8,297 per child on ECE services in 2020-21.**

- It estimates that **India needs to spend a minimum of Rs 32,500 per child per year in anganwadi and Rs 46,000 per child per year in pre-primary section** to achieve universalisation of ECE by 2030.

- **This can only achieved if India allocates 1.5 to 2.2% of GDP** for universalisation of ECE.

- The National Education Policy (NEP) 2020 states that universal provisioning of quality early childhood development, care, and education must be achieved by 2030.

- However, the report also notes that although the earlier draft of NEP suggested spending 1.4% of total government expenditure for the universalisation of ECE, **the final report is silent on funding.**

Significance of Early Childhood Education:

- According to UNESCO, Early childhood is defined **as the period from birth to eight years of age. It is a time of remarkable growth with the brain development at its peak.**

- Early Childhood Care and Education (ECCE) is more than preparation for primary school. It aims at **the holistic development of a child's social, emotional, cognitive and physical needs in order to build a solid and broad foundation for lifelong learning and wellbeing.**

- According to National Education Policy(NEP) 2020, **Over 85% of a child's cumulative brain development occurs prior to the age of 6,** indicating the critical importance of appropriate care and stimulation of the brain in the early years.

- Nobel Laureate **James Heckman strongly argues that investing in early childhood education produces the greatest returns** in terms of human capital and ensures quality economic returns. It results in far greater returns than the same investment in schooling.

- Neuroscience tells that **'a young child's brain develops through stimulation of the sensing pathways (e.g. seeing, hearing, touching, smelling, tasting) from early experiences'.**

- The greater the number of experiences, the more neural pathways are created by neurons for optimal learning and development.

Government Programs for Early Childhood Education:

- **Samagra Shiksha Abhiyan** for quality education and enhancing learning outcomes of students from pre-school to class 12.

- **Integrated Child Development Services (ICDS) Scheme** for nutritional as well as proper psychological, physical and social development of the child.

- **Students and Teachers Holistic Advancement through Quality Education (SARTHAQ)** to reform ECCE along with other targets.

INNOVATION IN SCIENCE PURSUIT FOR INSPIRED RESEARCH (INSPIRE) SCHEME

In News: Government presented INSPIRES awards to 60 Start-Ups and financial support to 53,021 students.

More on the Topic:

- The award is instituted by the Department of Science & Technology (DST), Government of India, and these innovators will be extended complete incubation support for their entrepreneurship journey.

- The annual INSPIRE Awards MANAK (Million Minds Augmenting National Aspiration and Knowledge) competition attracted an unprecedented 6.53 lakh ideas and innovations from all states and UTs of the country in 2020-21.

INSPIRE Scheme:

- The basic objective of INSPIRE would be **to communicate to the youth population of the country the excitements of creative pursuit of science** and attract talent to the study of science at an early stage and build the required critical human resource pool for strengthening and expanding the Science & Technology system and R&D base.

- INSPIRE Scheme has included **three programs.** They are i) Scheme for Early Attraction of Talents for Science (SEATS), b) Scholarship for Higher Education (SHE) and c) Assured Opportunity for Research Careers (AORC).

INDIAN SWACHHATA LEAGUE

In News: 'Indian Swachhata League' has started recently.

More on the Topic:

- 'Indian Swachhata League' is **an inter-city competition with the spirit of cleanliness and resolve** towards ensuring garbage-free beaches, hills and tourist places in the country.

- 'India Swachhata League' started with **'Swachh Amrit Mahotsav',** a fortnight of activities from September 17 to October 2 to galvanise action around 'swachhata' (cleanliness).

- The activities are being organised by the **Union Housing and Urban Affairs Ministry.**

- The 1st edition of the Indian Swachhata League witnessed a record with more than half a million youth joining hands for clean beaches, hills and tourist spots.

About Swachh Bharat Mission:

- Swachh Bharat Mission (SBM) is **a country-wide campaign initiated by the Government of India in 2014 to eliminate open defecation and improve solid waste management.**

- It is a restructured version of the Nirmal Bharat Abhiyan launched in 2009.

- Phase 1 of the Swachh Bharat Mission lasted till October 2019.

- Phase 2 is being implemented between 2020–21 and 2024–25.

- The mission aimed to achieve an "open-defecation free" (ODF) India by 2 October 2019, the 150th anniversary of the birth of Mahatma Gandhi through the construction of toilets.

- Under the scheme, **the Government provides subsidies for constructing toilets, waste management structures, and awareness campaigns to bring behaviour change.**

- **The mission is split into two: Rural and Urban.**

- In rural areas "SBM - Gramin" is financed and monitored through the Ministry of Jal Shakti.

- In Urban areas "SBM - urban" is overseen by the Ministry of Housing and Urban Affairs.

NATIONAL TECHNICAL TEXTILES MISSION

In News: The Ministry of Textiles cleared 23 strategic research projects worth around Rs 60 crores in the areas of specialty fibres, sustainable textiles, geotextiles, mobiltech and sports textiles.

More on the Topic:

- Technical Textiles are textile **products which are manufactured primarily for their functionality and use rather than the aesthetic appeal.**

- This includes functional fabrics which find **application in civil engineering, construction, defence, healthcare and automobile among other industries.**

- The products are divided into 12 segments based on their usage.

About Technical Textiles Mission in India:

- Technical Textiles Mission in India aims to increase the penetration level of technical textiles in India while leveraging the extraordinary growth rate of the sector, the Ministry of Textiles has launched the National Technical Textiles Mission.

- The aim of the mission is **to position India as a global leader in Technical Textiles.** It also supports the **'Make in India' initiative** promoting domestic manufacturing of related machinery and equipment.

The mission will comprise of the following four components:

- Research, Innovation and Development
- Promotion and Market Development
- Export Promotion
- Education, Training, Skill Development

THE MINISTRY OF PANCHAYATI RAJ LOCALIZATION OF SUSTAINABLE DEVELOPMENT GOALS (LSDGS)

In News: The Ministry of Panchayati Raj (MoPR), Government of India and the Institute of Rural Management Anand (IRMA), Gujarat signed a Memorandum of Understanding (MoU) or Localization of Sustainable Development Goals (LSDGs) through PRIs.

More on the Topic:

- The MoU envisages for finding gaps and possible solutions to overcome gaps in preparation of **model Gram Panchayat Development Plan (GPDP) linkages with LSDGs.**

About Localising Sustainable Goals:

- Localising the Sustainable Development Goals (SDGs) involves **the definition, implementation and monitoring of strategies at the local level,** which is essential to achieve the 2030 Agenda for Sustainable Development.

- Localisation also relates both to how local and sub-national governments can support the achievement of the SDGs through bottom up action.

- LSDG becomes significant for India as about 65% of India's population lives in rural areas.

About Sustainable Development Goals:

- To bring sustainable development in the mainstream United Nations (UN) launched the **2030 Agenda for Sustainable Development and SDGs.**

- This universal, integrated and transformative agenda aims to spur actions that will end poverty and build a more sustainable world over the next 15 years.

- **There are 17 goals and 169 targets specific targets to be achieved by 2030.** Reaching the goals requires action on all fronts – governments, businesses, civil society and people everywhere all have a role to play.

- **SDGs are not legally binding.**

E-BAAL NIDAN PORTAL

In News: Online Portal "E-Baal Nidan" For Redressal Of Grievances Against Violation Of Child Rights was Revamped.

More on the Topic:

- "E-Baal Nidan" is an online complaint mechanism launched in 2015 to enable individuals to report violations committed against a child and track the progress of the redressal of the complaint in the Commission.

- It ensures a timely disposal of cases by the NCPCR.

- Currently, the NCPCR is providing access to all State Commission for Protection of Child Rights.

- It will be providing user IDs and passwords for the State Commissions to enable them to view complaints registered on the portal and take necessary steps as mandated by the law.

- The portal also provides an option to transfer the registered complaints from the NCPCR to the concerned State Commission.

- It also gives option of joint inquiry if the State Commission wants the NCPCR to be involved.

- The portal segregates complaints based their subject matters like juvenile justice, PSCSO, child labour, education etc.

THE SCALE APP (SKILL CERTIFICATION ASSESSMENT FOR LEATHER EMPLOYEES)

In News: Union Minister of Education and Skill Development has launched the SCALE (Skill Certification Assessment for Leather Employees) app which provides a one-stop solution for skilling, learning, assessment, and employment needs of the leather industry.

More on the Topic:

- The SCALE studio App developed by Leather SSC allows people from all age groups interested in leather craft to access online live streamed classes from the state-of-the-art studio at its office.

The Indian Leather Industry:

- The leather industry plays a major role in generating large-scale employment in the country with over 44 lakh people currently working in this industry.
- The Indian leather sector has one of the youngest and most productive workforces, with 55% of the workforce under the age of 35.
- A total of 2.39 million new jobs are predicted to be produced in the Leather Sector between 2017 and 2022.
- India is the world's second-largest producer and consumer of shoes.

AYUSHMAN BHARAT DIGITAL MISSION

In News: The Ayushman Bharat digital mission completed one year recently.

THE NDHM ECOSYSTEM
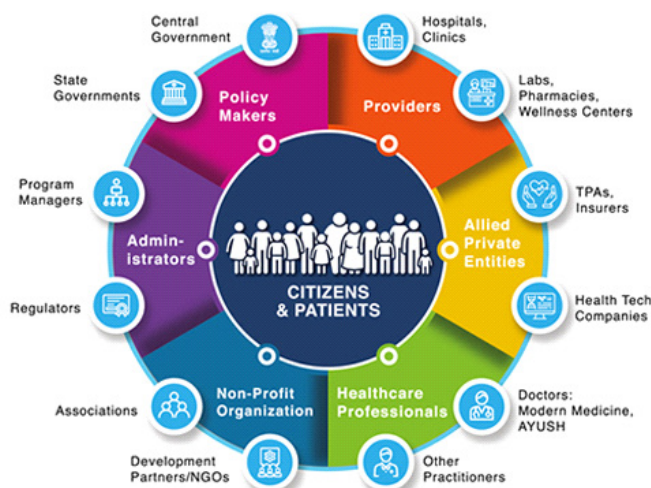
More on the Topic:

- Ayushman Bharat Digital Mission (ABDM) crossed the landmark of one crore digitally linked health records with over 27 lakh records linked in a single day recently.
- The Ayushman Bharat Digital Mission (ABDM) **aims to develop the backbone necessary to support the integrated digital health infrastructure of the country.**
- It will bridge the existing gap amongst different stakeholders of Healthcare ecosystem through digital highways.
- It will close the current gap that exists among the various stakeholders of the country's healthcare ecosystem through digital technologies.
- The mission was launched during **the third anniversary of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY).**
- **The National Health Authority (NHA) under the Ministry of Health and Family Welfare is the implementing agency of the mission.**

PRADHAN MANTRI MATSYA SAMPADA YOJANA

In News: The Pradhan Mantri Matsya Sampada Yojana (PMMSY) completed its successful second year.

Pradhan Mantri Matsya Sampada Yojanaa will generate about 55 lakhs direct & indirect employment opportunities in the fisheries sector over a period of next five years
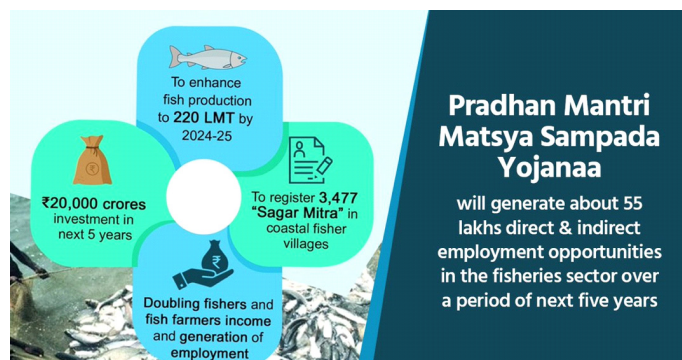
More on the Topic:

- The Pradhan Mantri Matsya Sampada Yojana. (PMMSY) is designed **to address critical gaps** in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernisation and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers welfare.
- PMMSY scheme primarily focuses on **adopting 'Cluster or Area based approaches'** and creation of Fisheries clusters through backward and forward linkages.
- Special focus will be given for **employment generation activities** such as seaweed and ornamental fish cultivation.
- It emphasizes on interventions for quality brood, seed and feed, special focus on species diversification, critical infrastructure, marketing networks etc.

Implementation:

- It is implemented **as an umbrella scheme with two separate components namely:**
- **Central Sector Scheme:** The project cost will be borne by the Central government.
- **Centrally Sponsored Scheme:** All the sub-components/activities will be implemented by the States/UTs and the cost will be shared between the Centre and State.

Achievements of the Scheme:

- Fisheries sector showed **impressive growth of 14.3% from 2019-20 to 2021-22.**
- Fish production **reached an all-time high of 141.64 lakh** tons during 2019-20 to 161.87 lakh tons during 2021-22.
- Fisheries sector saws all-time high exports of 13.64 lakh tonnes valuing Rs 57,587 crore dominated by exports of shrimps.
- Currently, exports to 123 countries are taking place including China, Thailand, Japan, Taiwan, Tunisia, the United States, Hong Kong, Kuwait, etc.
- PMMSY has supported 31.47 lakh farmers under insurance coverage from 22 states and 7 UTs.

WOMEN IN ENGINEERING SCIENCE AND TECHNOLOGY (WEST)

In News: A new I-STEM (Indian Science Technology and Engineering facilities Map) initiative called "Women in Engineering Science and Technology (WEST)" was launched by ministry of Science and Technology.
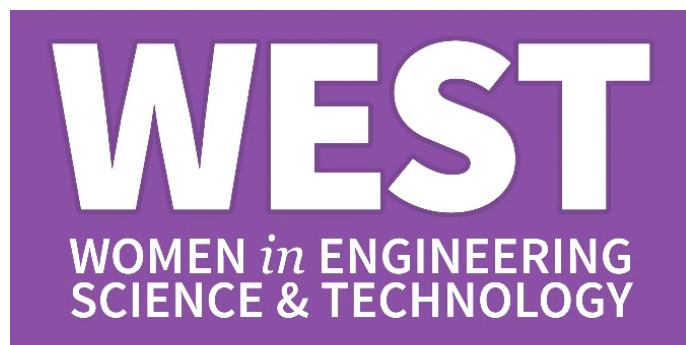
More on the Topic:

- Through the WEST initiative, I-STEM shall provide a separate platform to scientifically inclined women researchers, scientists, and technologists for pursuing research in basic or applied sciences in frontier areas of science and engineering.

- Women may join the WEST program and explore opportunities to become stakeholders in various domains and pursue careers in R&D at various levels: technicians, technologists, scientists, and entrepreneurs.

- Opportunities range from operating scientific equipment and maintaining them, to designing and manufacturing them.

About I-STEM:

- **I-STEM is a National Web portal for sharing R&D (Research and Development) facilities.**

- The portal facilitates researchers to access slots for the use of equipment, as well as to share the details of the outcomes, such as patents, publications and technologies.

- Launched in January 2020. It is an initiative of **the Office of the Principal Scientific Adviser to the Government of India** under the aegis of Prime Minister Science, Technology and Innovation Advisory Council (PM-STIAC) mission.

URBAN EMPLOYMENT SCHEME

In News: Rajasthan Chief Minister has launched the government's flagship scheme for urban employment named the Indira Gandhi Shehari Rojgar Yojana.

Urban Employment Schemes In Indian States

State	Scheme	Year of Launch	Workdays guaranteed
Kerala	Ayyankali Urban Employment Guarantee Scheme	2010	100 per household
Himachal Pradesh	Mukhyamantri Shahri Ajeevika Guarantee Yojana	2020	120 per household
Odisha	Urban Wage Employment Initiative (now Mukhyamantri Karma Tatpara Abhiyan)	2020	
Jharkhand	Mukhyamantri Shramik Yojana	2020	100 per worker

More on the Topic:

- Under the scheme, employment will be provided in segments of environment and water conservation, cleanliness and sanitation, stopping defacement of property, service-related works, convergence work and heritage conservation.

- People from age groups of 18 to 60 are eligible for the scheme. Payments will be made in bank accounts of beneficiary within 15 days.

Why Urban Employment Guarantee Scheme is the need of the hour?

- Parliamentary committee has recommended the institution of an urban employment scheme at the national level.

- Unemployment rates are typically higher in urban areas.

- As per Periodic Labour Force Survey 2019-20, higher unemployment rate (7%) in urban areas as compared to rural areas (4%).

- Urban poor are worst affected by India's persistently high inflation.

- Prevalence of low-wage, poor quality, informal work.

- Growing distress among the urban poor.

PRADHAN MANTRI SCHOOLS FOR RISING INDIA (PM-SHRI) YOJANA

In News: The Prime Minister has announced the development and upgradation of 14,500 schools across India under the Pradhan Mantri Schools For Rising India (PM-SHRI) Yojana.

More on the Topic:

- 14,500 schools across the country will be developed and upgraded under the scheme.

- The PM-SHRI schools will have a modern, transformational and holistic method of imparting education. Emphasis will be on a discovery oriented, learning centric way of teaching.

- Focus will also be on modern infra including latest technology, smart classrooms, sports and more.

THE SCHEME FOR ECONOMIC EMPOWERMENT OF DENOTIFIED / NOMADIC / SEMI NOMADIC (SEED)

In News: The Union Social Justice Ministry has so far received 402 online applications from across the country to avail benefits under SEED, a scheme meant for the upliftment of Denotified, Nomadic and Semi-Nomadic Tribes (DNTs/NTs/SNTs).

More on the Topic:

- More than 10 crore Indians from 1,400 communities belong to these groups, as per the latest estimates available with the government.

- However, none of the applications received so far on SEED's online portal have been approved yet, with multiple officials explaining that the exercise to bring all DNT, NT and SNT communities under SC, ST, and OBC categories is holding up the implementation of the scheme.

- **Idate Commission** was formed by the Government of India in 2015 to study and prepare state-wise lists of different castes of DNTs.

- The categorisation of these communities by the Idate Commission left room for inaccuracies as outlined by the commission in its 2018 report.

- For instance, some communities such as the Banjara were under the SC list in Delhi, the ST list in Rajasthan and the OBC list in Uttar Pradesh.

- The categorisation of DNTs, NTs and SNTs is essential for the implementation of SEED.

About SEED Scheme:

- The Scheme for Economic Empowerment of Denotified/Nomadic/SemiNomadic (SEED) communities was launched in February 2022.

- It aims to provide free competitive exam coaching to these students, to provide health insurance to families, to uplift clusters of these communities through livelihood initiatives, and to provide financial assistance for housing.

- The Ministry has been allocated 200 crore for this scheme - to be spent over five years from FY 2021-2022 to FY 2025-2026.

About Denotified Nomadic Tribes (DNTs):

- DNTs are the tribes which **were notified as criminal tribes under Criminal Tribes Act, 1871, by the British colonial government.**

- Under this Act, millions of nomadic and semi-nomadic communities were declared criminals and put under continuous surveillance.

- After decades of facing horrors of this racial Act, they were denotified by the Government of independent India on August 31, 1952.

- While most DNTs are spread across the Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Classes (OBC) categories, some DNTs are not covered in any of the SC, ST or OBC categories.

- The DNTs are a heterogenous group engaged in various occupations such as transport, key-making, salt trading, entertaining like acrobats, dancers, snake charmers, jugglers and pastoralists.

Difference Between nomadic and semi-nomadic tribes:

- There are **nearly 1,500 nomadic and semi-nomadic tribes and 198 denotified tribes, comprising 15 crore Indians, according to the Renke Commission (2008).**

- The nomadic tribes maintain constant geographical mobility while semi-nomads are those who are on the move but return to fixed habitations once a year, mainly for occupational reasons.

- All nomadic tribes are not DNTs, but all DNTs are nomadic tribes.

PARAKH

In News: A new regulator, PARAKH (Performance Assessment, Review and Analysis of Knowledge for Holistic Development), is being set up to oversee the process and conduct the National Achievement Survey (NAS).

More on the Topic:

- PARAKH will be setting norms, standards and guidelines for student assessment and evaluation for all recognised school boards of India, encouraging and helping school boards to shift their assessment patterns towards meeting the skill requirements of the 21st century.

- (PARAKH) team will consist of leading assessment experts with a deep understanding of the education system in India and internationally.

- PARAKH will also **aim to do away with rote learning,** as mentioned in the New Education Policy (NEP) 2020.

- PARAKH will **eventually become the national single-window source for all assessment-related information and expertise,** with a mandate to support learning assessment in all forms, both nationally and where applicable, internationally.

PRADHANMANTRI BHARTIYA JANURVARAK PARIYOJNA (PMBJP)

In News: The Ministry of Chemicals and Fertilisers announced One Nation One Fertiliser scheme.

More on the Topic:

- As part of the initiative, fertilisers will be sold under a single brand name, 'Bharat' irrespective of the

manufacturing companies under PMBJP.

- Under ONOF companies are allowed to display their name, brand, logo and other relevant product information only on one-third space of their bags.

- On the remaining two-thirds space, the "Bharat" brand and Pradhanmantri Bharatiya Jan Urvarak Pariyojana logo will have to be shown.

- This scheme applies to both public & private sector companies. It will bring about uniformity in fertiliser brands across the country.

Government Involvement in the Fertiliser Industry:

- The maximum retail price of urea is currently fixed by the government, which compensates companies for the higher cost of manufacturing or imports incurred by them.

- Apart from subsidising and deciding at what price companies can sell, the government also decides where they can sell. This is done through the Fertiliser (Movement) Control Order, 1973. The department also regularly monitor movement to ensure fertiliser availability as per requirement, including remote areas.

Criticism About the Scheme:

- The branding by government **disincentives fertiliser companies from undertaking marketing and brand promotion activities.** They will now be reduced to contract manufacturers and importers for the government.

- Fertiliser companies said this **will destroy their own branding and lead to an unnecessary uniformity in the market.**

- Currently, in case of any bag or batch of fertilisers not meeting the required standards, the blame is put on the company. But now, that may be passed on fully to the government.

DELHI GOVERNMENT AND MANDATORY FORENSIC PROBES

In News: Delhi Police has become the first police force in country to make collection of forensic evidence mandatory in crimes punishable by more than six years.

More on the Topic:

- According to the guidelines, apart from the Delhi Police's own mobile crime vans in the districts, a forensic mobile van shall be allotted to each district.

- It will provide scientific and forensic assistance on the spot to the Investigating Officers(IOs) whenever any such need arises.

- Each van shall be fully equipped with scientific tools and a sufficient number of forensic assistants.

- These forensic mobile vans shall not be under the administrative control of the city police. They shall be independent entities responsible to the court of law.

MATERNITY LEAVE

In News: The Union government has decided to grant a 60-day special maternity leave for Central government women employees in case of stillbirth or death of an infant within 28 days of birth.

More on the Topic:

- **Maternity Benefit Act Amendment Act 2017** has amended the Maternity Benefit Act, of 1961.

- The Maternity Benefit Act, 1961 **shields the employment of women during their maternity and entitles them to a 'maternity benefit.**

- The Act applied to **all organisations employing 10 or more than 10 persons in Factories, Mines, plantations, Shops & Establishments, etc.**

- Maternity leave available to the working women to be increased from 12 weeks to 26 weeks for the first two children.

- Maternity leave for children beyond the first two will continue to be 12 weeks.

- Maternity leave of 12 weeks to be available to mothers adopting a child below the age of three months as well as to the **"commissioning mothers".**

- The commissioning mother has been defined as biological mother who uses her egg to create an embryo planted in any other woman.

- The employer may permit a woman to work from home if it is possible to do so.

- Every establishment will be required to make these benefits available to the women from the time of her appointment.

- **Organizations employing 50 or more employees are also required to provide crèche facilities.**

- **Women employees would be permitted to visit the crèche 4 times** during the day (including rest intervals) and where crèche facilities are not available to women employees there should be two one-half-hour rest periods.

INDIAN ECONOMY

SPECIAL VOSTRO ACCOUNTS

In News: Public sector lender UCO Bank has received the Reserve Bank of India's (RBI's) approval to open a special vostro account.

More on the Topic:

- It will **cushion rupee from market volatility and help Russia as it cannot use SWIFT system**

- **(system used by banks for payments in foreign currency) due to sanction**

- A Vostro account is an account a correspondent bank holds on behalf of another bank. A Vostro account is an essential part of correspondent banking in which a foreign bank works as an agent for a domestic bank, delivering financial services on its behalf.

- Vostro accounts enable domestic banks to offer international financial services to their clients who require them.

- Vostro account services include wire transfers, foreign exchange transactions, deposit and withdrawal options, and international trade streamlining.

INSIDER TRADING

In News: The Supreme court recently held that mere possession of price-sensitive information and trading on the basis of that are not sufficient to prove insider trading charges.

More on the Topic:

- It is equally important to establish that the intent behind the transaction too was to gain from the insider information.

- **Insider trading refers to the practice of purchasing or** selling a publicly-traded company's securities while in possession of material information that is not yet public information.

- Material information refers to any and all information that may result in a substantial impact on the decision of an investor regarding whether to buy or sell the security.

- E.g.: A government employee acts upon his knowledge about a new regulation to be passed which will benefit a sugar-exporting firm and buys its shares before the regulation becomes public knowledge.

SOCIAL STOCK EXCHANGE (SSE)

In News: The Securities and Exchange Board of India (Sebi) came out with a detailed framework for social stock exchange, specifying minimum requirements for a Not-for-Profit Organisation (NPO) for registering with the bourse and disclosure requirements.

ILLUSTRATION: AJAY MOHANTY
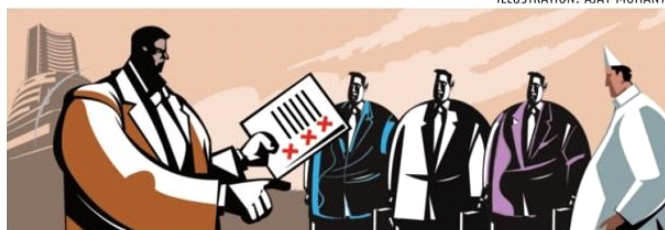
ANOTHER SHOT AT SUCCESS
This is the second expert panel report on setting up SSEs in the country

Source: Sebi report

	Exchange	Instrument	Disclosures
FOR-PROFIT	IGP, SME, NSE or BSE (main board)	Equity, debt, development impact bonds, SVPs	Social impact reporting
NOT-FOR-PROFIT	Separate segment under the existing stock exchanges	Equity, ZCZP, MFs, SVPs, development impact bonds	Social impart reporting and other disclousre requirements of exchanges

More on the Topic:

- NPOs should be registered as **a charitable entity, and registration certificate must be valid for next 12 months.**

- Age of the NPO should be **"minimum of three years"**. SEs raising funds using SSE should disclose Annual Impact Report within 90 days from end of financial year.

- NPOs raising funds through **the issuance of Zero Coupon Zero Principal Instruments** must disclose their Vision, Target Segment, etc.

About Social Stock Exchange:

- SSE is a novel concept in India and such a bourse is meant **to serve the private and non-profit sectors by channelling greater capital to them.**

- SSE will be a separate segment of the existing stock exchanges. Social enterprises eligible to participate in the SSE will be entities **NPOs and for-profit social enterprises having social intent and impact as their primary goal.**

- Also, such an intent should be demonstrated through its focus on eligible social objectives for the underserved or less privileged populations or regions.

- It is important to note that **the social enterprises will**

have to engage in a social activity out of 16 broad activities listed by the regulator.

- The eligible activities include eradicating hunger, poverty, malnutrition and inequality; promoting healthcare, supporting education, employability and livelihoods; gender equality empowerment of women and LGBTQIA communities; and supporting incubators of social enterprise.

Zero-coupon, zero-principal structure:

- With its zero-coupon, zero-principal structure, **it resembles a debt security like a bond.** When an entity takes a loan by issuing regular debt security like a bond, it has to make **interest payments and the principal when the bond matures.**

- But with this new financial instrument, when an entity issues these securities and raises money, it is not a loan but a donation.

- So, the **borrowing entity does not have to pay interest—therefore zero coupon—and it does not have to pay the principal (zero principal) either.**

MARKET-BASED ECONOMIC DISPATCH (MBED) MODEL

In News: The Securities Exchange Board of India (SEBI) has joined the Reserve Bank of India's (RBI's) account aggregator framework.

More on the Topic:

- The Market-Based Economic Dispatch (MBED) mechanism, the Union Ministry of Power proposal **envisages centralised scheduling for dispatching the entire annual electricity consumption of around 1,400 billion units.**

- This will mark a clear shift from a decentralised model followed now, which has been buttressed by the Electricity Act 2003 and follow-on reforms.

Implementation:

- The market operator will arrive at a **market clearing price (MCP) by matching the last generators' supply offer** matched to meet the demand offers.

- The Discoms would have to procure the required electricity from the market operator at the MCP, which, in turn, would be paid to the Gencos supplying power.

- **The settlement for fixed costs shall be outside the ambit of this market.**

- Discoms shall **pay the same to their contracted Gencos based on the latter's availability.**

- However, if the MCP is higher than the contracted price (variable cost) a Genco had agreed with a Discom, then the Genco will refund the excess to the Discom.

- This ensures that **the Discom will not be forced to pay more** for its contracted capacity.

Pros:

- **Reduced power purchase costs:** Centralised pool of generation and demand offers will make Gencos to become more cost-efficient or shut down, thus lowering the overall variable cost of power in India.

- **Greater renewable energy integration:** With power being scheduled and dispatched over a larger balancing zone, renewable energy is expected to be curtailed at a lower rate.

Concerns:

- The MBED model is **seen as impinging on the relative autonomy of states** in managing their electricity sector, including their own generating stations, and making the discoms (distribution companies that are mostly state-owned) entirely dependent on the centralised mandatory market pool requirements.

- There are concerns **this could strip states of their freedom to decide their own electricity requirement** while managing seasonal and local demand trends.

Views Expressed by The Central Government:

- The Centre's argument is that **the current model of states doing scheduling is suboptimal.**

- As part of this, an algorithm developed by the NLDC called the Security Constrained Economic Dispatch (SCED) is being cited as a solution, which is aimed at assisting regulators in making informed calls on scheduling decisions on a nationwide basis.

Way Ahead:

- There is a need for more consensus building exercise before rolling out of the plan.

- Instead of moving towards complete centralization, steps to reinforce the existing voluntary pool-based markets must be considered.

ESSENTIAL MEDICINES LIST

In News: The Union Health Ministry recently released the new National List of Essential Medicine (NLEM)-2022, revising it after a seven-year period.

ESSENTIAL MEDICINES

- **GUIDING PRINCIPLE:** A limited range of carefully selected essential drugs leads to Better health care, Better drug management & at Lower costs

- **DEFINITION:** That satisfy the priority health care needs of the population at all time.

- **SELECTION:** with due regard to public health relevance, evidence of efficacy and safety, and comparative cost-effectiveness*

*WHO, [Online]. http://www.who.int/topics/essential_medicines/en
3| Essential Medicines List: Concept and Procedures
World Health Organization

More on the Topic:

- Curated by experts in consultation with stakeholders, **the list includes medicines that are needed to address the priority healthcare needs of the majority of the population.**

- The drugs included are those that are best for the treatment of a particular condition and are cost-effective at the same time.

- This is the reason **the list almost always sees the inclusion of generics** (unbranded medicines, like paracetamol instead of crocin).

- **Framed on the principles of the World Health Organisation's essential medicine list,** India's first list was developed in 1996. It has since been modified four time.

FINANCIAL STABILITY AND DEVELOPMENT COUNCIL

In News: The 26th Meeting of the Financial Stability and Development Council (FSDC) was chaired by the Union Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman recently.
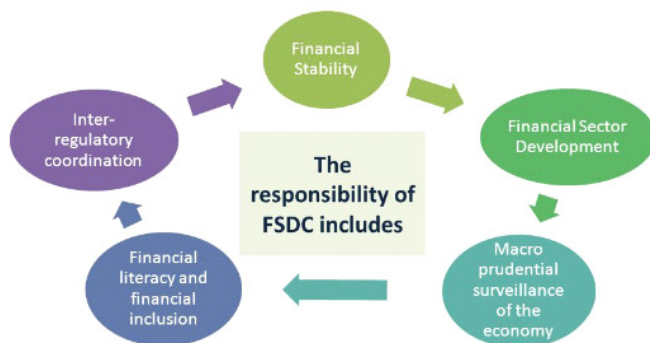
More on the Topic:

- Financial Stability and Development Council is an apex-level body constituted by the government of India.

- The idea to create such a super regulatory body was first mooted by the Raghuram Rajan Committee in 2008.

- In 2010 the GOI decided to set up such an autonomous body dealing with macro prudential and financial regularities in the entire financial sector of India.

- An apex-level FSDC is not a statutory body.

- The new body envisages to strengthen and institutionalise the mechanism of **maintaining financial stability, financial sector development, inter-regulatory coordination** along with monitoring macro-prudential regulation' of economy.

ONE WATER APPROACH

In News: Shift needed from single-minded, linear water management to multi-dimensional integrated water management technique known as One Water Management.

More on the Topic:

- The United Nations has estimated that by the year 2050, four billion people will be seriously affected by water shortages, which might lead to multiple conflicts between countries over water sharing.

- Therefore, shifting the attention from a single-minded and linear water management to a multi-dimensional integrated water management approach, that is, the 'One Water' approach, for a comprehensive, resilient and sustainable management of water resources.

About One Water Approach:

- One Water is the emphasis that all water has value, encouraging those in the water industry to work together to solve water challenges, whether these challenges encompass storm water, residential water, commercial water, industrial water, municipal water, wastewater, drinking water, etc.

- Under One water strategy, Water is recycled and reused several times in IWRM.

- It brings all diverse stakeholders together to advance common-ground solutions to combat water and urban ecology challenges.

- It is multi-faceted approach.

GADGIL, KASTURIRANGAN REPORTS

In News: The Supreme Court of India has dismissed a public interest litigation against Gadgil and Kasturirangan reports.

Gadgill Committee	Kasturirangan Committee
The entire Western Ghats is an "Ecologically Sensitive Area".	Only approximately 37% of the entire Western Ghats is an "Ecologically Sensitive Area".
Recommends a bottom-up approach to conservation with Gram Sabhas playing a crucial role in decision-making.	Envisages decision-making as a responsibility that lies primarily with the government and the bureaucracy (such as forest officials).
Recommends the recognition of three grades of Ecologically Sensitive Zones and the complete ban on the construction of high-capacity storage dams and sand mining in ESZ-1 areas.	Hydroelectric power plants to be permitted in ESAs only after a detailed study. Recommends a complete ban on quarrying, mining, and sand mining in ESAs.
Constitute the Western Ghats Ecology Authority under the MoEF to regulate and oversee the conservation of the Western Ghats.	Strengthen the current legal framework (such as the State Pollution Control Boards and the State Biodiversity Boards) .

More on the Topic:

- The petitioner had pleaded to the apex court to not implement the recommendations of the Western Ghats Ecologically Expert Panel (Gadgil Committee Report) and the High-Level Working Group (Kasturirangan Committee Report).

- The petitioner has said it will lead to deprivation of the Right To Life of the citizens hailing from the Western Ghats, especially Kerala.

About Gadgil and Kasturirangan Report:

- The Madhav Gadgil Report had classified **the whole of the Western Ghats, spread across six states and covering 44 districts and 142 talukas, as an Eco-Sensitive Zone (ESZ).**

- **The Kasturirangan Committee had reduced the ESZ to 37%** of the total area, covering about 60,000 sq km. It had recommended that 123 revenue villages be demarcated as ESA.

- **The Kasturirangan report removed the system of gradation recommended by the Gadgil commission.** Instead, it continued the existing system of 'red', 'orange' and 'green' categorisation of activities according to their polluting effects.

- It recommended **a blanket ban on mining, quarrying, setting up of red category industries and thermal power projects.**

- As people turned violent and started protests, **Kerala government appointed a committee to study the Kasturirangan report in detail.**

- The panel has made **several pro-farmer recommendations,** including the exclusion of inhabited regions and plantations from the purview of ecologically sensitive areas (ESAs).

About Western Ghats:

- The Western Ghats is **one of the world's eight biodiversity hotspots, spanning six states: Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu, and Kerala.**

- It is designated as a UNESCO World Heritage Site. It is one of the **world's eight "hottest hotspots" of biological variety.**

- The Western Ghats, according to UNESCO, **is older than the Himalayas.** They have an impact on Indian monsoon weather patterns by intercepting rain-laden monsoon winds that blow in from the southwest in late summer.

NATIONAL CLEAN AIR PROGRAM

In News: A large number of cities under the National Clean Air Programme (NCAP) and non-NCAP cities need a substantial reduction in PM 2.5 levels to meet the national ambient air quality standards in all climatic zones.

National Clean Air Programme

More on the Topic:

- NCAP and non-NCAP cities are showing similar trends in PM 2.5 levels. The analysis stressed the need to adopt regional air quality planning for all cities and regions to improve overall air quality.

- As per the air quality analysis, **the NCAP has set a national level target of a 20-30% reduction in PM2.5 and PM10 concentrations by 2024** from the 2017 base year.

- But the latest performance assessment of NCAP cities by the Central Pollution Control Board (CPCB) for disbursement of performance-linked funds has considered only PM10 data that is largely coarse dust particles.

- As the monitoring of PM2.5 - the tinier particles that are much more harmful - is limited, a uniform assessment of cities based on PM2.5 reduction has not been considered for performance assessment.

About NCAP:

- National Clean Air Programme (NCAP), launched in 2019, is India's flagship program for better air quality in 132 cities.

- The plan includes **102 non-attainment cities, across 23 states and Union territories,** which were identified by the Central Pollution Control Board (CPCB) on the basis of their ambient air quality data between 2011 and 2015.

- Non-attainment cities are those that **have fallen short of the National Ambient Air Quality Standards (NAAQS) for over five years.**

SURFACE COAL GASIFICATION

In News: Coal India Limited (CIL) will be joining hands with three other major PSUs of the country— Bharat Heavy Electricals Limited (BHEL), Indian Oil Corporation Limited (IOCL) and GAIL (India) for setting up four Surface Coal Gasification (SCG) projects.

Nº of published studies on microplastic accumulation in organisms
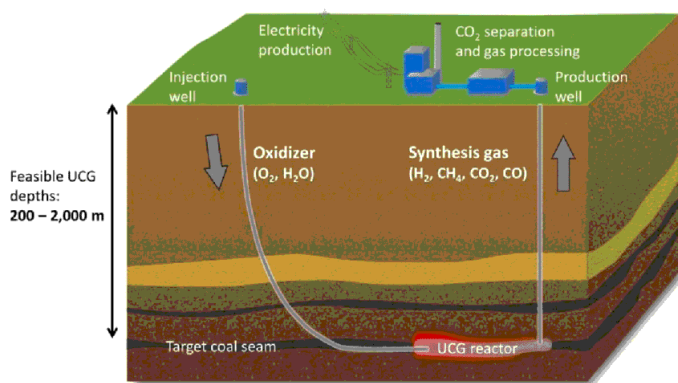
More on the Topic:

- Through the SCG route coal is converted into syngas that can be subsequently processed for downstream production of value-added chemicals.

- These are otherwise produced through imported natural gas or crude oil. Envisaged end products would be di-methyl ether, synthetic natural gas and ammonium nitrate.

- With the twin objectives of self-reliance and energy independence, the Ministry of Coal has set a target for achieving 100 million tonne of coal gasification by 2030.

About Syngas:

- Syngas is a mixture consisting primarily of methane (CH4), carbon monoxide (CO), hydrogen (H2), carbon dioxide (CO2) and water vapour (H2O).

- Syngas can be used to produce a wide range of fertilizers, fuels, solvent and synthetic materials.

Advantages of Coal gasification:

- Transporting gas is a lot cheaper than transporting coal.

- Help address local pollution problems.

- Has greater efficiency than conventional coal-burning because it can effectively use the gases twice: the coal gases are first cleansed of impurities and fired in a turbine to generate electricity.

- The exhaust heat from the gas turbine can be captured and used to generate steam for a steam turbine-generator.

Challenges:

- There are also concerns about water contamination, land subsidence and disposing of waste water safely.

- Indian coal is low grade.

- Highly capital-intensive and water-intensive process.

NANO PLASTIC

In News: A team of researchers developed a new, metallic fingerprint-based method to detect and measure the amount of Nano plastics in organisms.
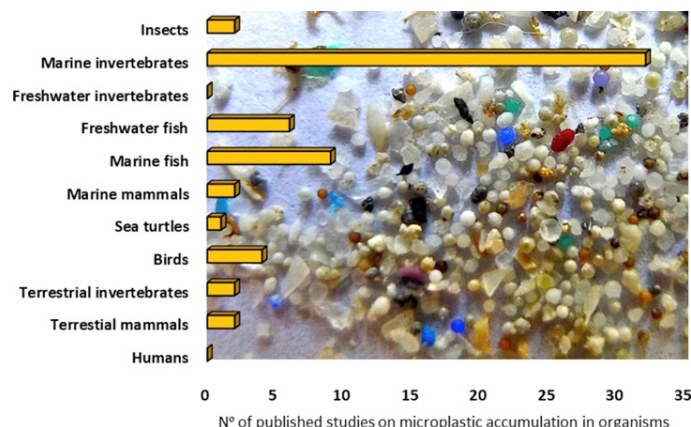
More on the Topic:

- For their study, they applied the technique to a model food chain that contains three trophic levels (trophic level is the position an organism occupies in the food chain) — lettuce, which was the primary producer, black soldier fly larvae, the primary consumer, and insectivorous fish (roach) as the secondary consumer.

- The research showed that the nanoplastics from the soil were taken up the roots of the plants and accumulated in the leaves.

- Subsequently, the contaminated lettuce transferred the nanoplastics to the insects.

- Imaging of the black soldier fly digestive system showed that both PS and PVC nanoplastics were found in the mouth and gut, despite allowing them to empty their guts for 24 hours.

- Both the lettuce and insects, however, contained a lower amount of PS particles, as compared to the PVC nanoplastics.

- Due to their small size, nanoplastics can likely pass through physiological barriers and enter organisms.

About Nano Plastic:

- Nonplastics are plastic debris particles that are smaller than 1,000 nanometre, which is equal to one billionth of a metre.

- Nanoplastics pose significant health hazard to herbivores and humans by entering into their bodies and staying there.

- Currently, agricultural soil is receiving microplastics from various sources like atmospheric deposition, irrigation using wastewater, usage of sewage sludge for agricultural purposes, and use of mulching film.

- It can lead to cell damage and inflammation in humans; growth impairments, larval deformities and other toxic effects in marine organisms.

INDO-SWISS BUILDING ENERGY EFFICIENCY PROJECT

In News: A conference has been organized under BEEP (Indo-Swiss Building Energy Efficiency Project) for helping India mainstream energy-efficient and thermally comfortable Building design for both commercial and residential buildings.

INDO-SWISS BUILDING ENERGY EFFICIENCY PROJECT (BEEP)

More on the Topic:

● Indo-Swiss Building Energy Efficiency Project (BEEP) is a bilateral cooperation project between the Ministry of Power, Government of India, and the Federal Department of Foreign Affairs (FDFA) of the Swiss Confederation.

● Started in 2011, the project's central focus is **to help India mainstream Energy-Efficient and Thermally Comfortable (EETC) Building** Design for both commercial and residential buildings.

● **BEEP works with building industry, policy makers, and building owners** to catalyse adoption of EETC building design and technologies.

● **The Bureau of Energy Efficiency is BEEP's implementing agency for the Ministry of Power,** while the Swiss Agency for Development and Cooperation oversees the project for FDFA.

INTERNATIONAL YEAR OF MILLETS-2023

In News: Popularly known as the 'Millet Man of India', Dr Khadar Vali called upon the farmers, agriculture scientists and policymakers to promote millets in agriculture to save soil, water, environment and, above all, human health.

More on the Topic:

● Millets are cereal crops with high nutritive value and categorized as small-seeded grasses.

● The key varieties of millets include Sorghum, Pearl Millet, Ragi, Small Millet, Foxtail Millet, Barnyard Millet, Kodo Millet and others.

● Major producers include Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.

● The water required for rice and wheat crops in one year equates with water requirement of millets for 26-30 years. This single reason is good enough for scientists and farmers to have shifted to the cultivation of millets.

● High in dietary fibre, nutri-cereals are a powerhouse of nutrients including iron, folate, calcium, zinc, magnesium, phosphorous, copper, vitamins and antioxidants.

Significance of Millets:

● Millets can **counter many of the adverse effects of climate change** better than most other food crops. They grow in almost any type of soil – sandy or with varying levels of acidity. They hardly need any fertilisers or irrigation.

● Being a C4 group of cereals, **millets convert more carbon dioxide to oxygen,** contributing in mitigating climate change.

● Millets also offer **a significant cost advantage over maize as a feedstock for bio-ethanol** production.

● Unlike rice and wheat that require many inputs in terms of fertiliser and water, **millets grow well in dry regions as rain-fed crops.**

● Therefore, **boosting millet cultivation will empower the average farmer** and achieve the objectives of enhancing incomes and improving crop diversification.

International Year of Millets:

● India's proposal to observe an International Year of Millets in 2023 has been approved at the by the Food and Agriculture Organisation (FAO).

● The International year of millet intends to raise awareness and direct policy action to the nutritional and health benefits of millets consumption and their suitability for cultivation under adverse and changing climatic conditions

THE ZERO EMISSION VEHICLES TRANSITION COUNCIL

In News: At COP26, India, represented by NITI Aayog, participated in the fourth ministerial dialogue of the ZEVTC.

More on the Topic:

● The Zero Emission Vehicles Transition Council was formed in November 2020.

● It is the world's first political forum through which ministers and representatives from governments and most progressive automotive markets meet to discuss how to accelerate the pace of the global transition to zero emission vehicles.

THE FINANCIAL INTERMEDIARY FUND (FIF)

In News: A new fund for pandemic prevention ,preparedness and response hosted by the World Bank will invite investment proposals soon.
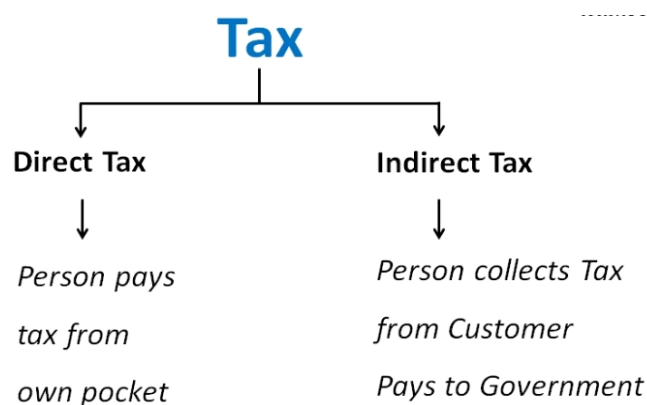
More on the Topic:

- It is built to financially boost efforts in low and middle-income countries to prevent, control and prepare for pandemics such as COVID-19.

- It will also "address critical gaps through investments and technical support at the national, regional and global levels".

- FIF will help in strengthening PPR capacity in areas such as zoonotic disease surveillance,laboratories, emergency communication, critical health workforce capacities etc.

- The FIF was developed with broad support from members of the G20 and beyond.

DIRECT TAXES

In News: Finance Ministry has indicated that the Direct tax collection has increased by 35.46% to Rs 6.48 lakh crore in the current fiscal up to September.

Tax

Direct Tax — *Person pays tax from own pocket*

Indirect Tax — *Person collects Tax from Customer Pays to Government*

Example
Income Tax

Example
~~Vat. Service Tax, Excise, Customs etc.~~ *GST*

More on the Topic:

- As the name suggests these taxes are directly paid by the assesse to the government. These are not paid on behalf of the taxpayers but are imposed directly by the regulator. Furthermore, this liability is non-transferable to another taxpayer.

Types of Direct Taxes:

- **Corporate tax:**
- Such tax is levied on domestic companies that are different from the shareholders. This tax is also payable by foreign corporations whose income arises or is deemed to arise in India. Income earned as interest, royalties, dividends, technical services fees, or gains through the sale of assets based in India is taxable. Corporate tax includes Minimum Alternate Tax (MAT), Dividend Distribution Tax (DDT) etc.

- **Wealth tax:**
- This liability arises from the ownership of properties and is paid every year based on the market value of the property. Property owners must pay this tax irrespective of whether the property earns them any income or not.

- **Capital gains tax:**
- This type of direct tax in India is payable on income earned from the sale of investments or assets. Capital assets include investments in homes, art, businesses, shares, bonds, and farms.

Benefits of Direct Income Taxes:

- **Equity:** Direct taxes are levied on the total income of the taxpayers. Therefore, taxpayers with higher income pay more tax while taxpayers earning less pay lower to no taxes.

- **Progressive:** The primary objective of any government is to achieve equal distribution of wealth. Direct taxes in India play an important role in attaining this equality. These taxes are designed with progressiveness; they are beneficial in reducing income inequalities.

- **Productive:** These types of taxes are productive and elastic. The revenue earned through such taxes automatically increases or decreases depending on the changes in the national wealth of the country.

- **Economic:** Since taxpayers pay this tax annually, the administrative costs borne by governing authorities for the levy and collection of tax are reduced.

PRODUCTION-LINKED INCENTIVE (PLI) SCHEME

In News: As part of the Atmanirbhar Bharat initiative, in the first-ever disbursement under PLI scheme was approved recently by an empowered committee headed by NITI Aayog CEO.

More on the Topic:

- Production linked incentive (PLI) schemes are a cornerstone of the government's push for accomplishing the vision of Atmanirbhar Bharat.

- It intends to make India a manufacturing hub.

- The strategy behind scheme is to offer financial incentive to boost electronics manufacturing and attract large scale investments.

Objective of the Scheme:

- To make domestic manufacturing globally competitive and to create global champions in manufacturing.

- To provide support towards the existing domestic companies to expand their manufacturing units.

- To ensure that more employment opportunities are provided to Indian citizens in the manufacturing sector.

Implementation of the Scheme:

- The government has rolled out the scheme with an outlay of about 2 lakh crore for as many **as 14 sectors, including automobiles and auto components, white goods, pharma, textiles, advance chemistry cell and specialty steel.**
- The scheme shall **extend an incentive of 4% to 6% on incremental sales** (over base year) of goods manufactured in India and covered under target segments, to eligible companies, for a period of five (5) years with financial year (FY) 2019-20 considered as the base year for calculation of incentives.
- The Scheme will be implemented through a **Nodal Agency which shall act as a Project Management Agency (PMA)** and be responsible for providing secretarial, managerial and implementation support and carrying out other responsibilities as assigned by MeitY from time to time.

Incremental Sale?

- So, basically Incremental sales are a concept wherein a company manages to sell more products as compared to its estimates. But to ramp up production in order to sell more products companies usually need to go for self- funding.
- In the PLI Scheme however, the Government will provide subsidies/ incentives on this "Incremental Sale" of goods manufactured in domestic units i.e within India.

RBI GUIDELINES FOR DIGITAL LENDING

In News: RBI has Issued Guidelines for Digital Lending which is effective Immediately.

More on the Topic:

- According to the guidelines, **all loan disbursals/ repayments are to be executed only between the bank accounts of the borrower and the regulated entity (RE).**
- REs need to ensure that the disbursal is not made to a third-party account, including the accounts of loan service providers (LSPs) and their digital lending apps (DLAs).
- **Any fees or charges payable to the LSPs are to be paid directly by REs** and must not be charged by LSP to the borrower directly.
- **Any penal interest/charges levied on borrowers must** be based on the outstanding amount of the loan.
- Penal charges are to be disclosed upfront on an annualised basis to borrowers in the key fact statement (KFS).
- **Lenders can store information such as name, address of customer etc.** that are required to process and disburse loan and repayment of it. **Biometric information of the borrower cannot be stored** by Digital Lending Apps (DLAs).
- REs shall provide a Key Fact Statement (KFS) to the borrower before the execution of the contract in a standardized format for all digital lending products.

About Digital Lending:

- It consists of **lending through web platforms or mobile apps, by taking advantage of technology for authentication and credit assessment.**
- India's digital lending market has seen a significant rise over the years. The digital lending value increased from USD 33 billion in FY15 to USD 150 billion in FY20 and is expected to hit the USD 350-billion mark by FY23.
- **Banks have launched their own independent digital lending platforms** to tap in the digital lending market by leveraging existing capabilities in traditional lending.

OPEN NETWORK FOR DIGITAL COMMERCE

In News: Commerce and Industry Minister Piyush Goyal has reviewed the progress of the Open Network for Digital Commerce (ONDC).

More on the Topic:

- It was launched by **Department for Promotion of Industry and Internal Trade (DPIIT), to control digital monopolies and make the industry more inclusive** for buyers and sellers alike.
- The Open Network for Digital Commerce (ONDC) **is an open technology network based on an open protocol.**
- The platform will **allow buyers and sellers to connect and transact with each other online,** regardless of what other applications they use.
- **The buyers and sellers do not have to use the same platform** or same mobile app to have a transaction. They can use different applications and still do business transactions.
- **The ONDC will not be owned or controlled by a single entity or platform** and the idea behind it is to connect buyers, suppliers, payment, and logistics providers through open-source specifications and protocols.
- Incorporated as a private sector non-profit company in

2021, **it is modelled around Unified Payments Interface (UPI).**

Benefits of ONDC:

- The benefits of ONDC include access to more buyers; better discoverability of products and cost; autonomy on terms because of multiple choices for being digitally visible; lower cost of doing business; and more options for value chain services like logistics and fulfilment.

- **Empower merchants and consumers by breaking silos to form a single network to drive innovation and scale,** transforming all businesses from retail goods, food to mobility.

- As all e-commerce companies will operate using same processes, **it provides boost to smaller online retailers as well as new entrants** by ushering in discoverability, interoperability, and inclusivity.

CREDIT RATING AGENCIES

In News: The Securities and Exchange Board of India (SEBI) has issued fresh guidelines for the credit rating agencies (CRAs) to improve transparency and usability of information disclosed on their websites.

No	S&P	Moody's	Fitch	Meaning and Color
1	AAA	Aaa	AAA	Prime
2	AA+	Aa1	AA+	High Grade
3	AA	Aa2	AA	High Grade
4	AA-	Aa3	AA	High Grade
5	A+	A1	A+	Upper Medium Grade
6	A	A2	A	Upper Medium Grade
7	A-	A3	A-	Upper Medium Grade
8	BBB+	Baa1	BBB+	Lower Medium Grade
9	BBB	Baa2	BBB	Lower Medium Grade
10	BBB-	Baa3	BBB-	Lower Medium Grade
11	BB+	Ba1	BB+	Non Investment Grade Speculative
12	BB	Ba2	BB	Non Investment Grade Speculative
13	BB-	Ba3	BB-	Non Investment Grade Speculative
14	B+	B1	B+	Highly Speculative
15	B	B2	B	Highly Speculative
16	B-	B3	B-	Highly Speculative
17	CCC+	Caa1	CCC+	Substantial Risks
18	CCC	Caa2	CCC	Extremely Speculative

More on the Topic:

- The new rules mandate **credit rating agencies to compare two consecutive rating actions if the change between two consecutive actions** is more than or equal to three notches downward.

- The rule aims **to standardize the methodology of computation and disclosure of a sharp rating action.**

- Sharp rating action is when the credit rating of an issuer gets downgraded in a very short time period.

- While withdrawing any credit rating, CRAs must assign a credit rating to such security in its press release, except securities that do not have outstanding obligations, or security rated is wound up, merged or amalgamated with another company.

Credit Rating Agencies:

- A credit rating is an **assessment of the creditworthiness of a borrower** in general terms or with respect to a particular debt or financial obligation.

- A credit rating agency is a company **that assigns credit ratings, which rate a debtor's ability to pay back debt by making timely principal and interest payments and the likelihood of default.**

- The credit rating agencies in India are authorized and regulated by the Securities and Exchange Board of India as per the SEBI Regulations, 1999 of the SEBI Act, 1992.

- India has seven credit rating agencies namely the CRISIL, ICRA, CARE, Brickwork Rating, India Rating and Research Pvt.

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.

CRITICAL INFRASTRUCTURE PROJECTS

In News: China's biggest freshwater lake - Poyang reduced to just 25% of its usual size by a severe drought.
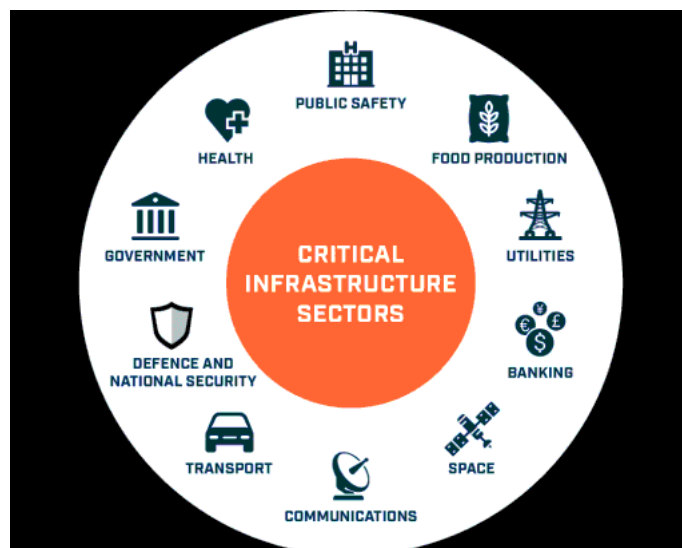
More on the Topic:

- Along with providing water for agriculture and other uses, the lake is a major stopover for migrating birds heading south for the winter.

- A wide swath of western and central China has seen days of temperatures exceeding 40 degrees Celsius (104 Fahrenheit) in heat waves that have started earlier and lasted longer than usual.

- The heat is likely connected to human-caused climate change, though scientists have yet to do to the complex

calculations and computer simulations to say that for certain.

ENVIRONMENT AND ECOLOGY

GLOBAL CLEAN ENERGY ACTION FORUM (GCEAF)

In News: Union Minister of Science and Technology will take part in Global Clean Energy Action Forum (GCEAF).

More on the Topic:

- Conference aims to accelerate clean energy innovation and catalyze deployment for the global energy transition.
- It is first-of-its-kind of meeting of over 30 countries to promote policies and programmes that advance clean energy technology.

GREEN FINS HUB

In News: The UN Environmental Programme (UNEP), along with the Reef-World Foundation, launched the Green Fins Hub.

More on the Topic:

- The Green Fins Hub is the first-ever global marine tourism industry platform for diving and snorkelling operators worldwide.
- This industry-backed platform would give a 'major boost' to sustainable marine tourism.
- The Green Fins Hub is the first-ever global marine tourism industry platform, helping operators to make simple, cost-efficient changes to their daily practices by utilising tried and tested solutions, keep track of their annual improvements and communicate with their communities and customers.
- Membership - The Green Fins Hub hosts two types of membership

- Digital membership,
- Green Fins Certified Members.

GREEN EVENTS TOOL

In News: The Gulf Organisation for Research & Development (GORD), the United Nations Framework Convention on Climate Change (UNFCCC) secretariat and United Nations Environment Programme (UNEP) have developed an online Green Events Tool (GET).

More on the Topic:

- Events, irrespective of their size, are a significant source of greenhouse gas (GHG) emissions and sustainability impacts.
- The GET aims to facilitate eco-friendly events and designed to evaluate events' sustainability performance.
- The platform **helps event organizers systematically evaluate the GHG emission profile and sustainability impacts of the proposed event** at planning stage, to design mitigation activities, **and to transparently report** the actual sustainability impact and GHG emissions resulting from their events.
- Events supported by the GET go through a comprehensive assessment framework covering aspects related to venue construction, venue operation, flight, ground transportation, communication, audio-visual systems, production and exhibition, accommodation and catering.

THE OCEAN OBSERVING SYSTEM REPORT CARD, 2022

In News: The WMO has released the latest Ocean Observing System Report Card – an annual report providing insight into the state, capacity and value of the Global Ocean Observing System (GOOS).

More on the Topic:

- The report card is prepared in collaboration with the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) and other GOOS partners and experts.
- The report card focuses on how an integrated observing network adds value to society across three delivery areas of climate, operational services

and ocean health.

Key Findings:

- The system to observe carbon concentration in the world's oceans is extremely inadequate to meet the growing and urgent need for information on oceanic carbon.

- This is especially worrying trend given that **26% of the 40 gigatonnes of carbon emitted into the atmosphere annually because of human activities is absorbed by the oceans.**

- Oceanic carbon information is thus critical for designing decarbonisation policies and needs investments.

- Only 5% cent of platforms at sea carry biogeochemical sensor, including carbon dioxide sensors.

- Environment monitoring systems, including air and ocean, were affected during the pandemic years. But most activities were slowly returning to normal.

- **The Southern Ocean and some marginal seas (mainly under national jurisdictions) remain largely under-sampled** due to operational challenges.

- Rising ocean temperatures and acidification are impacting phytoplankton and can lead to important changes in food webs. This will also affect how gasses like oxygen and carbon dioxide are stored or released by the ocean.

Recommendations:

- **Early warning systems** are essential to reduce risk for coastal zones and communities which are increasingly at risk from rising sea levels and more frequent and intense storm surge.

- There is a **need to improve forecasting of the ecosystem services provided by phytoplankton**. Going forward, this is an important goal of the GOOS to support the Blue Economy.

International Argo Program:

- Argo is an international program that collects information from inside the ocean using a fleet of robotic instruments that drift with the ocean currents and move up and down between the surface and a mid-water level.

- Each instrument (float) spends almost all its life below the surface.

- It maintains global array of about 3,800 floats that measure pressure, temperature and salinity of upper 2,000 metres of world's ocean.

- **This is a major component of both GOOS and Global Climate Observing System, providing near-real time data (on temperature, salinity)** for ocean and atmospheric services.

DHARAMSHALA DECLARATION

In News: The three-day National Conference of State Tourism Minister ended with the adoption of the "Dharamshala Declaration" which affirms commitment toward developing "sustainable and responsible tourism" and positions India as a "global leader in the tourism sector by 2047".

More on the Topic:

- Tourism sector currently contributes 6.8% to the Indian GDP.

- It also creates over 39mn jobs.

- India is ranked 54th/117 countries on the latest WEF Travel and Tourism Development Index. (down from 46 in 2019).

LEGACY WASTE MANAGEMENT ROAD MAP BY CSE

In News: The Centre for Science and Environment (CSE) on Thursday released a roadmap for legacy waste management in a bid to support India's garbage-free cities agenda.

More on the Topic:

- The CSE's seven-point roadmap includes **developing a sustainable solid waste management plan, ensuring maximum utilisation of recovered fractions and reusing the reclaimed land sustainably on the basis of a comprehensive policy and protocol.**

- The plan also includes developing standards for gainful use of recovered fractions, incentivising management of recovered materials, building capacity of urban departments and ensuring sustainable operation of sanitary landfills.

About Legacy Wastes:

- Legacy wastes are the wastes **that have been collected and kept for years at some barren land or a place dedicated for Landfill (an area to dump solid waste).**

- The legacy waste constituents include, **the decomposed and mineralized organic wastes** mixed with silt, sand, and fine fragments of construction and demolition (C&D) wastes. This is the major fraction in the majority of landfills.

- **Scrap polymeric and combustible materials** which include plastics, paper, cardboard and textiles etc.

- Stones (greater than 20 millimetres in size)

- **Miscellaneous items**: These include broken glass, sanitary waste and diapers, metallic fractions such as razors, needles, etc.

Harming Effects of Legacy Wastes:

- The legacy wastes dumped for a long time create irreversible damage to the environment by leachate, emitting greenhouse gases, pollutes groundwater, etc.

CARACAL

In News: The species caracal, which was used by India's nobility in the sport of coursing like the cheetah, is struggling to survive.

More on the Topic:

- The caracal (Caracal caracal) is **a medium-sized wild cat native to Africa, the Middle East, Central Asia, and arid areas of Pakistan and north western India.**

- The Asiatic caracal is **an elusive medium-sized and locally threatened felid (cat) species,** which has been widely reported to be on the brink of extinction in India.

- The reasons **are large-scale hunting, illegal trading and loss of natural habitats are considered significant threats to the species.**

Protection Status:

- The caracal is currently included in **Schedule I of the Wild Life (Protection) Act, 1972** and the **Near Threatened category** International Union for Conservation of Nature Red list assessment in India.

- In 2021, the National Board for Wildlife and the Ministry of Environment, Forest and Climate Change included Caracal in the list of Critically Endangered species under critically endangered species recovery programme.

TOMISTOMA

In News: The tomistoma is a shy and unsociable species that typically withdraws from areas with a high degree of human activity. However, increasing human activities in their habitat are making them attack people.

More on the Topic:

- **Tomistoma is a genus of gavialid crocodilians.** They are noted for their long narrow snouts used to catch fish, similar to the gharial.

- **The tomistoma is a large crocodilian species native to Southeast Asia.**

- It is found in **Indonesia, Malaysia and Brunei.**

- It is a freshwater species and is frequently associated with peat swamp forests.

- It shares its habitat with two other types of crocodilians; the Saltwater crocodile and the Siamese crocodile.

- It is recorded as **endangered species on the International Union for the Conservation of Nature Red List of Threatened Species.**

CHEETAH REINTRODUCTION

In News: A group of eight Cheetahs has arrived from Namibia to India as part of Cheetah reintroduction project recently.

More on the Topic:

- The reintroduction became possible with an agreement that was signed between the government of India and the Namibian government.

- The agreement, which has been negotiated for some years prepared the ground for the relocation of the first batch of cheetahs from southern Africa to **Madhya Pradesh's Kuno National Park.**

- The cheetah is **one of the oldest of the big cat species,** with ancestors that can be traced back more than five million years to the Miocene era.

- The cheetah is also the world's fastest land mammal that lives in Africa and Asia.

Asiatic Cheetah

- IUCN: Critically Endangered

- CITES: Appendix-I of the List

African Cheetah

- IUCN: Vulnerable
- CITES: Appendix-I of the List

Kuno National park:

- Kuno National Park is a national park in **Madhya Pradesh, India, established in 1981** as a wildlife sanctuary.
- State government changed the status of the wildlife sanctuary to Kuno National Park in 2018
- It is part of the Khathiar-Gir dry deciduous forests ecoregion.

CLIMATE REPARATION

In News: Facing the worst flooding disaster, Pakistan is demanding climate reparations from the Global North that is responsible for 92% of excess global carbon emissions.

More on the Topic:

- Climate reparations refer to a call for money to be paid by the Global North to the Global South as a means of addressing the historical contributions that the Global North has made (and continues to make) toward climate change.
- **Countries in the Global North are responsible for 92% of excess global carbon emissions.**
- **Climate reparations are also about the need for acknowledgment and accountability** for the loss of land and culture - and how that has affected us in the Global South - as a result of climate change.
- **The element of accountability is what differentiates climate reparations from climate aid.**
- The demand for compensation for loss and damage from climate disasters is an extension of the universally acknowledged "Polluter Pays" principle.
- The call for climate reparations is one of the **key elements within demands for climate justice.**

EMISSION NORMS FOR THERMAL POWER PLANTS

In News: The Union Ministry of Environment, Forest and Climate Change (MoEF&CC) September 5, 2022 once again granted more time to the thermal power plants for meeting the Sulphur dioxide (SOx) standards.

More on the Topic:

- The deadline for the power plants within a 10-km radius of Delhi-NCR and cities with a population of more than 10 lakh has been extended from December 31, 2022 to December 31, 2024.
- Thermal power plants within 10 kilometres of the Delhi-National Capital Region or cities with million-plus populations were supposed to meet the SOx standards by the end of this year. The compliance deadline for this category of plants as well as the rest has now been pushed by two years.

**Emissions from Thermal Power Plants:**

- The main emissions from coal combustion at thermal power plants are carbon dioxide (CO_2), nitrogen oxides, Sulphur oxides, chlorofluorocarbons (CFCs), and air-borne inorganic particles such as fly ash and soot; CO_2, methane, and CFCs are greenhouse gases.
- **Coal-based thermal power stations contribute over half sulphur dioxide (SO_2), 30% oxides of nitrogen (NOx), about 20% particulate matter (PM), etc.**
- Persistent burning of coal in thermal power stations and a delay in implementation of latest carbon capture storage technology are among major reasons of air pollution in India.

The Emission Norms for Thermal Power Plants:

- To limit particulate matter, sulphur dioxide and nitrous oxide emission from thermal plants, India put in place a phased-approach that directs **440 coal-fired units — responsible for about 166,000 MW of power — to put in place measures to limit pollution by December 2022. This date has been differed now.**
- The measures which has to be mandatorily set up include, acquiring flu-gas desulphurisation technology.
- **The removal of Sulphur Dioxide is called Flue Gas Desulphurization.** The method removes gaseous pollutants such as Sulphur Dioxide from exhaust flue gases generated from boilers and furnaces.
- As per Centre for Science and Environment (CSE) estimates, these norms can help reduce PM emissions by about 35%, NOx emission by about 70%, and SO_2 emissions by more than 85% by 2026-27 against a business-as-usual scenario with no pollution control technologies.

CARBON CAPTURE AND STORAGE (CCS) INFRASTRUCTURE

In News: Norway is building world's first open-access Carbon capture and Storage (CCS) infrastructure on Norway's North Sea coast.
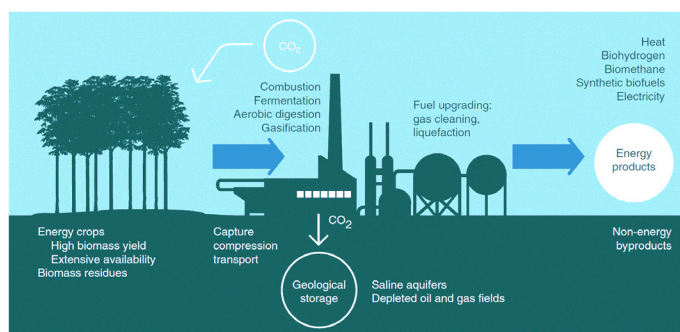
More on the Topic:

- Carbon capture and storage (CCS) is a technology to

reduce anthropogenic carbon dioxide (CO_2) emissions into the atmosphere.

- CO_2 is captured at large stationary sources, such as fossil fuel–fired power plants, and is injected into the deep subsurface for long-time storage.
- CCS is a way of reducing carbon emissions, which could be key to helping to tackle global warming.

GLOBAL ENVIRONMENT FACILITY (GEF) SMALL GRANTS PROGRAMME

In News: MoEFCC, UNDP & TERI came together to launch GEF Small Grants Programme.
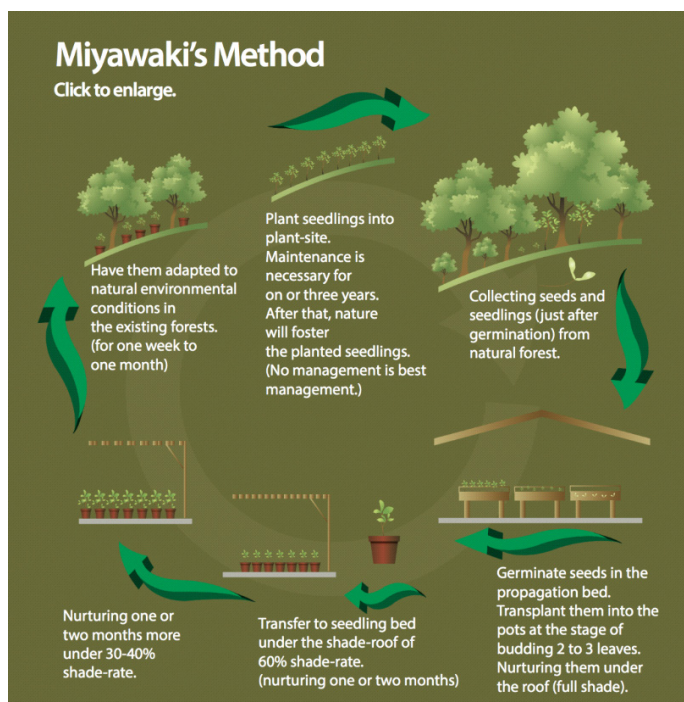

More on the Topic:

- The Global Environment Facility Small Grants Programme **provides financial and technical support to projects that conserve and restore the environment while enhancing the lives of local communities.**
- This year marks **the seventh operational phase of this programme** and is jointly implemented by the Ministry of Environment, Forest and Climate Change, the United Nations Development Programme and The Energy and Resources Institute (TERI).
- **It was launched in 1992 during Rio Earth Summit.** It works closely with and complements other GEF projects and programs, supporting 136 countries and funds grants up to $50,000.

MIYAWAKI FOREST

In News: Prime Minister has inaugurated Smurti Van at Gujarat which was developed in a year through Miyawaki method.

More on the Topic:

- Miyawaki is a technique pioneered by Japanese botanist Akira Miyawaki, that helps build dense, native forests.
- The approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual.
- It involves planting dozens of native species in the same area, and becomes maintenance-free after the first three years.
- It helps to create a forest in just 20 to 30 years while through conventional methods it takes anywhere between 200 to 300 years.

The Process of Miyawaki Forestation:

- The native trees of the region are **identified and divided into four layers — shrub, sub-tree, tree, and canopy.**
- The quality of soil is analysed and **biomass which would help enhance the perforation capacity, water retention capacity, and nutrients in it, is mixed with it.**
- A mound is built with the soil and the seeds are planted at a very high density — three to five sapling per square meter.
- The ground is covered with a thick layer of mulch.

Significance:

- Help lower temperatures.
- Reduce air and noise pollution.
- Attracts local birds and insects.
- Create carbon sinks up to 30 times or more Carbon-di-oxide absorption as compared to conventional forests.

FIRST TIME, AVIAN FLU IS SEEN IN CETACEANS

In News: For the first time, avian flu is seen in cetaceans.

More on the Topic:

- This version of the virus, which has spread widely among North American and European birds, has affected an unusually broad array of species.
- It includes two documented cases in cetaceans, a group of marine mammals that includes dolphins, porpoises and whales.
- While experts emphasise that the risk to humans remains low, the spread of the virus to new species poses potential risks to wildlife and provides the virus with new chances to mutate and adapt to mammalian hosts.

- Besides birds, the virus has earlier turned up in foxes, bobcats, skunks, and seals.

About Avian Flu:

- A disease caused by avian influenza (AI) Type A viruses **found naturally in wild birds worldwide.**
- AI viruses are broadly classified as low pathogenic AI (LPAI) and highly pathogenic AI (HPAI) viruses, based on their pathogenicity. **H5N1 strains come under HPAI viruses.**
- The virus can infect domestic poultry including chickens, ducks, turkeys and there have been reports of H5N1 infection among pigs, cats, and even tigers in Thailand zoos.

RED-EARED SLIDER TURTLE

In News: The presence of invasive and non-native south red-eared slider turtles would lead to the extinction of native species of their own kind.

More on the Topic:

- **The red-eared slider is native to south-eastern USA and Mexico,** but have found their way across the globe including India through trade of exotic animals.
- It is not mentioned in the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
- The species has a wide set of diet and eats almost all vegetation, unlike native species.
- The red-eared slider is also aggressive, it drives away the native species.

India's Turtle Diversity:

- India is home to 29 freshwater turtles and tortoise species of the 356 turtle species recognised world-wide and around 80% of them are threatened.
- In India, keeping indigenous turtles as pets is prohibited under the wildlife protection act. But the foreign breeds are not restricted and are kept as pets in many families across India.

SEA CUCUMBERS

In News: Sea cucumbers were the most frequently trafficked marine species in India between 2015 and 2021.

More on the Topic:

- The researchers found that 64,172 kilograms plus 988 individuals (unweighted) of sea cucumbers were seized by enforcement agencies in Tamil Nadu, Lakshadweep Islands and the Andaman Islands.
- Sea cucumbers are marine invertebrates that live on the seafloor found generally in tropical regions.
- This class falls under the Echinodermata phylum, which also includes many other well-known marine invertebrates, such as sea stars, sea urchins and sand dollars.
- They are **an integral part of the coral ecosystem** as one of the main by-products of the sea cucumbers digestion of sand is calcium carbonate and this is essential for the survival of the coral reefs.
- **They act like garbage collectors of the ocean world,** and they recycle nutrients, thus playing an important role in keeping coral reefs in good condition.
- **IUCN Red List:** Brown Sea Cucumber (Endangered), Blackspotted Sea Cucumber (Least Concern), Blue Sea Cucumber (Data Deficient), etc.
- **Wildlife Protection Act, 1972:** Schedule I

VEMBANAD LAKE

In News: Vembanad lake, the second largest wetland system in India after the Sunderbans in West Bengal, is shrinking.
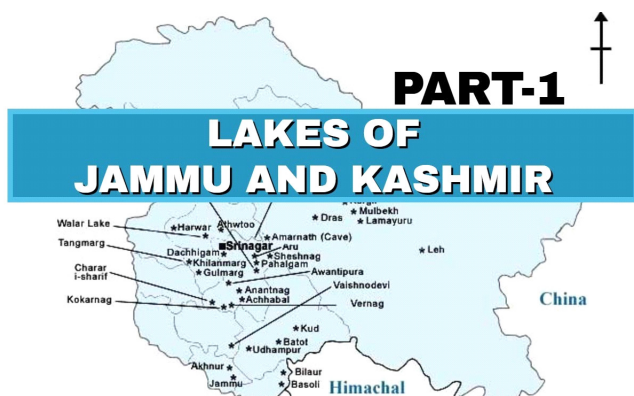

More on the Topic

- Its unique biodiversity is under threat of ecological decay despite it being declared as a Ramsar site 20 years ago.

- According to ecological experts and various studies conducted over the years, the lake is facing serious environmental degradation due to recurring floods, increased pollution, reduction in water spread area and increased weed growth.
- The lake lays right by the Arabian Sea, with a narrow reef separating it from the sea.
- The Kumarakom Bird Sanctuary is located on the east coast of the lake.
- In 2019, Willingdon Island, a seaport located in the city of Kochi, was carved out of Vembanad Lake.
- The Nehru Trophy Boat Race (Vallam Kali) is a Snake Boat Race hosted in the lake every year in the month of August.

MANASBAL LAKE

In News: The Indian Navy has revived its training area at the Manasbal lake in Jammu and Kashmir's Ganderbal district, 33 years after it was closed following the eruption of terrorism in the erstwhile state.

PART-1
LAKES OF
JAMMU AND KASHMIR

More on the Topic:

- Manasbal Lake is located in Jhelum valley, north of Srinagar. Lake is also known as 'Bird's Paradise'.
- **It is the deepest lake in India.**
- The name Manasbal is said to be a derivative of the Lake Manasarovar.

SUTLEJ-YAMUNA LINK CANAL

In News: The SC has directed Punjab and Haryana CMs to meet within the month to discuss on Sutlej Yamuna Link canal dispute.

DRAGGING ON FOR DECADES

- ▶ 1966 | Reorganisation of Punjab; it is decided that Haryana will get share of Sutlej water
- ▶ 1977 | Land acquisition starts for 214km Sutlej Yamuna link – 122km of it in Punjab and 92km in Haryana
- ▶ 1980 | Haryana completes its

portion. Punjab skips deadlines, moves SC repeatedly

- ▶ 2004 | SC orders Punjab to complete canal. State govt passes Act terminating water-sharing pacts. Matter referred to SC for presidential reference. Still pending

Bhakra dam
Chandigarh
PUNJAB
Sutlej Yamuna link canal
HARYANA
Yamuna
UP

More on the Topic:

- Satluj Yamuna Link Canal or SYL as it is popularly known, **is an under-construction 214-kilometer (133 mi) long canal in India to connect the Sutlej and Yamuna rivers.**
- However, the proposal met obstacles and was referred to the Supreme Court of India.
- It was defined as river water sharing between the states of Punjab and Haryana.
- Canal, once completed, will enable sharing of waters of rivers Ravi and Beas between Haryana and Punjab.
- **SYL canal will help in addressing water shortage in southern parts of Haryana.**
- Haryana completed its stretch of SYL Canal in 1980, while Punjab kept delaying the construction on pretext of non-availability of spare water.

DARK SKY RESERVE

In News: In a first-of-its-kind initiative, the Department of Science & Technology (DST) has announced the setting up of India's first Dark Sky Reserve in Hanle, Ladakh as a part of Changthang Wildlife Sanctuary.

More on the Topic:

- Hanle is located in Ladakh's cold desert region away from any form of human disturbance.
- A Dark Sky Reserve is a designation given to a place that has policies in place to ensure that a tract of land or region has minimal artificial light interference.
- The International Dark Sky Association is a U.S.-based non-profit that designates places as International Dark Sky Places, Parks, Sanctuaries and Reserves, depending on the criteria they meet.
- Several such reserves exist around the world but none so far in India.

The Indian Astronomical Observatory, Hanle:

- The Indian Astronomical Observatory, the high-altitude station of IIA, is situated to the north of Western Himalayas, at an altitude of 4,500 metres above mean sea level.
- **Located atop Mt. Saraswati in the Nilamkhul Plain in the Hanle Valley of Changthang,** it is a dry, cold desert with sparse human population and has the Hanle monastery as its nearest neighbour.

- The cloudless skies and low atmospheric water vapour make it one of the best sites in the world for optical, infrared, sub-millimetre, and millimetre wavelengths.
- The Himalayan Chandra Telescope (HCT), High Energy Gamma Ray telescope (HAGAR), the Major Atmospheric Cherenkov Experiment Telescope (MACE) and GROWTH-India are prominent telescopes located at the Hanle observatory.

Changthang Wildlife Sanctuary:

- Located in the **Changthang Plateau in the Leh district of Ladakh,** Changthang Wildlife Sanctuary is one of the most popular sanctuaries in the Ladakh region.
- **This sanctuary also houses the highest lake on earth, Lake Tso Moriri.** It is considered to be the second largest nature reserve after Northeast Greenland National Park.

RULE CURVE

In News: As per Tamil Nadu Water Resources Organisation, Mullaperiyar is first reservoir to have Rule Curve implemented in the country.

More on the Topic:

- Rule curve is a measure **that specifies the storage or the empty space maintained in a reservoir at different times of the year and the measure also decides on the fluctuating storage levels of the reservoir.**
- It is based on the rainfall data for 35 years.
- Under Rule Curve method, water is not allowed to be stored to permissible maximum level at the time when reservoir receives huge inflows.
- It is part of core safety mechanism in a dam.

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.
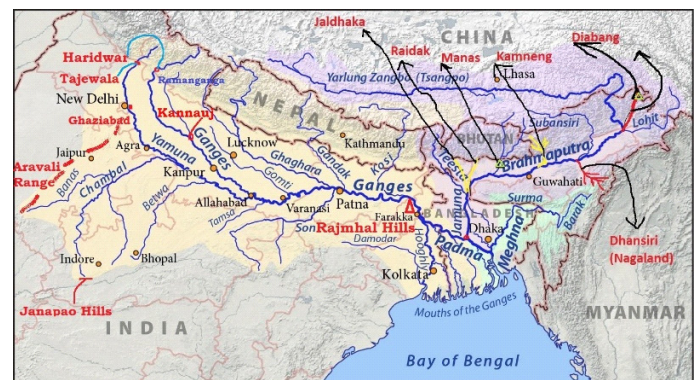

More on the Topic:

- 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.

ARTH GANGA

In News: The Director General of the National Mission for Clean Ganga, spoke about the Arth Ganga model during his virtual keynote address to the Stockholm World Water Week 2022.

More on the Topic:

- PM Modi first introduced the concept during the first National Ganga Council meeting in Kanpur in 2019, where he urged for a shift from Namami Gange, the Union Government's flagship project to clean the Ganga, to the model of Arth Ganga.
- The latter focuses on the sustainable development of the Ganga and its surrounding areas, by focusing on economic activities related to the river.
- At its core, the Arth Ganga model seeks to use economics to bridge people with the river.

Features of Arthganga:

- Under Arth Ganga, the government is working on six verticals.
- The first **is Zero Budget Natural Farming,** which involves chemical-free farming on 10 km on either side of the river, and the promotion of cow dung as fertiliser through the **GOBARdhan scheme.**

- **The Monetization and Reuse of Sludge & Wastewater is the second,** which seeks to reuse treated water for irrigation, industries and revenue generation for Urban Local Bodies (ULBs).
- Thirs is **Livelihood Generation Opportunities,** by creating haats where people can sell local products, medicinal plants and ayurveda.
- The fourth is **to increase public participation by increasing synergies between the stakeholders involved with the river.**
- The Fifth vertical intends **to promote the cultural heritage and tourism of Ganga** and its surroundings, through **boat tourism, adventure sports and by conducting yoga activities.**
- Lastly, the model seeks **to promote institutional building by empowering local administration** for improved water governance.

CLOUD SEEDING

In News: The UAE, located in one of the hottest and driest regions on earth, has been leading the effort to seed clouds and increase precipitation, which remains at less than 100 millimetres (3.9 inches) a year on average.
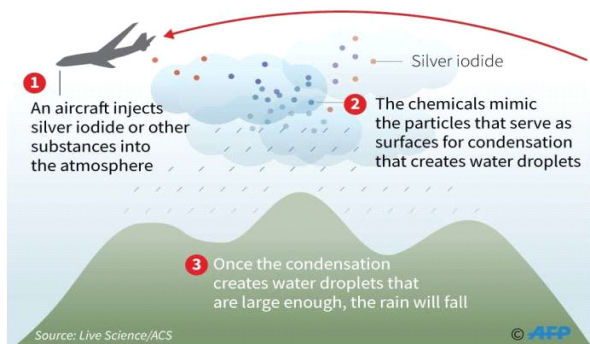
More on the Topic:

- Scientists in UAE combine shooting hygroscopic, or water-attracting, salt flares with releasing salt nanoparticles, a newer technology, into the clouds to stimulate and accelerate the condensation process and hopefully produce droplets big enough to then fall as rain.
- The effects of climate change, combined with a growing population and economy diversifying into tourism and other areas have pushed up demand for water in the UAE, which has relied on expensive desalination plants that make use of seawater.
- cloud seeding operations cost much less than the desalination process,

About Cloud Seeding:

- Cloud seeding is a type of weather modification that aims to change the amount or type of precipitation that falls from clouds by dispersing substances into the air that serve as cloud condensation or ice nuclei, which alter the microphysical processes within the cloud.
- The most common chemicals used for cloud seeding include **silver iodide,potassium iodide and dry ice (solid carbon dioxide).**

- **Liquid propane,** which expands into a gas, has also been used.
- This can produce ice crystals at higher temperatures than silver iodide. After promising research, the use of **hygroscopic materials, such as table salt, is becoming more popular**

AXOLOTLS CAN REGENERATE THEIR BRAINS

In News: The axolotl (Ambystoma mexicanum) is an aquatic salamander renowned for its ability to regenerate its spinal cord, heart and limbs.

More on the Topic:

- Axolotls are able to regenerate all the different cell types in their brain, including the connections linking one brain region to another.
- **The axolotl is a paedomorphic salamander.** Paedomorphosis is an alternative process to metamorphosis in which adults retain larval traits at the adult stage.
- It is frequent in newts and salamanders, where larvae reach sexual maturity without losing their gills.
- Axolotls are thus unusual among amphibians in that they reach adulthood without undergoing metamorphosis. Instead of taking to the land, adults remain aquatic and gilled.
- Axolotls are used extensively in **scientific research** due to their ability to regenerate limbs, gills and parts of their eyes and brains. Axolotls were also sold as food in Mexican markets.

Protection Status:

- They are listed as **critically endangered in the wild,** with a decreasing population of around 50 to 1,000 adult individuals, by IUCN and are listed under **Appendix II** of the CITES.

INTERNATIONAL RELATIONS

THE EASTERN ECONOMIC FORUM AND INDIA'S BALANCING ACT

In News: The Russia hosted the seventh Eastern Economic Forum (EEF) recently.

More on the Topic:

- The four-day forum is a platform for entrepreneurs **to expand their businesses into Russia's Far East (RFE).**

- This year, the Forum aimed at connecting the Far East with the Asia Pacific region. **China is the biggest investor in the region** as it sees potential in promoting the Chinese Belt and Road Initiative and the Polar Sea Route in the RFE.

About EEF:

- The EEF was established in **2015 to encourage foreign investments in the RFE**. The EEF displays the economic potential, suitable business conditions and investment opportunities in the region.

- The primary objective of the EEF is **to increase the Foreign Direct Investments in the RFE.**

- The region encompasses **one-third of Russia's territory and is rich with natural resources such as fish, oil, natural gas, wood, diamonds and other minerals.**

- The sparse population living in the region is another factor for encouraging people to move and work in the Far East.

India's Interest In the region:

- India is keen in cooperation in energy, pharmaceuticals, maritime connectivity, healthcare, tourism, diamond industry, Arctic region etc.

- In 2019, India also offered a $1 billion line of credit to develop infrastructure in the region.

India's Balancing Diplomacy:

- The U.S.-led **Indo-Pacific Economic Framework for Prosperity (IPEF) and the EEF are incomparable** based on its geographic coverage and the partnership with the host-countries.

- **IPEF was announced in 2021 to set regional standards for cooperation and to encourage regional economies to "decouple" from the Chinese market** by leading them to alternative supply chains

- **India has vested interests in both the forums** and has worked towards balancing its involvement. India has not shied away from investing in the Russia-initiated

EEF despite the current international conditions.

- The country understands the benefits of being involved in the development in the RFE but it also perceives the IPEF as a vital platform to strengthen its presence in the Indo-Pacific region.

- The IPEF also presents **an ideal opportunity for India to act in the region, without being part of the China-led Regional Comprehensive Economic Partnership** or other regional grouping like the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

- IPEF will help in **disengaging from supply chains that are dependent on China and will also make it a part of the global supply chain network.**

OPEC COUNTRIES

In News: The Organization of the Petroleum Exporting Countries – or OPEC – and its allies have decided to cut production of crude oil for October by 100,000 barrels per day.
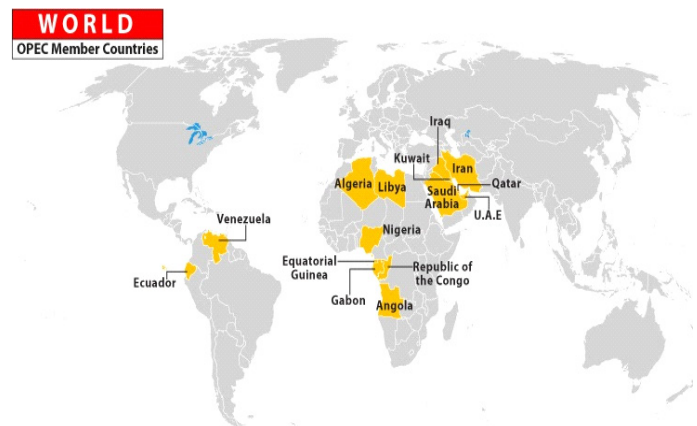
More on the Topic:

- OPEC + decision to cut oil output by 100,000 barrels a day is only 0.1% of global demand. Therefore, it is grossly inadequate to affect oil prices.

About OPEC:

- OPEC stands for Organization of the Petroleum Exporting Countries. It is a permanent, intergovernmental organization.

- It was created at the Baghdad Conference in September 1960 by Venezuela, Iran, Iraq, Saudi Arabia, and Kuwait.

- Currently, it has 13 members. Its headquarters are in Vienna, Austria.

- OPEC membership is open to any country that is a substantial exporter of oil and which shares the ideals of the organization.

About OPEC+:

- Opec+ refers to the alliance of crude producers, who have been undertaking corrections in supply in the oil markets since 2017.

- OPEC plus countries include Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.

SIDS LIGHTHOUSES INITIATIVE

In News: The capacity building roundtable for islands in the Atlantic, Indian Ocean and South China Sea was organised by IRENA through its SIDS Lighthouses Initiative.
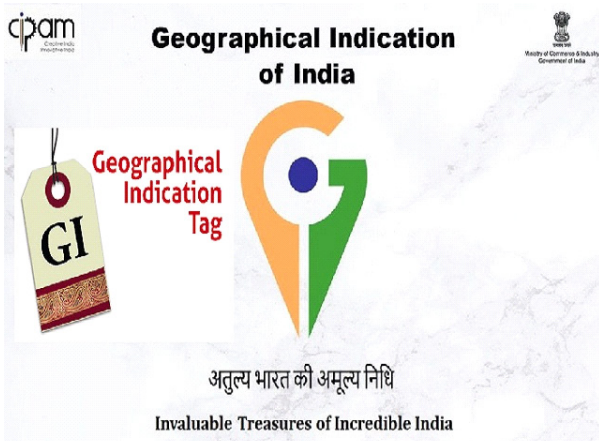

More on the Topic:

- It was launched at the **UN Climate Summit in 2014 to support Small Island Developing States (SIDS)** in their energy transition efforts from fossil fuel dependence to renewables.

- It supports **global, regional and national level efforts towards achieving the Paris Agreement and the 2030 Agenda for Sustainable Development.**

- Taking into account the success in surpassing the previous targets, the SIDS LHI has revised its target to 10GW of total renewable energy installed capacity in all SIDS by 2030.

About IRENA:

- The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future.

- IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.

INDIA - QATAR GI MEET

In News: In its endeavor to promote the export of agricultural products inherent to India, the Centre organized a Virtual Networking Meet for Agri and Food GI products in association with Qatar.

More on the Topic:

- Besides being the leading producer of several agriculture commodities such as rice, fruits and vegetables, tea. India also has a distinct advantage of having registered geographical indication for several agricultural products.

- At present, there are more than 400 registered Geographical Indications in India of which around 150 are agricultural and food products GI.

- More than 100 registered GI products fall under the category of APEDA scheduled products (fresh fruits and vegetables, processed foods, animal products and cereals).

About GI Tag:

- A geographical indication (GI) is a name or sign used on certain products which corresponds to a specific geographical location or origin (e.g., a town, region, or country).

- India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999 has come into force with effect from 15 September 2003.

- GIs have been defined under Article 22 (1) of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement.

Significance of GI Tag:

- Once a product gets this tag, any person or company cannot sell a similar item under that name.

- GI registration of a product provides it legal protection and prevention against unauthorised use by others.

- GI tag helps in promoting the exports of the product.

- It also provides comfort to customers about the authenticity of that product.

KAZAKHSTAN

In News: Kazakhstan will change name of capital from Nur-sultan back to Astana.
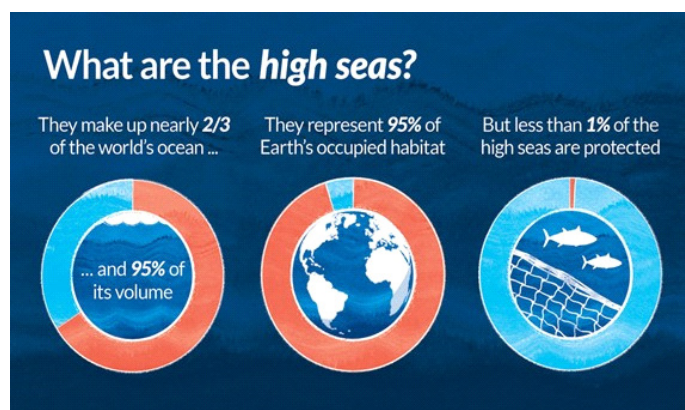

More on the Topic:

- The capital of the central Asian country was renamed Nur-sultan in 2019 in honour of outgoing president Nursultan Nazarbayev.

- Kazakhstan **broke away from the Soviet Union to become**

an independent republic in 1991.

- Nursultan Nazarbayev, the country's powerful leader, stepped down as President in 2019.
- Kazakhstan is the largest country in Central Asia and the ninth largest in the world.
- The Aral Sea lies in the south and the Caspian Sea bounds it in the southwest.

UN HIGH SEAS TREATY

In News: Negotiations involving 168 countries, including the European Union, to agree on a UN treaty for protecting oceans failed recently.

More on the Topic:

- The proposed UN High Seas treaty is also known as the 'Paris Agreement for the Ocean'.
- The treaty deal with Biodiversity Beyond National Jurisdiction has been under discussion for several years.
- The proposed treaty concerns the ocean existing beyond the Exclusive Economic Zones that lie from the coast of a country to about 200 nautical miles or 370 km into the sea, till where it has special rights for exploration. Waters beyond that are known as open seas or high seas.
- The treaty was to be negotiated under the United Nations Convention on Laws of the Sea (UNCLOS) of 1982 which governs the rights of countries regarding marine resources.
- As there is no treaty for conserving the health of vast swathes of the earth's oceans, a UN resolution in 2017 had decided to rectify this while setting 2022 as the deadline.

How are the world's oceans regulated as of now?

- Some treaties, along with the UNCLOS, regulate the conduct of actors on the high seas.
- The UNCLOS led to the establishment of territorial sea boundaries 22 km offshore, deciding the region up to which countries could claim full sovereign territorial rights, as well as the 200 nautical miles EEZ limit.
- It also created the International Seabed Authority and other conflict-resolution mechanisms.
- But a treaty dedicated to protecting ocean health does not exist as of now.
- Conversely, every country has the right to access open

seas, resulting in large-scale drilling and trawling operations for catching fish and other animals for commercial purposes.

What are the risks of countries failing to reach an agreement?

- **Ninety per cent of global warming is occurring in the ocean,** according to the NASA website.
- The effects of ocean warming include sea level rise due to thermal expansion, coral bleaching, accelerated melting of Earth's major ice sheets, intensified hurricanes, and changes in ocean health and biochemistry.
- **Excessive fishing has increased manifold over the years,** and a third of species such as sharks and rays are at the risk of extinction, according to the World Wildlife Fund.
- Despite acknowledging these threats, members failed to agree on how to deal with these threats.

UNGA PRAISES INDIA'S ROLE AT UNITED NATIONS

In News: President of the United Nations General Assembly Abdulla Shahid acknowledged the important role played by India UNGA, while describing the country as a "source of pride" for not only South Asia, but for all peace-loving democracies.

More on the Topic:

- UNGA is the main policy-making organ of the United Nations which comprises all 193 member states. It is a platform for the multilateral discussion on the issues of international importance and issues covered by the Charter of the United Nations

India's Important Contributions at UNGA:

- It stood at the forefront during the UN's tumultuous years of struggle against colonialism and apartheid.
- From early 1947-1948, **it took an active part in drafting the Universal Declaration on Human Rights highlighting the need for reflecting gender equality** by changing the language of the Universal Declaration on Human Rights from 'all men are created equal' to 'all men and women are created equal'.
- In 1953, the chief delegate of India at the time, **Vijaya Laxmi Pandit was elected the first woman President of UN General Assembly.**

- **Global Disarmament: India supported the struggle towards global disarmament** and the ending of the arms race, and towards the creation of a more equitable international economic order.

- **Decolonisation Efforts:** Through co-sponsoring **the landmark 1960 Declaration of UN on Granting of Independence to Colonial Countries and Peoples** India achieved the goal of formation of a "free world" where no country is subjugated by the other and every country.

- It was also elected **the first chair of the Decolonization Committee** where its ceaseless efforts to put an end to colonialism have been lauded.

- India was also amongst **the most outspoken critics of apartheid and racial discrimination in South Africa.** When the Convention on Elimination of all forms of Racial Discrimination was adopted in 1965, India was among the earliest signatories.

- **Non Alignment Movement: Being the founding member of the Non-Aligned Movement and the Group of 77** , India cemented its position within the UN system as a leading advocate of the concerns and aspirations of developing countries and the creation of a more equitable international economic and political order.

- India has been actively working with other like-minded countries for building support of UN membership for a meaningful restructuring and expansion of UNSC. Arguments have been raised that the United Nations Security Council still reflects the geopolitical architecture of the 2nd World War.

- **Peace Keeping Mission:** So far India has taken part in **43 Peacekeeping missions** with a total contribution exceeding 160,000 troops and a significant number of police personnel having been deployed.

- In 2014 **India is the third largest troop contributor** with 7,860 personnel deployed with ten UN Peacekeeping Missions.

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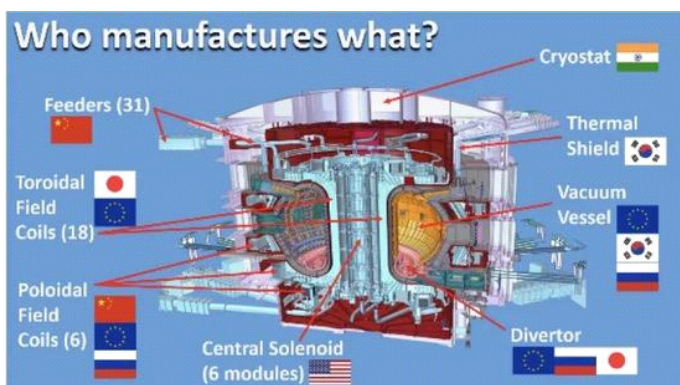
More on the Topic:
- ITER International Thermonuclear Experimental Reactor is **an international nuclear fusion research an engineering megaproject** aimed at creating energy by replicating the fusion processes of the Sun.

- 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.**

TIGRAY CRISIS

In News: Dr Tedros Adhanom Ghebreyesus who is the chief of WHO has said the situation caused by the conflict in Tigray was worse than any other humanitarian crisis in the world.

More on the Topic:

- The Tigray War is an ongoing civil war that began in November 2020 in the Tigray Region of Ethiopia.
- United Nations has said that ethnic violence in the country had risen to "an alarming level" and ethnic intolerance was growing due to the stigmatisation of certain groups.
- Tigray and its neighbouring regions **are facing starvation, absence of medical facilities, no access to their own money due to shut-down banking services, ethnic and physical violence, and raids at the hands of warring forces.**
- The government declared a ceasefire on humanitarian grounds but imposed a blockade on Tigray later, shutting power, telecommunications, banking and commercial transit facilities.
- This, aid agencies said, made it impossible to deliver humanitarian, economic, and medical assistance to Tigrayans.
- The U.N. called it "a de facto humanitarian aid blockade."

About Tigray Region:

- Tigray is **the northernmost regional state in Ethiopia.** Capital and largest city is Mekelle
- Tigray is bordered by Eritrea to the north, Sudan to the west, the Amhara Region to the south and the Afar Region to the east and southeast.
- The Tigray Region is the homeland of the **Tigrayan, Irob and Kunama peoples.**

ASIAN PALM OIL ALLIANCE (APOA)

In News: The Five Asian countries, including India, Pakistan, Sri Lanka, Bangladesh and Nepal have joined hands to form palm oil alliance.
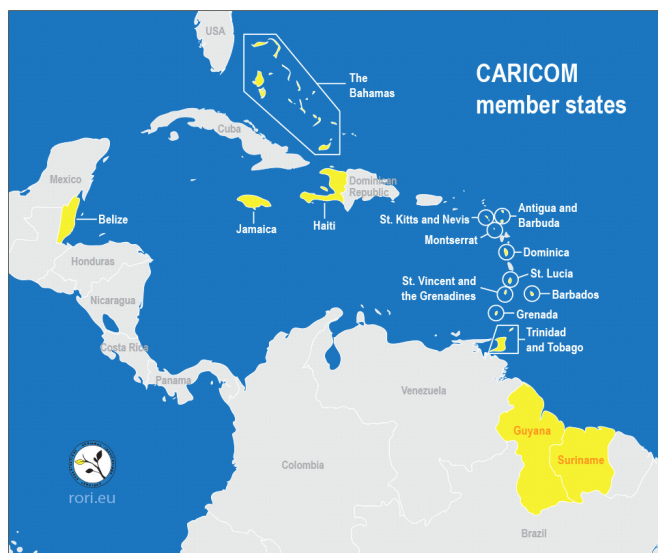
More on the Topic:

- APOA aims at safeguarding the economic and business interests of the palm oil consuming countries and will work towards increasing the consumption of palm oil in member countries.
- The alliance would work towards ensuring that palm oil is recognised as a high-quality, economical, and healthy vegetable oil and to change the negative image of palm oil.

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.

CARICOM (CARIBBEAN COMMUNITY)

In News: On the sidelines of the UNGA in New York, India and CARICOM (Caribbean Community) held discussions on various topics including deepening political engagement.

More on the Topic:

- CARICOM group of countries in the developing world is considered to be one of the most advanced regional institutions.
- CARICOM group includes — **Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Trinidad and Tobago, Suriname, Saint Lucia, Saint Vincent and the Grenadines, Antigua and Barbuda, the Bahamas, Saint Kitts and Nevis.**
- The organization was established in 1973 with its four founding members signing the **Treaty of Chaguaramas.**

INDIA-BRAZIL-SOUTH AFRICA TRILATERAL COOPERATIVE FORUM (IBSA)

In News: India hosted the 10th Ministerial Commission of Foreign Ministers of the India-Brazil-South Africa Trilateral Cooperative Forum (IBSA), on the sidelines of the 77th United Nations General Assembly.

INDIA BRAZIL SOUTH AFRICA FORUM

More on the Topic:

- The IBSA is a trilateral, developmental initiative between India, Brazil and South Africa to promote South-South cooperation and exchange.

- IBSA or G3 grouping was **formalized and named the IBSA Dialogue Forum through Brasilia Declaration in 2003.**

- Members are **democracies and major economies from three different continents, facing similar challenges.** It is based on the spirit of **South-South Cooperation or SSC (collaboration among developing countries).**

- Its genesis can be traced back to the decades of efforts by countries and groupings working together **to ensure South-South solidarity such as the Bandung conference 1955, the Non-Aligned Movement 1961, the G77 grouping, UNCTAD, the Buenos Aires Plan of Action 1978, and the 2009 Nairobi declaration.**

QUAD-HUMANITARIAN ASSISTANCE AND DISASTER RELIEF (HADR) PARTNERSHIP

In News: The Quad countries signed the Humanitarian Assistance and Disaster Relief (HADR) partnership guidelines.

More on the Topic:

- The Partnership has been designed **to respond to the vulnerabilities of the Indo-Pacific region** and will serve as a dedicated framework for Quad partners to coordinate their disaster response operations in the region.

- Under the partnership, **Quad partners will promote inclusion by advancing gender equality and women's and girl's empowerment,** ensuring persons with disabilities are agents and beneficiaries of humanitarian action, and by ensuring indigenous people, minority groups and persons in vulnerable situations are not left behind.

- The guidelines call for **zero tolerance for inaction on** tackling Sexual Exploitation, Abuse and Harassment (SEAH).

- Response operations will be guided by **the core principles of humanity, neutrality and impartiality** as outlined in the United Nations General Assembly Resolution 46/182 on the provisions of humanitarian assistance.

About QUAD:

- Quadrilateral Security Dialogue (Quad) is **the informal strategic dialogue between India, USA, Japan and Australia** with a shared objective to ensure and support a "free, open and prosperous" Indo-Pacific region.

- In November 2017, India, the US, Australia and Japan gave shape to the long-pending

- "Quad" Coalition to develop a new strategy to keep the critical sea routes in the Indo-Pacific free of any influence (especially China).

- The Quad is **'not a military alliance'** for India, but a multilateral cooperation effort for humanitarian assistance and an anti-smuggling exercises.

ASIA-PACIFIC INSTITUTE OF BROADCASTING DEVELOPMENT (AIBD)

In News: India's presidency of prestigious AIBD extended for one year.

More on the Topic:

- The Asia-Pacific Institute for Broadcasting Development (AIBD), was formed in 1977.

- It is a unique regional inter-governmental organization of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP).

- **AIBD works in the field of electronic media development.**

- AIBD currently has **26 countries as complete members represented by 43 organizations and 52 affiliate members.**

- The Asia-Pacific Institute for Broadcasting Development (AIBD) is hosted by the Government of Malaysia and the secretariat is located in Kuala Lumpur.

EAST ASIA SUMMIT

In News: Minister of State for Commerce and Industry Anupriya Patel attended the 10th East Asia Summit Economic Ministers' Meeting in Siem Reap City, Cambodia.

East Asia Summit

Leaders' summit in Naypyidaw, Myanmar on November 12-13

Members of Association of Southeast Asian Nations
Sources: Asean/Australia DFAT

More on the Topic:

- The Ministers exchanged views on global and regional economic developments including the outcomes of the 12thWTO Ministerial Conference, post-pandemic economic recovery efforts, measures adopted to mitigate the impact of global supply chains disruptions and strong inflation pressure.

- India has reiterated I**ndia's willingness to collaborate with East Asian partners in the production of vaccines, generic drugs and medical technologies used for the treatment of COVID-19 patients.**

- India also reiterated India's commitment to strengthening the EAS as an ASEAN-led organisation and its support in collective actions of the EAS Forum aimed at mitigating the economic impact of the pandemic and strengthening regional economic architecture.

About East Asia Summit:

- The East Asia Summit (EAS) is **the Indo-Pacific's premier forum for strategic dialogue.** It is the **only leader-led forum at which all key Indo-Pacific** partners meet to discuss political, security and economic challenges facing the region, and has an important role to play in advancing closer regional cooperation.

- The inaugural EAS was held in Kuala Lumpur in 2005.

- The EAS has **18 members - the ten ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam) along with Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia and the United States.**

- ASEAN leads the forum, and the chair position rotates between ASEAN Member States annually.

- In 2021 **EAS members represented 53.1% of the world's population and accounted for 59.5% of global GDP.**

SHANGHAI COOPERATION ORGANISATION

In News: Iran seeks to become the member of SCO to overcome economic isolation imposed by U.S. sanctions.

More on the Topic:

- The Shanghai Cooperation Organisation (SCO) is a **permanent intergovernmental international organisation,** created on 15 June 2001 in Shanghai (China). The founding members are:

- The Republic of Kazakhstan

- The People's Republic of China

- The Kyrgyz Republic

- The Russian Federation

- The Republic of Tajikistan

- The Republic of Uzbekistan.

- It was preceded by the Shanghai Five mechanism (1996) formed by the leaders of China, Russia, Kazakhstan, Kyrgyzstan, and Tajikistan.

- In 2017, it expanded to include India and Pakistan with a view to playing a bigger role as counterweight to Western influence in the region.

GEOGRAPHY

ENSO

In News: Australia's Bureau of Meteorology (BOM) predicted that a third consecutive event of La Nina could be underway.

What are El Nino & La Nina Years

El Nino year
An irregular event of abnormal warming of eastern Pacific waters. Occurs at intervals of two to seven years
How It Hits Indian Monsoon | Area of rising warm air/rain shifts towards central/east Pacific. This warm air current subsides over Indian Ocean/India's mainland, creating high pressure that keeps rain away

Pacific Ocean

Easterly winds weaken; warm water moves towards South America

La Nina year
A cold episode that usually follows the warm El Nino phenomenon. The warm equarorial ridge cools, between coasts of South America and Oceania
How It Helps Indian Monsoon | Warm air/high rainfall region in west Pacific reinforces monsoon winds, invigorating rains over India

More on the Topic:

- **The El Niño-Southern Oscillation (ENSO) is a recurring climate pattern** involving changes in the temperature of waters in the central and eastern tropical Pacific Ocean.

- On periods ranging from about three to seven years, the surface waters across a large swath of the tropical Pacific Ocean warm or cool by anywhere from 1°C to 3°C, compared to normal.

- **This oscillating warming and cooling pattern, referred to as the ENSO cycle, directly affects rainfall distribution** in the tropics and can have a strong influence on weather across the United States and other parts of the world.

- **El Niño and La Niña are the extreme phases of the ENSO cycle;** between these two phases is a third phase called ENSO-neutral.

El Niño:

- **A warming of the ocean surface,** or above-average sea surface temperatures (SST), in the central and eastern tropical Pacific Ocean.

- Over Indonesia, rainfall tends to become reduced while rainfall increases over the central and eastern tropical Pacific Ocean.

- The low-level surface winds, which normally blow from east to west along the equator ("easterly winds"), instead weaken or, in some cases, start blowing the other direction (from west to east or "westerly winds").

- In general, the warmer the ocean temperature anomalies, the stronger the El Niño (and vice-versa).

La Niña:

- **A cooling of the ocean surface, or below-average sea surface temperatures (SST),** in the central and eastern tropical Pacific Ocean.

- Over Indonesia, rainfall tends to increase while rainfall decreases over the central and eastern tropical Pacific Ocean.

- **The normal easterly winds along the equator become even stronger.** In general, the cooler the ocean temperature anomalies, the stronger the La Niña (and vice-versa).

Neutral:

- Neither El Niño or La Niña. Often tropical Pacific SSTs are generally close to average. However, there are some instances when the ocean can look like it is in an El Niño or La Niña state, but the atmosphere is not playing along (or vice versa).

Impact of ENSO on India:

- El Nino: Strong El Nino events contribute to weaker monsoons and even droughts in India Southeast Asia.

- La Nina: The cold air occupies a larger part of India than the El Nino cold air.

- In the 'La Nina year', rainfall associated with the summer monsoon in Southeast Asia tends to be greater than normal, especially in northwest India and Bangladesh.

- This generally benefits the Indian economy, which depends on the monsoon for agriculture and industry.

- It usually brings in colder than normal winters in India.

TAIWAN STRAIT

In News: India has for the first time referred to what it called "the militarisation of the Taiwan Strait", marking a rare instance of New Delhi appearing to comment on China's actions towards Taiwan.

More on the Topic:
Present Context:

- The reference to Taiwan, in a statement issued by the Indian High Commission in Sri Lanka, marked a more pronounced expression over the situation in the Taiwan Strait than its previous response on August 12 to China's military drills.

- The visit by US speaker Nancy Pelosi to Taiwan is not well received by China. It has sparked intense tensions between the two powerful countries- China and US as China sees Taiwan as a breakaway province. China improved its military presence in Taiwan Strait.

- Apart from this event in Earlier August month a Chinese military research vessel docked at Sri Lanka's Hambantota port for a week.

- Analysts say the Yuan Wang 5 is among a group of Chinese ships operated by the People's Liberation Army that monitor satellite, rocket and intercontinental ballistic missile launches.

- The docking of the Yuan Wang 5 was delayed for

several days after India objected, amid fears that Beijing intends to use the port as a military base.

- This is considered as the reason for India's response now.

About Taiwan Strait:

- The Taiwan Strait is a 180-kilometer wide strait separating the island of Taiwan and continental Asia.

- The strait is part of the South China Sea and connects to the East China Sea to the north.

- The narrow Taiwan Strait has been a frequent source of military tension since the defeated Republic of China government fled to Taiwan in 1949 after losing a civil war with the communists, who established the People's Republic of China.

KUTCH BRANCH CANAL (KBC)

In News: Prime Minister Narendra Modi has inaugurated the Kutch Branch Canal (KBC) that stretched from the Sardar Sarovar Narmada Dam in Narmada district, Gujarat.

SARDAR SAROVAR (NARMADA) PROJECT
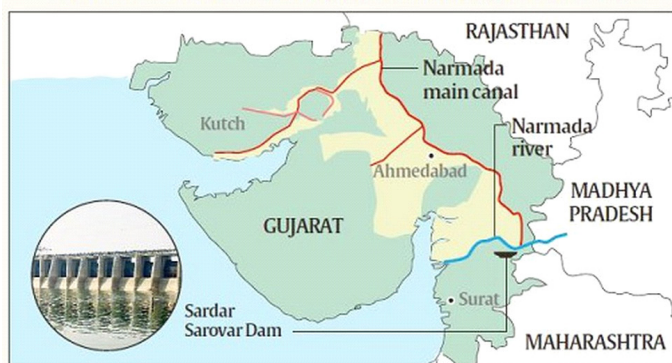
More on the Topic:

- The dam is intended to provide irrigation facility to more than 180 villages and drinking water facility to 10 towns in Kutch district.

- **The Sardar Sarovar Dam is a concrete gravity dam built on the Narmada river in Gujarat.**

- Four Indian states, Gujarat, Madhya Pradesh, Maharashtra and Rajasthan, receive water and electricity supply from the dam.

About Narmada River:

- The Narmada River is also known as the Rewa River. The River is originated from Maikala range near Amarkantak.

- It is a West flowing river. The River flows through Gujarat, Chhattisgarh Madhya Pradesh, and Maharashtra.

- Its principal tributaries are **the Burhner, the Halon, the Heran, the Banjar, the Dudhi, the Shakkar, the Tawa, the Barna ,the Kolar, the Ganjal, the Beda, the Goi, and the Orsang.**

INDIA AND BANGLADESH DISCUSSED RIVER WATER ISSUES

In News: India and Bangladesh discussed a wide range of issues related to the major common rivers such as the Ganga, Teesta and several smaller rivers during the 38th meeting of the Joint River Commission (JRC).

More on the Topic:

- They finalised text of MoU on **interim water sharing of Kushiyara river.** The Kushiyara River is a distributary river in Bangladesh and Assam, India.

- It forms on the India-Bangladesh border as a branch of the Barak River, when the Barak separates into the Kushiyara and Surma.

**India Bangldesh Water Sharing Troubles:**

- India shares 54 trans-boundary rivers with Bangladesh with several disputes including Teesta, Power project on Barak river etc.

- Bangladesh requested for conclusion of the long-pending **Teesta Waters Sharing Treaty at an early date.** The Indian side assured of their utmost efforts in concluding the agreement.

- Teesta River is a 315 km long river that rises in the eastern Himalayas, flows through the Indian states of Sikkim and West Bengal through Bangladesh and enters the Bay of Bengal.

- The point of contention between India and Bangladesh is mainly the lean season flow in the Teesta draining into Bangladesh.

- **Bangladesh has sought an "equitable" distribution of Teesta waters** from India, on the lines of the Ganga Water Treaty of 1996, but to no avail.

- The failure to ink a deal remains an issue.

- Another problem between India and Bangladesh is the Lack of transparent data regarding trans-boundary rivers.

- Ganga water Treaty 1996 which was signed between India and Bangladesh is about to expire in 2026 its updation is still awaited. The treaty was signed to settle Ganges river water sharing issues with Bangladesh.

Joint River Commission:

- The Joint Rivers Commission of India and Bangladesh was constituted in the year 1972 as a bilateral mechanism to address issues of mutual interest on common / border / transboundary rivers.

- The JRC is headed by Water Resources Ministers of both countries.

EFFECTS OF CLIMATE CHANGE ON INDIAN MONSOON

In News: The Indian Meteorological Department (IMD) has sighted that 2022 has seen the second highest extreme events since 1902.

IMPACTS OF GLOBAL WARMING
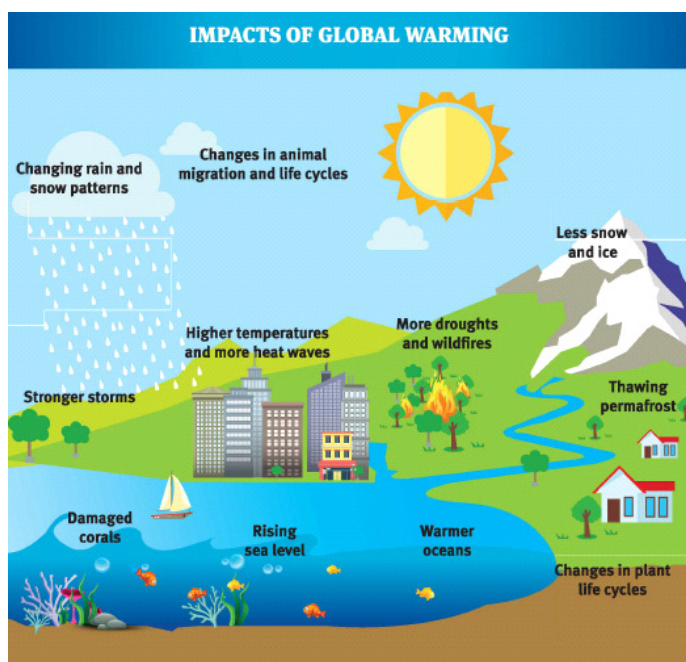
More on the Topic:

- A shift in the track of monsoon systems has been seen such as **low pressure and depression travelling south of their position and flash floods.**
- Monsoon depression originally refers to a low-pressure system affecting the North Indian Ocean and the Bay of Bengal in summer. It encompasses a relatively large area and the diameter of closed isobar can be as wide as 1000 km.
- **Due to this the area of rainfall is continuously changing.**
- As a result, States such as Madhya Pradesh, Gujarat, Rajasthan and parts of Maharashtra have been recording excess rainfall this season.
- West Bengal, Jharkhand, Bihar and Uttar Pradesh are experiencing the worst monsoon season of the century.
- Experts believe that these changes are here to stay, which would continue to propel extreme weather events over the entire South Asian region.

Climate change has affected following Phenomena:

- Persistence of intense **La Nina conditions, the abnormal warming of East Indian Ocean, negative Indian Ocean Dipole (IOD), southward movement of most of the monsoon depressions and lows and pre-monsoon heating** over the Himalayan region and melting glaciers.
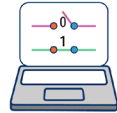
Impacts:

- One of the major impacts of changes in track of monsoon systems can be seen on kharif crops, particularly rice production.
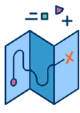- They form a significant share of more than 50% of total food grain production during this period.
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- They form a significant share of more than 50% of total food grain production during this period.

SCIENCE AND TECHNOLOGY

QUANTUM COMPUTING

In News: International Business Machines (IBM) has partnered with Indian Institute of Technology, Madras, (IIT-Madras), to advance quantum computing skill development and research in India.


Quantum Computing Vs. Classical Computing

Quantum Computing	Classical Computing
Calculates with qubits, which can represent 0 and 1 at the same time	Calculates with transistors, which can represent either 0 or 1
Power increases exponentially in proportion to the number of qubits	Power increases in a 1:1 relationship with the number of transistors
Quantum computers have high error rates and need to be kept ultracold	Classical computers have low error rates and can operate at room temp
Well suited for tasks like optimization problems, data analysis, and simulations	Most everyday processing is best handled by classical computers

CBINSIGHTS

More on the Topic:

- Quantum computing is an area of study focused on the development of computer based technologies centered around the principles of quantum theory.
- Quantum theory explains the nature and behaviour of energy and matter on the quantum (atomic and subatomic) level.
- Quantum networks also known as the quantum internet is an internet network that makes use of the properties of photons to transmit data.
- It allows quantum devices to exchange information within a particular environment that harnesses the principles of quantum mechanics.

SOLAR STORM

In News: An enormous coronal mass ejection (CME) was recorded exploding on the far side of the Sun, sending a solar storm out across the Solar System.
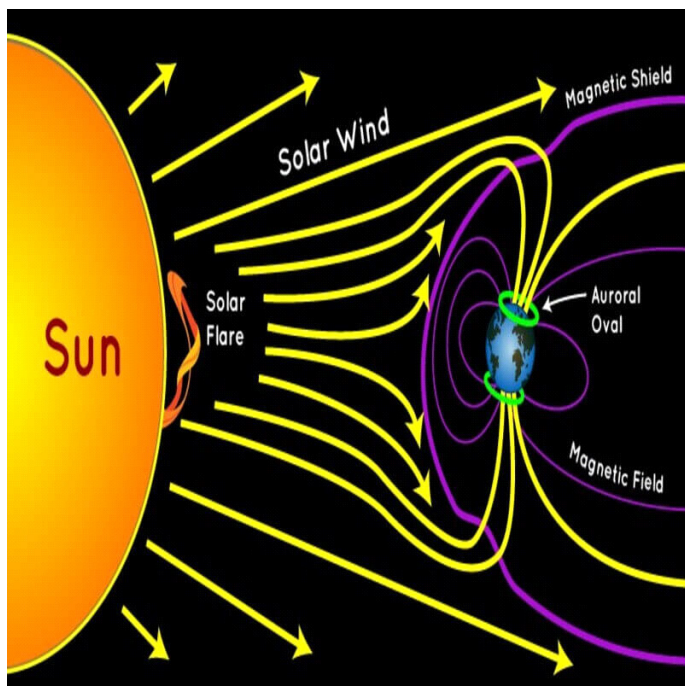
More on the Topic:

- Geomagnetic storms/solar storms are major disturbance of Earth's magnetosphere.

- **Magneto sphere is the area around planet controlled by its magnetic field.**

- It occurs when there is **a very efficient exchange of energy from solar wind into space environment surrounding Earth.**

- The impacts of Solar storm on earth include Disruption of navigation systems such as Global Navigation Satellite System (GNSS) and create harmful geomagnetic induced currents (GICs) in power grid and pipelines.

EINSTEIN RING

In News: The James Webb Space telescope captured an image of an almost perfect "Einstein ring".
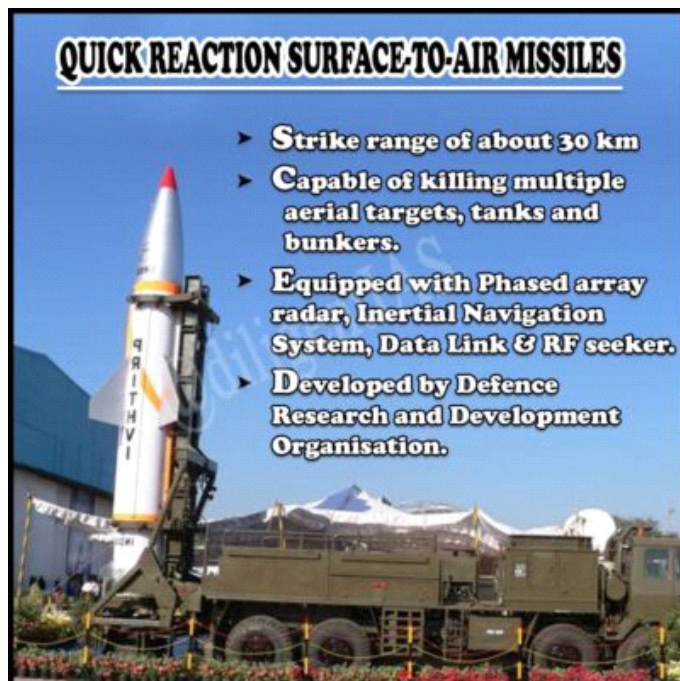

More on the Topic:

- Einstein Ring was first discovered in 1988 as the phenomenon of bending of the light was predicted by Alert Einstein.

- It is a ring of light created when **light from a galaxy, star or other cosmic objects passes near a massive object** before reaching Earth.

- Since gravitational force of large object bends the light, it develops gravitational lensing, forming a ring-like effect, making the light of galaxy appear as an almost perfect ring.

QUICK REACTION SURFACE TO AIR MISSILE (QRSAM) SYSTEM

In News: Flight tests of the Quick Reaction Surface to Air Missile (QRSAM) system were performed from Integrated Test Range (ITR) Chandipur, Odisha coast.
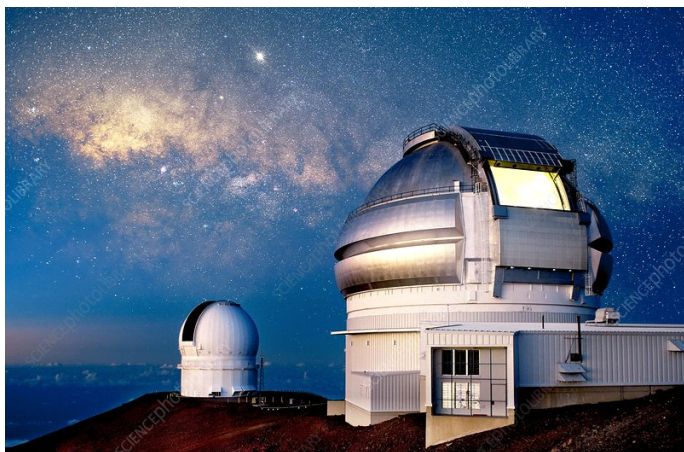

More on the Topic:

- Quick Reaction Surface-to-Air Missile (QRSAM) is a missile developed by the Defence Research and Development Organisation (DRDO), Bharat Electronics Limited and Bharat Dynamics Limited for the Indian Army, meant for protecting moving armoured columns from aerial attacks.

- **It is a short range surface-to-air missile (SAM)** system, primarily designed and developed by DRDO to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks.

- QRSAM is a canister-based system, which means that it is stored and operated from specially designed compartments.

- In the canister, the inside environment is controlled, thus along with making its transport and storage easier, the shelf life of weapons also improves significantly.

- The QRSAM weapon system can operate on the move with search and track capability and fire on short halt.

GEMINI NORTH TELESCOPE

In News: Gemini North Telescope has captured brilliant image of two galaxies merging.
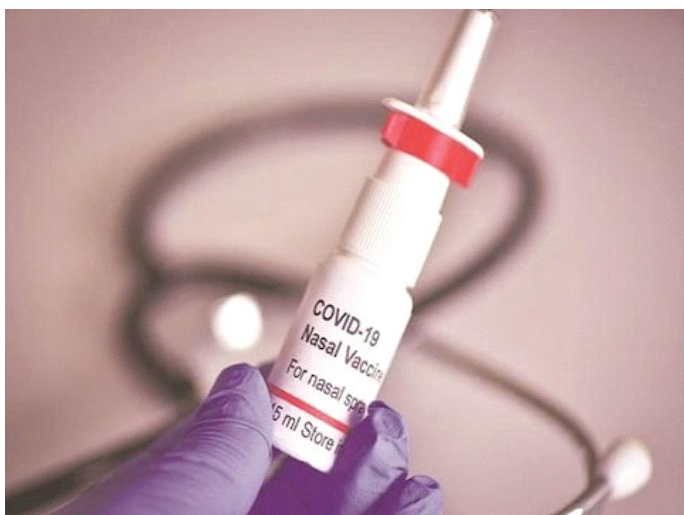
More on the Topic:

● As the two galaxies merge into each other, their opposing gravitational forces will trigger bursts of star formation and will distort the structures of both galaxies. Over a period that will last millions of years, these galaxies will continuously swing past each other in loops that tighten with each repetition.

About Gemini Twin Telescope:

● Gemini North is one of the twin telescopes at the International Gemini Observatory, Hawai, which is operated by the United States National Science Foundation's (NSF) NOIRLab.

● Gemini North Telescope, located on the dormant volcano Mauna Kea on the island of Hawaii in the Northern Hemisphere, and

● Gemini South Telescope, located at the Cerro Tololo Inter-American Observatory on Cerro Pachon in Chile in the Southern Hemisphere.

● The two telescopes have been optimized for observations at infrared wavelengths by having their primary mirrors coated with silver.

INCOVACC INTRANASAL VACCINE

In News: Bharat Biotech's iNCOVACC, the world's first intranasal vaccine for Covid-19 received approval for emergency use in India.

More on the Topic:

● The vaccine was jointly developed by Covaxin-maker Bharat Biotech and Washington University St. Louis.

● It is **a recombinant replication deficient adenovirus vectored vaccine** with a pre- fusion stabilized spike protein.

● It uses **a modified chimpanzee adenovirus,** which cannot replicate in body, to carry Covid spike protein to induce immunity.

Advantages:

● Nasal vaccines **stimulate antibodies in airway passages,** making them effective against viruses that attack respiratory tissues.

● They can be **self-administered, easing pressure on healthcare personnel** and making them more acceptable to people who fear needles.

● Delivering a vaccine in the form of nasal drops **is expected to make it more cost-effective** in low- and middle-income countries.

GREEN HYDROGEN

In News: According to a new study, Green hydrogen would likely supply less than 1% of final energy globally by 2035.
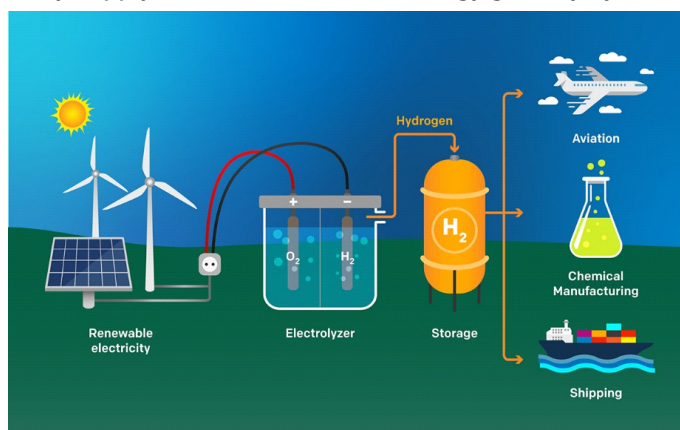
More on the Topic:

● Green Hydrogen Production technology is based on the generation of hydrogen, a universal, light and highly reactive fuel **through a chemical process known as electrolysis.**

● This method uses **an electrical current to separate the hydrogen from the oxygen in water.**

● If this electricity is obtained from renewable sources we will, therefore, produce energy without emitting carbon dioxide into the atmosphere.

Barriers in Green Energy Production:

● **High cost:** energy from renewable sources, which are key to generating green hydrogen through electrolysis, is more expensive to generate, which in turn makes hydrogen more expensive to obtain.

● **High energy consumption:** the production of hydrogen in general and green hydrogen in particular requires more energy than other fuels.

● **Safety issues:** hydrogen is a highly volatile and flammable element and extensive safety measures are therefore required to prevent leakage and explosions.

● **Demand Gap:** There is a lack of industrial demand for

hydrogen (especially green hydrogen).

Significance of Green Hydrogen:

- **100 % sustainable:** green hydrogen does not emit polluting gases either during combustion or during production.

- **Storable:** hydrogen is easy to store, which allows it to be used subsequently for other purposes and at times other than immediately after its production.

- **Versatile:** green hydrogen can be transformed into electricity or synthetic gas and used for commercial, industrial or mobility purposes.

Way Ahead:

- The study has recommended the following to improve Green Hydrogen production.

- Implementing strong policies is the need of the hour. Fostering green hydrogen growth will require **strong dedication, coordination and funding along the entire value chain.**

- **Carbon pricing should always form the basis of climate policy.**

- Carbon pricing is a policy tool that puts a tax on producers of greenhouse gas emissions. This will improve green energy production.

- Accelerating the roll-out of crucial zero-carbon technologies like electric mobility and heat pumps. These technologies make more efficient use of scarce renewable electricity

CANDIDIASIS

In News: A team of researchers from Bengaluru-based Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) has identified a gene that probably holds the key to preventing the fungal infection Candidiasis.
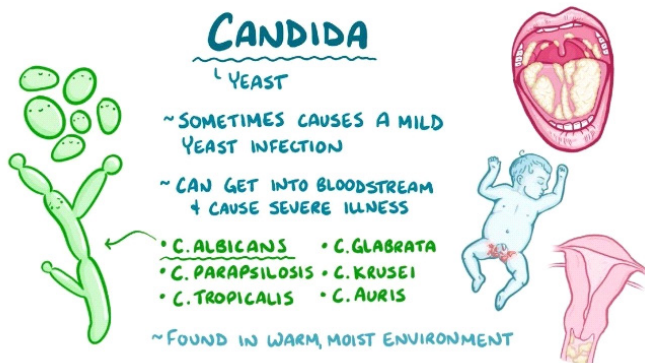
More on the Topic:

- Named CSA6, the gene has been identified in Candida albicans, a fungus notorious for causing high morbidity and mortality rates under certain immuno-compromised conditions such as AIDS or during cancer treatment.

- **The fungus is a typical member of the human gut flora** and typically resides in mucosal linings of the gastrointestinal and urogenital tract of healthy individuals without causing any harm.

- However, it can turn into a pathogen under immuno-compromised conditions, causing superficial and life-threatening systemic infection.

- Factors that increase the risk of candidiasis include HIV/AIDS, mononucleosis, cancer treatments, steroids, stress, antibiotic usage, diabetes, and nutrient deficiency.

- Candidiasis is **treated with antifungal medications.**

INFLATABLE AERODYNAMIC DECELERATOR (IAD)

In News: ISRO has successfully tested IAD technology to land missions on Venus & Mars.

More on the Topic:

- Designed and developed by ISRO's Vikram Sarabhai Space Centre (VSSC), the technology is being developed for aerodynamically decelerating an object descending through the atmosphere.

- It means that through this technology the payload will land back on Earth by decelerating the fall at the required level.

- The IAD has huge potential in a variety of space applications including the recovery of spent stages of rockets, landing payloads on Mars or Venus and making space habitats for human space flight missions.

PERSEVERANCE ROVER

In News: NASA's Perseverance rover has discovered stunning Martian rocks in the Jezero crater on the Red Planet that may have life-related traces.
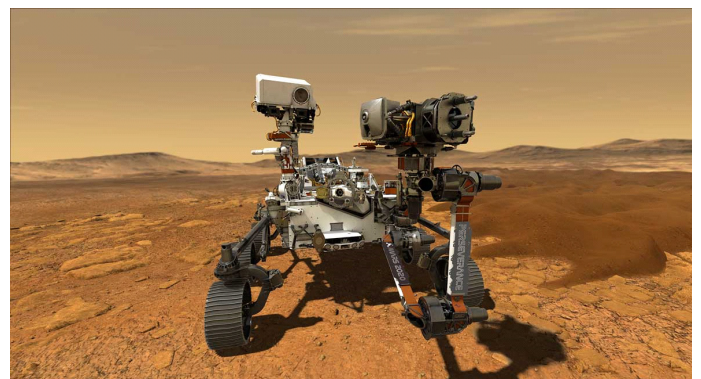
More on the Topic:

- Scientists believe that **the Martian surface was once filled with water.** And these rocks, believed to have been altered by water, have given them confidence that the Red Planet was indeed a water world once.

- The collected samples have been preserved by a robot and will be delivered to Earth.

About Perseverance Rover:

- Perseverance, nicknamed Percy, is a car-sized Mars rover designed **to explore the Jezero crater on Mars as part of NASA's Mars 2020 mission.**

- The rover also **carried the mini-helicopter Ingenuity to Mars,** an experimental aircraft and technology testbed that made the first powered flight on another planet in 2021.

- The rover's goals include identifying ancient Martian environments capable of supporting life, seeking out evidence of former microbial life existing in those environments, collecting rock and soil samples to store on the Martian surface, and testing oxygen production from the Martian atmosphere to prepare for future crewed missions.

GAGAN AUGMENTATION SYSTEM

In News: Boeing 787 aircraft exempted from GAGAN augmentation system compliance till 2025.
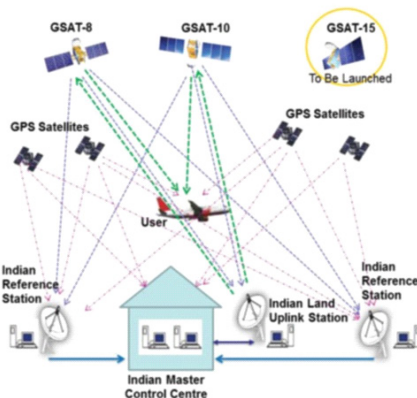

Image: Isro

More on the Topic:

- GAGAN is India's own **satellite-based augmentation system (SBAS)** which is jointly developed by the Indian Space Research Organisation (ISRO) and the Airports Authority of India (AAI) to provide the best possible navigational services over Indian FIR (Flight Information Region) with the capability of expanding to neighbouring FIRs.

- Notably only few countries including the United States (US), Japan, and Europe have their own SBAS.

- GAGAN provides lateral and vertical guidance as an aircraft approaches the runway for landing. **It provides GPS signal corrections, giving better position accuracy.**

- It helps aircraft with guided landing at airports that **do not have instrument landing system for low-visibility operations.**

- **GAGAN also corrects for GPS signal errors caused by Ionospheric disturbances,** timing and satellite orbit errors. It even provides vital information regarding the health of each satellite.

- It also helps during natural disasters such as floods and earthquakes by sending messages to affected people.

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.

NAFIS - NATIONAL AUTOMATED FINGERPRINT IDENTIFICATION SYSTEM

In News: India has inaugurated a National Automated Fingerprint Identification System.

More on the Topic:

- NAFIS was launched at the at the two-day National Securities Strategies (NSS) Conference.

- It was developed by the National Crime Records Bureau (NCRB) at the Central Fingerprint Bureau (CFPB).

- It will help in the quick and easy disposal of cases with the help of a centralised fingerprint database.

- A unique 10-digit National Fingerprint Number (NFN) will be assigned to each person arrested for a crime.
- It will be used for his lifetime. Different crimes registered under different FIRs will be linked to the same NFN.

AVALANCHE MONITORING RADAR

In News: A first of its kind radar – which can see through snow and fog and detect avalanches within three seconds of being triggered – was installed by the Indian Army at one of its forward posts, at an altitude of 15,000 feet in north Sikkim.

More on the Topic:
- Besides detecting avalanches, the radar can also spot landslides.
- The radar, which can see at night, is an all-weather solution that covers an area of 2 sq/km. The device uses a series of short microwave pulses which are scattered at the target. It can permanently scan the targeted slope for avalanche release and track its path and size.
- The radar is also linked to an alarm system enabling automatic control and warning measures. Images and videos of the event are recorded for future analysis by experts.

About Avalanche:
- An avalanche is a **rapid flow of snow down a slope, such as a hill or mountain.**
- Avalanches can be **set off spontaneously, by such factors as increased precipitation or snowpack weakening, or by external means such as humans, animals, and earthquakes.**
- Primarily composed of flowing snow and air, large avalanches have the capability to capture and move ice, rocks, and trees.

ENERGY ACCESS EXPLORER (EAE)

In News: The World Resources Institute had launched the Energy Access Explorer (EAE) in 2021.

More on the Topic:
- It was first introduced in the state of Jharkhand in 2021 and more recently in Assam, August, 2022.
- The aim behind the EAE was to bring visibility to the areas that need attention.

- Through combining public data with custom analyses, this platform **paints a clearer picture of energy access and, most critically, where it is lacking.**

Present Indian Scenario:
- The Saubhagya initiative has claimed an electrification rate of 99.99% and that only 18,734 households in India are without electricity. **However, the quality and reliability of electricity access remain an issue.**
- Power for All, reveals that **energy access in India is 79.2%.** There are several gaps in energy access to critical sectors like health and education.
- Even in 2019, **only 54% of the healthcare facilities and 50% of public schools were electrified.**
- **Healthcare, education and livelihoods sectors continue to remain un-electrified** or under-electrified.

Significance of Energy Access Explorer (EAE) to present scenario:
- EAE could be used by decision-makers who are tasked with the responsibility of ensuring socio-economic development in the state **to ensure access to energy.**
- It will further ensure that **the country meets the Sustainable Development Goals targets.**
- The most significant impacts of EAE have been in the health sector, where EAE analysis has helped prioritise 300 un-electrified healthcare facilities best suited for solarisation by the Jharkhand Renewable Development Agency.

HYBRID PROPULSION SYSTEM

In News: ISRO has successfully tested hybrid motor aiming at new propulsion system for rockets.

More on the Topic:
- The motor used Hydroxyl-terminated polybutadiene (HTPB) as fuel and liquid oxygen (LOX) as the oxidiser.
- Unlike **solid-solid or liquid-liquid combinations,** a hybrid motor uses solid fuel and liquid oxidiser.
- The use of liquids facilitates throttling, and the control over the flow rate of LOX enables the re-start capability.
- The hybrid model is more efficient, "greener" and safer to handle and paves the way for new propulsion technologies for future missions.

SOVA VIRUS

In News: The new mobile banking 'Trojan' virus - SOVA - which can stealthily encrypt an Android phone for ransom and is hard to uninstall is targeting Indian customers.
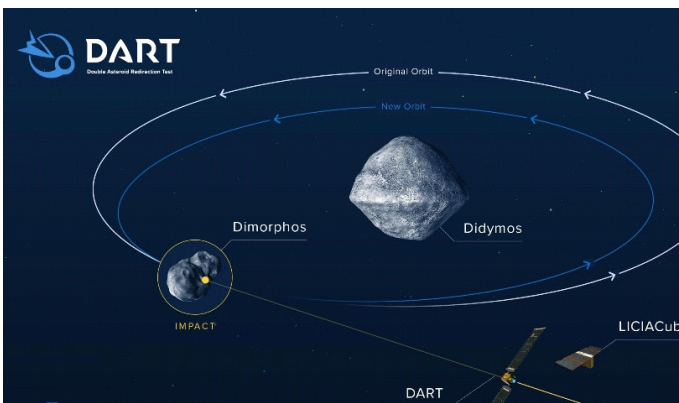

More on the Topic:

- SOVA can add **false overlays to a range of apps and "mimic" over 200 banking and payment applications in order to con the Android user.**

- The latest version of this malware hides itself within fake Android applications that show up with the logo of a few famous legitimate apps like Chrome, Amazon, NFT (non-fungible token linked to crypto currency) platform to deceive users into installing them.

- The lethality of the virus can be gauged from the fact **that it can collect keystrokes, steal cookies, intercept multi-factor authentication (MFA) tokens, take screen-shots and record video from a webcam and can perform gestures like screen click, swipe etc.** using android accessibility service.

DART (DOUBLE ASTEROID REDIRECTION TEST)

In News: The Double Asteroid Redirection Test is a NASA space mission aimed at testing a method of planetary defense against near-Earth objects.

More on the Topic:

- Launched from Earth in November 2021, the mission will deliberately crash a space probe into the minor-planet moon Dimorphos of the double asteroid Didymos.

- It is intended **to assess the future potential of a spacecraft impact to deflect an asteroid on a collision course with Earth** through a transference of momentum.

- The asteroid poses no actual threat to Earth; it was merely selected for the test.

- The technology would allow a spacecraft to crash into an asteroid and change its route.

- It will be a suicide mission and the spacecraft will be destroyed in the collision with the asteroid.

ANTI-RADIATION PILLS

In News: With fears of a nuclear disaster at Ukraine's Zaporizhzhia power plant growing, the European Union has decided to pre-emptively supply 5.5 million (five point five million) anti-radiation pills to be distributed among residents in the vicinity.
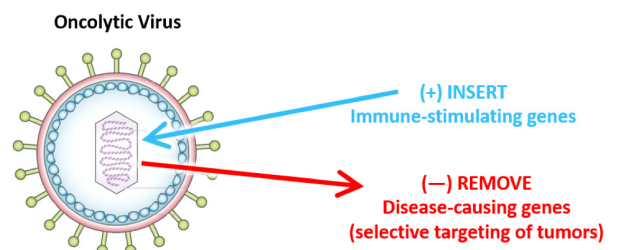
More on the Topic:

- Potassium iodide (KI) tablets, or anti-radiation pills, are known to provide some protection in cases of radiation exposure.

- They contain non-radioactive iodine and can help block absorption, and subsequent concentration, of radioactive iodine in the thyroid gland.

- After a radiation leak, radioactive iodine floats through the air and then contaminates food, water and soil.

How it Works?

- While radioactive iodine deposited during external exposure can be removed using warm water and soap, the bigger risk is inhaling it.

- The thyroid gland which uses iodine to produce hor-mones to regulate the body's metabolism has no way of telling radioactive from non-radioactive iodine.

- **Potassium iodide(KI) tablets rely on this to achieve 'thyroid blocking'.** KI pills took a few hours before or soon after radiation exposure to ensure that **non-radioactive iodine in the medicine is absorbed quickly to make the thyroid "full".**

- But KI pills are preventive only and cannot reverse any damage done by radiation to the thyroid gland.

ONCOLYTIC VIRUS

In News: A new study published in the journal Cancer Cell suggests that the body's immune capacity against cancer — to recognise and destroy cancer cells — can be boosted by using oncolytic viruses.

More on the Topic:

- Oncolytic viruses (OVs) are viruses that selectively target and kill cancer cells while sparing normal ones. The study notes that these viruses also enhance the immune system's ability to recognise and terminate cancer cells.

- The latest study focused on **the virus known as myxoma and it found that T-cells infected with myxoma virus can lead to a type of cancer cell death** not previously observed.

- **Myxoma can target and kill cancer cells directly,** but using myxoma-equipped T-cells works well as cancerous

cells in the vicinity of those targeted are also destroyed. This process is called bystander killing.

BPAL TUBERCULOSIS TREATMENT

In News: A short tuberculosis treatment regimen of six months called BPaL had showed "favourable outcomes".

One day of typical BPaL regimen
6 months / <750 pills

One day of typical XDR-TB treatment
18+ months / 14,000+ pills

More on the Topic:

- The **"bedaquiline-pretomanid-linezolid"** regimen, abbreviated as the BPaL regimen, has been reported to have around 90% efficacy against highly drug-resistant tuberculosis.

- Developed by a non-profit organisation, TB Alliance, **pretomanid is the newest anti-TB drug,** prescribed as part of the BPaL regimen, which includes bedaquiline and linezolid.

- Medical practitioners believe that **this new drug in the BPaL combination will cut short the treatment duration** by half (and more), and reduce the amount of medication an MDR-TB patient must take during treatment.

- **From a treatment duration range of 18 to 24 months,** BPaL is likely to bring down the time to around 6 months.

- Furthermore, **the older "all oral drug regimen" included nearly 14 different anti-TB drugs** for a patient to take every day.

- With BPaL, it is likely to take just three daily tablets. A shorter regimen, which is all oral and requires fewer doses per day, makes it easier for a patient to adhere to and complete treatment.

Why Is Bpal Important For India?

- Data from the India TB Report has revealed that the situation for drug-resistant forms of TB or multi-drug resistant TB needs urgent mitigation in India.

- According to the Global TB Report 2021, the mortality rate due to all forms of TB between 2019 and 2020 increased by 11% in India.

- **India accounts for more than 1 in 4 of all cases of active TB diseases,** including nearly 1.20 lakh cases of drug-resistant forms of TB.

About Tuberculosis:

- TB is caused by bacillus Mycobacterium tuberculosis which typically affects lungs (pulmonary TB) but can affect other sites.

- Currently, **BCG is the only licensed vaccine available for prevention of TB.**

REPORTS AND INDICES

NCRB ROAD ACCIDENT REPORT

In News: NCRB Data suggests that besides the deaths, 3.71 lakh people were also injured in 4.03 lakh 'road accidents' across the country last year.

More on the Topic:

- Deaths in road accidents has increased by 17%

- In 2021, 1.55 lakh people died in accidents on Indian roads, up from 21.33 lakh in 2020

- A maximum number of cases were reported in Tamil Nadu.

- Reasons include speeding which accounted for over half of all deaths, dangerous and careless driving which caused over 42000 deaths.

- The NCRB report's data for 2021 also suggested that public transport, like buses, were safer than private modes of conveyance, like motorcycles.

Road Accident Safety Measures:

- The three-point seat belt a passive safety device first incorporated into a car by Volvo in 1959, and now standard in cars sold in India, is a low cost restraint system that prevents occupants of a vehicle from being thrown forward in a crash.

- An IIT Delhi study reveals that Air-bag deployment has reduced mortality by 63%.

- Head restraints, which are found either as adjustable models or moulded into the seats, prevent a whiplash injury (sudden backwards and forward movement of head-on collision).

PROGRESS ON WASH IN HEALTHCARE FACILITIES, 2000−2021 REPORT

In News: UNICEF and WHO has released Progress on WASH in Healthcare Facilities, 2000−2021 Report.

More on the Topic:

- Key findings include,
- Half of world's healthcare facilities lack basic hygiene services, nearly 4 billion people at risk.
- Lack of potential infection prevention in health facility impacts pregnant mothers, new-borns and children health.
- Unhygienic health care facility influences disease transmission and emergence of antibiotic resistance.

About the Report:

- The WHO and UNICEF release progress updates on WASH in households, WASH in schools and WASH in health care facilities every two years.
- WHO's WASH Strategy has been **developed in response to the 2030 Agenda for Sustainable Development** (SDG 3: Good Health and Well Being, SDG 6: Clean Water And Sanitation).

REPORT ON SOCIAL PROTECTION

In News: 'World Social Protection Report 2021-22' was released by International Labor Organisation.

More on the Topic:

- The report notes that Mongolia, New Zealand, Singapore and Australia have 100% social protection net, while in Myanmar and Cambodia, the number stands below 10%
- As of 2020, **only 46.9% of the global population was effectively covered by at least one social protection benefit,** while the remaining 53.1% as many as 4.1 billion people were left wholly unprotected.
- Three out four workers in the Asia Pacific region are not protected in the event of illness or injury sustained at work.
- **Countries with lower GDP per capita tend to have low levels of work injury coverage** for example, Afghanistan, India, Nepal and Pakistan cover fewer than 5% of their workers.
- Highlighting the **inherent gender inequality in the social protection coverage,** the report makes note women's coverage lag behind men's by a substantial 8 percentage points.

India Specific Findings:

- **Only 24.4% of Indians,** even fewer than Bangladesh (28.4%), are under any sort of social protection benefit.

- The report **appreciated India's higher coverage rate achieved through a combination of contributory and non-contributory schemes** through its progressive extension of coverage by combining different tiers of social protection svhmes.
- **Example:** Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGA), which offers a degree of protection for informal sector workers for up to 100 days.

About International Labour Organisation:

- International Labour Organization (ILO) is the only tripartite U.N. agency, since 1919.
- It brings together **governments, employers and workers of 187 member States,** to set labour standards, develop policies and devise programmes promoting decent work for all women and men.
- Headquarters: Geneva, Switzerland
- Received the Nobel Peace Prize in 1969.

The eight-core conventions of the ILO are:

- Forced Labour Convention (No. 29)
- Abolition of Forced Labour Convention (No.105)
- Equal Remuneration Convention (No.100)
- Discrimination (Employment Occupation) Convention (No.111)
- Minimum Age Convention (No.138)
- Worst forms of Child Labour Convention (No.182)
- Freedom of Association and Protection of Right to Organised Convention (No.87)
- Right to Organise and Collective Bargaining Convention (No.98)
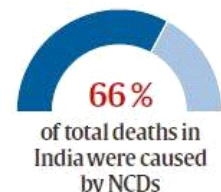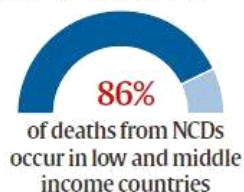
INVISIBLE NUMBERS – THE TRUE SCALE OF NON-COMMUNICABLE DISEASES

In News: WHO has released the report: 'Invisible numbers – the true scale of non-communicable diseases' recently.

More on the Topic:

- Over 60.46 lakh people died due to NCDs in India in 2019.
- There was a 22% probability of death between the age of 30 and 70 due to any type of non-communicable disease, including cardiovascular diseases, cancer, diabetes or chronic obstructive pulmonary disease.
- Over 25.66 lakh deaths in 2019 in the country were due to cardiovascular diseases while 11.46 lakh deaths were due to chronic respiratory diseases. Cancer led to 9.20 lakh deaths while 3.49 lakh deaths in the country were attributed to diabetes.

Global Scenario:

- Globally, **one in three deaths – 17.9 million a year –** are due to cardiovascular diseases (CVDs).
- Eighty-six per cent of CVD deaths could have been prevented or delayed through prevention and treatment.
- **Two-thirds of the people with hypertension live in low- and middle-income countries,** but almost half of the people with hypertension are not even aware they have it.
- Hypertension currently affects around 1.3 billion adults aged between 30 and 79.
- This major shift in public health over the last decade has gone largely unnoticed.
- Even in the Covid-19 pandemic, severe morbidity and high mortality were associated with prior affliction with NCDs.

Recommendations:

- There is a need for concerted global response, which uses policy instruments that have a population-wide impact on tobacco, alcohol, unhealthy foods and air pollution.
- There is also a need for **robust health system programmes that promote health, detect and control risk factors early and effectively, treat diseases in a cost-effective manner and prevent untimely deaths.**
- NCDs need to be accorded higher priority in financial allocation and health system strengthening initiatives, with strong emphasis on primary care.

THE STATE OF THE EDUCATION REPORT FOR INDIA: ARTIFICIAL INTELLIGENCE IN EDUCATION

In News: UNESCO has inaugurated 2022 State of the Education Report for India: Artificial Intelligence in Education recently.

More on the Topic:

- The report is the fourth edition and is an annually flagship report.
- The AI Market in India **is likely to reach US Dollar 7.8 billion by 2025** at the rate of 20.2% compound annual growth.
- To match India's curriculum to make the students ready for the AI economy, India's National Education Policy (NEP) 2020 lays a big emphasis on the need to impart the **necessary technical knowledge and the integration of AI in Education** to also promote quality and skill-based education.

Recommendations by UNESCO:

- Consider the **ethics of Artificial Intelligence in Education** as an utmost priority
- Rapidly provide **an overall regulatory framework for Artificial Intelligence in Education**
- Create **effective public-private partnerships**
- Ensure that all students and teachers have **access to the latest technology**
- **Expand AI literacy efforts**
- Attempt to **correct algorithmic biases and the resulting discrimination**
- Improve **public trust in Artificial Intelligence**
- Request the private sector to better involve students and educationists in developing AI products
- Place **ownership of data with the students**
- Embrace the **versatility of Artificial Intelligence in Education systems**

About Artificial Intelligence:

- Artificial intelligence (AI) refers to **the simulation of human intelligence in machines** that are programmed to think like humans and mimic their actions.
- The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.
- Voice assistants, image recognition for face unlock in cellphones, and ML-based financial fraud detection are examples of AI software currently being used in everyday life.

INDIA DISCRIMINATION REPORT

In News: The Oxfam India's 'India Discrimination Report 2022' was released recently.

More on the Topic:

- Gender discrimination is the reason for 98% of employment gap between males and females in India.
- In India **despite their same educational qualification and work experience** as men will be discriminated in the labour market **due to societal and employers' prejudices.**
- **Self-employed males earn 2.5 times more than females,** 83% of which is attributed to gender-based discrimination and 95% of the gap between the earnings of

male and female casual wage workers is due to discrimination.

- **Lower wages for salaried women are due to discrimination** (67%) and lack of education and work experience (33%).
- **Self-employed SC/STs earn Rs 5,000 less than non-SC/STs** and discrimination accounts for 41% of this gap.
- **Female casual workers earn about Rs 3,000 less than their male counterparts.**

Recommendations:

- The government should **actively enforce effective measures for the protection and right to equal wages and work for all women.**
- The Government of India should also **incentivise the participation of women in workforce,** including enhancement in pay, upskilling, job reservations and easy return-to-work options after maternity.
- Government should **implement "living wages" as opposed to minimum wages,** particularly for all informal workers, and formalise contractual, temporary, and casual labour as much as possible.
- There should be efforts from various stake holders to ensure **a more equitable distribution of household work and childcare duties** between women and men.

THE GENDER SNAPSHOT 2022

In News: The new report, launched by UN Women and the UN Department of Economic and Social Affairs (UN DESA), highlights that, at the current pace of progress, SDG 5 achieving gender equality will not be met by 2030.
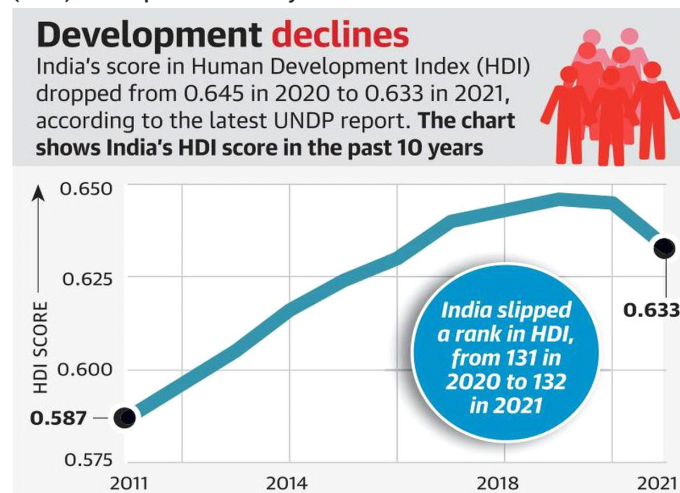

More on the Topic:

- Global challenges, such as the Covid-19 pandemic and its aftermath, violent conflict, climate change, and the backlash against women's sexual and reproductive health and rights are further exacerbating gender disparities.
- At the current rate of progress, the report estimates that **it will take up to 286 years to close gaps in legal protection and remove discriminatory laws,** 140 years for women to be represented equally in positions of power and leadership in the workplace, and at least 40 years to achieve equal representation in national parliaments.
- The report also points to a worrisome reversal on the reduction of poverty, and rising prices are likely to exacerbate this trend.

Way Ahead Suggested:

- Cooperation, partnerships and investments in the gender equality agenda, including through increased global and national funding, are essential to correct the course and place gender equality back on track.

HUMAN DEVELOPMENT INDEX (HDI)

In News: India ranked 132nd among 191 countries and territories on the 2021 Human Development Index (HDI). It is published by UNDP.

Development declines
India's score in Human Development Index (HDI) dropped from 0.645 in 2020 to 0.633 in 2021, according to the latest UNDP report. **The chart shows India's HDI score in the past 10 years**

India slipped a rank in HDI, from 131 in 2020 to 132 in 2021

More on the Topic:

- Switzerland, Norway and Iceland topped the HDI 2021.
- India ranked 132nd among 191 countries and territories on the HDI 2021-2022. Last year, the country ranked 131.
- The report said around 90% of countries registered a decline in their HDI value in 2020 or in 2021.
- People across the globe are feeling more distressed and insecure about their lives and the future, in the wake of the Covid pandemic.

India Specific Findings:

- **India's latest HDI value of 0.633 places the country in the medium human development category,** lower than its value of 0.645 in the 2020 report.
- The report attributes the drop in HDI from 0.645 in 2019 to 0.633 in 2021 to India's falling life expectancy from 69.7 years to 67.2 years during the survey period.
- Among India's neighbours, Sri Lanka (73rd), China (79th), Bangladesh (129th), and Bhutan (127th) are ranked above India, while Pakistan (161st), Nepal (143rd), and Myanmar (149th) are worse off.

About Human Development Index:

- Pakistani economist **Mahbub -ul-Haq** developed Human Development Index (HDI) as a measure to track progress on three key dimensions of human development ,
- **A long and healthy life, access to education, and a decent standard of living** in 1990 with the objective — **"people are the real wealth of nations".**

It is calculated using the following four indicators:

- Life expectancy at birth,
- Mean years of schooling,
- Expected years of schooling, and
- Per capita Gross National Income.

INDIAN SOCIETY / SOCIAL ISSUES / SOCIAL JUSTICE

CHILD MORTALITY INDICATORS

In News: India has achieved a milestone in the deduction of child mortality rates, and will soon achieve the Sustainable Development Goals (SDG) targets by 2030.

More on the Topic:

- The country has been witnessing a progressive reduction in IMR, U5MR and NMR since 2014.

- **Under 5 Mortality Rate (U5MR)** for the country has shown significant Annual Decline Rate of 8.6%) from 2019 (32 per 1000 live births in 2020 against 35 per 1000 live births in 2019). It varies from 36 in rural areas to 21 in urban areas.

- U5MR for Female is higher (33) than male (31). There has been a decline of 4 points in male U5MR and 3 points in female U5MR during the corresponding period.

- Highest decline of U5MR is observed in the State of Uttar Pradesh (5 points) and Karnataka (5 points).

- **Infant Mortality Rate (IMR)** has also registered 2-point decline to 28 per 1000 live births in 2020 from 30 per 1000 live births in 2019 (Annual Decline Rate: 6.7%).

- The Rural-Urban difference has narrowed to 12 points (Urban 19, Rural-31).

- No gender differential has observed in 2020 (Male -28, Female – 28).

- **Neonatal Mortality Rate** has also declined by 2 points from 22 per 1000 live births in 2019 to 20 per 1000 live births in 2020 (Annual Decline Rate: 9.1%). It ranges from 12 in urban areas to 23 in rural areas.

High Performing States:

- Six (6) States/ UT have already attained SDG target of NMR (<=12 by 2030): Kerala (4), Delhi (9), Tamil Nadu (9), Maharashtra (11), Jammu & Kashmir (12) and Punjab (12).

- **Eleven (11) States/UT have already attained SDGs target of U5MR (<=25 by 2030):** Kerala (8), Tamil Nadu (13), Delhi (14), Maharashtra (18), J&K (17), Karnataka (21), Punjab (22), West Bengal (22), Telangana (23), Gujarat (24), and Himachal Pradesh (24).

REVISIONS IN SCHEDULE TRIBES (STs) LISTS

In News: The Union cabinet has approved the inclusion of several communities in the Schedule Tribes list of the Constitution across 4 states, as part of the Constitution (Scheduled Tribes) Order (Amendment) Bill 2022.

More on the Topic:

- The change includes granting tribal status to

- The Hatti community living in the Trans-Giri region of Himachal Pradesh

- Narikoravan and Kurivikkaran hill tribes of Tamil Nadu

- Binjhia in Chhattisgarh

More about the communities:

- The Hattis are a close-knit community who got their name from their **tradition of selling homegrown vegetables, crops, meat and wool etc. at small markets called 'haat' in towns.**

- The Hattis are governed by a traditional council called Khumbli.

- Narikoravan (jackal catchers) and Kuruvikaras (bird eaters) are **nomadic tribal communities.**

- Binjhia, ethnic group found in **Odisha and Jharkhand,** have rich heritage of tradition and culture.

SELF HELP GROUPS

In News: The Ministry of Rural Development (MoRD) is conducting a 15-day national campaign to accelerate the process of mobilisation of left-out rural poor women across 34 states and Union Territories into women's Self Help Groups (SHGs).

More on the Topic:

- The campaign is under Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM).

- **National Rural Livelihoods Mission (NRLM)** was

launched by the MoRD in 2011 as a restructured version of Swarna Jayanti Gram Swarozgar Yojna (SGSY).

- The mission aims at creating efficient and effective institutional platforms for the rural poor enabling them to increase household income.

- In November 2015, the program was renamed DAY-NRLM. As of 31st August 2022, more than 8.5 crore families have been linked with 78.33 lakh SHGs under DAY-NRLM's fold.

- "Mission 1 lakh, 2024", an initiative launched by the MoRD last year, is aimed at raising the annual income of each woman in self-help groups (SHGs) to Rs 1 lakh per year by 2024.

About Self Help Groups:

- Self Help Groups can be **defined as a self-governed, peer-controlled information group of people with similar socio-economic backgrounds and having a desire to collectively perform a common purpose.**

- They are informal associations of people who choose to come together to find ways to improve their living conditions.

- SHGs promote small savings among their members.

- The savings are kept with the bank. This is the common fund in the name of the SHG. The SHG gives small loans to its members from its common fund.

CONVERSION THERAPY

In News: National Medical Commission has banned 'Conversion Therapy' and called it a professional misconduct.

More on the Topic:

- The development came after a series of orders from the Madras High Court to improve the lives of the LGBTQIA+ community.

- Conversion therapy is the attempt to change an individual's sexual orientation, gender identity, or gender expression.

- Sometimes referred to as reparative therapy, the practice may include talking therapies and prayer as well as extreme practices such as exorcism, physical violence, and food deprivation.

- These methods are used to try to stop or suppress a person's sexual or gender identity in order to "cure" them by changing their sexual orientation or gender identity.

INTERNAL SECURITY

TRIPARTITE AGREEMENT WITH 8 ARMED TRIBAL AND THE ASSAM GOVERNMENT

In News: Centre has signed the tripartite agreement with 8 armed tribal and the Assam government to restore peace and rehabilitation of armed groups.

More on the Topic:

- The groups that signed the agreement are Birsa Commando Force (BCF), Adivasi People's Army (APA), All Adivasi National Liberation Army (AANLA), Adivasi Cobra Military of Assam (ACMA) and Santhali Tiger Force (STF).

- The remaining three outfits are splinter groups of BCF, AANLA, and ACMA.

- The groups are in ceasefire since 2012 and living in designated camps.

- The agreement was signed **to end decade old crisis of tribal groups and tea garden workers in Assam**.

- The agreement will prove to be another milestone in the direction of making North East region extremism free by 2025.

About the Settlement agreement:

- The major provisions of the agreement included **fulfilling political, economic, and educational aspirations.**

- The other objective is **protecting, preserving and promoting social, cultural, linguistic and ethnic identities.**

- The agreement also provides for **the setting up of an Adivasi Welfare and Development Council by the Government of Assam**

- Necessary measures would be taken for **the rehabilitation of cadres of armed groups and for the welfare of tea garden workers.**

- **A special development package of 1,000 crores** would be provided over a period of five years for infrastructure development in Adivasi-populated villages and areas.

ART AND CULTURE

SHUMANG LEELA

In News: The 50th All Manipur Shumang Leela Festival 2021-2022 kicked off at Imphal.

More on the Topic:

- Shumang Leela is a traditional form of theatre in Manipur and the roles of female artists are all played by male actors and male characters are played by female artists in case of female theatre groups.

- The present-day Shumang Leelas address the issues of moral values, unity and integrity.

- The fostering of bonds of brotherhood and friendship among various communities in the State is also promoted by the theatre.

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 led MSP.

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.

MARTAND TEMPLE

In News: ASI had objected to the 'Navgrah Ashtamangalam Puja' on the premises of Martand Temple.

More on the Topic:

- The temple is a heritage site.

- It was built by the Karkota dynasty king Lalitaditya Muktapida, who ruled Kashmir from 725 AD to 753 AD.

- **Dedicated to Vishnu-Surya, the Martand Temple has three distinct chambers;** the mandapa, the garbhagriha, and the antralaya. It is probably the only three-chambered temple in Kashmir

- The temple is built in a unique Kashmiri style, though it has definite Gandhar influences.

MOHENJO-DARO

In News: In flood-stricken Pakistan, where an unprecedented monsoon season has killed hundreds of people, the rains now threaten a famed archaeological site Mohanjo-daro.

More on the Topic:

- The ruins of Mohenjo-daro, located in southern Sindh province near the Indus River, and a Unesco world heritage site, are considered among the best pre-served urban settlements in south Asia.

- They were discovered in 1922 (Discovered by: RD Banerji), and mystery still surrounds the disappearance of its civilisation, which coincided with those of ancient Egypt and Mesopotamia.

- Mohenjo-Daro was the largest city of the Indus valley civilization. Both Harappa and Mohenjo-Daro can be called the capital cities of the civilization.

Features:

- Great Bath: The most famous building found at Mohenjo-Daro is a great bath. The water for the bath was provided from a well in an adjacent room. The floor was made up of bricks.

- Floor and outer walls were bituminized so that there is no leakage of water. There are open porch's on four sides of the bath.

- Granary: A granary has been found which the largest building of the Mohenjo-Daro is. This granary is divided into 27 rooms of different size and shape.

- Assembly Hall: A square pillared hall is another important building found at Mohenjo-Daro. The scholars agree that this pillared hall was a site for social gatherings.

- Mohenjo-Daro has shown **an extensive usage of bricks.**

- Known to be a model planned city of ancient civilisation, houses here had bathrooms, toilets and drainage system.

- Roads and streets were laid out along an approximate "grid" pattern, intersecting at right angles.

- Dancing girl statue, Pasupati Seal, and Statue of Beard man are some of the important findings from Mohenjo-Daro.

QUTB SHAHI TOMBS COMPLEX

In News: Six walls of Qutb Shahi Tombs Complex in Hyderabad have been restored recently.

More on the Topic:

- The restored heritage site will help make a strong case for Unesco World Heritage City.

- The restored medieval wells include the 16.5 metre deep (about five storeys) **3.5 million litre capacity Badi**

Baoli and an equally massive **stepwell near Jamshed Quli's tomb** as well as the 4.7 million litre capacity **Hammam Baoli.**

Qutb Shahi Tombs:

- The tombs of Qutb Shahis are a mausoleum complex, a royal necropolis (cemetery) which comprises the tombs of the Royal family and the officials who faithfully served them and also mortuary bath and mosques.

- The complex consists of 30 tombs, mosques and a mortuary bath. The Qutb Shahi tombs collectively constitute an outstanding example of **an Indo-Muslim dynastic necropolis and is the most extensive and best epigraphically documented in all of India.**

- The tombs are **graceful structures with intricately carved stonework.** The tombs display a distinctive style, a mixture of Persian, Pathan and Hindu forms.

- **The Qutb Shahi tombs complex dating back to 15th century** has numerous tombs, funerary mosques, wells and manicured gardens.

- They are located close to the famous Golconda Fort in Hyderabad, India.

- They contain **the tombs and mosques built by the various kings of the Qutub Shahi dynasty.**

About Qutub Shahi Dynasty:

- Qutb Shāhī dynasty, (1518–1687), **rulers of the kingdom of Golconda in the southeastern Deccan of India,** one of the five successor states of the Bahmanī kingdom. The founder was Qulī Qutb Shah.

SITTANAVASAL

In News: With much of the art in Sittanavasal either damaged or vandalised, Archaeological Survey of India has undertaken conservation measures and also introduced digital checks to track public access.
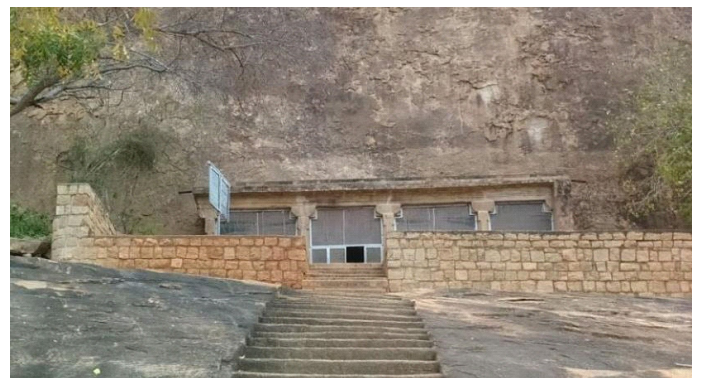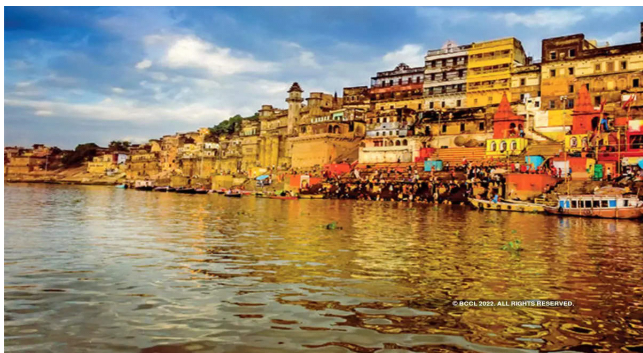

More on the Topic:

- Sittanavasal was a small village in Pudukottai district of Tamil Nadu was a major centre of Jain influence for 1,000 years just before the Christian era.

- Sittanavasal is the name used synonymously **for the hamlet and the hillock that houses the Arivar Kovil (temple of Arihats - Jains who conquered their senses), 'Ezhadipattam' (a cavern with 17 polished rock beds), megalithic burial sites and the Navachunai tarn (small mountain lake)** with a submerged shrine.

Significant Art Works:

- The artwork on the ceiling of the sanctum and the ardha mandapam of Arivar Kovil is an **early example of post-Ajanta cave paintings** of the fourth to sixth centuries, done using the fresco-secco technique (a process that dispenses with preparation of the wall with wet plaster).

- The ceiling paintings show **'bhavyas' (exalted souls who work to achieve moksha or spiritual liberation) enjoying themselves in a pool, full of blooming lotuses;**

- This is the only place in Tamil Nadu where one can see Pandya paintings.

- Sittanavasal's site and art was first mentioned by local historian S. Radhakrishnan Iyer in his 1916 book General History of Pudukottai State. Subsequent research by French archaeologist Gabriel Jouveau-Dubreil.

SCO TOURIST AND CULTURAL CAPITAL

In News: The holy city of Varanasi was nominated as the first-ever SCO Tourism and Cultural Capital during the period 2022-2023 at the 22nd Meeting of Shanghai Cooperation Organization (SCO) Council of Heads of State in Samarkand, Uzbekistan.

More on the Topic:

- The nomination of Varanasi as the first ever SCO Tourism and Cultural Capital will promote tourism, and cultural and humanitarian exchanges between India and the SCO member Countries. It also underlines India's ancient civilizational links with the Member States of SCO, especially the Central Asian Republics.

- The SCO was founded at a summit in Shanghai in 2001 by the presidents of Russia, China, the Kyrgyz Republic, Kazakhstan, Tajikistan and Uzbekistan.

- Over the years, it has emerged as one of the largest trans-regional international organisations. India became its permanent member in 2017.

About Varanasi:

- Varanasi is in southeastern Uttar Pradesh state. It is located on the left bank of the Ganges (Ganga) River and is one of the seven sacred cities of Hinduism.

- It is one of the oldest continuously inhabited cities in the world. Its early history is that of the first Aryan settlement in the middle Ganges valley.

- Varanasi was the capital of the kingdom of Kashi during the time of the Buddha (6th century BCE), who gave his first sermon nearby at Sarnath.

BATHUKAMMA FESTIVAL

In News: The Prime MinisteR has greeted everyone, particularly the Nari Shakti of Telangana on the auspicious occasion of Bathukamma.

More on the Topic:

- Bathukamma is a flower festival celebrated predominantly in Telangana and some parts of Andhra Pradesh.

- Every year this festival is celebrated as per Sathavahana calendar for nine days.

- Bathukamma represents cultural spirit of Telangana. Bathukamma is a beautiful flower stack, arranged with different unique seasonal flowers most of them with medicinal values, in seven concentric layers in the shape of temple gopuram. In Telugu, 'Bathukamma' means 'Mother Goddess come Alive'.

- Historically, bathukamma meant "festival of life" and was celebrating crop harvest.

KURMI COMMUNITY

In News: Thousands of members of the Kurmi community from at least four Bengal districts staged demonstrations to demand the state and central governments' intervention in granting Scheduled Tribe status to the community and the inclusion of Kurmali language in the Eighth Schedule.

More on the Topic:

- Kurmi is traditionally a non-elite tiller caste in the lower Gangetic plain of India.

- They are present in southern regions of Awadh, eastern Uttar Pradesh and parts of Bihar.

Scheduled Tribe:

- The National Commission for Scheduled Tribes explains a scheduled tribe is one with Primitiveness, geographical isolation, shyness and social, educational & economic backwardness due to these reasons are the traits that distinguish Scheduled Tribe communities of our country from other communities.

- Like the definition for Scheduled Castes, which was carried over from British-era legislation, the definition for "Scheduled Tribes" has been retained from the 1931 Census.

- There are over 700 Scheduled Tribes in India according to The National Commission for Scheduled Tribes.

PERSONALITIES IN NEWS

RAMON MAGSAYSAY AWARD

In News: Former Kerala Health Minister K K Shailaja has declined to receive the Ramon Magsaysay Award recently.
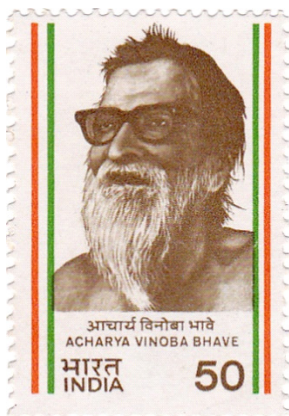

More on the Topic:

- The Rockefeller Brothers Fund (RBF) in 1957 established the Ramon Magsaysay Awards to honour the late President of the Philippines, who died in a plane crash in March 1957.

- The awards were given for contributions made by citizens of the Philippines and other Asian countries in government service, public service, international understanding, journalism and literature, and community leadership.

ACHARYA VINOBA BHAVE

In News: Prime Minister Narendra Modi has remembered Acharya Vinoba Bhave on his birth anniversary.

More on the Topic:

- He was an Indian advocate of nonviolence and human rights. Often called Acharya (Sanskrit for teacher), he is best known for the Bhoodan Movement.

- He is considered a National Teacher of India and the spiritual successor of Mahatma Gandhi. He was an eminent philosopher.

- He wrote **Ishavasyavritti and Sthitaprajna Darshan in jail.**

- Gandhi chose him as the first participant in the individual satyagraha campaign in 1940.

- In 1958, Vinoba was the first recipient of the international Ramon Magsaysay Award for Community Leadership.

- He was also conferred with the Bharat Ratna posthumously in 1983.

DARA SHIKOH

In News: Vice President of India has released Arabic Version of "Majma Ul-Bahrain" of Dara Shikoh.
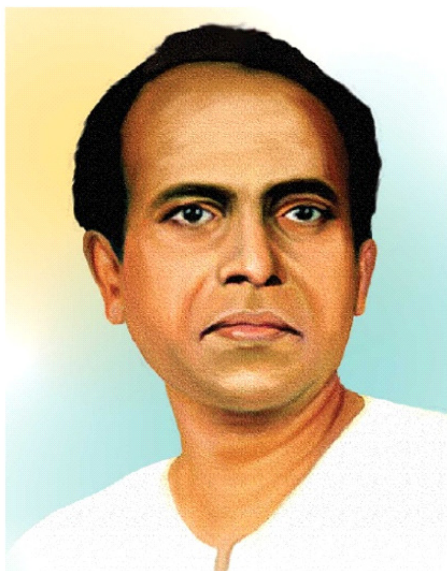

More on the Topic:

- Majma-ul-Bahrain (which means 'Confluence of Two Oceans') throws invaluable light on the similarities between religions and helped bring stronger unity among the people of India.

- In this book he has listed one by one, **all the commonalities between Hinduism (Vedanta) and Islam (Sufism)** and came to the conclusion that the difference between Islam and Hinduism is only verbal.

- He translated the Upanishads and other important sources of Hindu religion and spirituality from Sanskrit to Persian.

About Dara Shikoh:

- Dara Shikoh was **the eldest son and heir-apparent of the Mughal emperor Shah Jahan.**

- A great patron of the arts, **he was also more inclined towards philosophy and mysticism** rather than military pursuits.

- In the war of succession which ensued after Shah Jahan's illness in 1657, Dara was defeated by his younger brother Prince Muhiuddin (later, the Emperor Aurangzeb).

- He was executed in 1659 on Aurangzeb's orders in a bitter struggle for the imperial throne.

ANNABHAU SATHE

In News: A statue of writer-activist Annabhau Sathe was unveiled by Maharashtra Deputy chief Minister Devendra Fadnavis in Moscow recently.

More on the Topic:

- Annabhau Sathe is known as Lok Shaheer in Maharashtra. Lok Shaheer means people's balladeer. His writing was influenced by communism and, more so, Russian revolution.

- **Sathe formed Dalit Yuvak Sangh,** a cultural group and started writing poems on workers' protests, agitations.

- The group would **translate the Russian work of Maxim Gorky, Anton Chekhov, Leo Tolstoy, Ivan Turgenev into Marathi.**

- Sathe used folk music like **'powada' (ballad) and the 'lavani' folk dance of Maharashtra** to further popularise his work.

- In 1939, he wrote his first ballad **'Spanish Povada'.**

- His **'Bangalchi Hak' (Bengal's Call)** on the Bengal famine was translated into Bengali and later presented at London's Royal Theatre.

- He dedicated his famous novel **Fakira to Dr Ambedkar.**

Associations:

- In 1943, he along with **Amar Sheikh and Datta Gavhankar, formed the Lal Bawta Kala Pathak** that presented programmes on caste atrocities, class conflict, and workers' rights across Maharashtra.

- In 1943, he helped forming the **Indian Peoples Theatre Association (IPTA).** He became its national president in 1949.

MISCELLANEOUS

INDIAN NAVY'S NEW ENSIGN

In News: The Indian Navy's new ensign was unveiled by Prime Minister Narendra Modi in Kochi on the sidelines of the commissioning of INS Vikrant, the country's first Indigenously Aircraft Carrier (IAC-1).

More on the Topic:

- In a bid to do away with the "colonial past", **the Saint George's Cross has been removed from the Indian Navy's new flag.**

- Instead, it now features the national emblem with the Tricolour on the upper canton (top left corner of flag).

- The national emblem is encompassed by **an octagonal shield and sits atop an anchor. Beneath it is the Navy's motto 'Sam No Varunah'.**

- **The golden border surrounding the national emblem draws inspiration from the seal of Indian emperor Chhatrapati Shivaji Maharaj and depicts stead-fastness.**

- The octagonal shape of the national emblem has been designed to represent eight directions, symbolising the multi-directional reach and multi-dimensional operational capability of the Indian Navy.

Practice Questions

1) Which of the following statement/s is/are true?
1. The Governing Council of National Infrastructure and Investment Fund is chaired by the Finance Minister.
2. NIIF is an organ of NITI Aayog.

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

2) Harmika and Anda are associated with?
(a) Rain water System of ancient India
(b) Temple Architecture
(c) Step wells
(d) None of the above

3) Which of the following statement/s is/are true?
1. The Constitution of India has not given any language a national status.
2. The official language of the Union is Hindi in Devanagari.

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

4) PM-SHRI Yojana is associated with?
(a) Environment
(b) Health
(c) Education
(d) Agriculture

5) The cross-border Kushiyara river is located between?
(a) India and Nepal
(b) India and China
(c) India and Bhutan
(d) India and Bangladesh

6) Which of the following statement/s is/are true?
1. The Miyawaki method is a technique to create micro forests.
2. Miyawaki involves mono-cropping due to scarcity of land.

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

7) Climate reparation is associated with?
(a) Climate finance
(b) Reducing fossil fuels
(c) A climate coalition
(d) None of the above

8) SIDS lighthouses initiative sometimes seen in news is associated with?
(a) Covid 19 Coalition
(b) Rare Earth Metals
(c) Climate Action
(d) None of the above

9) In India: Palm oil cultivation is mainly concentrated in?
(a) Kerala and Tamil Nadu
(b) Karnataka and Maharashtra
(c) Gujarat and Rajasthan
(d) Andhra Pradesh and Telangana

10) Hailakandi is an innovative practice of gifting 5 saplings (coconut, litchi, assam lemon, guava, amla) to the parents of a new born girl child. It is associated with?
(a) Assam
(b) Kerala
(c) Tamil Nadu
(d) Meghalaya

Practice Questions

1) Nationalism was an unintended consequence of the British rule in India. Critically Analyse.

2) Major cities of India are becoming vulnerable to flood conditions. Discuss.

1. a   2. b   3. c   4. c   5. d

6. a   7. a   8. c   9. d   10.a

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