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1.Polity & Governance

1.1. Nitipath for Civil Services

Why In News?

- Recently the independent views on the requirement of "**Nitipath" for the civil services** along the **lines of "Agnipath"** were articulated.

General viewpoint

- Many aspects of the Agnipath scheme offer a model for civil service recruitment.
- **Years of service:**
  - Experts have called for **officers to be filtered out** after **10, 25 and 30 years of service**.
- **Boost to recruitment:**
  - The government can recruit **four times as many candidates** at the entry level **without being constrained by the number of apex-level positions** and career paths.
    - Instead of 600-1,000 candidates appointed to the All India Services, we can have 4,000 officers entering service every year.
    - Only 25% of them will be retained after a performance review after the fourth year.
- **Options for retired officers:**
  - The 3,000 or so officers leaving the Union civil service after the fourth year can be employed in the state services, where there is a crisis of selection, a massive shortfall and acute demand for better governance.

Significance

- **Rectifying the existing structure:**
  - This would rectify the **top-heavy structure**, and create a **culture of public service and performance**.
- **Encouraging youths in the administration:**
  - This will bring a lot of **young and energetic officers** at the junior levels, give them **strong incentives to perform**, and give them **work experience in government**.
  - Youthful, trained and experienced managerial cadre will benefit the **broader economy**.
- **Batter Quality assessment:**
  - **The average quality** of the **top 4,000 all-India rank holders** will not be **markedly different from that of the top 1,000**.
  - So, a four-year review period will allow the government to get a better pick **than merely exam and interview scores**.
- **Beneficial outcomes:**
  - Filling vacancies has a massive impact on outcomes.
  - For instance, experts estimate that on average **48% of the** sanctioned positions at Block Development Offices **(BDOs) are vacant**, and filling them would increase **NREGA employment by 10%**.
- **Better proportion of the officials to its population:**
  - It is well-known that **we have too few administrators**, **police officers, diplomats and other officials** as a proportion of the population, and consistently fall short of world averages.
  - Experts point out that while the **federal government in the US** had just over 8 civilian employees per 1,000 population in 2014, India had 4.51, down from 8.47 in 1995.
  - The capacity is **especially weak at the local government level**.

1.2. Benami Transactions Prohibition Act as Unconstitutional

Why in News?

- The Supreme Court of India stated the provision of the Benami Transaction Amendment Act "unconstitutional" on the grounds of being "manifestly arbitrary".

Background:

- The **Benami Transactions (Prohibition) Amendment Act, 2016,** was declared not to have retrospective effect by the Calcutta High Court in December 2019.
- The decision of the Calcutta High Court was then **appealed by the Central government to the Supreme Court.**
- This issue came up with **respect to the poor legislative rigour in the framing of Benami Transactions (Prohibition) Amendment Act, 2016.**
- Chief Justice N.V Ramana stated that the **Benami Transactions Amendment Act of 2016** should not be applied retrospectively.
- The court declared **some provisions of the Benami Transactions (Prohibition) Act of 1988 and the 2016** amendments to the Act unconstitutional.

What is Benami Property?

- "Benami" means **"no name" or "without name".**
- Benami properties are **those that are held by an owner through proxies.** The property is purchased in the name of or held in the name of a person who has neither paid for it nor actually enjoys it.
- It may even be held in the name of a **non-existent person.**
- Such front person is **known as 'Benamidar'.** This name is only an alias for the actual owner, the 'Beneficial Owner'.
- Thus, the **Benami property transaction** is where the 'Beneficial Owner' buys the property in the name of a Benamidar but seeks to enjoy it himself.

Law in India against Benami Property:

- **Benami Transactions (Prohibition) Act, 1988:**
  - It is an act of the Indian parliament that **disallows certain financial transactions.**
  - This act labels a **'benami'** transaction as any transaction in which property is **transferred to one person for the amount paid by another person.**
  - In legal terms, it means any transaction in which **property is transferred to one person for a consideration paid or provided is called a 'benami transaction'.**
  - The act establishes **four authorities to conduct inquiries or investigations** regarding benami transactions and also has provisions for an Appellate Tribunal.
  - Section 5 of the act said that **"any benami property shall be liable to be confiscated by the Central Government".**
- **Benami Transaction Amendment Act 2016:**
  - In 2016, the government of India amended the Benami Transaction Act 1988. The motive of this amendment **was to curb black money in India.**
  - The Act defines a **benami transaction.**
  - Under the Amendment Act, the term **"property" will cover movable, immovable, tangible and intangible properties.** In case of joint ownership of property, the taxpayer will have to show financing sources.
  - It provides an **Appellate Tribunal to hear appeals against** any orders passed by the Adjudicating Authority. Appeals against orders of the **Appellate Tribunal will lie to the high court.**
  - The special court should **conclude the trial within six months** from the date of filing of the complaint.
  - The amendment inserted a sub-section 2 in section 3 of part 3 of the act. It specified that whoever enters a Benami transaction shall be punishable with imprisonment for a term of up to three years or a fine or both.

- The new punishment was also being applied retrospectively to the transactions that took place before 2016.

Judgement made by the Supreme Court:

The declarations made by the Supreme Court are as follows:

- The Supreme Court's ruling confirmed the Calcutta High Court's ruling that the 2016 Benami Transactions Act **modification cannot be enforced retroactively.**
- The Supreme Court's also invalidated the provisions of the **Benami Transactions (Prohibition) Act of 1988,** which threatened people who engaged in "benami" transactions with up to three years in prison, a fine, or both.
- Supreme Court's also declared the forfeiture provision under Section 5 of the unamended Act of 1988, prior to the 2016 Amendment Act, **as unconstitutional for being manifestly arbitrary.**
- Supreme Court's also declared concerned authorities **cannot initiate or continue criminal prosecution or confiscation proceedings** for transactions entered into prior to the coming into force of the 2016 Act. As a consequence of the above declaration, all such prosecutions or confiscation proceedings shall stand quashed.

Why Supreme Court held Benami Property Act Unconstitutional?

- The Supreme Court of India stated that the **provision of the act violated Article 20(1) of the Indian Constitution.**
- The Supreme Court of India stated the provision of the Benami Transaction Amendment Act **"unconstitutional" on the grounds of being "manifestly arbitrary".**
- The CJI said, "Section 3 (criminal provision) read with Section 2(a) and Section 5 (confiscation proceedings) of the 1988 Act are overly broad, disproportionately harsh, and operate without adequate safeguards in place. Such provisions were stillborn law and never utilised in the first place. In this light, this court finds that **Sections 3 and 5 of the 1988 Act were unconstitutional from their inception.**
- **Benami Provisions Act 2016** has section 5 which states that **"any property which is a subject matter of a benami transaction shall be liable to be confiscated by the central government."** The Supreme Court announced that this provision cannot be applied retrospectively.

1.3. Retirement Age Of Judges

Why in News?

- Advocates bodies, including the Bar Council of India (BCI), are demanding to raise the retirement age of judges of the Supreme Court and High Courts.

Introduction:

- The Bar Council of India after holding joint meetings with the State Bar Councils and Office Bearers of the High Court Bar Associations came to the conclusion that the age superannuation of the judges should be increased.
- They demanded amendments to raise the age of High Court judges from 62 to 65 and that of Supreme Court judges from 65 to 67 years.
- They intend to communicate their resolution to the Prime Minister and the Union Law Minister.
- The Union Minister for Law and Justice told the Parliament that there is no proposal to increase the retirement age of Supreme Court and High Court judges.

Background:

- The National Commission to review the working of the Constitution, 2002 recommended raising the retirement age of the Judges of both the Supreme Court and High Court.
- The Constitution (114th Amendment) Bill was introduced in 2010 to increase the retirement age of High Court judges to 65. However, it was not taken up for consideration in Parliament and lapsed with the dissolution of the 15th Lok Sabha.

- Several Supreme Court Judges have also recommended increasing the retirement age of judges in the higher judiciary to decrease the pendency of cases.
- Attorney General of India K. K. Venugopal has publicly voiced his support for it on various occasions.

Constitutional Provisions:

- The age of retirement for Supreme Court judges is 65 under Article 124(2) of the Indian Constitution.
- As per Article 217(1) of the Constitution, High Court judges retire at 62.
- The retirement age of High Court judges was fixed at 60 by the Constituent Assembly, which was later increased to 62 by a constitutional amendment in 1963.

Need for a raise in the retirement age:

- The judge-population ratio in India is among the lowest in the world at 19.66 judges per million people.
- India is also facing a very high number of pending cases. The total number of pending cases in the Supreme Court of India is 71,411 as on August 2, 2022.
- This will also make post-retirement assignments unattractive and strengthen the independence of the judiciary to sustain democracy.

Global Practices:

- In the United States, a judge of the Supreme Court holds office till his/her death.
- In Norway, Australia, Denmark, Belgium, the Netherlands, and Ireland, the prescribed retirement age is 70 years.
- In Germany, it is 68 years.
- The retirement age is 75 years in Canada.

1.4. Parliamentary business and an essential pit stop

Why in News?

- Important bills were referred to the Parliamentary Standing Committees for detailed scrutiny in the recently concluded monsoon session.

Background

- In the monsoon session of the Parliament which was adjourned sine die on August 8, 2022, the Competition (Amendment) Bill and the Electricity (Amendment) Bill were referred to the Parliamentary Standing Committees for detailed analysis.
- The government in the past has been wary of referring the bills to the Standing Committees as it felt that the process was time-consuming and counterproductive.
- Further, in recent times there have been several delays in the proceedings of the Parliament due to disruptions.
- The recent monsoon session of Parliament reflects the same with the Lok Sabha's productivity being just 47% and the Rajya Sabha's being only 42%.
- The share of Bills that have been referred to the Department Related Parliamentary Standing Committees (DRSC), during the 14th (2004-2009), 15th (2009-2014) and 16th Lok Sabhas (2014-2019) regimes has been 60%, 71% and 27%, respectively.
- The substantial reduction in the share during the 16th Lok Sabha was mainly in the second half of its session when the Government pushed several big-ticket reforms through when the Opposition was adamant to prevent these reforms in the backdrop of the 2019 elections.

Parliament v/s Committees

- Despite there being no obligation on the part of the Government to accept to refer all the legislation to the DRSCs it is believed that sending a Bill to the DRSC has been largely beneficial in the process of lawmaking.

- The Bills that are passed without the scrutiny of such committees are often criticised as not being examined or analysed fully and that the decisions have been taken by the bureaucracy unilaterally ignoring the inputs from other key stakeholders.
    - **Example**: The controversy associated with the three Farm Bills.
- Experts believe that scrutiny of the Bills by the committees is more advantageous for the Government than the Opposition as the discussions in the committee and in Parliament take place differently.
    - The committee meetings are said to be held in a friendly and cordial setting as compared to meetings in the Parliament.
- The discussions held in the committees help add value to the content of the legislation, and usually, consensus would be reached between the Members of different parties.
- Also, the Bills that have been scrutinised by the committees will foster ownership of such bills by the members of the committee from both the ruling and the Opposition parties.
- The Governments should not be hesitant to refer Bills to these committees, as most of these committees will have members from the ruling party in the majority and the final decision is always through the process of voting.

Recommendations

The author of the article who is a former Indian Administrative Service officer and a former Secretary-General of the Rajya Sabha recommends various changes to the procedures for consideration of Bills for Committees, which include:

- The Speaker of the Lok Sabha and the Chairman of the Rajya Sabha are empowered to refer Bills to a DRSC of Parliament and are often influenced by several political and administrative factors.
    - To negate such unruly influences the process of reference of Bills to the committees can be made a mandatory or an automatic process.
        - Exemptions can be provided with the specific approval of the Speaker/Chairman after detailed reasoning.
        - Hence the prerogative of the House to refer the Bills to the Committee, through an amendment, would, of course, remain unaffected.
- Efforts must be undertaken to **ensure that all the discussions in the Parliamentary Standing Committee must be frank and free** by making sure that **no whip of the party** would apply to them.
- The Parliamentary Standing Committee can be given a **fixed timeline** to put forth its recommendations and present its report and such timelines can be fixed by the Speaker/Chairman.
    - The Speaker/Chairman should have the right to fix a time limit and such limits can also be stringent at times.
    - It can also be provided that if the committee fails to submit its report/recommendation within the timeline, the Bill can be put up before the House concerned directly to avoid delays.
- To improve the quality of assessments and examinations in the committees, a provision must be introduced to **invite the experts from the respective fields** who bring in domain knowledge and expertise which help make key decisions in line with the latest trends in that field.
- There is usually enough time to convene committee meetings in the parliamentary committees between the two sessions.
    - However, there is some negligence among the members in this respect, and they try to push through these pieces of legislation when the next session is announced.
    - Hence, it is crucial for the Ministry of Parliamentary Affairs to keep a check on such behaviour.
- During the meetings on budget proposals by the ministries, the committees should also make suggestions for the Ministry about the prospects of new initiatives and the potential of people-centric measures.

1.5. Aadhaar-Voter ID Linkage

Why in News?

- Recently, the Election Commission (EC) started a campaign to promote the linkage of Voter ID and Aadhaar,
- Further, Government officials have asked individuals to link them Aadhaar with their Voter IDs and failure to link voter ID with Aadhar could lead to the cancellation of their Voter ID card.

Why is the Government Pushing to Link Voter ID with Aadhar?

Update Database:

- The linking project would help the Election Commission, which conducts regular exercises to maintain an updated and accurate record of the voter base.

Remove Duplication:

- To weed out duplication of voters, such as migrant workers who may have been registered more than once on the electoral rolls in different constituencies or for persons registered multiple times within the same constituency.

Pan India voter ID:

- As per the government, linkage of Aadhaar with voter IDs will assist in ensuring that only one Voter ID is issued per citizen of India.

What are the Significances of this Linkage?

Universal coverage:

- At the end of 2021, 99.7% of the adult Indian population had an Aadhaar card.
- This coverage exceeds that of any other officially valid document such as driver's licence, ration cards, PAN cards etc that are mostly applied for specific purposes.

Reliable & Cost Effective:

- Since Aadhaar allows for biometric authentication, Aadhaar-based authentication and verification are considered more reliable, quicker and cost-efficient when compared to other IDs.

Is linking Aadhaar with One's Voter ID mandatory?

Legal status:

- In December 2021, Parliament passed the Election Laws (Amendment) Act, 2021 to amend the Representation of the People, Act, 1950, Section 23(4) was inserted in the Representation of the People Act, 1950.
- According to it the electoral registration officer may for the purpose of establishing the identity of any person or for the purposes of authentication of entries in electoral roll of more than one constituency or more than once in the same constituency for citizens already enrolled, require them to furnish their Aadhaar numbers.

Recent Changes:

- Recently, the government notified changes to the Registration of Electors Rules, 1960.
- Rule 26B was added to provide that every person whose name is listed in the roll may give his Aadhar number to the registration officer.
- Confusing Government Actions:
- There have been assurances given by both the government and the EC that linkage of the Aadhaar with Voter ID is optional, but this does not seem to be reflected in Form 6B issued under the new Rule 26B.

Form 6B:

- It provides the format in which Aadhaar information may be submitted to the electoral registration officer.
- Further, it provides the voter to either submit their Aadhaar number or any other listed document.
- However, the option to submit other listed documents is exercisable only if the voter is not able to furnish their Aadhaar number because they do not have an Aadhaar number.

What are the Issues Related to Linking Aadhar with Voter ID?

Unclear Constitutional Status:

- In the Puttaswamy case(Right to Privacy), one of the questions that the Supreme Court

explored was whether the mandatory linking of Aadhaar with bank accounts was constitutional or not.

Different Purpose:

- The preference for Aadhaar for the purposes of determining voters is puzzling as Aadhaar is only proof of residence and not proof of citizenship.
- Therefore, verifying voter identity against this will only help in tackling duplication but will not remove voters who are not citizens of India from the electoral rolls.

Biometric Errors:

- The estimate of error rates in biometric-based authentication differs widely.
- As per the Unique Identification Authority of India in 2018, Aadhaar-based biometric authentication had a 12% error rate.
- This concern is also reflected in the previous experiences of using Aadhaar to clean electoral rolls.
- A similar exercise undertaken in 2015 in Andhra and Telangana led to the disenfranchisement of around 30 lakh voters before the Supreme Court stalled the process of linkage.

Violation of Right to Privacy:

- The linking of the two databases of electoral rolls and Aadhaar could lead to the linkage of Aadhaar's "demographic" information with voter ID information and lead to violation of the right to privacy and surveillance measures by the state.

Way Forward

Reforms in Legislation:

- The Government must invite public opinion and allow deeper parliamentary scrutiny before implementing any new provisions.
- It is of utmost importance in a Parliamentary democracy like India that not just the ordinary citizens but also the elected representatives are not being deprived of their rights and opportunities.
- A productive debate raising the concerns and the significance of a proposed bill is essential to identify and eliminate the concerns legislation may pose.

Ensure the Privacy of Citizens:

- Before pursuing the Aadhaar-voter ID integration, the government shall first go for enacting the Personal Data Protection (PDP) law.
- The PDP regime must also apply to government entities and require them to obtain an individual's explicit consent before sharing their data across various government institutions.

1.6. Indian Telegraph Right of Way - Amendment Rules, 2022

Why in News?

- In a bid to expedite the rollout of 5G networks in the country, the Ministry of Communications announced amendments to the Right of Way (RoW).

What are the Amendments?

- The amendments include rationalisation of charges, introduction of a single window clearance system and doing away with the need for consent from a government authority for installing infrastructure over private property.
- Telecom licensees can enter into agreement with private property owners and will not require any permission from any government authority for installing telecom infrastructure such as towers, poles or optical fibre.
- No administrative fee shall be charged by the Central government for the establishment of poles on land owned/controlled by it.
- For State/UTs, this fee will be limited to Rs 1,000 per pole. The fee for laying overground optical fibre shall be limited to Rs 1,000/ Km.
- Telecom companies will need to submit details of the building or structure, where the establishment of a mobile tower or pole is proposed, and a copy of certification by a structural engineer, authorised by the appropriate authority, attesting to the structural safety of the building or structure, where the mobile tower or pole is proposed to be established.

- The amendments provide for a single window clearance system for RoW applications.
- Gati Shakti Sanchar Portal of the Ministry of Communications will be the single window portal for all telecom related RoW applications.
- The telecom licences will be able to use street infrastructure to deploy telecom equipment at a nominal cost of Rs 150 annually in rural areas and Rs 300 annually in urban areas.

Why are these Amendments Announced?

- The Amendments are announced to expedite upgradation and expansion of telecom networks and to pave the way for the deployment of 5G small cells on existing street infrastructure.
- The current infrastructure may be able to sustain the rollout of services. However, experts say at least 70 % of the telecom towers need to be fiberized from the current level of 33 % to roll out 5G in a way that utilises its full potential.
- Fiberization is essential for 5G due to the increasing data consumption and growth in India compared to the 2G and 3G wireless technologies, which work on a shared network and have a limited capacity to handle an increase in load.
- Access to the existing infrastructure, deployment of new infrastructure, and the high cost involved in it were major challenges the telecom sector always came across which will now be eased down.

What is the Significance of the Move?

- The telecom industry is giving equal importance to rural areas and urban areas, it is predicted that the 5G services will reach almost all parts of the country in the next 2-3 years.
- The Amendment will ensure the speedy roll-out of the technology and make the dream of 5G enable India to come true.
- The digital divide between rural-urban and rich-poor will be bridged, in line with the Digital India mission and BharatNet project.
- E-governance and financial inclusion will be strengthened.
- Doing business will be easy.
- Information and communication needs of citizens and enterprises will be fulfilled (including 5G).
- The dream of India's transition to a digitally empowered economy and society will be translated into reality.

1.7. Forests and Jurisdictions

Why in News?

- Recently, the Ministry of Environment, Forest and Climate Change has objected to Chhattisgarh for its transfer of land without following due process from its Forest to the Revenue Department.

What is the Background?

- In March 2022, Chhattisgarh Chief Minister announced in his Budget speech that the state government has transferred over 300 sq km — an area larger than Raipur — in the Bastar region from the Forest department to the Revenue department to ensure easy availability of land for setting up industries and building infrastructure.
- In August 2022, the Union Environment Ministry's Integrated Regional Office asked the state to stop the transfer of land, saying it was in violation of the Forest Conservation Act, 1980 and multiple Supreme Court orders, and return the land already transferred.
- The move has now run into a hurdle, even as paperwork is underway for transferring more land to other parts of the state.

What is a Forest?

About:

- At present, in India, there is no clear nationally-accepted definition of 'forest'.
- States are responsible for determining their definition of forests.
- The prerogative of the states to define forests stems from a 1996 Supreme Court order called the T.N. Godavarman Thirumulkpad vs the Union of India judgment.
- In the judgement, the Supreme Court interpreted that the word "forest" must be understood according to its "dictionary meaning".

- This description covers all statutorily recognised forests, whether designated as reserved, protected or otherwise.

Jurisdiction:

- Forests are included in the Concurrent List in the (Seventh Schedule) of the Constitution of India.
- Through the 42nd Amendment Act, 1976 Forests and Protection of Wild Animals and Birds were transferred from State to Concurrent List.
- State Forest Departments have jurisdiction over two types of forests notified under the Indian Forest (IF) Act, 1927: Reserve Forests (RF), where no rights are allowed unless specified, and Protected Forests (PF), where no rights are barred unless specified. Certain forests, such as villages or nagarpalika forests, are managed by state Revenue Departments.

Legislations:

- Article 51 A (g) of the Constitution states that it shall be the fundamental duty of every citizen to protect and improve the natural environment including forests and Wildlife.
- Article 48 A in the Directive Principles of State policy, mandates that the State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country.

What is Forest Clearance?

- The Forest Conservation Act, 1980, applies to all kinds of forests, whether under the control of the Forest or the Revenue Department, and it requires statutory clearance before forests can be used for any non-forest purpose such as industry, mining, or construction.
- Another type of Clearance is Environment Clearance, which is a long-drawn process that is mandatory for projects beyond a certain size and often involves an environment impact assessment of a potential project and sometimes public hearings involving the local populace who might be affected by the project.

What is Undemarcated Protected Forest?

- Undemarcated Protected Forests are also called the Orange areas, IEare the result of an administrative logjam that remained a bone of contention between the Revenue and the Forest departments since the abolition of the zamindari system in 1951.
- Undemarcated protected forests cannot be used for non-forest purposes without clearance under the Forest Conservation (FC) Act, 1980.

1.8. Reviewing EWS Quota

Why In News?

- A Constitution Bench of the Supreme Court is examining whether the **10% quota for Economically Weaker Sections (EWS)** violates the basic structure of the Constitution.

More about the News

- **Petition:**
  - The Bench of the Supreme Court, hearing petitions **against the 10 percent quota** for Economically Weaker Sections **(EWS) in government jobs and admissions**, will examine whether the **Constitution (103rd Amendment) Act**, by which it was introduced, **violates the basic structure** of the Constitution.
- Supreme Court has fixed **three key questions** for examining EWS quota:
  - Provisions based on economic criteria:
    - Whether the **103rd Constitution amendment** can be said to breach the **basic structure of the Constitution** by **permitting the State** to make special provisions, including **reservation, based on economic criteria**.
  - Provisions regarding private unaided institutions:
    - Whether it can be said to breach the basic structure of the Constitution by permitting the State to make **special**

provisions in relation to **admission to private unaided institutions**.

- **Exclusion of SEBCs:**
  - Whether it can be said to breach the basic structure of the Constitution in **excluding the SEBCs** (Socially and Educationally Backward Classes)/OBCs (Other Backward Classes)/SCs (Scheduled Castes)/STs (Scheduled Tribes) **from the scope of EWS reservation.**

- **Creamy layer in EWS:**
  - The question of creamy layer does not come in the economically weaker sections (EWS) quota according to SC, as it was meant to give quota benefits to the poorest of the poor.

Arguments favouring EWS Quota

- **Benefits of reservation:**
  - Government said it would not let anything come in the way of Other Backward Classes (OBC) and "poorest of the poor" getting the benefits of reservation.
- **The quota is progressive:**
  - The economically weaker sections have not reaped the benefits of higher educational institutions and public employment due to their financial incapacity.
  - The quota is progressive and could address the issues of educational and income inequality in India.
- **Abysmal conditions:**
  - The reservation criteria should be economic because there are many classes other than backward classes who are living under abysmal conditions but cannot avail reservation and its intended benefits.
- **Ram Singh v. Union of India (2015):**
  - In this case, SC asserted that social deficiencies may exist beyond the concept of caste (e.g. economic status/gender identity as in transgenders).
- **The "quota-for-poor" policy:**
  - This policy is symptomatic of a larger failure.
  - It replaces the principle that welfare should be the basic raison d'être of public policy, it hides the colossal failure of the state in handling questions of poverty and deprivation and, at the same time, it indicates a dead-end in policy-making itself.

Arguments against EWS Quota

- **Reservation based on economic criteria:**
  - Reservation based entirely on economic criteria is not an all-in-one solution, though family income can be one of the parameters.
- **Determining economic backwardness:**
  - Determining economic backwardness is a major challenge as there are concerns regarding the inclusion and exclusion of persons under the criteria.
- **Equality of opportunity:**
  - In M. Nagaraj v. Union of India (2006), a Constitution Bench ruled that equality is part of the basic structure of the Constitution.
  - The 50 per cent ceiling is a constitutional requirement without which the structure of equality of opportunity would collapse.
- **Financial burden:**
  - The implementation of the quota is a challenge in itself as the states do not have the finances to enforce even the present and constitutionally mandated reservations.
- **Other:**
  - It washes away the constitutionally permitted gatekeeping mechanism of social and educational backwardness and makes reservation available to everyone irrespective of social backwardness.
  - Reservation has also become synonymous with anti-merit, with the extension of reservation, this opinion might get further ingrained in the public psyche.

1.9. Medium of Instruction in Schools

Why In News?

- Over the years, there has been a raging debate over the need for children to have their mother tongue as the medium of instruction in schools.

Background

- **The mother tongue, home language or the first language** educationally means the language which the **child is using to connect to the world**, to people, to nature, to the environment, and to make sense of everything that's going on.
- **The first language** is the language that you speak and think in, and if you learn to read and write and understand the world through that language, that is what gives you the proficiency and confidence to be able to read and write a **second language** which can be the state language, and a **third language** which should be English.

Arguments in favour of mother tongue

- Educationists have emphasised the importance of learning in the mother tongue to **enhance a child's learning and overcome glaring inequities**.
- **The National Education Policy 2020** says the home language, mother tongue, local language, or regional language wherever possible should be the medium of instruction until at least Grade 5, but preferably till Grade 8.
- **There is an almost-complete consensus** among educationists, linguistic experts and psychologists that the mother tongue or the language of the region where the child lives is the **only appropriate language** of learning for the child.
    - A child can be taught any number of languages particularly later in life but the medium of learning should be the mother tongue.
- This is the language which helps the child to build, grow and develop in every way.

Arguments in favour of English

- There has been an equally **steady demand** for English-medium schools in **several States**.
- **NEP's overall philosophy of the privatisation of education** and marketisation with no regulatory control to the state would tilt towards English.
    - There are a growing number of schools, mostly private, that teach in English.
- **Tamil Nadu was one of the earliest States to start English-medium learning** in a very big way.
    - **Government schools too in States like Tamil Nadu** unable to bear the pressure from parents and to stop students from migrating to private schools, are switching to English medium.
- **Millions are languishing** because of their inability to learn in English not English as a language but as a medium through which they acquire any knowledge of any subject.
    - English is their dream and their despair.

Challenges with Indian learning system

- **India has constructed an education system that is among the most exclusionary in the world**: The impulse behind this is excluding the vast majority from all opportunities except the lowest and the least-paying jobs.
    - Every component of education, curriculum, testing and certifying methods, and each and every rule of the game is crafted for **fulfilling this class purpose**.
- **There are political forces especially Dalit groups who insist that English has been the language of liberation for them**.
    - They look at it like that because of the denial and the deprivation of Dalits in the education system, and **that's important to acknowledge**.
- **Learning outcomes**: Is a denial of children's rights, because the NEP too says that it will not focus on inputs and only on outcomes.

Way Forward/ Suggestions

- **We don't have a language policy. We take ad hoc decisions**. The three language formula

also doesn't look too much at the pedagogical aspects.
    - It is important to have a well understood, pedagogically considered language policy.
- **Reading and writing are different** from learning to speak, understand, listen, or think in, and the **first language they learn to read and write in is critical**.
- **We don't want any classroom to be based on instruction** which is a very didactic, authoritative term; it should instead be interactive, and a transaction.
- **In many places in our country there are bilingual and multilingual classrooms**.
    - **In Jharkhand** the state might say Hindi is the language but 50%-60% of children don't speak the language.
- **Multilingualism** gives equal status to all languages and there's enough work, history and research on this.
- **Myth must be broken that our education system is class and caste neutral**: a powerful political movement will have to take place to make the language of learning a choice that is made democratically.

1.10. Central Vista Avenue

Why In News?

- Recently, the Prime Minister unveiled the new look of the revamped Central Vista Avenue, the 3-km stretch from the Rashtrapati Bhavan to the India Gate.
- PM also said that the **Kingsway or Rajpath** which was the **symbol of slavery** has become a **matter of history** and has been **erased forever.**

About the recent event

- Statue of Subhas Chandra Bose
    - Referring to the statue of King George V which once adorned the Grand Canopy has now been replaced by a 28-feet statue of Netaji Subhas Chandra Bose.
        - Netaji's statue is like **Praan Pratishtha** of a new India.
        - **Andaman Islands** were also recently renamed after Netaji Bose.

Chhatrapati Shivaji's symbol

- The Indian Navy has also adopted Chhatrapati Shivaji's symbol and shed the symbol of ghulaami.

Central Vista Redevelopment Project

- The project aims for an **integrated administration block** and **synergised functioning** of ministries presently spread across **47 buildings in the region**, and in particular, the **Central Secretariat block.**
- It seeks to build a new **Parliament house**, a new residential complex, which would house the Prime Minister and the Vice President besides several new office buildings including the North and South Block buildings.
- It will cover a 3-km stretch from Rashtrapati Bhavan to India Gate in Lutyens' Delhi.
    - The **Parliament House, the Rashtrapati Bhavan** and the secretariat that includes both north and south block were designed by **Edwin Lutyens and Herbert Baker.**

New Parliament

- It will be three times bigger than the existing 93-year-old heritage building.
- It is likely to have a triangular shape with a built-up area of 65,000 sq.m. and is scheduled to be completed in 2022, in time for the 75th Independence Day celebrations and the Global G-20 summit.

Significance

- The present Parliament building is **85-year-old and suffers** from **inadequacy** of **space to house members** and their staff.
- It suffers from **structural issue**s and the **building needs to be protected** because of its heritage, it is a **major attraction for the tourists** who visit the country.
- The new Parliament building will have **high-quality acoustic**s and **audio-visual** facilities, improved and comfortable seating arrangements, effective and inclusive

emergency evacuation provisions, with high-level security for the members.
- Central Vista is an essential ingredient of sovereignty and pride, and also where recreational spaces are available for enjoyment by the citizens.

Major Concerns Highlighted

- **Lack of transparency:** In the 're-development of the Central Vista, the entire matter has been formed in **secrecy and opacity.**
    - Several key approvals for the proposed Parliament building have been pushed during the lockdown which led to allegations of a lack of transparency.
- **Environment clearance**: Many opposition and environmentalists point out concerns related to the lack of studies to ascertain the need for the project and its impact on the environment, traffic and pollution.
- **Financial burden**: The ambitious project, costing Rs 20,000 crore and It came when the country is battling the COVID-19 pandemic and is staring at a serious economic crisis.
    - The failure of the public health facilities to cope with the increasing number of corona cases has highlighted the limitations of investing in infrastructure projects at the cost of the health sector

1.11. Live Streaming of Supreme Court Proceedings

Why In News?

- Recently, the Supreme Court (SC) in a full court **decided to live stream** its proceedings in **crucial Constitution Bench cases**.

Key Points

- **Background:**
    - The decision comes nearly four years after a plea was made in the interest of transparency.
    - The first steps towards the decision were taken **in 2018**.
    - A three-judge Bench agreed to hear a public interest litigation seeking live streaming of judicial proceedings on **matters of constitutional and national importance**.
    - On August 26 2022, on the day of former Chief Justice of India (CJI)'s retirement, the Supreme Court streamed its proceedings live.
- **Live streaming in HCs:**
    - Following the SC's decision, Gujarat High Court began live streaming its proceedings in July 2021.
    - Currently, the Jharkhand, Karnataka, Madhya Pradesh, Orissa, and Patna High Courts live stream their proceedings.
    - Allahabad High Court is learnt to be considering doing the same.

Significance of Live Streaming

- **Open To All:** The Indian legal system is built on the concept of open court and the SC is an institution of constitutional governance so the public has the right to know about court proceedings which will be open to all now.
- **Fundamental right of access to justice:** This will be in consonance with the principle of open court established under Article 145(4), and in furtherance of fundamental right of access to justice.
- **Safeguarding Public Interest:** The historical cases like on the entry of women in Sabarimala temple, on constitutionality of the Aadhaar scheme or on the legality of Section 377 of the Indian Penal Code etc. are public interest issues, Such issues in future will be available for all to watch now.
- **Multi-pronged Benefits:** Access to information for journalists, increased transparency, ensuring the right to access to justice as geographical locations will no longer be an issue, building the right perception, fostering public confidence and educating common people on how the judiciary functions are important benefits of live-streaming of court proceedings.
- **Improved Accuracy:** It will do away with the menace of fake news and the need to avoid multiple versions or wrong projections of facts. Sometimes positive systemic corrections have been made possible due to the broadcast of court proceedings.

- **Promotes Gender Respect:** Judicial interactions at oral argument are highly gendered, with women being interrupted at disproportionate rates by their male colleagues, as well as by male advocates. Such incidences have reduced after live streaming, a study suggests.
- **Safe Work Conditions:** In post-Covid-19 situations, people will be able to watch the proceeding, maintaining a safe distance so the health of all will be safeguarded.

Issues / Challenges

- **Disinformation:** Video clips of proceedings from Indian courts are already on YouTube and other social media platforms with sensational titles and little context, such as "HIGH COURT super angry on army officers". There are fears that irresponsible or motivated use of content could spread disinformation among the public.
- **Lack of Infrastructure:** The lack of technical infrastructure, internet connectivity in particular, is a major concern and the technical glitches can make it worse.
- **Security Related Concerns:** Lack of comprehensive guidelines might lead to the misuse of live access or there are chances of it getting hacked in absence of proper cybersecurity.
- **Exclusions:** The matters with a privacy dimension, such as family matters or criminal matters, or matters with legal procedural intricacies etc. are left out of the scope.
- **Individual Exposure:** Justices behave like politicians when given free television time, they act to maximise their individual exposure.

Recommendations by Attorney General (A-G)

- **Start As Pilot Project:**
    - Introducing live streaming as a pilot project in Court No.1, which is the CJI's court, and only in Constitution Bench cases.
    - The success of this project should determine whether or not live streaming should be introduced in all courts in the Supreme Court and in courts in India.
- **Improved Access:**
    - The A-G cited de-congestion of courts and improving physical access to courts for litigants who have to otherwise travel long distances to come to the SC in support of his recommendation.
- **Exceptions:** The court must retain the power to withhold broadcasting, and to also not permit it in cases involving:
    - Matrimonial matters,
    - Matters involving interests of juveniles or the protection and safety of the private life of the young offenders,
    - Matters of National security,
    - To ensure that victims, witnesses or defendants can depose truthfully and without any fear. Special protection must be given to vulnerable or intimidated witnesses. It may provide for face distortion of the witness if she/he consents to the broadcast anonymously,
    - To protect confidential or sensitive information, including all matters relating to sexual assault and rape,
    - Matters where publicity would be antithetical to the administration of justice, and
    - Cases which may provoke sentiments and arouse passion and provoke enmity among communities.
- **Supreme Court's Decision:**
    - The Supreme Court approved a set of guidelines suggested by the A-G, which included allowing transcripts and archiving the proceedings.

Global Scenario

- **United States of America:** While the US Supreme Court has rejected pleas for broadcast of its proceedings, it has since 1955 allowed audio recording and transcripts of oral arguments.
- **Australia:** Live or delayed broadcasting is allowed but the practices and norms differ across courts.
- **Brazil:**
    - Since 2002, live video and audio broadcast of court proceedings, including the deliberations and voting process

undertaken by the judges in court, is allowed.
    - A **public television channel,** TV Justiça, and a radio channel, Radio Justiça, were set up to broadcast video and audio.
    - Separately, **dedicated YouTube channels** hold discussions and commentaries on the judicial system, apart from broadcasting proceedings live.
- **Canada:** Proceedings are broadcast live on Cable Parliamentary Affairs Channel, accompanied by explanations of each case and the overall processes and powers of the court.
- **South Africa:** Since 2017, the Supreme Court of South Africa has allowed the media to broadcast court proceedings in criminal matters, as an extension of the right to freedom of expression.
- **United Kingdom:** In 2005, the law was amended to remove contempt of court charges for recording proceedings of the Supreme Court. Proceedings are broadcast live with a one-minute delay on the court's website, but coverage can be withdrawn in sensitive appeals.

Way Ahead

- Both **audio-visual recordings and transcripts of oral arguments** should be maintained for the purpose of posterity.
- Concerns related to **cyber safety** need to be addressed beforehand in order to mitigate possible chances of hacking and information being leaked.
- The punishments for offences should be strict enough to deter the offenders and it has to be made sure that there is no scope of corruption in dealing with that.
- The SC should take advantage of **other modes of communication** including the internet, social media, television and radio, which will enable it to reach a wide cross-section of Indian society.

2. Economy

2.1. Electronics Production in India

Why In News?

- Recently, the government launched a report titled 'Globalise to Localise: Exporting at Scale and Deepening the Ecosystem are Vital to Higher Domestic Value Addition'.

Major Highlights

- **About:**
    - The report is prepared by India Council for Research on International Economic Relations (**ICRIER**), in collaboration with India Cellular and Electronics Association (ICEA)
- **Significance:**
    - This report describes **what India's strategy** will be for the next few years.
    - It explores **how** India can achieve an electronics production target of **US$300 billion and exports of US$120 by 2025-26**.
    - Launch of the report will help the Government **identify the challenges** that are to be met and the **strategies t**hat are to be adopted to achieve this target.
- **Relation between exports and the share of domestic value addition**
    - The report examines the **empirical relationship** between exports and the share of domestic value addition in successful exporting nations.
    - It finds that the two variables are **negatively correlated** in the short-run, but exhibit **positive correlation** in the medium-term.

Electronics Sector in India

- **Past:**
    - In 2014, India was **increasingly dependent** on Electronics imports.
- **Present Scenario:**
    - Today, India is a 76 billion dollar manufacturing economy with 16 billion dollars of exports in FY 2021-22, with a

target of 21 to 25 billion dollars of exports in next year.
    - Electronics as a sector has jumped to the **6th largest export** from India this year.
        - **Mobile phones** constitute the single largest component of electronics exports from India.
        - They are expected to contribute nearly **50 percent** of the total electronics exports by next year.
- **Targets:**
    - By 2026, India has clearly laid out a goal of 300 billion dollar manufacturing with a 120 billion dollar of exports.
    - The aim is to emerge as a **reliable and trusted partne**r in Global value chains.
    - For this, the government always emphasised on **strengthening its domestic manufacturing ecosystem** to make India more resilient to supply chain disruptions.
    - That strategy talks about **broadening and deepening** the electronics ecosystem.

Challenges in Electronics Sector in India

- **Highest tariffs:** India has the highest tariffs on import of components for electronic products, compared to competing electronics hubs like China and Vietnam.
- **Lack of component ecosystem:** India lacks a robust ecosystem of companies locally manufacturing components required for electronic products.
- **High import costs:** High cost of importing these components is listed as a challenge.
- **Less favorable subsidy:** Vietnam and China have more favorable subsidy structures than India does in areas like machinery used for manufacturing, and research & development.
- **Taxation:** Compared to China and Vietnam, India provides lower income tax exemptions and reductions to electronics manufacturers.
- **Free Trade Agreements:** A lack of Free Trade Agreements with developed countries is another challenge for the sector.

Suggestions in Report

- **Competitive Domestic Ecosystem:**
    - There is an urgent need for India to create a competitive domestic ecosystem of ancillary suppliers through technology upgradation programmes, holding sourcing fairs and introducing supporting industry development programmes.
- **Focus on Exports:**
    - In addition to domestic production, and supplies and domestic consumption, exports are an important way to get the **scales of the other economies** that are competing with us.
    - Exports will create a network effect of creating supply chain interests, and supply chain investments that in turn will **increase the value addition i**n the Indian electronics segment.

- **Opportunities for India**
    - Post-COVID, the value chains of electronics are undergoing **deep tectonic irreversible changes**.
    - It presents to India, the current momentum and opportunity.
    - India must **export aggressively** to reach the scale in electronics manufacturing.
- **Adopt Global Measures:**
    - **China and Vietnam** have adopted the mantra of '**first globalise, then localize**', which means in the initial years they were determined to achieve global scale in exports, and then shifted their emphasis to greater use of local contents.
    - The report recommends **a sequential approach** that can put India's exports in the same trajectory as China and Vietnam.
    - The **immediate goal** should be to export at scale to global markets (globalise), and the subsequent objective should be to increase the share of local content (localise).
- **Importance on Policies:**
    - The report suggests **several steps and policies** needed for deepening the

broader electronics ecosystem within India.
    - Additionally, policies such as **Gati Shakti** will also help increase India's competitiveness.

Government Efforts

- As a first step, India used the **Phased Manufacturing Program (PMP)** to build a USD 36 billion mobile industry.
- India has succeeded in **systematically building a framework** and a strategy that has clearly outlined the goals of a US$300 billion electronics manufacturing ecosystem with US$120 billion dollars of exports by 2026.
- India is now pushing for **global exports via Production Linked Incentives (PLI)** and a total production of USD 300 bn.
- With exports as its key focus, the government is working on policies that will increase **domestic value addition** over the next few years.

Way Ahead

- The focus should be on creating a **robust local supply chain** and building a **strong local component ecosystem**.
- The challenges related to infrastructure, tariffs, and Free Trade Agreements **must be resolved** to make manufacturing in India resilient and globally competitive.
- It is crucial for the electronics manufacturing industry in India to **utilize resources efficiently** and to **build sustainable domestic capabilities**.

2.2. Indian Economy's Mixed Signals

Why in News?

- The Reserve Bank of India has pegged growth for the quarter at 16.2 per cent in its most recent update.
- For the full year, it expects the economy to grow at 7.2 per cent, marginally lower than the International Monetary Fund's most recent forecast of 7.4 per cent.
- These projections imply that over the course of these turbulent years, India will be one of the fastest-growing economies in the world.

Several contradictory impulses in the economy:

- **Informal labour sector distress:**
    - While the economy has **surpassed its pre-pandemic level,** the labour market, especially the informal segment, continues to be mired in distress.
    - The clearest indication of the continuing stress comes from **data on work demanded by households under MGNREGA.**
    - In every month this year (April-July), the **number of households demanding work has been significantly higher** than those **demanding work over the same period in the pre-pandemic period.**
    - This **heightened demand for work under MGNREGA** indicates the continuing absence of more remunerative employment opportunities and points towards the persisting divergence between the formal and informal parts of the economy.
    - For if both were growing at a similar pace then the labour market distress in both segments would have eased at a comparable rate.
    - These diverging trends also indicate rising productivity/growing capital intensity of production, which is more likely to occur among the larger firms in the formal sector.
    - An **obvious corollary** is the continuing struggles of the micro, small and medium-sized firms which suggest that the **labour market stress is unlikely to dissipate immediately.**
- **Subdued wage growth:**
    - This **continuing slack in the informal labour market** reflects in **subdued wage growth** in this segment, even as there are signs of the labour market tightening at the other end of the wage spectrum in the formal segment.
    - **Data on rural wages** shows that over the past year, wage growth across

three principal occupation categories — general agricultural labourers, construction workers and non-agricultural labourers — has been lower than retail inflation. This translates to an erosion of the real purchasing power of households.
    - Several firms have alluded to this trend in their **quarterly earnings, pointing towards a drop in sales volume.**
    - **In direct contrast,** reports of high attrition rates, despite record pay hikes in sectors such as IT point towards a tightening of the labour market at the other end of the spectrum.
    - They also suggest a rise in the return to skill/higher education during this period, indicative of a deepening of the labour market dualism (at one end are the well-paid highly skilled/educated workers, while at the other are the low-paid semi- or unskilled, informal casual workforce).

- **Subdued household mobility over the income ladder:**
    - **The lack of employment opportunities** and subdued wage growth implies that household mobility continues to be adversely impacted, even as inequality is likely to have risen during this period.
    - **As household movement up the income ladder has slowed down,** the number of families in the higher spending cohorts isn't increasing fast enough, even as the purchasing power of those in the top spending cohort has risen dramatically.
    - Thus expenditure, especially on high-end discretionary goods and services, is growing at a fast clip, but overall consumer sentiment, as measured by the RBI, remains in the "pessimistic zone", well below levels seen before the pandemic, as purchasing power remains subdued. Across various markers of upward mobility, there are indications of this effect.
    - **As per data from SIAM, in 2021-22,** sales of two-wheelers were roughly a quarter lower than their pre-pandemic level in 2019-20.
    - Similarly, sales of entry-level cars are also facing headwinds, even as purchases of high-end cars (sedans and SUVs) are growing at a fast clip.
    - **As per CRISIL, cars priced above Rs 10 lakh** (the premium segment) grew by 38 per cent last year, while those priced lower grew by a mere 7 per cent.
    - A similar trend seems to be playing out in residential real estate. As per data from JLL, in seven cities (Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Mumbai, and Pune), in the first six months of the year (January-June), real estate transactions above Rs 1.5 crore grew at more than twice the pace of those below Rs 50 lakh.
    - In fact, during this period, the number of transactions above Rs 1.5 crore was more than half of the volumes seen in the Rs 50 lakh category.
- **High profits of corporates despite sluggish growth:**
    - At the firm level too, these contradictory impulses can be observed.
    - Corporate profits are at record highs even though business sentiment, as measured by the central bank's business assessment index, is lower than what it was around a year ago.
    - A possible explanation for these opposing trends is that even as the larger formal firms have gained market share at the expense of the smaller players, subdued employment prospects and sluggish wage **growth imply that the overall size of the market isn't expanding as hoped.**
- **Sluggish investment:**
    - **Despite the central bank's survey**s showing that **capacity utilisation rates** have risen to levels exceeding their long-term average, there **aren't enough concrete indications of a broad-based pick-up in private investments across a range of sectors.**
    - **Investment activity,** as proxied by bank credit (adjusting for lower inflows from bond and commercial paper issuances)

and internal accruals (there are reports of higher dividend pay-outs by firms) remains subdued. Firms seem to be **hesitant to commit to fresh investments.**

Conclusion:

- The granular picture that emerges is of a continuing deficit in employment opportunities and subdued wage growth; limited mobility and rising inequality; pessimistic consumers and uncertain business prospects.
- This implies that economic activity is not as ebullient as many would believe.
- To what extent these contractions deepen or get resolved will determine the country's medium-term growth prospects.
- India is slowly but surely on the path to economic recovery and investment is the way to sustain this growth momentum.

2.3. RBI Paper on Digital Payments

Why in News?

- The RBI's discussion paper on reviewing charges on digital payments has stirred up a hornet's nest.
- RBI sought views from the public on fees and charges in payment systems, with an aim to make such transactions affordable as well as economically remunerative for the entities involved.
- In this context, let us discuss the issues and suggestions highlighted in it.

Background

- The payment systems include -
    - Immediate Payment Service (IMPS),
    - National Electronic Funds Transfer (NEFT) system,
    - Real Time Gross Settlement (RTGS) system,
    - Unified Payments Interface (UPI),
    - Debit cards and credit cards,
    - Prepaid Payment Instruments (PPIs).
- The focus of RBI's initiatives in the payment systems has been to ease frictions that may arise from systemic, procedural or revenue-related issues.
- RBI stressed that charges for payment services (costs imposed by the Payment Service Providers (PSPs) on the users for facilitating a digital transaction) should be reasonable and competitive for the users, yet generate optimal revenue for the intermediaries.
- The charges are recovered from the users depending on the type of payment system.
    - In a fund transfer payment system, the charges are generally recovered from the originator of the payment instruction. These are usually levied as an add-on to the amount earmarked for remittance.
    - In the case of a merchant payment system, the charges are generally recovered from the final recipient of money (merchant). This is generally done by deducting the same from the amount receivable by the merchant or a discount on the amount receivable by the merchant.
- The Finance Minister termed UPI as a **"digital public good"** and rejected plans to impose any charges on UPI transactions leaving PSPs disappointed.
- While the question remains unanswered on whether UPI transactions should be charged or not, the RBI decided to review charges on all digital payments including UPI as a lifeline for fintech players offering digital payments.

The backdrop

- Recent months have seen the regulator significantly tightening its ground-rules on what fintech players can and cannot do.
    - The notification on digital lending norms laid out the basics of how fintech can approach the lending business. The list was more prohibitive than accommodative.
    - Later, the RBI opened the floor for discussion on charging digital payments.
- These two events suggest that the RBI may be offering a way out for fintech players. The discussion paper seems to be re-opening avenues for fintech to go back to what they set out to do in the first place — make money from the payments business.

The genesis of payment providers

- Paytm, Freecharge and the NPCI-promoted Bhim were the pioneers of the payment wallet ecosystem.
- Initially, digital payments found more use-cases in booking movie tickets or paying utility bills.
- By 2018, QR-backed UPI payments started gathering steam and in the Union Budget 2019, the government decided to allow MDR charges on UPI transactions and this was implemented from January 1, 2020.
- Fintech providers originally intended to generate revenues from a fee on payment transactions, whether they were routed through UPI or their own wallets.
- They faced their first blow when full-stack KYC was made mandatory for digital wallets. Then, with the UPI gaining acceptance from merchants and offered free of cost, fintech players had to go back to their drawing boards.

The pandemic came as a blessing in disguise

- With banks and insurance companies forced to cut back on field agents because of the lockdown related constraints, fintech players filled the void by cross-selling of products and earning a fee.
- They started selling insurance products, mutual funds, and small- ticket loan products in a big way.
- Those who operated with NBFCs at the back-end ventured into lending as an extension of such fee-based offerings.
- Products such as buy now pay later (BNPL) or credit offered through prepaid instruments and early payday loans were a hit with borrowers.
- According to a BCG report, there is more money to be made for fintech players through lending, than through payments and the fintech topography has reflected this in the last two years.
- But these pivots in the revenue models of fintech players haven't gone down well with the RBI.
- The customer-facing and data storage practices of fintech players and the bad loan thresholds have come in for criticism.
- From the fintech players' perspective, the ability to branch out beyond payments helped attract capital at higher valuations and gave wings to the Unicorn story. But they are now faced with the challenge of scalability.
- This could put their investors in jeopardy. So, a new window for monetizing their payments business would be welcome for fintech players.

Need for more debate

- The RBI and the government now seem to have divergent views on pricing UPI.
- While the government's intent on not impeding digital payments when they're scaling up so rapidly is understandable, it's also important to consider the financial system.
- Since 2020, there have been rounds of discussions on this issue and most of them have failed.
- The discussion paper floated by the RBI last week is a good attempt to seek feedback from all stakeholders in the digital payments economy - users, service providers and those responsible for laying out the digital infrastructure - on whether a paid UPI will work.
- The bone of contention with respect to UPI is that in the present cost-recovery process where the government foots the bill, the money doesn't reach the right hands - mainly the back-end technology infrastructure providers.
- The RBI and the government need to sort out this part of the equation and ensure that a digital public good isn't operated at the cost of someone else's revenue model.
- Only this can make it a win-win for everyone, be it the UPI user, the RBI, the government or the banking system at large.

2.4. EU's Decision to Withdraw GSP Benefit

Why in News?

- The European Union recently has decided to end duty benefits for 1,800 goods under the Generalized Tariff Preference Scheme.
- It has forced India to engage with the industry to assess the impact of this decision.

Background

- India's exports of plastics, stone, electrical machinery, **articles of stones, articles of leather,** and mechanical appliances worth $7.9 billion to the EU will no longer be eligible for low or zero-duty concessions from January 2023.
- In these four sectors, the EU is a major export destination for India and holds around 22.58% share of India's total exports.
- It will make Indian goods more expensive with exporters paying 6.5% duty for certain plastic products where the tariff is nil at present.
- This will severely impact our competitiveness as other GSP and GSP plus countries will continue to enjoy tariff concessions for these sectors
- The main issue now is to look into whether exporters will lose their market share and if there is a case for extending some support to such sectors.

Generalized System of Preferences

- **Generalized System of Preferences (GSP)** is an umbrella that comprises the bulk of preferential schemes granted by industrialized nations to developing countries.
- It involves reduced **Most Favored Nations (MFN) Tariffs** or **duty-free entry** of eligible products exported by beneficiary countries to the markets of donor countries.
- The idea of granting developing countries preferential tariff rates in the markets of industrialized countries was originally presented at the first UNCTAD conference in 1964. The GSP was adopted in New Delhi in 1968.
- There are currently 13 national GSP schemes notified to the UNCTAD secretariat including the US, Canada, Australia, New Zealand, Norway, and the UK.
- Under the scheme, the EU allows preferential access to identified products originating in certain developing countries, in its markets in the form of reduced or zero rates of customs duties.
- According to EU rules, GSP beneficiaries can lose preferences for specific product categories that are deemed to have become sufficiently competitive.
- Textiles, vehicles, chemicals, and some leather products were excluded from the EU GSP programme in 2014 after their exports crossed the specified threshold and haven't enjoyed preferential treatment since then.

Data and Statistics

- As per an analysis done by FIEO, out of the total 16,309 EU tariff lines (products), 46.6% are eligible for tariff concessions under GSP. Around 23% of the products have zero duty.
- Among states, Maharashtra, Gujarat and Tamil Nadu would be the most hit as their share in exports to the EU is almost 60%.
- The EU is India's third largest trading partner, accounting for €88 billion worth of trade in goods in 2021, or 10.8% of total Indian trade, after the USA (11.6%) and China (11.4%).
- The EU is the second-largest destination for Indian exports (14.9% of the total) after the USA (18.1%), while China only ranks fourth (5.8%).
- India is the EU's 10th largest trading partner, accounting for 2.1% of EU total trade in goods in 2021, well behind China (16.2%), the USA (14.7%), or the UK (10%).
- Trade in goods between the EU and India increased by about 30% in the last decade.
- Trade in services between the EU and India reached €30.4 billion in 2020.

Affecting exports

- The government is taking heart from the fact that even after the withdrawal of the GSP scheme by the US for several Indian products in 2019, exports of most items actually increased and their market share was not adversely affected.
- One has to see if the same would happen in case of withdrawal by the EU.
- The Federation of Indian Export Organizations (FIEO) has already done a rough analysis of how the move could affect Indian producers and flagged the matter with the government.

- India exports machinery worth about $5.1 billion and plastic items worth about $1.7 billion to the EU annually.

FTA possibility

- **Articles of leather (excluding footwear) and articles of stones** — the other two categories set to lose GSP benefit - are not critical as exports there are not significant.
- In the first two product sectors, the government has to look into whether or not the industry is competitive enough to survive this kind of withdrawal. If not, then what could be done to help them?
- As India is negotiating a Free Trade Agreement (FTA) with the EU, there also exists a scope of getting preferential tariff benefits for the affected sectors through the trade pact.

Way Forward

- India is amongst the world's fastest-growing large economies and is an important player in global economic governance.
- India is already an important trade and investment partner for the EU and could hold significant further potential.
- It represents a sizable and dynamic market, with an annual projected GDP growth rate of over 8% according to the IMF, which would make it the fastest-growing emerging economy.
- This shows the dependency of both India and the EU on each other and hence the issue in the economic domain.

2.5. Semiconductor Production-Linked Incentive (PLI) Scheme

Why In News?

- Recently, the Union Cabinet approved modifications in the production-linked incentive (PLI) scheme for manufacturing of semiconductor and display manufacturing ecosystems.
- It modified the incentives of about $10 billion that the government announced in December 2021.

About the recent changes made in the scheme

- **Fiscal support**
  - The government approved **uniform fiscal support of 50%** of project cost for semiconductor fabs across technology nodes and display manufacturing.
  - It also **raised fiscal support** for compound semiconductors, packaging and other semiconductor facilities to **50% from 30%.**
  - **Earlier incentives for semiconductor fabs were based on the size of the node:**
    - Nodes from 45 nanometre (nm) to 65 nm were offered an incentive of 30 percent of the project cost.
    - Those between 28 nm and 45 nm were offered a 40 per cent support.
    - Only nodes from 28 nm and below were offered 50 per cent fiscal support.

  Target technologies
  - It will **include discrete semiconductor fabs**.
  - **Discrete semiconductors are** used for devices performing basic electronic functions.

Significance of the plan

- **The modified programme will expedite investments** in semiconductor and display manufacturing in India.
- It aims for an **entire integrated semiconductor ecosystem** to be present in India.
  - **Under the previous terms of the scheme**, there was a potential risk that we would have established fabs in the country but the **packaging would have happened elsewhere**.
- **Self-Sufficient**: The government had announced the massive incentive plan to establish chip and display industries in India with the intent of becoming an electronics manufacturing hub and cut reliance on supplies from China.
- **Semiconductor market:** The technology nodes of 45nm and above have **high demand** which is driven by automotive, power and telecom applications, which constitute around 50% of the total semiconductor market.

Way forward

- **The incentives** are planned to be offered to companies over six years and expected to attract **investments worth 1.77 trillion.**

- **It has since seen a $20 billion investment from Vedanta-Foxconn joint venture** for setting up a semiconductor fab unit, display unit and other projects in **Gujarat.**
- **Israel-based ISMC Analog Fab Private Limited** will set up a semiconductor fab unit with an investment of **$3 billion.**

2.6. Prompt Corrective Action Framework

Why In News?

- Recently, the Reserve Bank of India (RBI) **removed the Central Bank of India** from its **Prompt Corrective Action Framework (PCAF).**

Key Points

- **Background:**
  - The RBI had imposed the PCA norms on the Central Bank of India in June 2017 due to its high net NPA and negative return of assets (RoA).
  - This is the last bank which has been removed from the PCA norms by the RBI.
- **Reason of Removal:**
  - The Bank showed improvement in various financial ratios, including minimum regulatory capital and net non-performing assets (NNPAs).
  - The bank has provided a written commitment that it would **comply with the norms of minimum regulatory capital, net NPA and leverage ratio** on an ongoing basis.

Prompt Corrective Action Framework (PCAF)

- **About:**
  - The RBI's PCA Framework was introduced in 2002 as a structured early intervention mechanism along the lines of the US Federal Deposit Insurance Corporation's PCA framework.
  - It is a **supervisory tool** and is imposed when a bank breaches certain regulatory thresholds on capital to risk weighted assets ratio (CRAR), net NPAs and return on assets (RoA).
  - It refers to the central bank's watch list of weak banks.
- **Objectives:**
  - To enable Supervisory intervention at the appropriate time and require the Supervised Entity to initiate and implement remedial measures in a timely manner, so as to restore its financial health.
  - Intended to act as a tool for effective market discipline.
  - PCA entails curbs on high-risk lending, setting aside more money on provisions and restrictions on management salary.
- **Application:**
  - The PCA Framework would apply to all banks operating in India including foreign banks operating through branches or subsidiaries based on breach of risk thresholds of identified indicators.
- **Assessment:**
  - A bank will generally be placed under the PCA framework based on the Audited Annual Financial Results and the ongoing Supervisory Assessment made by RBI.
- **Time Period:**
  - RBI may impose PCA on any bank during the course of a year (including migration from one threshold to another) in case the circumstances warrant.
- **Banks under this framework:**
  - RBI had placed **11 state-run banks** under PCA framework after they breached the risk thresholds:
    - Allahabad Bank,
    - United Bank,
    - Corporation Bank,
    - IDBI Bank,
    - Uco Bank,
    - Bank of India,
    - Central Bank of India,
    - Indian Overseas Bank,
    - Oriental Bank of Commerce,
    - Dena Bank and
    - Bank of Maharashtra.
  - Of the 11 lenders, five PSBs were placed under PCA restrictions in the quarter ended June 2017; another five in the quarter ended December 2017 and one PSB in the quarter ended March 2018.
  - The first two banks are out of PCA, while the Central Bank of India is still under the watch of the RBI.

Corrective actions under PCA

- When a bank is placed under PCA, one or more of the following corrective actions may be prescribed:
  - Restriction on dividend distribution/remittance of profits.
  - Promoters/shareholders to infuse equity and reduction in leverage;
  - Restriction on issue of guarantees or taking on other contingent liabilities on behalf of group companies (only for CICs)
  - Restriction on branch expansion; domestic and/or overseas
  - Appropriate restrictions on capital expenditure, other than for technological upgradation within Board approved limits
  - Appropriate restrictions on capital expenditure, other than for technological upgradation within Board approved limits
  - Restrictions/reduction in variable operating costs

Significance

- **Maintains capital:** As most bank activities are funded by deposits that need to be repaid, it is imperative that a bank carries a sufficient amount of capital to continue its activities.
- **Alert mechanism and a regulator:** PCA is intended to help alert the regulator as well as investors and depositors if a bank is heading for trouble.
- **Checks NPA:** It aims to check the problem of Non-Performing Assets (NPAs) in the Indian banking sector.
- **Rectify the bank's mistakes:** The aim of PCA is to rectify the bank's mistakes before they attain crisis proportions.
- **Regulation:** RBI will regulate loan disbursals/ credit by PCA banks to unrated borrowers or those with high risks; however, it will not place a complete ban on the bank's lending.
- **Restoring the financial health of a bank:** Basically, PCA helps RBI in restoring the financial health of a bank by monitoring key performance indicators of banks and taking corrective measures on the same.
- **Strengthening the financial core of the institution:** It may also stop banks from entering new lines of businesses, thereby strengthening the financial core of the institution.

Challenges

- **Lack of Capital:** The PCA banks have been starving for funds for a long time because of inadequate capital as government finances are too tight. These banks are not in a position to raise capital on their own.
- **Need of Provisioning:** These banks need higher provisioning from profits to provide for any future losses before kick-starting any fresh loans.
- **Avoid Relaxation:** Any relaxation of the PCA framework at this stage will derail the process, which may have longer-term negative implications.

Conclusion

- The PCA framework for banks enables supervisory intervention and also acts as a tool for **effective market discipline**.

2.7. Social Stock Exchange

Why In News?

- Recently, the Capital markets regulator **SEBI** came out with a detailed framework for social stock exchange.

Background

- The idea of SSE was **first floated by the Finance Minister** in her **Budget speech for the financial year 2019-20.**
- With business impacted due to the COVID-19 induced lockdown, SEBI constituted a panel on social stock exchanges which **recommended direct listing of non-profit organisations (NPOs)** through the issuance of bonds and a range of funding mechanisms in a report submitted to the market regulator.

What is an SSE?

- An SSE allows the **listing of non-profit or non-government organisations** on stock exchanges, providing them with an **alternative fund-raising structure.**

- It may be listed on **BSE or NSE.**
- Countries like the **UK, Canada and Brazil have SSEs.**
- The fund-raising is proposed through several instruments such as **zero-coupon-zero-principal bonds, social venture funds and mutual funds**.

What is the size of the market?

- India has over **31 lakh NPOs** more than double the number of schools and 250 times the number of government hospitals which amount to one NPO for 400 Indians.

Objectives of SSEs

- A Social Stock Exchange may be **helpful in rebuilding the livelihoods** of people who are affected during pandemics like COVID-19.
- **The SSEs will aim at** unlocking large pools of social capital, and encourage blended finance structures, so that conventional capital can partner with social capital to address the urgent challenges of COVID-19.

Tax benefits

- **Investors will get Section 80G benefits** which allow all investments in securities/instruments of NPOs listed on SSE to be tax deductible.
- Investment by companies will be considered as part of their **Corporate Social Responsibility (CSR) initiatives.**

Recent Guidelines/ Framework

- **A Separate segment**
  - SSE will be a separate segment of the existing stock exchanges.
- **Eligibility**
  - 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.
- **Non Eligibility**
  - Corporate foundations, political or religious organisations or activities, professional or trade associations, infrastructure and housing companies, except affordable housing will not be eligible to be identified as a social enterprise.
- **Minimum requirements for Not-for-Profit Organisation**
  - NPO needs to be registered as a **charitable trust** and should be **registered for at least three years**, must have **spent at least Rs 50 lakh annually** in the past financial year and should have received a **funding of at least Rs 10 lakh in the past financial year**.
  - Disclosure requirements for NPOs raising funds through the issuance of **zero-coupon zero principal instruments** and put in place annual disclosure requirements that need to be made by NPOs on such exchanges.
- **Registration of NPO**
  - The entities must be registered in India as a "charitable trust registered under the public trust statute of the relevant state" or under the **Societies Registration Act, 1860**, or the **Indian Trusts Act, 1882**, or incorporated as a company under **Section 8 of the Companies Act, 2013.**
- **Statement of utilisation**
  - Listed NPO will have to submit a statement of utilisation of funds to SSE, as mandated under SEBI's rules within **45 days** from the end of quarter.
- **Annual Impact Report (AIR)**
  - SEBI has asked social enterprises raising funds using SSE to disclose the Annual Impact Report (AIR) **within 90 days** from the end of the financial year.
    - It will Capture the qualitative and quantitative aspects of the social impact generated by the entity and where applicable, the impact that is generated by the project or solution for which funds have been raised on SSE.

Significance of the move

- **Social objectives**: Such intent should be demonstrated through its focus on eligible social objectives for the underserved or less privileged populations or regions.
- **Social activity**: The social enterprises will have to engage in a social activity out of 16 broad activities listed by the regulator.
  - **It includes** 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.

3. International Relations

3.1. WTO Needs to Reform

Why in News?

- New Delhi is getting a bigger say in global issues but must not let rhetoric get the better of hard work. An arrow has already been shot across the bow of the World Trade Organization (WTO) which, if it travels the distance, could change the global trade grammar.

Background:

- India, along with 44 African countries, Cuba and Pakistan, submitted a note to the WTO during its June 2022 ministerial.
- The 11-page note seeks to correct historical imbalances that were embedded during the organization's founding in 1995 and put the developing world at a disadvantage.
- India's efforts at reforming global rules, including the WTO's structural flaws, have continued across different governments in New Delhi, regardless of their political persuasion.
- For example, the Indian government's struggle for trade equity at the WTO—particularly its steadfast pursuit of the Doha Development Agenda (DDA) since 2001—has been waged by various regimes, albeit inconsistently.
- The latest submission for reconfiguring the WTO will now be discussed in the General Council, the trade body's important decision-making body.
- The emphasis will be on reviving some DDA commitments which advanced countries have stalled repeatedly.
- The note states: "WTO reform does not mean accepting either inherited inequities or new proposals that would worsen imbalances."

Issues need to focus:

Three issues are in sharp focus:

- **The first is correcting imbalances in a number of areas:**
  - **Lopsided agriculture trade rules** which allow OECD countries to provide high subsidies and aggregate measures of support to farmers but deny the same to developing nations;
  - **Rules for Trade-Related Intellectual Property Rights (TRIPS),** which rich nations have converted into a competition thwarting instrument;
  - **Disparity in subsidies for promoting industrialization,** with advanced economies using them liberally during their industrial development phase but disallowing developing countries the same path to industrialization.
- The second issue is getting the WTO to agree that the world is **made up of different countries with differing development challenges and priorities.** Implicit in this is the understanding that, **depending on the level of development, state intervention of varying degrees** will be required to address market failures or achieve development objectives.
- The third issue is the **disproportionate impact of covid on developing countries** and the WTO's need to foster international cooperation of a kind that **ensures universal and timely access to medical products and a clear pathway to faster economic recovery.**

Priorities of reform at WTO needed:

The priorities for reform at the WTO must include:

- **The negotiating function of the WTO.**
  - Strengthening the **multilateral character of the WTO.** Critically, this must include the **preservation of consensus decision-making and respecting Art.** X of the Marrakesh Agreement on Amendments with regards to new rules;

- Addressing the **unilateral and protectionist actions taken by some Members;**
- **Reaffirming the principle of Special and differential treatment (S&D),** which is a treaty-embedded, non-negotiable right for all developing countries in the WTO;
- **Promoting inclusive growth,** widening spaces for states to pursue national development strategies in the broad framework and principles of a rules-based system;
- **Keeping development** at its core through delivering on the long-promised development concerns, in particular the outstanding development issues of the DDA;
- **Address the asymmetries in WTO Agreements** such as those in Agriculture, the Subsidies Agreement, TRIMS and the related GATT articles (Art. III(national treatment)and XI (general elimination of quantitative restrictions)), TRIPS and other areas;
- Continuing with the on-going **multilaterally mandated negotiations;**
- **Reinvigorating the discussions in the 1998 E-Commerce Work Programme** particularly looking at the E-Commerce Moratorium and the issues of digital divide.

- **The dispute settlement function.**
  - Restoring the **Appellate Body and the two-tier WTO Dispute Settlement Understanding,** and addressing challenges of access to the dispute settlement system by developing countries.
- **The monitoring function of regular bodies.**
  - **Reaffirming existing commitments and not adding more obligations** in the areas of transparency; specific trade concerns and the functioning of regular bodies. The WTO must also allow for different economic models rather than push for one form or another.
- COVID-19
  - Responding to the COVID-19 pandemic, including through **introducing a Moratorium on trade measures and providing sufficient flexibilities on intellectual property** disciplines for developing countries.
  - Such a Moratorium will be in place for the **duration of the pandemic** for governmental action taken to directly respond to the pandemic.
  - Unlike developed countries, developing countries without deep pockets must be more creative, including by **using trade policy measures to provide medicines, diagnostics, health equipment,** and to address the serious balance of payments crises many developing countries now find themselves in.
  - To address COVID-19, developing countries should not be asked to relinquish their required trade policy space such as through the **permanent liberalization of tariffs or agreement to end the use of export restrictions.**

Way forward:

- Covid's aftermath and the Russia-Ukraine war now fortuitously situates, India in a unique negotiating position, with a slightly larger share of voice in the global governance framework.
- As it happens, India also assumes the G20 presidency this year. The stars seem aligned but will yield results only when hard work trumps rhetoric; currently, double-speak threatens to muddy India's crusading cape.
- India's leadership must decide whether it wants to seize this moment or only exploit its rhetorical prospects.

3.2. Taliban 2.0

Why In News?

- Recently, it has been a year after the Taliban returned to power in Kabul.

Background

Civil war

- The first time the Taliban took Kabul was in 1996.
- Afghanistan was in ruins and much of its infrastructure was destroyed by a raging civil war.

Foreign powers

- Over the last two decades, foreign powers including India helped rebuild roads, dams, government offices, hospitals, rural infrastructure, the economy, and education.

2021

- In 2021, the Taliban took over a readymade country.
- But administering a nation of 32 million requires capacity and finances which the Taliban are short on both.
- Many wealthy people, and those of the middle class with means and education, including civil servants, have fled the country, not wishing to be part of the Taliban regime.

No recognition

- The international community has not yet recognised the regime formally, and sanctions, including travel bans on many Taliban, remain in place.
- Their access to international banking and finances are limited.

Present Scenario of Taliban

Economy

- The Taliban presented an **annual budget** based entirely on **domestic revenue.**
- Afghanistan is the **heart of Asia** and countries in the region that want to trade with each other have to go through Afghanistan.
- Most of Afghanistan's revenues are now being **raised through customs duties.**

  It is also **exporting coal to Pakistan.**

  They are also **leasing out small mines to local investors**.

  Banks are functioning, except for international transfers.

  Schools and hospitals are open.

Security

They have **restored peace** apart from the **Daesh or ISKP** (Islamic State Khorasan province), which has carried out attacks in Kabul.

The killing of al-Qaeda leader Ayman al-Zawahiri in a Kabul neighbourhood by the US has added to the Taliban's insecurity.

Scrapped the constitution

The regime has scrapped the constitution promulgated by the previous Islamic Republic of Afghanistan.

Impacts

No change towards civil society

- There hasn't been much change in the Taliban's attitude towards civil society from the time they last ruled in Kabul.
- But outright brutalities, including public executions, have not been reported yet.
- A dress code has been prescribed for both men and women, but it is not strictly implemented.

Ban on the education of girls

- The most draconian anti-people action by the Taliban so far has been to **ban the education of girls** beyond class 6 in school, and to make it difficult for women to work.

Extrajudicial killings

- UN has reported 160 extrajudicial killings, 178 arbitrary detentions, 23 instances of incommunicado detentions, and 56 instances of torture and ill-treatment of former government and military officials.
- Those of the previous regime who remain in the country live in hiding for fear of being tracked down and killed.

Hazaras and Tajiks

- The minority communities that the Taliban have targeted such as the Hazaras and Tajiks feel more vulnerable than the majority Pashtun.

Poverty related issues

- Millions of Afghans have plunged into poverty as by the end of 2021, half of the nation's population of nearly 38 million were living under the poverty line, according to a report by the United Nations.

Role of International Community

- The UN's humanitarian response has helped Afghanistan keep its head above water.
    - Until the Taliban banned high school education for girls, the UN was paying teachers' salaries.
- It was also ensuring that community doctors and other health workers were paid. The ICRC is financing the Indira Gandhi Children's Hospital in Kabul. In the absence of international banking facilities, UN planes have flown in $1bn in hard cash, including to fund money transfers to the needy through partner agencies, which has helped to increase the circulation of money in the economy. Some INGOs are even using hawala, euphemistically calling the middlemen "money transfer agents".

India's stand in the current situation

- **Friendship**
    - Afghanistan is possibly the only country in South Asia where people spontaneously declare hand on heart that they love India.
- **Visa issue**
    - People of Afghanistan are hurt that India shut its doors on them last year when they most needed its help.
- **Indian Embassy**
    - The reopening of the Indian Embassy has given that hope legs, even though there is no indication from India yet that it is going to restart consular work, despite repeated declarations that India's approach to Afghanistan is dictated by the people-to-people links between the countries, and a desire to assist Afghans in a dire humanitarian situation.
- **Food aid and medicines**
    - India has been sending food aid and medicines to the country since 2021.
- **Strategic interests**
    - India sees Afghanistan as vital for its strategic interests in the region, including access to Central Asia, and ensuring that Pakistan is not able to relocate India-focussed terror groups to Afghanistan.
- **Infrastructure projects**
    - Taliban want India to complete the infra projects that it had left unfinished in the country.
    - From 2002 to 2021, India spent $4 billion in development assistance in Afghanistan, building high-visibility projects such as highways, hospitals, the parliament building, rural schools, and electricity transmission lines.
    - One of the projects that was left incomplete was the **Shahtoot Dam** to provide drinking water to 2 mn residents of Kabul.

Way forward

- **Regime will not last long**
    - Kabul which has witnessed repeated changes of rulers; there is expectation that this regime will not last either.
- **Another cycle of civil war**
    - Reports of factionalism and the reported dissonance between the Haqqanis and the Kandahar core of the Taliban have fuelled speculation about the possibility of a breakdown and another cycle of civil war.
- **China factor**
    - China's primary concern is to ensure that Afghanistan does not become a launching pad for **Uighur radicals in Xinjiang**.
    - With the US out and Russia, the other big player that was rooting for the Taliban preoccupied in Ukraine, China has been

expanding its engagement with the regime.
    - Two sides are finalising mining operations in **Aynak Logar**, **Afghanistan's largest copper reserve** for which China signed an agreement back in 2008.
    - There is an upcoming 650-acre **China-Afghanistan industrial park** at **Pul-e-Charkhi** outside Kabul.

3.3. India-Bangladesh Relations

Why In News?

- Recently, India and Bangladesh have finalised the text of Memorandum of Understanding (MoU) on interim water sharing of **Kushiyara river**.

Key Highlights

About:

- The text was finalised during the **38th meeting of the ministerial-level Joint Rivers Commission (JRC) of India and Bangladesh**, held in Delhi.
- The ministry welcomed finalisation of the design and location of water intake point on **Feni river** to meet drinking water needs of Sabroom town in Tripura as per the October 2019 India-Bangladesh MoU.

Headed by:

- The two sides were led by the Minister of Jal Shakti and his Bangladesh counterpart.

Issues Discussed:

- Water-sharing of common rivers,
- Sharing of flood data,
- Addressing river pollution,
- Conducting joint studies on sedimentation management,
- River bank protection works, etc.

Significance of the meeting:

- It was held after a long gap of 12 years, although technical interactions under the framework of JRC have continued in the interim.
- **Rivers shared between the 2 countries:**
    - India and Bangladesh share **54 rivers.**
    - Of which seven have been identified earlier for developing the framework of water-sharing agreements on priority.
    - During the recent meeting, the neighbours agreed to include eight more rivers for data exchange.
- **Common Rivers:**
    - The Ganges,
    - Teesta,
    - Manu,
    - Muhuri,
    - Khowai,
    - Gumti,
    - Dharla,
    - Dudhkumar and
    - Kushiyara.

India Bangladesh Relations

- **Political:**
    - India was one of the first countries to recognize Bangladesh and establish diplomatic relations immediately after its independence in **December 1971**.
    - Internationally both the nations share the following platforms: SAARC, BIMSTEC, Indian Ocean Coastal Regional Cooperation Association, and Commonwealth.
- **Trade and investment:**
    - Bangladesh is India's **biggest trade partner** in South Asia.
    - India's exports to Bangladesh during 2021 was US$14.09 Billion.
    - Bangladesh may become **India's fourth-largest export destination** in FY22, jumping five places in two years.
    - Bangladesh's growth stems largely from its success as an exporter of garments, which account for around 80 percent of its total exports.
- **Power and energy cooperation:**

- Cooperation in the power sector has become one of the hallmarks of India - Bangladesh relations.
  - Bangladesh is currently **importing 1160 MW** of power from India.
- Bangladesh is the **biggest development partner** of India.
  - India has extended 3 Lines of Credits (LOC) to Bangladesh in the last 8 years amounting to US$ 8 billion for the development of infrastructure in various sectors including roads, railways, shipping and ports.

- **Defense Cooperation:**
  - High level exchanges at the level of services chief of Indian Navy, Bangladesh Navy and Indian Air Force, conduct of second annual defense dialogue and **inaugural tri-services staff talks**, service specific talks of Navy and Air Force.
  - DG level talks between the Coast Guards have contributed to significant improvement in bilateral defense cooperation.
  - In the training domain both the countries have continued and enhanced mutual engagements.
  - Various **Joint exercises take** place between the two countries:
    - Exercise Sampriti (Army) and
    - Exercise Milan (Navy).
- **Multimodal Connectivity:**
  - **The passenger trains between India and Bangladesh:**
    - **Bandhan Express:**
      - starting from Kolkata for Khulna - Since 2017
      - It covers the distance via Petrapole and Benapole border route to cater to the demands of the people from both countries.
    - **Maitree Express:**
      - Starting from Dhaka for Kolkata - since 2008
      - The **tri-weekly** service between Kolkata and Dhaka used to run with 90 percent occupancy.
    - **Mitali Express:**
      - Starting from New Jalpaiguri in North Bengal to Dhaka.
  - **Bus Service:**
    - Both the governments decided to commence: Dhaka-Siliguri-Gangtok-Dhaka and DhakaSiliguri-Darjeeling-Dhaka bus service to enhance people to people contacts between both the countries and the trail run of Dhaka-Siliguri-Gangtok-Dhaka was also held in December 2019.
  - The Government of India has also been providing **grant assistance** to Bangladesh for various infrastructure projects including the construction of Akhaura-Agartala rail link, dredging of inland waterways in Bangladesh and construction of India-Bangladesh Friendship Pipeline.
- **Capacity Building and Human Resource Development:**
  - Human resource development is a key component of India's development cooperation efforts in Bangladesh through its several ongoing **training programs and Scholarships**.
  - The Government of India has been training 1800 Bangladesh Civil Service officials from 2019 at National Centre for Good Governance (NCGG), Mussoorie.
  - The **Indira Gandhi Cultural Centre (IGCC) in Dhaka** plays an important role in the celebration of **common cultural links** between the two countries.
  - Its training programs including **Yoga, Kathak, Manipuri dance, Hindi language, Hindustani classical music** and the cultural programs of renowned artists of India and Bangladesh contribute to the promotion of **people-to-people contacts**.

Way Ahead

- India needs to look at more ways to **deepen its ties with Bangladesh,** especially keeping in mind the shifting nature of geopolitics and geoeconomics in South Asia.
- India and Bangladesh have more or less agreed on most issues and this **stability must be maintained**.
- India needs to find a **fine balance** in respecting Bangladesh's economic growth while maintaining its economic progress.

3.4. India-Egypt: 75th Anniversary of Diplomatic Ties

Why In News?

- Recently Egypt released a Postage Stamp celebrating the 75th Anniversary of diplomatic ties with India.

More about the news

- Diplomatic relations between Egypt and India were established with **Egypt's recognition of the independence of India on 18 August 1947**, just **three days after India's independence**.
    - Growing **Egypt-India economic and commercial relations** contribute to the **stability and strength** of a rapidly **diversifying and deepening** bilateral relationship.

India-Egypt Relations

- **History:**
    - **Ancient times:**
        - India's relations with Egypt began when the trade contacts between the two ancient civilizations grew along the **banks of the river Nile and the river Indus**.
    - **Under Nehru's leadership:**
        - **In 1955, Egypt under Gamal Abdel Nasser and India under Jawaharlal Nehru** became the founders of the **Non-Aligned Movement**.
        - During the **1956 War**, Nehru stood supporting Egypt to the point of threatening to withdraw his country from the British Commonwealth.
- **Friendship Treaty & bilateral relations:**
    - The two nations became even closer in the 1950s and concluded a **historic Friendship Treaty in 1955.**
        - During the last couple of years, the traditionally strong bilateral relations enjoyed by the two countries have received an impetus with **regular exchange of high-level meetings and contacts** between the two sides.
- **Trade & Commerce:**
    - Egypt has traditionally been one of India's most important trading partners in the African continent.
    - The **India-Egypt Bilateral Trade Agreement** has been in operation since March 1978 and is based on the **Most Favoured Nation clause**.
    - **Major Egyptian exports to India include:**
        - Raw cotton, raw and manufactured fertilizers, oil and oil products, organic and non-organic chemicals, leather and iron products.
    - **Major imports into Egypt from India are:**
        - Cotton yarn, sesame, coffee, herbs, tobacco and lentils.
        - Mineral fuel; vehicle parts; Ship, boat and floating structure; cuts of boneless bovine frozen meat; and Electrical machinery and parts are also exported from India.
    - There is a significant Indian presence in almost every field in Egypt.
- **Technical and Scientific Cooperation:**
    - Technical cooperation and assistance have been a major part of the bilateral relationship.
        - Egyptian candidates visit India under the **Indian Technical and**

Economic Cooperation Programme (ITEC).

- In the field of Scientific Cooperation, **ICAR and the Agricultural Research Center** of the Ministry of Agriculture & Land of Egypt signed a **MoU for cooperation in the field of agricultural research** in 1998.

- **Cultural Links:**
  - **The Maulana Azad Centre for Indian Culture (MACIC)** was set up in Cairo in 1992
    - It aims to **promote cultural cooperation between the two countries**, through the implementation of the **Cultural Exchange Programme (CEP)**.
    - The Centre, in addition to popularizing Indian culture through **Hindi, Urdu and Yoga classes** and the screening of movies, also organizes cultural festivals.
  - **'India by the Nile' festival:**
    - It is a cultural festival **celebrated annually in Egypt**.
    - It brings the essence of India through classical, contemporary, performing and visual arts, food and popular culture in a language that amalgamates diverse cultural and artistic strands.
    - The festival is produced by **Delhi-based M/S Teamwork Arts and supported by ICCR and the Egyptian Ministry of Culture**.
- **The defence partnership:**
  - It is being revived with among other developments the visit of the Indian Navy ship to Egypt, a month-long Air Force exercise and the visit of the Egyptian Air Force chief to India in recent months.

3.5. The Outline of an Essential Global Pandemic Treaty

Why in News?

- An estimated 18 million people may have died from COVID-19, according to various credible estimates, a scale of loss not seen since the Second World War.
- With over 120 million people pushed into extreme poverty, and a massive global recession, no single government or institution has been able to address this emergency single-handedly. This has given us a larger perspective of how nobody is safe until everybody is safe.

What is the pandemic treaty?

- In December 2021, the **World Health Assembly** agreed to start a **global process to draft the pandemic treaty.**
- The need for an updated set of rules was felt after the COVID-19 pandemic **exposed the shortcomings of global health systems.**
- The Health Assembly adopted a decision titled **"The World Together"** at its second special session since it was founded in 1948.
- Under the decision, the health organization established an **Intergovernmental Negotiating Body (INB)** to **draft and negotiate the contents of the pandemic treaty in compliance with Article 19 of the WHO Constitution.**
- The pandemic treaty is expected to cover aspects like **data sharing** and **genome sequencing** of emerging viruses and equitable distribution of vaccines and drugs and related research throughout the world.
- The underlying logic is that as **global governance had failed during the pandemic,** the world needed **political commitment to mitigate future challenges.**

What is Article 19 of the WHO Constitution?

- Article 19 of the WHO Constitution gives the **World Health Assembly** the authority to adopt conventions or agreements on matters

of health. A two-thirds majority is needed to adopt such conventions or agreements.

- **The WHO Framework Convention on Tobacco Control was set up under Article 19 and it came into force in 2005.**

Need for Global Pandemic Treaty:

- **Widespread health inequity:**
  - Health-care systems have been stretched beyond their capacity and gross health inequity has been observed in the distribution of vaccines, diagnostics, and therapeutics across the world.
- **Risk of another health crisis:**
  - With the World Health Organization (WHO) having declared the monkeypox outbreak as a Public Health Emergency of International Concern (PHEIC) with over 32,000 cases from over 80 countries (August 2022), the world faces the risk of another health crisis.
- **Socioeconomic consequences:**
  - While high-income economies are still recovering from the after-effects, the socioeconomic consequences of the novel coronavirus pandemic are irreversible in low and low-middle-income countries.
- **Monopolies by pharma majors:**
  - The monopolies held by pharma majors such as Pfizer, BioNTech, and Moderna created at least nine new billionaires since the beginning of the COVID-19 pandemic and made over $1,000 a second in profits, even as fewer of their vaccines reached people in low-income countries.
- **Poor vaccination in low-income countries:**
  - As of March 2022, only 3% of people in low-income countries had been vaccinated with at least one dose, compared to 60.18% in high-income countries.
  - The international target to vaccinate 70% of the world's population against COVID-19 by mid-2022 was missed because poorer countries were at the "back of the queue" when vaccines were rolled out.
  - Most countries have followed the "me-first" approach which is not an effective way to deal with a global pandemic.
- **Lack of precautions:**
  - Even six to eight weeks after the PHEIC declaration, countries, except for Asia, did not take the requisite precautions.

India's lead role:

- India's response to the COVID-19 pandemic and reinstating global equity by leveraging its own potential has set an example to legislators worldwide.
- India produces nearly 60% of the world's vaccines and is said to account for 60%-80% of the United Nations' annual vaccine procurement - **"vaccine diplomacy"** or **"Vaccine Maitri"** with a commitment against health inequity.
- India was unfettered in its resolve to continue the shipment of vaccines and other diagnostics even when it was experiencing a vaccine shortage for domestic use.
- As of 2021, India shipped 594.35 lakh doses of **'Made-in-India'** COVID-19 vaccines to 72 countries — a classic example of global cooperation.
- Among these, 81.25 lakh doses were gifts, 339.67 lakh doses were commercially distributed, and 173.43 lakh doses were delivered via the Covax program under the aegis of Gavi, the Vaccine Alliance.
- The long tussle with the pharma majors over vaccine patents, especially in the African countries, held back the global vaccination drive.
- India stood as a global leader, moving a proposal with South Africa in October 2020 to ask the **World Trade Organization (WTO)** 'to allow all countries to choose to neither grant nor enforce patents and other intellectual property related to COVID-19 drugs, vaccines, diagnostics and other technologies for the duration of the pandemic until global herd immunity is achieved.'
- Even though this proposal was stonewalled by some of the leading countries, the WTO finally decided to water down intellectual property

restrictions in manufacturing COVID-19 vaccines after rigorous efforts.

The path ahead:

- In the COVID-19 pandemic, the world has seen a **multitude of initiatives to address the pandemic and to do better in the future such as the Vaccine Alliance.**
- These are all valuable, but a treaty under the umbrella of WHO would **build coherence and avoid fragmentation.**
- Such a treaty **should cover crucial aspects such as data sharing and genome sequencing of emerging viruses.**
- It should formally commit governments and parliaments to implement an early warning system and a properly funded rapid response mechanism.
- It should **mobilize nation states** to agree on a set of common metrics that are related to health investments and a return on those investments. These investments should aim to reduce the public-private sector gap.
- A global pandemic treaty will not only reduce socioeconomic inequalities across nation states but also enhance global pandemic preparedness for future health emergencies. India must take the lead in this.

3.6. India Japan 2+2 Dialogue

Why in News?

- As India's defence and foreign ministers head to Tokyo for talks with their Japanese counterparts in the so-called 2+2 format, they are bound to exchange notes on their shared and mounting security challenges.
- China's growing military capabilities and assertiveness on territorial disputes are at the heart of the deteriorating environment of India and Japan.

Underdeveloped bilateral security cooperation:

- Although **India and Japan have had defence exchanges** for nearly two decades, **declared a common interest in keeping the Indo-Pacific "free and open"**, and been partners in the Quadrilateral forum along with the US and Australia, their bilateral security cooperation remains underdeveloped.
- The innate caution in the Indian and Japanese defence bureaucracies has prevented the two sides from turning their stated strategic objectives into concrete outcomes.
- With Beijing turning up the heat on both, Delhi and Tokyo are scrambling to cope with the China challenge.

Areas of cooperation for the dialogue:

- It will be an opportunity for India to get a first-hand account from the Japanese leadership on Tokyo's bold new plans to transform its military strategy and build on the common interest in preventing the rise of new hegemonism in the Indo-Pacific.
- The meeting will be an opportunity for the two sides to review regional security challenges at a time when India and Japan are concerned about China's aggressive actions along the Line of Actual Control (LAC) and in the South China Sea and the East China Sea.
- The 2+2 meeting will also focus on enhancing exchanges between the armed forces and security establishments of the two sides and joint exercises.
- The Japanese side is keen to explore ways to work together on the joint development and manufacturing of advanced military hardware.
- Though Japan does not have a very well-established military manufacturing industry, it has expertise and materials that can be used for the joint development of equipment.

Japan's new strategy in tackling the threats from China:

- **Japan's new strategy to cope with Chinese power involves three broad elements -**
    - Reorienting Japan's diplomacy
    - Boosting national capabilities to deter aggression
    - Deepening defence partnerships

Reorienting Japan's diplomacy

- A **new "realism diplomacy"** will allow Japan to meet the **new security challenges through pragmatism and firmness.**

Boosting national capabilities to deter aggression:

- **Japan will fundamentally reinforce its defence capabilities** within the n**ext five years and secure a substantial increase of its defence budget needed to effect it.**
- Japan has recently called for **raising the share of defence to two per cent of the GDP. Japan has traditionally limited its defence spending to one per cent.**
- One focus is on building what is being called **"counter-strike"** weapons to deter Chinese aggression.
- In essence, it is about acquiring long-range missiles that can strike critical targets — including **missile bases and command headquarters in China (and North Korea).**
- While China's missile arsenals are growing, Japan does not have long-range missiles, and the US had been under treaty obligations with Russia not to develop and deploy longer-range missiles in Asia.
- This is set to change as Japan and the **US confront the problem of deterring China (as well as North Korea).**
- Critics call such a counter-strike capability a **departure from the principles of Japan's peace constitution.**
- Some experts call for **defensive capabilities** that **can intercept the Chinese missiles on their way.**

Impact of increasing defence expenditure:

- Given the size of the Japanese economy, which is the **third-largest in the world, the small percentage of spending on defence did produce a reasonable defence budget — about $40 billion today.**
- **Japan is the 9th largest defence spender** in the world. But a **doubling of the defence allocation over the next few years could make it the third-largest defence spender after the US and China.**

Deepening defence partnerships in the Indo-Pacific:

- Even as it builds national capabilities, Japan continues to emphasise the centrality of the alliance with the US in dealing with China.
- Tokyo is also looking to **strengthen security partnerships** with other like-minded countries such as Australia and India.
- Tokyo is also **promising to strengthen the defence capabilities** of the Indo-Pacific countries, unilaterally as well as through the Quad.
- It is also **boosting defence and security cooperation with France and the UK.**

Conclusion:

- As democratic countries in Asia, India and Japan **can cooperate to contribute to global peace and prosperity.**
- Both Countries share **political, economic and strategic interests based on the firm foundations of common values and traditions.**
- The focus during the dialogue should be to **inject substantive military content into the strategic partnership between India and Japan. For there is much that Delhi and Tokyo could do together in meeting their common security challenges.**

3.7. India and Australia, from Divergence to Convergence

Why in News?

- Leaders from India and Australia are meeting in New Delhi today (September 6) for the fifth round of the most important bilateral Track 1.5 dialogue.
- It is widely recognized that Canberra's relationship with New Delhi is among the most important and critical for the future of the Indo-Pacific.

A gradual change:

- When the dialogue started, both the countries recognized that for most of the 20th

century, **India and Australia rarely had a meaningful conversation.**

- The long shadow of the Cold War, **India's autarkic economic policies,** the White Australia policy, Canberra's decision **not to transfer uranium to India,** and other factors had **kept the two countries apart for several decades.**
- Today, few countries in the **Indo-Pacific region** have more in **common in both values and interests than India and Australia.**
- Apart from being two English-speaking, multicultural, federal democracies that believe in and respect the rule of law, both have a strategic interest in ensuring a balance in the Indo-Pacific and in ensuring that the region is **not dominated by any one hegemonic power.**
- **Indians are today the largest source of skilled migrants in Australia** and the economic relationship, already robust, could potentially be transformed if the promise of the new **Australia-India Economic Cooperation and Trade Agreement (ECTA) is realized.**

Why Australia-India Leadership Dialogue is critical?

- Leaders will have **a robust conversation about the relationship and the ways in which both nations can carry it forward.**
- **The Australia-India Leadership Dialogue is critical** because ideas matter in a relationship as much as transactions and negotiations do.
- **Stable, strong, and sustainable relationships** are built not just on the possibility of immediate gains, but on the promise of the future.
- **In other words, the relationship is far too important to be left to the two governments alone.**
- **Governments matter tremendously, but forums such as these can provide the space and the ambiance that can infuse new ideas to generate new energy into the relationship.**

Seeds that will germinate:

- The Leadership Dialogue is also important because **people and real connections matter.**
- **Technology and the cyber world** can blind us to believing that face-to-face conversations are outdated.
- In this Leadership Dialogue, India still believes in the power of personal and collective communication in a shared physical space.
- From a broad range of business executives, government officials, and scholars, eager to increase their understanding of how each country approaches shared challenges.
- **From cyber threats and artificial intelligence (AI) governance** in a geopolitically turbulent region, how they will **decarbonize economies and help each other develop trusted supply chains** through critical minerals cooperation, to **India's tech talent can help address Australia's skills gaps through migration.**
- **As the premier forum for informal diplomacy** between Australia and India, **backed by Australian-founded tech company Atlassian** and its co-founder Mike Cannon-Brookes, outcomes that grow the relationship through emerging technology are high on the agenda.
- **Australia wants to find alternative markets to China and diversify supply chains for its critical minerals.**
- As a country with reserves of **about 21 out of the 49 minerals identified in India's critical minerals strategy,** Australia is well placed to serve India's national interests required for India's carbon reduction program.

Conclusion:

- While this is the **first Dialogue since 2019**, due to the novel coronavirus pandemic having kept both countries apart, as two nations India-and Australis have only grown closer together through enhancing our shared framework for regional security, promoting business and commercial opportunities, and strengthening our people-to-people links, bilaterally and multilaterally.
- As India marks 75 years of Independence and surpasses the United Kingdom as the fifth largest global economy, the momentum around this fifth Australia-India Leaderships Dialogue and the bilateral fruit it may bear should not be underestimated.

3.8. Kyrgyzstan--Tajikistan Conflict

Why In News?

- Recently, nearly 100 people have been killed and scores injured in violent border clashes between Kyrgyzstan and Tajikistan.

More about the news

- **About:**
  - A ceasefire, brokered by Russia, was recently agreed upon after the clashes.
  - The two landlocked countries share a 1,000-km long border, a large part of which is disputed.
    - While regular talks have tried to resolve the issue, one of the crucial points of disagreement remains over the map which should be used for demarcation purposes.
  - It is important to note that **both Kyrgyztan and Tajikistan are Russian military bases**.
    - The border dispute between the nations is a part of the **Russia-led Collective Security Treaty Organisation (CSTO)**.
- **History of the region:**
  - Historically, the **Kyrgyz and Tajik populations enjoyed common rights over natural resources**.
  - The issue of the delimitation of the border is a relic of the Soviet era.
  - The borders of the two republics were demarcated under Joseph Stalin's leadership.
- **Issue:**
  - There have been flare-ups in the past as well over **sharing water and land resources**.
    - The current clashes are replaying old pre- and post-Soviet era legacies.
  - **Issue of livestock:**
    - The creation of the Soviet Union saw the large-scale redistribution of livestock to collective and state farms.
    - The Tajik territory saw their livestock increase, and with scarce grazing land, agreements were signed between the two populations over the **utilization of Kyrgyz territory by the Tajiks' livestock.**
  - **Water resources:**
    - The collapse of the Soviet Union and the subsequent dissolution of the then-existing water and land agreements saw the **creation of multiple smaller independent farms**,
    - This led to a marked increase in water consumption patterns among the farmers.
    - Both countries share multiple water channels with undulating trajectories and flow, which upset equitable access to water on both sides.
    - As a result, small-scale conflicts occur practically every year during the crucial irrigation period.
  - **Ethnic and religious diversity:**
    - Both countries, while sharing a closely intertwined historical past, have had differing internal dynamics since coming into statehood.
    - One can trace their instability to transnational challenges and **internal ethnic strife.**
    - The ethnic and religious diversity of Central Asia made land borders a fraught socio-political issue even under the Soviet regime.
    - People of one ethnic grouping often resided in settlements in the territory that another major community claimed its own. Such is the complex border between Tajikistan and Kyrgyztan.
  - **The immediate cause of the current flare-up:**
    - The ideological basis of the current set of clashes is reinforced by **developmental issues,** thus providing a fertile ground for the **entire geopolitical scenario.**
    - The conflict was further highlighted by incidents which saw **groups from either side planting trees** in **disputed**

areas and engaging in a **physical confrontation** using **agricultural equipment as weapons**.

- **Frozen conflicts in the region:**
  - **Frozen conflicts:**
    - In international relations parlance, conflicts that ended in a stalemate or without a peace treaty are known as frozen conflicts.
    - The frozen conflicts of the post-Soviet era are increasingly threatening regional peace.
  - **Armenia and Azerbaijan:**
    - Recently clashes also broke out between Armenia and Azerbaijan.
  - **Ferghana valley:**
    - Regions like **Ferghana valley** continues to be a **site of struggle and frequent violent outbursts**, with the location consisting primarily of Tajiks, Kyrgyz, and Uzbeks, who have historically shared common sociological specificities, economic activities, and religious practices.

Way ahead

- The path to resolution of the conflict will require warring groups to agree upon a common map.
- The international community will have to make efforts to solve the dispute by involving elders in the communities, as historically, elders have been used to resolve conflicts.
- The informal small-scale governance mechanisms would also have to be further strengthened through a concerted effort by the respective countries to stabilise the geopolitical dynamics.
- Stability in the region is crucial for Russia to project itself as the world power it seeks to become.

4. Science & Technology

4.1. Cyber threat to Digital/Mobile banking

Why In News?

- Recently, **Global cybersecurity firm Kaspersky** warns of an **increase in cyberattacks** on Android and iOS devices in the **Asia Pacific region**.

About the recent survey

- **According to a 2020 Statista survey of five thousand odd households across 25 States in India, two-third respondents said they had a smartphone**.
  - Of these, half said they sent and received money digitally, and about 31% said they had a mobile app for banking.
  - Nearly 14% said they used their mobile phones for banking-related purposes.
- **This number further jumped as the COVID-19 pandemic made a lot more people switch to digital modes of payment instead of transacting with cash.**
  - This acceleration brings along with it vulnerability: an increased threat of cyberattacks on mobile devices.

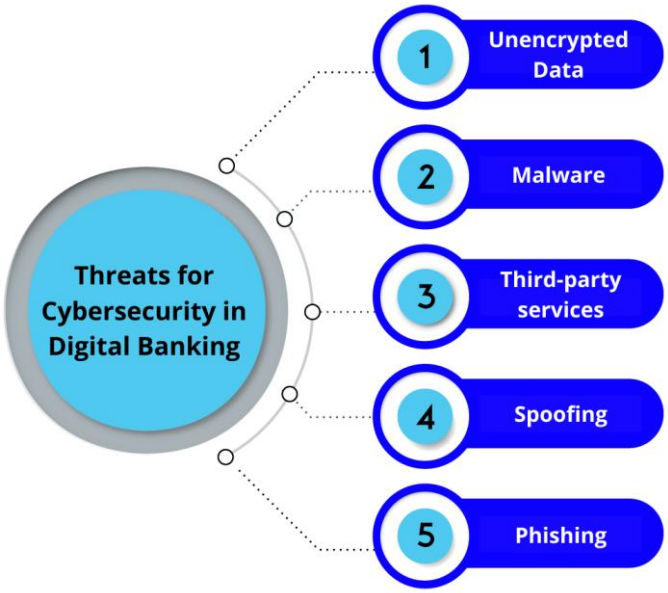
What is the need for Cybersecurity in digital banking?

- **Protecting the customer's assets**
  - The primary purpose of Cybersecurity in digital banking is to protect the customer's assets. As people go cashless, more and more activities or transactions are done online.
- **Recovering the data or information**
  - Cybercrimes in digital banking not only affects the customer, but it also affects the banks while they attempt to recover the data. The banks may require spending a

considerable amount of money to recover the data or information.

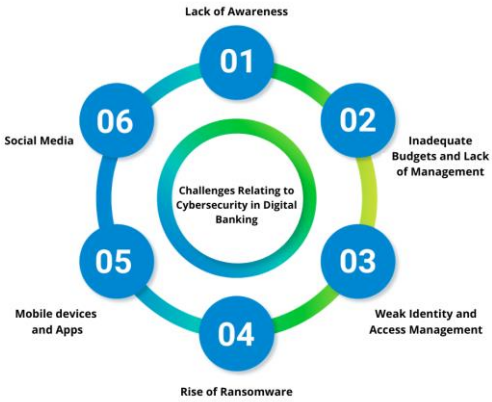
- **Trust**
  - A strong Cybersecurity is a must for banks as data breaches may make it tough to trust financial institutions. It may cause severe problems for banks.

Threats for Cybersecurity in Digital Banking



- **Unencrypted data**
  - It is one of the common threats faced by the banks where the data is left unencrypted, and hackers or cybercriminals use the data right away, thereby creating severe issues for the financial institution.
- **Malware**
  - End to end-user devices like computers and mobile devices are mostly used for conducting digital transactions; therefore, it must be secured.
- **Third-party services**
  - Many banks and financial institutions use third-party services from other vendors to serve their customers better. However, if these vendors don't have a tight Cybersecurity measure, then the bank that has employed them will suffer badly.
- **Spoofing**
  - The cybercriminals will impersonate a banking website's URL with a website that is similar to the original one and functions the same way and when the user enters his or her login credentials that login credentials are stolen by these criminals and use it later.
- **Phishing**
  - Phishing means the attempt to get sensitive information such as credit card details etc. for malicious activities by disguising as a trustworthy entity in an electronic communication.

What are the challenges relating to Cybersecurity in digital banking?



Lack of Awareness

- Awareness among the people regarding Cybersecurity has been quite low, and not many firms invest in training and improving the overall Cybersecurity awareness among the people.

Inadequate Budgets and Lack of Management

- Cybersecurity is accorded low priority; therefore, they are most of the time neglected in the budgets.

Weak Identity and Access Management

- Identity and access management has been the fundamental element of Cybersecurity and especially in these times when the hackers have the upper hand; it may require only one hacked credential to enter into an enterprise network.

Rise of Ransomware

- Cybercriminals are starting to use methods that avoid them to be detected by endpoint protection code that focuses on executable files.

Mobile devices and Apps

- Mobile phones have become an attractive target for hackers as we see a rise in mobile phone transactions.

Social Media

- Adoption of social media has led to hackers to exploit even more. Less aware customers put out their data for anyone to see which is exploited by the attackers.

Trojans let loose

- One mobile banking trojan, called **Anubis**, has been targeting Android users since 2017.
- **Roaming Mantis** is another prolific malware targeting mobile banking users.

Way forward

Integrated Security

- Moving towards integrated security where all components work and communicate together is more beneficial.

Machine Learning and big data analytics

- Analytics is an essential element in leveraging cyber resilience. A new generation of security analytics has come out which can store and assess a huge number of security data in real-time.

Understand the importance of security

- The mindset where security is seen as a cost must make way for security as a plus. The risk of security threats and its impact must be analyzed then only the importance of security can be truly understood.

Invest in Next-generation endpoint protection

- Banks and institutions must invest in technologies that can recognize and eliminate the practices and actions used in exploits.

Protect information

- Today the data is stored in different devices and in the cloud, so every system that holds the sensitive data must be protected with security.

Consumer Awareness

- It is one of the important aspects where the consumer must be made aware of not disclosing their banking credentials to anyone.

Anti-virus and Anti-malware applications

- A firewall may increase protection, but it won't stop an attack unless updated anti-virus and anti-malware applications are used.

4.2. NASA's Artemis I Mission

Why in News?

- NASA tests new moon rocket, 50 years after Apollo. The 322-foot rocket will lift off from Kennedy Space Centre.

Context:

- The American space agency NASA has **rolled out its giant new Moon rocket** to prepare it for a maiden flight.
- After separating from SLS (Space Launch System), the capsule will **deploy solar arrays and begin a multi-day journey to the moon** – departing from Earth's orbit.
- NASA plans to fly **Orion as close as 60 miles above the moon's surface,** before moving into a wide orbit around the lunar body.
- Artemis I will travel about **1.3 million miles over the course of 42 days,** spanning several phases.
- To return, Orion will use the **moon's gravity to assist it in setting a trajectory** back into Earth's orbit.
- Orion is expected to splash down in the **Pacific Ocean – off the coast of San Diego,** California – where a team of NASA and Department of Defense personnel will recover the capsule.

Space Launch System rocket (SLS):

- NASA's Space Launch System, or SLS, is a **super heavy-lift launch vehicle** that provides the

foundation for human exploration beyond Earth's orbit.

- With its unprecedented power and capabilities, SLS is the **only rocket that can send Orion, astronauts, and cargo directly** to the Moon on a single mission.
- Offering more payload mass, volume capability, and energy, SLS, the world's most powerful rocket, can **carry more payload to deep space than any other vehicle.**
- The SLS rocket is designed to be evolvable, which makes it possible to fly more types of missions, **including human missions** to the Moon and Mars and robotic scientific missions to places like the Moon, Mars, Saturn, and Jupiter.
- SLS is designed for **deep space missions and will send Orion or other cargo to the Moon,** which is nearly 1,000 times farther than where NASA's International Space Station resides in low-Earth orbit.

Objective of Artemis I mission:

- The primary operation goal of the mission is to **assure a safe crew module entry, descent, splashdown, and recovery.**
- Artemis I is an uncrewed flight test that **will lay the foundation for a sustained long-term presence on** and around the Moon.
- It will help us to get a feel for what **astronauts will experience on future flights.**
- Artemis I is an important step in **NASA's long-term goals for space exploration,** paving the way for us to land the first woman and the first person of colour on the Moon, explore more of the lunar surface than ever before — and prepare to travel on to Mars.

What's next?

- There's a lot more to be done before **astronauts step on the moon again.** A second test flight will send four astronauts around the moon and back, perhaps as early as 2024.
- A year or so later, **NASA aims to send another four up,** with two of them touching down at the lunar south pole. Orion doesn't come with its own lunar lander like the Apollo spacecraft did, so NASA has hired Elon Musk's SpaceX to provide its **Starship spacecraft for the first Artemis moon landing.**

4.3. GAGAN Navigation System

Why In News?

- Recently, the government has exempted **Boeing 787 aircraft** in India from complying with **indigenously developed GAGAN navigation system** until December 2025 as the aircraft manufacturer has said that it involves a major design change.

About

Civil Aviation Policy 2016:

- It said that all other aircraft have to comply with GAGAN.
    - The deadline for aircraft in India to comply with GAGAN was January 1, 2019 which was first extended to June 30, 2020 and then to July 1, 2021.

Need?

- Government wants Indian carriers to start using GAGAN so that it will help **increase the scope of the navigation system**.

GAGAN (GPS Aided GEO Augmented Navigation)

- **Development:**
    - GAGAN is an Indian Satellite Based Augmentation System jointly developed by the **AAI** and the **Indian Space Research Organisation**.
- **Aim:**
    - Its main aim is **passengers' safety** by guiding pilots to precision landing on runways.
    - **It is the first such system developed for India and neighbouring countries** in the equatorial region.
- **GAGAN uses a system of ground stations:**
    - Based in Delhi, Guwahati, Kolkata, Ahmedabad, Thiruvananthapuram, Bengaluru, Jammu and Port Blair to provide necessary augmentation to the GPS navigation signal.
    - **A network of precisely surveyed ground reference stations** is strategically positioned across the country to collect GPS satellite data.

- **The system will be interoperable with other international SBAS systems** and provide seamless navigation across regional boundaries.
- **The GAGAN Signal-In-Space (SIS)** is available through **GSAT-8 and GSAT-10.**
- **Other countries**
    - There are only **three other space-based augmentation systems** available in the world which include:
        - Wide Area Augmentation System in the U.S
        - European Geostationary Navigation Overlay Service
        - Japan's Multi-functional Satellite Augmentation System.

Significance of GAGAN

- **Smaller airports will benefit:**
    - Once fully rolled out, it will make several smaller airports such as those in the North-East capable of having compliant aircraft land in low-visibility scenarios.
- **Poor weather and low visibility:**
    - This new technology provides a substantial operational benefit in poor weather and low visibility conditions.
- **Tool to alert before natural disaster:**
    - AAI in coordination with Indian National Centre for Ocean Information Services (INCOIS) has implemented GAGAN Message Service (GMS) through which alert messages to fishermen, farmers, and disaster affected people will be sent on the occurrence of natural disasters, calamities, such as flood, earthquake etc.
- **Landing:**
    - GAGAN helps aircraft with guided landing at airports that do not have instrument landing systems for low-visibility operations or an aid where two radio beams provide pilots with vertical and horizontal guidance during landing.
- **Safety and Traffic management:**
    - It helps the aviation industry in maintaining safety with increased traffic and reducing the infrastructure needed on the ground.
- **Disaster management:**
    - It aids during natural disasters like floods and earthquakes by sending messages to affected people.
- **Other benefits:**
    - Besides aviation, it provides services in forest management, railway signalling, and scientific research for atmospheric studies, natural resource and land management, location-based services, mobile, and tourism.

Satellite-based augmentation system (SBAS)

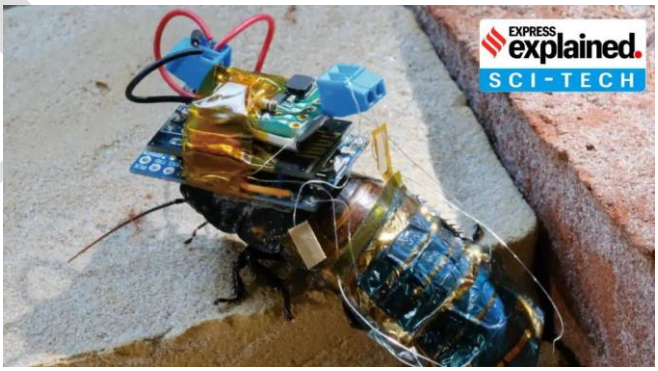
- **The SBAS is a navigation system**, which builds on the Global Navigation Satellite Systems **(GLONASS),** and **adds to the accuracy and integrity of these navigation tools.**
- **For aircraft operators, both civilian and military,** it means that pilots can land aircraft at smaller airports and airstrips using navigation guidance without expensive instrument-based landing systems being installed on the ground.

4.4. Cyborg Cockroaches

Why In News?

- An international team of researchers have devised a system that can create **cyborg cockroaches**, that are part insect and part machine.

About Cyborg cockroaches



- Cyborg cockroaches' movements are controlled by **tiny integrated circuits**.
- They will be able to conduct surveillance in procedures like urban search and rescue, environmental monitoring and inspection of areas dangerous to humans.
- By equipping the cockroaches with small wireless control modules, handlers will be able to control the **insect's legs remotely for long periods of time.**
- **Methodology:** The team used **Madagascar cockroaches,** which are not only the largest

species of cockroaches, reaching an estimated 6 cm, but are also known for **making hissing sounds when disturbe**d, which they make by expelling air from the openings on their back.
- The researchers also designed the system to be rechargeable, by powering it with a super thin 0.004 mm solar cell module that is installed on the dorsal side of the cockroach's abdomen.

4.5. Virtual autopsy

Why in News?
- Comedian Raju Srivastava's post-mortem was conducted using a novel technique called virtual autopsy.

What is virtual autopsy?
- Virtual autopsy or virtopsy is a new technique of post-mortem that does not include dissections.
- The post-mortem is done using high-tech digital X-rays and CT-scans.
- This technique requires lesser time when compared to the traditional method of post-mortem.
- This novel method is capable of detecting even minute fractures like hairline or chip fractures in bones along bleeding, which are signs of antemortem injuries (injuries received by body before death).
- This is not often possible in the traditional method of autopsy.
- Virtopsy also enables the accurate finding of the depth of foreign body, which is not often possible with conventional autopsy.
- The findings made by virtopsy can be documented in the form of X-ray films, which can be used as evidence in court.
- The disadvantage of virtopsy is that the lack of the use of physiological senses of an anatomical pathologist like smell, texture, and color due to the lack of direct contact with the cadaver.
- It is also difficult to be used in underdeveloped countries where advanced technology is not prevalent.
- However, it does away with the ethical disadvantages of the conventional autopsy as many cultures and traditions do not accept mutilation of body for the sake of autopsy.
- Currently, AIIMS Delhi is the only institute doing virtual autopsy in Southeast Asia for the past two years.

4.6. Nanoplastics in human food chain

Why in News?
- A new study published in the journal Nano Today revealed that nanoplastics travel up the human food web via plants, insects and fish.

More Details:
- Nonplastics are plastic debris particles that are smaller than 1,000 nanometre, which is equal to one billionth of a metre.
- Because of their miniscule size, nanoplastics are capable of passing through physiological barriers and enter different organisms through the food chain.
- These particles were detected and measured in organisms by researchers from the University of Eastern Finland.
- The researchers used a novel metallic fingerprint-based method to a model food chain that has three tropic levels.
- Tropic level is the position an organism occupies in the food chain.
- For this research, lettuce (primary producer), black soldier fly larvae (primary consumer) and an insectivorous fish (secondary consumer) were used.
- Researchers exposed lettuce plants to nanoplastics from commonly found plastic wastes in the environment – polystyrene and polyvinyl chloride nanoplastics – through contaminated soil.
- This lettuce was harvested and fed to black soldier fly larvae, which is used as a source of protein for children and cattle in many countries.
- The black soldier fly was then fed to the roach (fish), which is commonly found in fresh and brackish waters and sometimes consumed or used as a bait.
- From this experiment, researchers have found that nanoplastics from the contaminated soil have travelled from the lettuce plant to the fish.
- The nanoplastics stayed in mouth and gut of black soldier fly despite allowing it to empty it guts for 24 hours.
- This shows that 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.

5. Social Issues & Justice

5.1. Challenging the Special Marriage Act, 1954

Why In News?

- Recently, the Supreme Court dismissed a writ petition challenging provisions of the Special Marriage Act (SMA).

About the petition

- The petition challenged the **Constitutional validity of certain provisions** of the SMA under which couples seek refuge **for inter-faith and inter-caste marriages**.
- The writ petition has called these provisions violative of the right to privacy guaranteed **under Article 21** of the Constitution as they require couples to give **a notice of 30 days** before the **date of marriage** inviting objections from the public.
- The petition claims that the provisions contravene
    - **Article 14** on prohibition of discrimination on grounds of religion, race, caste and sex as well as,
    - **Article 15** on right to equality as these requirements are **absent in personal laws**.

More about the procedure of SMA & the controversial provisions:

- **Notice of 30 days:**
    - The SMA **requires couples getting married** under it to give a notice to the **Marriage Officer** 30 days before the date of marriage.
    - Such a notice is then entered into the **Marriage Notice Book** maintained by the Marriage Officer, which **can be inspected by "any person desirous of inspecting the same"**.
- **Displaying the notice & objections:**
    - These notices have to be also **affixed at a "conspicuous place"** in the office of **the Marriage Officer** so that anyone **can raise an objection** to the marriage.
    - 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 mental disorder** resulting in the **person being unfit for marriage** or **procreation**.
- **Inquiry procedure:**
    - The act also specifies the **inquiry procedure** to be followed **after an objection has been submitted**.

Issues & criticisms

- **Making personal information public:**
    - The provisions, by throwing the personal information of the individuals open to public scrutiny, **seriously damage one's right to have control over her or his personal information** and its **accessibility**.
    - By making the personal details of the couple accessible to everyone, the very right of the couple to be the decision makers of their marriage is being hampered by the state.
- **Misuse by anti-social elements:**
    - These public notices have been used by anti-social elements to harass couples getting married.

5.2. Atrocities Against SCs/STs

Why In News?

- The recent incident of a **crime against a Dalit boy** in **Rajasthan** highlights many **underlined issues**.
    - Two days before **India celebrated its 76th Independence Day**, a nine-year-old Dalit boy from Rajasthan died at a

hospital after allegedly being thrashed by his school principal.

Crimes and issues faced by SCs/STs:

- **Cases in Rajasthan:**
  - Despite the **massive presence of the SC/ST population**, Rajasthan ranks fourth — after Uttar Pradesh, Bihar and Madhya Pradesh — in the country in cases of atrocities against the community.
  - As per data of the **National Crime Records Bureau**, the State recorded over **7,000 cases of crimes and atrocities against SC/ST** community members in **2020**.
- **National level:**
  - Cases registered for **crime against SCs rose** from 42,793 in 2018 to over 50,000 in 2020, and of crime against STs from 6,528 to 8,272 in the same period.
    - The figures are sourced from the **National Crime Records Bureau**.
- **Historical marginalisation:**
  - Scheduled castes and scheduled tribes have been, for centuries, the most **neglected, marginalized and exploited** people in India.
  - These communities suffered from extreme **social, educational, and economic backwardness** arising out of:
    - Age-old practice of un touch ability
    - Primitive agricultural practices,
    - Lack of infrastructure facilities and
    - Geographical isolation.
- **Denial of basic rights:**
  - In states like **Rajasthan**, the communities still do not get their basic **rights and freedom**.
    - They are **denied simple rights** like growing a mustache, wearing particular dress or riding horse.
    - In few districts in Rajasthan each community has a **separate cremation ground**.
  - People feel that such actions mean **no discrimination** and claim that it is the **custom**.

Provisions safeguarding the rights of SCs and Sts in India

- The Indian Government has enacted laws to remove negative discrimination and has also brought in many reforms to improve the quality of life for the weaker sections of society. Few among them are:
  - Constitutionally guaranteed **fundamental human rights**
  - **Abolition of 'untouchability'** in 1950
  - Provision of **reservations in places like educational institutions, for employment opportunities** etc.
  - **Establishing social welfare departments** and **national commissions** for the welfare of scheduled castes and tribes.

- **Right to Equality**
  - **Articles 14, 15, 16, 17 and 18 of the Constitution of India** highlight the Right to Equality in detail.
  - It refers to equality in the eyes of law, discarding any unfairness on grounds of **caste, race, religion, place of birth sex**.
  - It also includes equality of prospects in matters of **employment, abolition of untouchability** and **abolition of titles.**

6. Health

6.1. India's Public Health Crisis and Role of Caste and Gender Inequalities

Background:

- In the aftermath of COVID-19, public health in India and associated challenges, and issues have been subjected to much debate.
- Recently, even the Prime Minister had exhorted countrymen to fight malnourishment.
- However, caste-based societal hierarchy and gender discrimination indirectly contribute to poor public health.

Public infrastructure and Social equalities: The correlation

- Strong Public infrastructure can be built through social equality and societal change and 19th century Western societies are examples of it.
- These **societies focused on two core areas: Public sanitation and Public solidarity** which means the coming together of social groups based on "shared concern" which was good for everyone.
- This socio-political change broadly took place through
    - Endogenous processes of social change.
    - Working-class struggles towards better working and living conditions
- It led to a **reorganization of urban spaces and secularization of knowledge** production and its application to society.
- Thus it is believed that the 19th century was a period of the **'Great Sanitation Awakening' in Britain,** which led to a dramatic fall in mortality due to communicable diseases.
- The mortality was reduced without the use of medicines and antibiotics underlines the importance of the shared societal efforts in public health improvement.

Public health and effect of social status of women:

- **A recent research (The effect of low social status of women:** V. Ramalingaswami and ors.) shows that child malnutrition predominates in South Asian countries vis-a-vis Sub Saharan countries.
- According to the research, **South Asia's high rates of child malnutrition is not due to poverty.**
- They argued that it was the **low social status of women** that was responsible for India's dismal record on nutrition.
- In fact, the recent improved performance of Bangladesh, a south Asian country, has highlighted the **significant role played by gender equality and improved status of women.**

The caste system and a failed nation?

- Although the **Caste system harms everyone,** Health research in India largely labels poverty, malnutrition and diseases as the **causes of miserable social indicators and ignores the impact of caste.**
- **The ideology of caste,** especially its dual principles of purity and pollution, has grave implications for public sanitation.
- **The caste system** has ostracized some castes as **"ritually impure",** who are forced into sanitation work.
- Thus the other castes stay far away from working towards public cleanliness and this way basic civic sense is discouraged, even stigmatized, in a caste society.

How does the caste system hinder "Public Spirit" and "Common Good"?

- **The Caste system works against social endosmosis** i.e. the possibility of various channels of exchange of ideas, values, and practices between social groups. The Caste

system enforces "social isolation" for oppressed groups.
- Thus these groups are blocked out of social communication, **resulting in loss of empathy** and ethical responses from other castes.
- The caste system has **percolated deep into the society** that even the most progressive and scientific-minded individuals who are socialized in caste will not find anything wrong in practices such as manual scavenging.
- It resists the interests of oppressed castes as well **prevents the elite sections** from developing feelings of mutual trust and fellowship in society which is essential for a sanitation revolution.
- Thus the **public spirit is lost** as the core tenet of the public system "caring for others translates into caring for oneself" is not found in a caste society.

The twin challenge of caste and gender inequality:

- **The Indian society is plagued with a caste system** which is coupled with gender discrimination.
- This coupling is largely responsible for prevalence of this system even in today's times because
    - The **rationale of control over women is to maintain the caste purity** thus promoting gender inequality.
    - On the same lines even today women have **limited control over decisions** regarding their own bodies, such as sexuality, choice in marriage or childbirth
    - **Violence against women takes varied forms and 'honour killings'** are as much about caste/clan as they are about gender.
- **India has one of the lowest female labour force participation rates in the world**, comparable to some west Asian and north African regions.

Way forward:

- **The Joint prevalence of Caste and Gender inequality** is the biggest hurdle in the inculcation of public spirit and public health concerns arising out.
- It is **impossible to completely insulate oneself** from the larger society but the absence of a feeling of belonging to the same 'public' in India needs to go which requires
    - **Urgent need of socio-political and scientific revolutions** against caste inequalities such as manual scavenging.
    - **Promoting gender equalities in all spheres of society.**
- During the COVID pandemic in October 2021, the New York City Board of Health declared racism a "public health crisis".
- Thus if **public health deteriorates then everyone is harmed** which is evident from COVID-19 pandemic and seeing the impact of gender and caste inequalities we need to declare caste and gender inequality a public health crisis in India so that urgent actions can be taken to overcome them.

6.2. CRISPR Solution

Why in News?

- In the 10 years since it was developed, the genome-editing technology called CRISPR has begun to deliver on the nearly unlimited potential that scientists say it has to improve the quality of human life.

The CRISPR technology:

- CRISPR is short for **Clustered Regularly Interspaced Short Palindromic Repeats,** which is a reference to the **clustered and repetitive sequences of DNA found in bacteria,** whose natural mechanism to fight some viral diseases is replicated in this gene-editing tool.
- Its mechanism is often compared to the **'cut-copy-paste'**, or 'find-replace' functionalities in common computer programmes.
- **A bad stretch in the DNA sequence,** which is the cause of disease or disorder, is located, cut, and removed — and then replaced with a 'correct' sequence.
- And the tools used to achieve this are not mechanical, but biochemical — specific protein and RNA molecules.
- The **technology replicates a natural defence mechanism in some bacteria** that use a similar method to protect themselves from virus attacks.

- **CRISPR-based therapeutic solutions** are not in the form of a pill or drug. Instead, some cells of every patient are extracted, the genes are edited in the laboratory, and the corrected genes are then re-injected into the patients.

Technology in action:

- The first task is to **identify the particular sequence of genes** that is the cause of the trouble.
- Once that is done, an **RNA molecule is programmed** to locate this sequence on the DNA strand, just like the **'find' or 'search' function on a computer.**
- After this, a **special protein called Cas9,** which is often described as **'genetic scissors',** is used to break the DNA strand at specific points, and remove the bad sequence.
- A DNA strand, when broken, has a natural tendency to re-attach and heal itself.
- But if the auto-repair mechanism is allowed to continue, the bad sequence can regrow. So, scientists intervene during the auto-repair process by supplying the correct sequence of genetic codes, which attaches to the broken DNA strand.
- It is like cutting out the damaged part of a long zipper and replacing it with a normally functioning part.
- The entire process is programmable, and has remarkable efficiency, though chances of error are not entirely ruled out.

Possibilities it presents:

- **Permanent cure for incurable genetic disorders:**
    - **A vast number of diseases and disorders are genetic in nature** — that is, they are caused by unwanted changes or mutations in genes.
    - These include common blood disorders like sickle cell anaemia, eye diseases including colour blindness, several types of cancer, diabetes, HIV, and liver and heart diseases. Many of these are hereditary as well.
    - This technology opens up the possibility of finding a permanent cure to many of these diseases.
    - This is also true for the deformities arising out of abnormalities in gene sequences, like stunted or slow growth, speech disorders, or inability to stand or walk.
- **Specific solution for every disorder:**
    - CRISPR is just a platform; a tool to edit gene sequences. What is to be edited, and where, is different in different cases?
    - Therefore, a specific solution needs to be devised for every disease or disorder that is to be corrected.
    - The solutions could be specific to a particular population or racial group since these are also dependent on genes.
- **Clinical trials:**
    - Over the last three years, several such solutions have been undergoing clinical trials.
    - These mainly **pertain to blood disorders, diabetes, inherited eye diseases, and some kinds of cancers.**
    - Japan has already approved the commercial cultivation of a tomato variety that has been improved using CRISPR-based intervention.

The ethical dilemma:

- **Misuse of the technology:**
    - Because of CRISPR's power to induce dramatic changes in an individual, scientists, including the main developer Doudna, have been warning of the potential for misuse of the technology.
- **Designer baby:**
    - In 2018, a Chinese researcher disclosed that he had altered the genes of a human embryo to prevent the infection of HIV. This was the first documented case of creating a 'designer baby', and it caused widespread concern in the scientific community.
- **Changes in the embryo pass on to future generations:**
    - Preventive interventions to obtain special traits are not something that scientists currently want the technology to be used for.
    - Also, because the changes were made in the embryo itself, the newly acquired traits were likely to be passed to future generations.
    - In the case of therapeutic interventions, the changes in genetic sequences remain with the individual and are not passed on to the offspring.

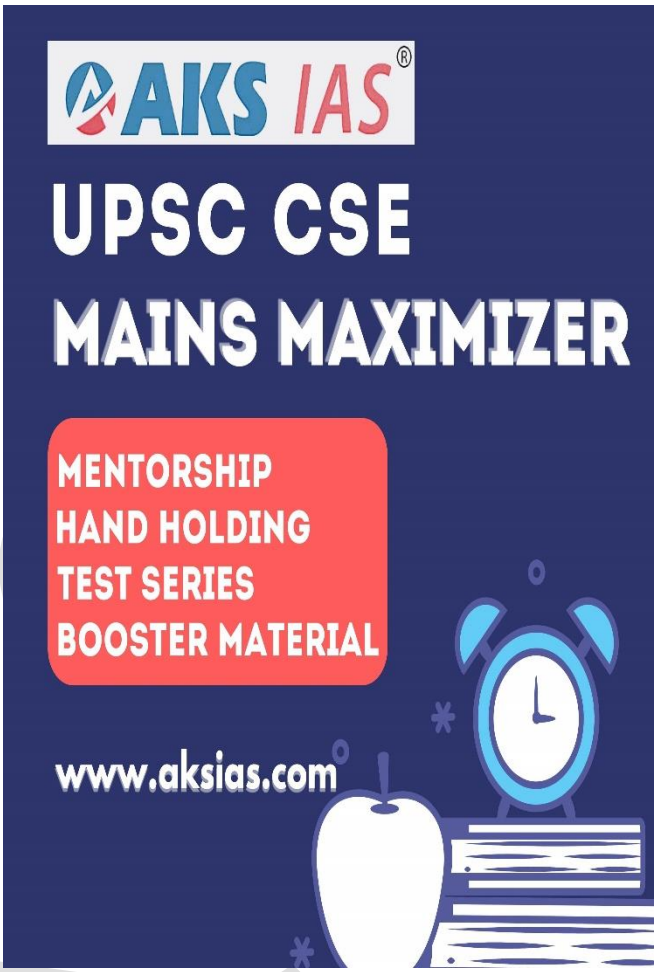
- **Precision:**
    - Though the **technology is fairly accurate**, it is not 100 per cent precise and could induce a few errors as well, making changes in other genes. This has the possibility of being inherited by successive generations.

India's efforts:

- Last year, the Indian government approved a f**ive-year project to develop this technology to cure sickle cell anaemia** which mainly afflicts the tribal populations of the country.
- In India, Debojyoti Chakraborty and Souvik Maiti at **CSIR's Institute of Genomics and Integrative Biology have indigenously developed a CRISPR-based therapeutic solution for sickle cell anaemia, which is now being readied for clinical trials.**

Conclusion:

- **CRISPR technology has undoubtedly revolutionised various sectors such as health care, agriculture, energy, etc.**
- Concerned authorities should formulate and authorize laws and regulations that permit the safe and ethical use of this emerging technology for basic research and clinical purposes.



7.education

7.1. Social, Emotional, and Ethical (SEE) Learning

Why in News?

- Social, emotional and compassion literacy is a key pathway for India's development.

Context:

- Traditional Indian learning systems focused on creating well-rounded individuals by developing the heart (compassion and love) and mind (cognitive development).
- Sadly, literacy is now viewed largely as acquisition of language skills and numeracy, when in today's strife-ridden world, values of compassion, empathy and love are urgencies to be developed at an early stage in learners who can contribute to the betterment of society.
- Re-imagining literacy as it existed in the traditional Indian learning system, in the context of today's times, thus becomes imperative.

Social, Emotional, and Ethical (SEE) Learning:

- Social, Emotional, and Ethical (SEE) Learning is an innovative new-age literacy model involving teaching-learning methods that encourage the development of the heart (compassion and love) and mind (cognitive development) together.

- SEE Learning provides educators with the tools they need to foster the development of emotional, social, and ethical intelligence for students and themselves.
- SEE Learning represents the state of the art in education by enhancing SEL programming with key additional components, including:
    - attention training
    - compassion and ethical discernment
    - systems thinking
    - resilience and trauma-informed practice
- This program provides educators with a developmentally staged curriculum consisting of easy-to-implement lessons, the conceptual framework used to design the curriculum, and resources for educator preparation and development.
- SEE Learning empowers students to engage ethically as part of a global community and provides educators with the tools to support student well-being.

Why it is Important:

- Research has shown that **teaching-learning methods based on common sense, experience and scientific** findings can cultivate key values like compassion, love and empathy.
- It can inculcate **pro-social capabilities, interpersonal abilities and emotional resilience** in children in their early learning stages, all of which are powerful levers to create caring young individuals.
- This will enable them to manage their emotions, demonstrate compassion and empathy, form healthy relationships, navigate life situations and go on to become nation-builders.
- Additionally, ethical literacy can spark an inner recognition of the interdependence of life, integrity and humility, and of the fact that we exist in this world not only for ourselves but for others.
- This awakening of the self is **'Sewa Bhaav'** in its purest form and will go a long way in making India a land of equal opportunity, harmony and peace.

Government Initiative:

- **National Education Policy (NEP) 2020:**
    - National Education Policy (NEP) 2020 has **recognized the pressing need of Social, Emotional, and Ethical (SEE) Learning.**
    - **It will create a new system that is aligned with the aspirational goals of 21st century education,** including Sustainable Development Goal 4, while building upon India's traditions and value systems.
    - The NEP lays particular emphasis on the development of the creative potential of each individual.
- **State government Collaboration with University:**
    - Through its collaboration with **Emory University, Piramal Foundation has collaborated** with the governments of Rajasthan and Odisha to implement compassion-based teaching-learning methods.
    - As a consortium partner of Project Sampoorna, it also supports **the government of Jharkhand to implement this form of literacy.**
    - The governments of Delhi and Uttarakhand are also implementing such methods, with encouraging outcomes. This testifies to the growing acceptance that a **truly transformative change can be enabled by developing well rounded, compassionate individuals.**

Way forward:

- The time has come for **literacy re- imagined** this way to find its rightful place in school education, as we move away from the standard narrative that equates literacy with language and numeracy to establish a counterfactual narrative that **emphasises social, emotional and compassion literacy.**
- This calls for all key players - **governments, social sector organizations and corporate India - to help this new narrative take root**. This will lead to lasting change, bringing us closer to our vision of the country and help achieve our Sustainable Development Goals.
- Nothing is more important in **our education system than nurturing compassion-literate learners, imbued with Sewa Bhaav,** who will evolve into leaders of tomorrow committed to the country's development. Our future depends on them.

7.2. India Needs More Public Investment in Higher Education

Why in News?

- Recently, the Union Minister of Education told the Lok Sabha that people should let go of the idea that universities must be funded only by the government thus underscoring the Government's stand over private funding in the Education Sector.

Background

- It also emphasizes on the General Financial Rules of 2017, which encourage all autonomous bodies to maximize generation of internal resources and attain self-sufficiency.
- The remarks by the Education Minister are in contradiction with that of the Union Home minister who stressed on the need for a public education system in a vibrant democratic society while inaugurating some education and skill development-related initiatives.

The National Education Policy's (NEP's) vision

- The **NEP 2020** envisages **to promote increased access, equity, and inclusion** through a range of measures, including greater opportunities for outstanding public education.
- It also provides an assurance that the autonomy of public institutions would be backed by **adequate public funding.**
- The NEP underlines that the previous targets of public expenditure on education of about **6% of GDP envisaged by the 1968** policy, reiterated in the 1986 policy and reaffirmed in the 1992 review of the policy **were not achieved.**
- It also endorsed a substantial increase in public investment by the Central and State governments **to reach 6% of GDP** at the earliest which is
    - Extremely critical for achieving **the high-quality and equitable public education** system that is truly needed for India's future economic, social, cultural, intellectual progress and growth.

Public Expenditure in Education: Data and Statistics

- The National Education Commission, also known as the Kothari Commission, precursor to First Education Policy, had suggested **2% of GDP expenditure on Education.**
    - But the expenditure on higher education by the Centre and the States taken together decreased from **0.86% of GDP in 2010-11 to a measly 0.52% in 2019-20 (Budget Estimates).**
    - The Centre's expenditure on higher education dropped from **0.33% of GDP in 2010-11 to a mere 0.16% in 2019-20 (BE).**
- Despite an increase of **almost 3 times in Government's Revenue** and Total receipts in the last decade the **decline in public expenditure** on education is a cause of concern.
    - Total receipts increased from ₹13.07 lakh crores in 2011-12 to ₹39.44 lakh crore in 2022-23 (BE).
    - Union government's expenditure on higher education as a percentage of revenue receipt saw a **decline from 2.60% in 2011-12 to 1.85% in 2022-23 (BE).**
    - As a percentage of the total receipt, the allocation for **higher education** fell from **1.49% to 1.04%** during the last decade.

Consequence of privatization

- Higher education in India is **already highly privatized** and most of the private higher education institutions are run on a self-financed basis and they aim to recover costs and profits.
- Taking a cue from the private sector, the public sector has also been rooting for practices such as
    - The thrust for resource mobilization and internal revenue generation
    - Cross-subsidization, resource use efficiency and cost reduction.
    - Accelerated cost recovery and enhanced user charges.

- This trend will lead to a **substantial increase in fees and other charges from students** and this would lead to skewed educational status in the society because the poor won't be able to afford such high costs.
- Also the financing through Savings and Bank Borrowings can only help the elites and poor won't be deprived of the opportunities.

Way Forward

- The NEP 2020 envisages enrolment in higher education to be nearly double by 2035
    - But the fact that the **social and economic elites,** the rich and the affluent, have **already crossed a gross enrolment ratio of 100%.**
    - Therefore the future **growth in higher education has to come** from the socio-economically disadvantaged groups which is only possible when the poor get subsidized or free Higher Education.
- Despite a high poverty rate; under the NFSA about **62.5% of our population** have to be provided free ration to save them from destitution.
- Therefore such a majority who cannot afford food will be deprived of accessing higher education if the education is privatized.

Conclusion

- Higher education in India may have not performed with the best of results but still it has served the nation rather well.
- It has played a **critical role in sustaining the $2.8 trillion economy** that India has become today but for enhanced investment in higher education, our vision of a $5 trillion economy and the aspiration of becoming a high-income developed country will be impacted if education is privatized.
- Thus the need of the hour is that the **Governments should push for an enhanced Public expenditure** in the education sector specially the Higher Education and coupled with implementation of NEP in its true vision, the new structure can bring India at par with the leading countries of the world.

8. Agriculture

8.1. Stable Policy Vital for Robust Agri Value Chain

Why in News?

- The Ministry of Consumer Affairs, Food, and Public Distribution has recently invoked the Essential Commodities Act, 1955 to curb the surging tur prices.
- The stockholders of Tur Dal (pigeon pea) have to upload the weekly data of the stocks held by them on the portal of the Consumer Affairs department.

Why the act has been invoked?

- The government aims to protect the interests of consumers by preventing the traders from creating an artificial scarcity or restricting sales in an attempt to increase the price rise.
- The government is taking pre-emptive steps to ensure overall availability and controlled prices of pulses in the domestic as well as overseas markets to control any unwarranted price rise in the upcoming high demand festival months.

What are the factors leading to volatility in agro-commodity prices?

- The short-term volatility is influenced by factors such as:
    - Droughts and floods
    - Unusual variation in temperatures
    - Policy responses
    - For example, governments promoting oilseed production or banning exports.
- There are also increasing pieces of evidence of structural supply issues that are driving long-term volatility.

- The instability of agricultural commodities prices is systemic, given that agricultural production depends on the monsoon.
- This causes uncertainty around the pricing of agri-commodities and livelihoods of people dependent on Agri value chains, be it traders, corporates, processors, wholesale merchants, or retailers.

Do short-term measures like stock limits, ban on futures, etc., actually help in controlling the prices?

- A stable policy regime requires certain clearly defined mechanisms and processes that take into account the weather and related factors.
- It must not only inform the decision-makers about the sowing and cropping trends in a particular commodity, but also provide information on stocks in hand, the current and likely prices in the crop cycle, the likely yield/consumption pattern, etc.

Way Forward:

1. **Approval of WDRA regulation:**
    - The Warehousing Development and Regulatory Authority (WDRA) regulation needs to be approved in Parliament at the earliest for a stable and transparent regime.
    - This regulation will help bring transparency into the system.
2. **Mandating the WDRA registration of warehouses:**
    - If the government mandates that all warehouses exceeding a particular capacity need WDRA registration, the WDRA and government will know the stock-holding in all WDRA-approved warehouses.
3. **Promotion of eNWR:**
    - The government can utilise the WDRA provision to promote eNWR (electronic negotiable warehouse receipt) that can be traded on repositories and can be easily pledge financed by banks.
    - The eNWRs will be free from physical issues like tempering, fudging, mutilation, etc., and will eliminate possibility of multiple financing and frauds.
    - The eNWRs can save expenditure on logistics as well, because the stocks can be traded through multiple buyers without physical movements and can be split for partial transfer or withdrawal and with a proper record.
4. **Futures Contract:**
    - The futures contract also gives indication of expected yield, as the prices of contract might go up or down, depending on the indications from the field and the government can respond accordingly, rather than reacting in an ad hoc manner.
    - If the futures price is not as per expectations, the acreage might go down and the government would know in advance whether import or higher procurement price is essential to ensure increased planting.

Conclusion:

- A stable policy regime is the need of hour to ensure that the farmers and the value chain have capacity to withstand temporary shocks in the economy.
- **The WDRA system**, in conjunction with the existing tools like the commodities derivatives markets, regulated by SEBI , can provide the government with the tools to monitor the value chains in an efficient way.
- The combination would provide a reference price point to the farmers, on the basis of which they may decide on sowing a particular crop in the season.
- Further, the positions of stock in warehouses across the country and movement of commodities can be easily monitored to ensure that there is no undue cornering of commodities and profiteering by any section to take advantage of any perceived scarcity.

8.2. Crop Yield Increase with Precision Technologies

Why in News?

- Increasing crop yields has been the bane of every farmer. Farming communities worldwide have

researched, experimented, and discussed extensively what factors affect crop yield the most and how they can assure an increased crop yield per acre.

- Now, with a looming food security crisis, burgeoning world population, global supply chain disruptions, and dwindling natural resources, the concern for increasing crop yield has become global.

Precision Farming:

- **As old solutions** - more fertilizers and pesticides - become obsolete and new agrarian challenges surface, there are also new technologies and sciences to address and overcome these concerns.
- Among these **tech-driven solutions** is precision farming, a scientific approach to farm management that leverages high-tech sensors and analytic tools to optimize crop and soil health while ensuring profitability and sustainability.

Why precision farming?

- To increase agriculture productivity
- Prevents soil degradation
- Reduction of chemical application in crop production
- Efficient use of water resources
- Dissemination of modern farm practices to improve the quality, quantity, and reduced cost of production
- Developing favourable attitudes
- Precision farming changing the socio-economic status of farmers

How do Precision Technologies increase crop yield and agrarian performance?

- **Regular scouting, and monitoring:**
  - From sowing seeds to harvesting, numerous problems can arise on farmland that directly impacts crop yield.
  - A farmer with acres of fields cannot scout acre by acre as it is time-consuming, laborious, and ineffective.
  - Given how critical crop scouting is, precision farming provides farmers with innovative tools and technologies to monitor their crops.
  - These include in-field wireless sensors, aerial drones, and satellites that eliminate farmers' grunt work and provide them round-the-clock crop and field insights.
  - Consequently, farmers can monitor multiple crops and fields, follow their growth and health status and take timely interventions to increase crop yield.
- **Forecasting weather:**
  - **Weather conditions** greatly influence the development of plants and ultimately, crop yield.
  - Considering how climate change affects different regions across the globe, it becomes vitally important to forecast uncontrollable weather factors to take preventive measures.
  - **Precision technologies** offer weather insights such as humidity, temperature, wind speed, etc., along with accurate forecasts, enabling farmers to protect their crops from extreme weather conditions, decide on farming practices in advance and mitigate the damages.
  - Precision farming provides farmers with current, historical, and future weather analytics to make informed decisions and increase crop yield.
- **Optimizing irrigation, and fertilization:**
  - Just as much as the weather is crucial in determining the fate of crop yield, so are irrigation and fertilization. A surplus or deficit of either can significantly affect the crop yield.
  - Consequently, farmers who aim to increase their crop yield must deploy a streamlined irrigation and fertilizer application system.
  - Precision farming gathers insights from in-field sensors to analyse soil moisture, leaf wetness, crop growth, etc., and recommend to farmers when and how to irrigate their fields.
  - Precision technologies identify the areas that require soil fertilization more than others so farmers can use fertilizers selectively and maximize crop yield.
- **Testing soil condition, and fertility:**
  - Perhaps there is no other factor as crucial to crop yield as soil fertility.
  - Soil fertility influences a farmer's decision to grow one plant or other and its cost.
  - To increase their crop yields, farmers must closely monitor their soil condition and quality throughout the growing season.
  - Precision technologies employ wireless sensors that monitor soil health, such as pH levels, moisture, temperature, salinity, etc., to allow farmers to gain insights into soil fertility.

- Such a comprehensive analysis enables farmers to allocate minerals, fertilizers, and irrigation accordingly and maximize their crop yield.

- **Protecting from weeds, and pests:**
  - Agrarians cannot maximize their crop yield unless they minimize the impact of weeds, pests, or diseases.
  - A single weed or pest infestation can spread like wildfire from field to field if overlooked.
  - While physical inspection acre by acre can be a herculean task, precision farming allows farmers to sit back and supervise their crops from their screens.
  - Depending on the problem, farmers use several measures such as herbicides, insecticides, desiccants, fungicides, etc., to protect their crops and maximize their yield.
  - With timely area-specific alerts, farmers can protect their crops from weeds, pests, and diseases.

Drawbacks of precision farming

- High cost
- Lack of technical expertise knowledge and technology
- Not applicable or difficult/costly for small land holdings
- Heterogeneity of cropping systems and market imperfections

Conclusion:

- **As natural and manmade calamities** hover over the horizon, precision technologies can pave the way for profitable and sustainable farming practices, which are the need of the hour.
- With precision technologies, farmers can make the best of accurate allocation of resources, minimum agrarian efforts, and timely alerts and analytics to maximize crop yields and secure the future of future generations and the planet.

9. Environment

9.1. Battery Waste Management Rules, 2022

Why In News?

- Recently, the government notified Battery Waste Management Rules, 2022 to ensure **environmentally sound management** of waste batteries.

More about the rules

- **About:**
  - The new rules **replace** the **Batteries (Management and Handling) Rules, 2001**.
  - The new rules **cover all types of batteries** -
    - Electric Vehicle batteries,
    - Portable batteries,
    - Automotive batteries and
    - Industrial batteries.
- **Extended Producer Responsibility (EPR):**
  - The rules function based on the concept of Extended Producer Responsibility (**EPR**).
  - The **producers (including importers)** of batteries are responsible for the **collection and recycling/refurbishment** of waste batteries
  - They are also responsible for the **use of recovered materials** from **wastes** into new batteries.
- **Environmental compensation:**
  - On the principle of **Polluter Pays Principle**, environmental compensation will be imposed **for non-fulfilment** of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules.
  - **Funds under compensation:**
    - The funds collected under environmental compensation shall be utilised in the **collection and refurbishing** or **recycling** of uncollected and non-recycled waste batteries.

- **Recycling:**
    - EPR mandates that **all waste batteries** to be collected and sent for recycling/refurbishment, and its **prohibits disposal in landfills and incineration**.
        - Producers **can engage themselves** or authorise **any other entity** for the purpose.
    - The rules promote setting up of **new industries and entrepreneurship** in collection and recycling/refurbishment of waste batteries.
- **Online portal:**
    - The rules will enable setting up a mechanism and centralised online portal for the **exchange of EPR certificates** between **producers and recyclers/refurbishers** to fulfil the obligations of producers.

Significance

- **New technologies and investment:**

- **Mandating the minimum percentage of recovery** of materials from waste batteries under the rules will bring new technologies and investment in the **recycling and refurbishment industry** and create **new business opportunities**.

- **Recycling:**
    - Prescribing the use of a certain amount of recycled materials in making new batteries will **reduce the dependency on new raw materials** and **save natural resources**.
- **Effective implementation and compliance:**
    - Online **registration & reporting, auditing, and a committee for monitoring** the implementation of rules and **taking measures required for removal** of **difficulties** will ensure effective implementation and compliance.
- **Electric vehicles as a future:**
    - Transport sector in India is one of the **major contributors to CO2 emissions** and accounts for **one-third of the particulate matter emissions**.
    - To decarbonize the transport sector, **transition to clean mobility, led by electric vehicles, is paramount**.
        - **Electric mobility** represents a viable option to meet these commitments, while packed with innovative business solutions, appropriate technology, and support infrastructure.
    - With the promotion of electric vehicles, it is **required to regulate the disposal** of battery technology.

9.2. Getting India to Net Zero

Why In News?

- According to a recent report, to meet its goals of net zero emissions target by 2070, India will require an economy-wide investment of $10.1 trillion.

More about the report

- The report is recently released in **New Delhi** and it is named as **'Getting India to Net Zero'**.
    - **The report was released by:**
        - Former Australian prime minister **Kevin Rudd,** also the president of Asia Society Policy Institute,
        - Former UN Secretary-General and Global Green Growth Institute President & Chair **Ban Ki-moon**,
        - International Finance Corporation's Head and Director of Climate Business, **Vivek Pathak** and
        - Former Indian foreign secretary **Shyam Saran**.
- **Advantages of target achievement:**

- The report also says achieving net-zero by 2070 would boost annual GDP by up to 4.7% by 2036 and create as many as 15 million new jobs by 2047.

- **India's Nationally Determined Contribution (NDC) targets set in 2015:**
  - The targets are likely to be met early within the next few years through current policies, says the report.
- **Peak in emissions:**
  - The report said India could peak in emissions as soon as 2030.
- **Report suggestions:**
  - According to the report, further **policies**, especially to **boost renewables and electrification**, could make net zero possible **by mid-century**.
  - **Ending new coal by 2023** and **transitioning from unabated coal power by 2040** would be particularly impactful for reaching net zero emissions closer to mid-century.

Challenges

- **Failure of the developed countries:**
  - The **continued failure of the developed countries** to fulfill their **long-standing commitments on finance and technology** is expected to make even the current transitions a lot more difficult.
- **Environmental shocks:**
  - There are **changes in cropping patterns**; there are **floods** and a great need to make **agriculture resilient to these shocks**.
- **Global carbon budget:**
  - Limiting the increase in the world's average temperature from pre-industrial levels to those agreed in the Paris Agreement **requires global cumulative emissions of carbon dioxide** to be capped at the global carbon budget.
- **Arguments against committing to a net-zero target:**
  - **Huge revenue loss** for poorer Indian states such as **Chhattisgarh, Odisha, Jharkhand, West Bengal, Madhya Pradesh and Uttar Pradesh**.
    - For states such as Chhattisgarh and Jharkhand, **close to 15% of the state revenue** comes from the **mining sector**.
  - These states would **lose out on employment,** as new **employment in the renewable sector** would be created in **western and southern India** which has **better solar and wind resources**.

Way ahead

- The updated framework, together with many other initiatives of the Government, including **tax concessions** and **incentives** such as **Production Linked Incentive scheme** (for promotion of manufacturing and adoption of renewable energy), will provide an **opportunity for enhancing India's manufacturing capabilities** and **enhancing exports**.
- It will lead to an **overall increase in green jobs** such as in **renewable energy, clean energy industries**- in automotives, manufacturing of low emissions products like **Electric Vehicles and super-efficient appliances**, and innovative technologies such as green hydrogen, etc.

India must **set an example** by **balancing energy use and climate goals**.

9.3. Putting Wastewater to Good Use

Why in News?

- Benjamin Franklin famously said that we realize the worth of water only when the well is dry.
- In this context, let us explore various ways of treating and reusing the wastewater in India.

Background

- The water is getting scarce and precious and the whole planet is facing a global water shortage.
- All of us are dependent on water for survival and for our energy needs and this makes sustainable water management the need of the hour.
- Thus, there is a growing need to effectively use all available forms of water including once used water called wastewater but which actually is an unutilized resource.

Situation in India

- Water is a cyclic resource with abundant supplies on the globe. Approximately, 71 per cent of the earth's surface is covered with it but freshwater constitutes only about 3 percent of the total water.
- India accounts for about 2.45 per cent of the world's surface area, 4 percent of the world's water resources and about 16 percent of the world's population.
- Agriculture accounts for most of the surface and ground water utilization, it accounts for 89 per cent of the surface water and 92 per cent of the groundwater utilization.
- While the share of the industrial sector is limited to 2 per cent of the surface water utilization and 5 percent of the ground-water.
- The share of the domestic sector is higher (9 per cent) in surface water utilization as compared to groundwater.
- In India, the situation of water scarcity is grim with close to 600 million people facing acute water shortage.
- According to a report by Observer Research Foundation (ORF), the demand for water in India is expected to grow at a 2.8 percent Compounded Annual Growth Rate (CAGR) from 2010 to 2030, facing a potential supply gap of 50 per cent by 2030.
- This could adversely impact agriculture and other key industries like food processing, beverages, textiles, etc., causing a significant dent to the GDP by 2050.

Industrial Water Usage

- When we talk about water shortage, industrial water usage is rarely given the needed attention.
- According to research by the Central Pollution Control Board (CPCB), industries utilize over 500 billion cubic meters of the total amount of fresh water available each year.
- There will be a further increase in demand for water for industrial purposes.
- While water usage in industries is one side of the story, the other issue is the wastewater discharge that can massively pollute our rivers.
- Industries can play an important role in sustainably managing their water usage and rethinking the way they manage their wastewater.

What is Wastewater?

- Wastewater is the water used once by domestic, industrial and commercial use.
- Household activities like washing, bathing, restroom usage, etc., result in waste water while industrial wastewater emerges from activities like manufacturing, production, etc.

Reusing wastewater

- Waste water can be treated to varying degrees and reused, making it a promising solution to tackle the problem of water scarcity.
- While treated waste water can be reused for several industrial and domestic purposes, the by-products of wastewater treatment can be invaluable resources for agriculture and possibly energy generation.
- While there is a scarcity of freshwater resources, it is observed that a potential source of water which is wastewater, is largely underutilized.
- According to the ORF report, if India reuses 80 per cent of its untreated wastewater from 110 of its most populous cities, 75 percent of projected industrial fresh water demand can be met by 2025 replacing fresh water use.

National Framework on the Safe Reuse of Treated Wastewater

- The recently adopted framework provides operational guidelines for States to take up programmes on wastewater reuse.
- Many States have adopted their own wastewater reuse policy which should provide a fillip for the setting up of treatment plants and safe reuse.

Decentralized route

- Wastewater reuse is possible and economically feasible at smaller, decentralized scales too.
- One of the ways in which industries can efficiently manage their water is by converting their wastewater into high quality clean water that can be used for their internal purposes.

Case Study: Bengaluru

- One such example is Bengaluru based Vishudh Plastic Recycle and Jeeves India laundry that have installed a unique 11 step filtration

process by Boson Whitewater System that converts ETP (effluent treatment plant) water into high quality potable water.
- All the ETP/STP (sewage treatment plant) water produced by the industry is converted into potable water and used for cooling towers, plastic washing units, laundry and other purposes.
- Recognising the real value of treated wastewater, even apartment complexes are making use of modern water recovery technology to convert STP treated water to drinking water quality.
- Some complexes have gone one step ahead and started generating revenue from the high-quality water by enabling the sales of this water to industries.
- This has proved to be a win-win situation with apartments not only becoming self-sufficient but also contributing to the health of the environment in a positive way.

Way Forward

- Apart from dealing with water scarcity effectively, they are also putting the water to meaningful use while industries reduce the dependency on bore-well water.
- With appropriate waste water reuse technology and right implementation, industries and apartments can definitely rethink their wastewater usage and leverage on its potential to the best possible level.

9.4. Realizing India's Wind Energy Potential

Why in News?

- As the government of India and its agencies are yet to make a move to exploit hitherto untapped offshore wind energy potential, Reliance Industries Ltd (RIL) is ready to set up a captive 5 MW offshore plant off the Gujarat coast.

Background:

- To execute the plan RIL's subsidiary Reliance New Energy Ltd. has already tied up with a Danish green energy specialist company that is already working in offshore wind energy.
- With this move RIL plans to capture the entire value chain in renewable power — from manufacturing solar photovoltaics to wind turbines, to specialized software for solar power generators.
- Unfortunately such implementation and execution intensity is missing from the government, which has been setting increasingly ambitious targets for renewable energy but failed to address bottlenecks on the ground.

Estimating the potential of wind energy in India

- The National Institute of Solar Energy has assessed the **country's solar potential of about 748 GW assuming around 3 percent of wasteland area** to be covered by solar PV modules.
- Also the National Institute of Wind Energy, estimates a **total wind energy potential of 302 GW at a hub height of 100 meters above ground.**
    - It is more than doubled to over 695 GW at a hub height of 120 meters.
    - **Hub Height:** height where the center of the wind turbine sits on top of the tower
- According to the **Global Wind Energy Council India h**as a potential of 174 GW of offshore wind resources which is largely concentrated off the Gujarat and Tamil Nadu coasts.
    - Offshore wind energy has just got off the starting block as the government aims to invite tenders for a 4GW capacity this year.
- Onshore wind is also highly concentrated in Tamil Nadu, Gujarat, and Maharashtra with an installed onshore wind capacity of around 40.8 GW as of June 2022.

Challenges in installing wind energy capacity

- Land acquisition is not easy in the absence of a land acquisition law.
- Due to **concentration of resource potential** most of the current and future projects are sited around the **Kanyakumari-Tirunelveli-Tuticorin belt and down the Palghat pass on the Tamil Nadu side.**
- It has sent land costs soaring for power projects in wind energy making land cost the

single biggest component of a wind energy project.

- The other bottleneck is evacuation of the power generated as most of India's renewable installations are densely clustered around a few substations in Tamil Nadu and Gujarat which are used to evacuate the power.
    - Decades of under-investment in transmission and grid capacity has led to insufficient transmission and grid capacity thus many projects are canceled.
- **Wind plants can impact local wildlife;** birds have been killed by flying into spinning turbine blades.
    - Also, like all energy sources, wind projects can alter the habitat on which they are built.

Financing the projects is crucial

- **Access to finance is not easy** because Renewable projects are financed on the basis of payments to the output generation.
    - Therefore Centrally-backed projects with assured Power Purchasing Agreements (PPAs) get financed while independent and State-level projects find it difficult to raise funding.
- **Delayed payments to the lenders** by India's chronically loss-making Discoms is another problem
    - According to an estimate by CRISIL, average receivables of renewable power producers stood at 180 days as of March 2022.
    - It is expected to reduce to 140 days by the end of the current fiscal as the central government is helping the discoms.
- **Lack of investment and initiatives** from the states has delayed the projects and led to underutilization of available potential.

Way forward

- **States need to take concrete** steps to augment the capacity of renewables.
    - States like Tamil Nadu and Gujarat, which have high solar and wind potential, need to treat it as a natural resource - like coal or oil.
- States with high potential need to **adopt a 'merchant producer' mindset** where renewable power is seen as a product and a revenue source.
- **More Investments in grid and transmission capacity** to wheel the power efficiently to where demand lies, can transform state economies.
- **Lower the taxes**
    - In India, the GST Law exempts electricity and power sales from GST.
    - In contrast, wind power generation companies cannot claim input tax credits when they pay GST to purchase goods and/or services for setting up the project.

Conclusion

- To sustain and increase growth in wind-based generation capacity, policymakers **need to streamline the procedures to grant permits,** including land allocation and grid connection projects.
- Therefore there is an immediate need to **revisit the government policies** in the wind power generation so that projects are installed with a **preplanned, efficient and time bound manner in sync with the private players** to maximize India's renewable energy potential.

9.5. Energy Atmanirbharta by 2040

Why in News?

- The Prime Minister has called for "Energy Atmanirbharta" by 2040 recently.

Power sector in India:

- **India is the third-largest producer and second-largest consumer of electricity worldwide**, with an installed power capacity of 403 GW, as of June 30th 2022.
- In India, power is generated from various sources such as **Fossil and non-fossil fuels.**
    - **Fossil fuel includes Coal (51%), Gas (6%), Lignite and Diesel**, and its share in total installed generation capacity is nearly 60%.

  - **Non fossil fuel includes Renewable Energy and Nuclear Energy sources** and it contributes to the remaining (40%) installed capacity.
- As of June 30th 2022, India's installed **renewable energy capacity stood at 159 GW, representing 39.70 % of the overall installed power capacity.**
  - 50.30 GW from Solar energy.
  - 40.1 GW from wind power.
  - 10.17 GW from biomass.
  - 46.51 GW from hydropower.
- In world, India's ranks is
  - Fourth in wind power,
  - Fifth in solar power,
  - Fourth in renewable power installed capacity.
- India is the only country among the G20 nations that is on track to achieve the targets under the Paris Agreement.

Issues faced by Power Sector in India:

- **Inadequate Electricity Generation:**
  - India's installed capacity to generate electricity is **insufficient to support the country's annual economic growth.**
  - India's commercial energy supply **must grow at a rate of about 7%** to meet the rising demand for electricity.
  - Coal-fired power stations provide the bulk of India's electricity. Despite efforts to diversify the alternatives, **coal remains the country's dominant source of power,** particularly in the case of renewable energies.
- **Underutilization of Installed Capacity:**
  - Underutilization of installed capacity due to extremely low plant load factor.
  - In India, PLF is extremely low, and very little effort is made to improve it.
- **Poor Performance of State Electricity Boards (SEBs):**
  - The losses incurred by State Electricity Boards (SEBs), which distribute electricity, exceed 20,000 crores.
  - AT&C (Aggregate Technical and Commercial Loss) in India is more than 20%.
  - Poor performance of state electricity boards and problems with balance sheets of state DISCOMs.
  - According to some analysts, the transmission of energy to farmers is the main cause of losses; nonetheless, power is stolen in many areas, increasing SEBs' issues.
- **Limited role of Private and Foreign Entrepreneurs:**
  - Foreign investors and private sector power generators have yet to play a significant role.
  - In the power generation sector, the government almost has a monopoly.
  - The public sector is unable to meet the challenges of power generation due to a lack of management facilities.
- **Shortage of Inputs:**
  - Thermal power plants, which are India's main source of electricity, are running out of raw materials and coal.
  - Thermal capacity expansion is hampered by the industry's growing concerns about fuel availability.
  - Shortage of Inputs such as coal especially due to transportation issues affects power generation as was recently highlighted in the media.
- **Pattern of Energy Consumption:**
  - Pattern of electricity consumption in India is still unpredictable and this affects the power demand curve and causes a rise in the peak power demand.

Measure to make Energy Atmanirbharta by 2040:

- **Priorities of access to fossil fuels.**
  - The transition to a green energy system will take longer. This was because sector had to be redesigned.
  - Our policy must continue to emphasise affordable and secure access to oil and gas. Part of this objective could be met by intensifying domestic exploration.
  - We must recognise, however, the low probability of finding substantive, additional domestic resources of hydrocarbons.
- **Priorities access to the building blocks of green energy:**

- We have ambitious targets for renewables.
- For realising this target, we will be cost-competitive access to minerals/components (copper, cobalt, lithium, semiconductor chips etc) required to build EVs, solar panels, wind turbines and batteries.
- The problem lies in that these commodities are concentrated in countries which are not on the same political page with India.
- India has some resources such as cobalt, nickel and heavy rare earth metals but it has done little to expedite their mining and processing.
- India must remove the obstacles to domestic mining and develop strategies to manage the dynamics of market concentration, global competition and unfavourable geopolitics.

- **Infrastructure development:**
  - We will need to develop innovative financing mechanisms to fund green infrastructure.
  - It should be emphasised that all such investments will get impaired if state discoms are financially insolvent.
- **Green incentives:**
  - The government's production-linked incentive scheme (PLI) offers benefits for investment in green energy.
  - The investor response has so far been encouraging. Other governments are, however, going down a similar route. Ex. The US CHIPS and Science Act has offered, for instance, tax credits and subsidies that are a multiple of that offered under PLI.
  - We may have to go back to the drawing board to retain the interest of potential investors.
- **Retraining and up skilling:**
  - The nature of jobs and their location will change with the progressive transition to a green energy system.
  - There might be, for instance, less need for maintenance workers on oil rigs and more for technicians on solar farms.
  - The consequential requirements for training/skilling should be anticipated and delivered.
- **Energy diplomacy:**
  - Our diplomats should add the arrows of energy diplomacy to their quiver.
  - This is because of our dependence on the international energy supply chains.
  - Success in navigating the cross-currents of economic and geopolitical uncertainties will rest greatly on skilful diplomacy.
- **Holistic governance:**
  - The current siloed structures of energy governance are suboptimal.
  - A root and branch administrative overall is required. Institutions should be created to facilitate integrated energy planning and implementation.

Way Forward

- Energy is constantly needed to **achieve India's growing young population and economic growth.** The Government of India has released its **roadmap to achieve 500 GW of non-fossil fuel capacity by 2030,** which will support India's clean energy supply.
- The policy of India at this time is to achieve **the energy goals without putting too much pressure on the environment** and India is succeeding in it.
- At this time, we need leadership that can reconcile **temporal differences and balance the short-term pressures of elections with the longer-term imperatives of sustainability.**

9.6. India's Climate Pledges

Why in News?

- Recently, a study has ranked India's updated climate pledge to the Paris Agreement fifth in compliance and fourth in ambition.

What are the Key Highlights of the Study?

About:

- The study was published in the scientific journal Nature Climate Change.
- It included eight countries — India, the US, China, Australia, Saudi Arabia, Russia, Australia and Brazil — and the European Union.

- Nearly all signatories to the Paris Agreement updated their climate commitments during the 26th session of the United Nations Conference on Climate Change (COP 26).

Outcomes:

- European Union (EU) took the lead while the United States was ranked last in compliance and second to last in ambition.
- Compliance: In the compliance category, the EU took the lead which was followed by China, Australia, South Africa, India, Russia, Saudi Arabia, Brazil and the US.

Ambition:

- In the Ambition category, the EU was followed by China, South Africa, India, Australia, Brazil, Russia, the United States and Saudi Arabia.

Parameters:

- Nations likely to meet their climate pledges or the Nationally Determined Contributions (NDC) were ranked high in compliance.
- The countries with bold commitments were ranked high in ambition.

Statistical Analysis:

- Nations with more stable governments are more likely to have bold and highly credible pledges.
- Besides, China and other non-democracies are also likely to honour their commitments.
- Their administrative and political systems enable them to implement complex national policies.

What is the Paris Agreement?

About:

- The Paris Agreement (also known as the Conference of Parties 21 or COP 21) was adopted in 2015.
- It replaced the Kyoto Protocol which was an earlier agreement to deal with climate change.
- It is a global treaty wherein some 200 countries agreed to cooperate to reduce Green House Gas (GHG) Emissions and rein in climate change.
- It seeks to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industry levels.

Working:

- The Paris Agreement works on a 5- year cycle of increasingly ambitious climate action carried out by countries. In 2020, countries had submitted their plans for climate action known as nationally determined contributions (NDCs).

Long-Term Strategies:

- Long-term low greenhouse gas emission development strategies (LT-LEDS) provide the long-term horizon for the NDCs. Unlike NDCs, they are not mandatory.

Tracking Progress:

- With the Paris Agreement, countries established an enhanced transparency framework (ETF). Under ETF, starting in 2024, countries will report transparently on actions taken and progress in climate change mitigation, adaptation measures and support provided or received.
- It also provides for international procedures for the review of the submitted reports.
- The information gathered through the ETF will feed into the Global stocktake which will assess the collective progress towards the long-term climate goals.

Way Forward

- To achieve this long-term temperature goal, countries should aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate-neutral world by mid-century.
- There is a need for credible short-term commitments, with a clear pathway to medium-term decarbonization, that takes into account the multiple challenges states face, such as air pollution, and development might well be the more defensible choice for some.

9.7. Fly Ash

In News

- Recently, the **National Green Tribunal (NGT)** made an urgent need to augment the **utilisation and disposal of fly ash** in **Chhattisgarh.**

About

- The situation in **Chhattisgarh** is even more critical because **Korba is the hub of coal thermal power plants** containing 15 state, central and private-owned electricity generating plants.

What is Fly Ash?

About:

- Fly ash is a **by-product of burning pulverized coal** in **thermal power plants**.
  - During combustion, mineral impurities in the coal (clay, feldspar, quartz, and shale) fuse in suspension and float out of the combustion chamber with the exhaust gases. As the fused material rises, it cools and solidifies into spherical glassy particles **called fly ash.**
  - **Low-grade coal** used in thermal power generation carries **30-45% ash content**. The high-grade imported coal has a low ash content of **10-15**%.
  - Since most of the coal used in thermal plants is low-grade, it generates a large quantity of ash which requires a large area as **landfill or ponds for disposal.**
  - All fly ashes **exhibit cementitious properties** to varying degrees depending on the chemical and physical properties of both the fly ash and cement.

Composition:

Fly ash includes substantial amounts of **silicon dioxide (SiO2), aluminium oxide (Al2O3), ferric oxide (Fe2O3) and calcium oxide (CaO).**

Uses:

It is an **excellent material** for **making construction** materials such as **bricks, mosaic tiles** and **hollow blocks**.

Bricks made of fly ash can help conserve soil to a great extent.

There are several **eco-friendly** ways to utilize fly ash so that it does not pollute air and water.

- It includes the use of fly ash in the manufacturing of cement, ready-mix concrete; constructing roads, dams and embankment, and filling of low-lying areas and mines.

Major Health and Environmental Hazards

- All the heavy metals found in fly ash like nickel, cadmium, arsenic, chromium, lead, etc—are toxic in nature. They leech into the surrounding soil and can enter food-chains, asthma and respiratory ailments due to direct exposure, destruction of mangroves, drastic reduction in crop yields, and the pollution of groundwater etc.

Utilization of Fly Ash

- Fly ash can be used as a r**eplacement for some of the Portland cement** contents of concrete. It is environmentally beneficial because it reduces the Portland cement, a major contributor of CO2, required in concrete.
- Fly ash is a p**roven resource material for many applications** of construction industries and currently is being utilized in manufacturing of bricks/blocks/tiles.
- Union Government has made it mandatory for use of **fly ash bricks in construction activities happening 500 km** around thermal power plants.

New fly ash utilisation rule for Thermal Power Plants (TPPs)

- It is mandatory for Thermal Power Plants (TPPs) to ensure **100% utilisation of fly ash** within **three to five years**.
  - Existing provisions allow TPPs to fully utilise fly ash in a **four-year cycle** in a staggered manner.
- It also **introduced fines** of **Rs 1,000** on **non-compliant** plants under the **'polluter pays**

principle', taking into account utilisation targets from April 1 next year.
    - The **'polluter pays' principle** is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment.
    - Under this, the collected fines will be deposited in the designated account of the **Central Pollution Control Board (CPCB).**

Initiatives Taken

- **Optimum utilization of fly ash:** To facilitate 100% ash utilization by all coal based thermal power plants, **a web portal** for **monitoring of fly ash generation** and utilization data of Thermal Power Plants and a mobile based **application titled "ASHTRACK"** has been launched by the Government.
    - **Ash-park** has developed, and awareness programme for utilisation of fly ash and its products conducted at various platforms..
- **Roles played NTPC:** National Thermal Power Corporation (NTPC) has developed an infrastructure to transport fly ash from power plants in bulk to cement plants, at a cheaper cost.
    - NTPC intends to transform the fly ash it produces into a revenue-generating by-product.
    - It has **developed geopolymer and nano aggregates** from residual fly ash for use in the construction of roads and houses is a manifestation of this.

Suggestions/ Way forward

- **Awareness programmes**: NGT directed that awareness programmes needed to be organised for common people in Chhattisgarh about the utilisation of fly ash for its own use.
- **Comply with guidelines**: The state authority must instruct all transporters to comply with guidelines issued by the central and state governments for safe transportation of fly ash and bottom ash.
- **Notice on vehicles**: Every fly ash transporter must write on their vehicles that if any illegal dumping of fly ash by this vehicle is seen, please inform the collector.
- **Strict action** should be taken if any complaint regarding illegal disposal was received by the authorities.
- **Supply pond ash:** The thermal power plants should supply pond ash for road construction projects and brick manufacturers.
- **Promoting R&D** for increasing the efficiency of power plants will also help in reducing ash generation.

9.8. MoU to Tackle Plastic Pollution

Why In News?

- Recently, the **National Cadet Corps (NCC) and United Nations Environment Programme (UNEP)** signed a Memorandum of Understanding (MoU) to tackle the issue of plastic pollution.

Key Points

- **Clean water Goal:**
    - This MoU will help achieve the universal goal of clean water bodies through '**Puneet Sagar Abhiyan**' and '**Tide Turners Plastic Challenge programme**'.
- **Aim:**
    - To synergise and collate efforts towards engaging youth for promoting clean water bodies
- **Objective:**
    - To engage in capacity building and awareness on environmental sustainability through information sharing and training initiatives;
    - Promote opportunities for NCC cadets to participate in appropriate national and international platforms related to environment and climate change and
    - Engage in and develop joint initiatives of mutual intent pertaining to environment and climate change.
- **'Puneet Sagar Abhiyan' – a Tide Turner:**
    - Following the growing support and success of the campaign, the UNEP, engaged in this initiative through their 'Tide Turner Challenge Programme'.

- UNEP decided to join hands with the NCC.
- **Time period:**
  - The MoU, to remain in force for a period of **three years**, aims at consolidating, developing and detailing their cooperation and effectiveness to achieve the common objectives in the field of environment.

Significance

- **Behavioural changes** among people due to the awareness drives.
- **Participation of youth** will make it a movement.
- Realisation of **responsibility towards mother Earth** will be achieved.
- It is an important **step for reducing pollution** caused due to littered plastic waste in the country.
- Such initiatives will weaken the circular economy of plastic packaging waste, promote the development of new alternatives to plastics and provide further next steps for moving towards sustainable plastic packaging by businesses.

Plastic

- Plastic is a synthetic organic polymer made from petroleum with properties ideally suited for a wide variety of applications, including packaging, building and construction, household and sports equipment, vehicles, electronics and agriculture.
- Plastic is cheap, lightweight, strong and malleable. Over 300 million tons of plastic are produced every year.
- **Sources of Plastic:**
  - The main sources of marine plastic are land-based, from urban and storm runoff, sewer overflows, beach visitors, inadequate waste disposal and management, industrial activities, construction and illegal dumping.
  - Ocean-based plastic originates mainly from the fishing industry, nautical activities and aquaculture.
  - Under the influence of solar UV radiation, wind, currents and other natural factors, plastic fragments into small particles, termed microplastics (particles smaller than 5 mm) or nanoplastics (particles smaller than 100 nm).

Issues / Challenges with Plastic

- **Environmental**
  - It is harmful to the environment as it is non-biodegradable and takes years to disintegrate.
  - Marine wildlife such as seabirds, whales, fishes and turtles eat plastic waste and most die of starvation as their stomachs are filled with plastic debris.

- **Food and health:**
  - Invisible plastic has been identified in tap water, beer, salt and are present in all samples collected in the world's oceans, including the Arctic.
  - The transfer of contaminants between marine species and humans through the consumption of seafood has been identified as a health hazard.
    - Fish consume thousands of tons of plastic in a year, ultimately transferring it up the food chain to marine mammals.

- **Climate change:**
  - Plastic, which is a petroleum product, also contributes to global warming. If plastic waste is incinerated, it releases carbon dioxide into the atmosphere, thereby increasing carbon emissions.

- **Tourism:**
  - Plastic waste damages the aesthetic value of tourist destinations, leading to decreased tourism-related incomes and major economic costs related to the cleaning and maintenance of the sites.
- **Financial costs of marine plastic pollution:**
  - According to conservative forecasts made in March 2020, the direct harm to the blue economy of the Association of Southeast Asian Nations will be $2.1 billion per year.

India's Efforts in Tackling Plastic Waste

- **The Plastic Waste Management Rules, 2016:**
  - It clearly stipulates that urban local bodies (ULBs) should ban less than 50 micron thick plastic bags and not allow the usage of recycled plastics for packing food, beverage or any other eatables.
  - It introduced the concept of EPR (Extended Producer Responsibility) to manage plastics in India.
- **Plastic Waste Management (Amendment) Rules, 2022:**
  - The guidelines on **EPR** (Extended Producer Responsibility) coupled with the prohibition of identified single-use plastic items.
  - It banned the manufacture, import, stocking, distribution, sale and use of carry bags made of virgin or recycled plastic less than seventy-five microns.
  - The items that will be banned are— Earbuds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene (thermocol) for decoration, plastic plates, cups, glasses, cutlery such as forks, spoons and knives, straw, trays, wrapping films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100-microns and stirrers.
  - The **Central Pollution Control Board**, along with state pollution bodies, will monitor the ban, identify violations, and impose penalties already prescribed under the Environmental Protection Act.
- **Swachh Bharat Mission – Urban 2.0:**
  - **Segregation and sorting:**
    - Under this, every Urban Local Bodies (ULB) is required to adopt 100% source segregation of waste, and have access to a Material Recovery Facility (MRF) for sorting the dry waste (including plastic waste) into further fractions for recycling and/ or processing into value-added products.
    - This is aimed to reduce plastic and dry waste ending up in dumpsites or waterbodies.
  - **Alternatives:**
    - The ULBs will need to identify SUP alternatives (such as cloth/jute/plastic bags, degradable cutleries, etc.) readily available in the market and create awareness about such alternatives among citizens.
  - **Reuse:**
    - States and ULBs have also been advised to enter into MoUs with nearby cement plants or other industrial units as well to ensure that a part of the plastic waste generated is used either as an alternative fuel in cement plants or for road construction purposes.
- India is a signatory to **MARPOL** (International Convention on Prevention of Marine Pollution).
- **The "India Plastic Challenge – Hackathon 2021**
  - It is a unique competition calling upon start-ups /entrepreneurs and students of Higher Education Institutions (HEIs) to develop innovative solutions to mitigate plastic pollution and develop alternatives to single-use plastics.
- **Others:**
  - India Plastics Pact
  - Project REPLAN
  - Un-Plastic Collective
  - GoLitter Partnerships Project

Way Ahead

- 1.5 million NCC cadets have the ability to influence the thinking of youth across the world, exuding confidence that they will be instrumental in making the **campaign a mass movement**.
- It is our **collective responsibility** to protect the environment for future generations to live a long and healthy life.

10. Internal Security

10.1. Operation 'Gear Box'

Why in News?

- Recently, the Directorate of Revenue Intelligence (DRI) launched operation 'Gear Box' to stop heroin smuggling, seizes 39.5 kg of contraband from Kolkata port.
- The heroin was examined and seized under provisions of the Narcotic Drugs and Psychotropic Substances Act.

What is Operation Gear Box?

- Operation Gear Box is conducted to detect the hidden drugs in the gear boxes.
- The gears from old and used gearboxes were removed after opening them and plastic packets containing the narcotic substance were placed in the created cavity and the gearboxes were refitted to avoid detection.
- The drug syndicate has used this unique modus operandi to conceal heroin.
- These packets were shipped concealing inside this metal scrap with other metal scrap so that it would go unnoticed by the authorities.

What about Drug Addiction in India?

- The menace of drug addiction has spread fast among the youth of India.
- India is sandwiched between two largest Opium producing regions of the world that is the Golden triangle on one side and the Golden crescent on other.
- The golden triangle area comprises Thailand, Myanmar, Vietnam and Laos.
- The golden crescent area includes Pakistan, Afghanistan and Iran.
- According to the World Drug Report 2022, India is one of the world's single largest opiate markets in terms of users and would likely be vulnerable to increased supply.
- According to the National Crime Records Bureau's Crime in India 2020 report, a total of 59,806 cases were lodged under NDPS Act.
- According to the Social Justice Ministry and All India Institute of Medical Sciences (AIIMS) report on magnitude of substance use in 2019, there were:
    - 3.1 crore cannabis users (of which 25 lakhs were dependent users).
    - 2.3 crore opioid users (of which 28 lakhs were dependent users).

10.2. Crime Multi Agency Centre

Why in News?

- A few states and one Union Territory have not uploaded a single alert on Cri-MAC (Crime Multi Agency Centre) platform.
- West Bengal, Andhra Pradesh, Bihar, Chhattisgarh, Mizoram, Manipur, Nagaland and Sikkim and Union Territory of Dadra, Nagar Haveli and Daman and Diu have not uploaded a single alert.
- Delhi, Assam and Haryana uploaded the maximum number of alerts on the portal.

What is Cri-MAC?

- The Cri-MAC was launched in 2020 by the Ministry of Home Affairs (MHA), which is run by National Crime Records Bureau (NCRB).
- It was launched to share information on crime and criminals with various law enforcement agencies and ensure a seamless flow of information among them.
- It aims to help in early detection and prevention of crime incidents across the country.
- Cri-MAC facilitates dissemination of information about significant crimes, including human trafficking across the country on real-time basis and enables inter-State coordination.

- It can help in locating and identifying the trafficked victims as also in prevention, detection and investigation of crime.

10.3. F/A 18 Super Hornet Fighter Jets

Why in News?

- Ahead of Commissioning India's first Indigenous Aircraft Carrier (IAC) Vikrant, the US aviation major Boeing has proposed Indian Navy to choose its F/A 18 Super Hornet fighter jet.

What are the Key Features of F/A 18 Super Hornet Fighter Jets?

- The F/A-18 Super Hornet Block III is the world's most advanced, combat proven, multi-role frontline naval fighter that offers unique and differentiated capabilities and full compatibility with Indian Navy carriers.
- It has been designed and built for carrier operations, and is fully compliant with INS Vikramaditya and INS Vikrant aircraft carrier.
- F/A-18 will be able to operate on the deck, in the hangar and on the lifts of the Indian Navy's aircraft carriers.
- It will help further the interface between manned and unmanned systems in a carrier environment.
- The Super Hornet's Precision Landing Mode software is specially designed to reduce pilot workload while landing on the Indian Navy's Vikramaditya carrier by maintaining the proper glide slope and proper approach speeds.
- It has fully redundant systems and is independent of the carrier's optical landing system.
- F/A-18 Super Hornet is in single-seater (E-Variant) and two-seater variant (F-Variant), and both variants are carrier compatible to perform the full range of combat missions and can fully operate from the carrier deck.
- The two-seater is also a capable trainer aircraft - both ashore and carrier borne.

What is IAC Vikrant?

About:

- Vikrant is the largest warship to have ever been built in India, and the first indigenously designed and built aircraft carrier for the Indian Navy.
- It puts India in an elite club of nations that have the capability to design and build these giant, powerful warships.
- It is designed by the Cochin Shipyard Ltd (CSL), a public sector shipyard under the Ministry of Ports, Shipping & Waterways.
- The ship had successfully completed its fourth and final phase of sea trials.

Operation Capabilities:

- It has a maximum designed speed of 28 knots (about 52 km/h) with an endurance of 7500 NM.
- The ship will be capable of operating 30 aircraft including MiG-29K fighter jets, Kamov-31 Air Early Warning Helicopters, MH-60R Seahawk multi-role helicopters, as well as the Advanced Light Helicopters (ALH), and the Light Combat Aircraft (LCA).
- Using a novel aircraft-operation mode known as Short Take Off But Arrested Recovery (STOBAR), the IAC is equipped with a ski-jump for launching aircraft, and a set of three 'arrestor wires' for their recovery onboard.

SIgnificance:

- It will enhance a Navy's capability to travel far from its home shores to carry out air domination operations.
- It is considered to be a "blue water" navy — that is, a navy that has the capacity to project a nation's strength and power across the high seas.

10.4. Cyber Security Exercise "Synergy"

Why in News?

- **Indian Computer Emergency Response Team (CERT-In)** in collaboration with the Cyber Security Agency of Singapore successfully designed and conducted the **Cyber Security Exercise "Synergy"** for 13 Countries.

About

- It was a part of the **International Counter Ransomware Initiative- Resilience Working Group.**
    - Ransomware is a **malware designed to deny** a user or organization access to files on their computer.
- The Group is being led by India under the leadership of **National Security Council Secretariat.**
- The theme of the exercise was "**Building Network Resiliency to Counter Ransomware Attacks".**
- The exercise scenario was derived from **real life cyber incidents**, in which a domestic level (limited impact) ransomware incident escalates to a global cyber security crisis.
- Each State participated as a National Crisis Management Team having composition from different government agencies including National CERTs/CSIRTs, Law Enforcement Agencies (LEA), Communication & IT/ICT Ministry and Security agencies.

Major Government Initiatives for Cyber Security

- **CERT-In:** It is an organisation of the Ministry of Electronics and Information Technology with the objective of securing Indian cyberspace.
- **Cyber Surakshit Bharat Initiative:** It is an initiative from the Ministry of Electronics and Information Technology (MeitY) that aims at creating a robust cybersecurity ecosystem in India. This program was in association with the National e-Governance Division (NeGD).
- **National Critical Information Infrastructure Protection Centre:** NCIIPC is a central government establishment, formed to protect critical information of our country, which has an enormous impact on national security, economic growth, or public healthcare. This was amended as per the provisions of section 70A of the Information Technology (IT) Act, 2000.
- **Indian Cyber Crime Coordination Centre (I4C):** The MHA launched this I4C Indian Cyber Crime Coordination Centre program to combat cybercrime in the country, through a coordinated and efficient method.
- Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre) is an installation under the Ministry of Electronics and Information Technology (MeitY).
- **Information Technology Act, 2000:** IT Act of 2000 came into effect in India on 09 June 2000. IT Act states in its preamble that the purpose of the legislation is to provide legal recognition to electronic transactions.
- **National Cyber Security Strategy 2020:** A National Cyber Security Strategy 2020 is still under development at the Indian government cyber security department National Security Council Secretariat by the Office of the National Cyber Security Coordinator.

11. Geography & Disaster Management

11.1. Seti River

Why in News?

- India is to develop two hydropower projects in Nepal, namely the West Seti Hydropower Project and the Seti River Hydropower Project.

About the Project

- The MoU was signed between Investment Board Nepal and National Hydro Power Corporation Ltd(India) to develop the 1200 MW project.
- **Benefits:** The projects will produce power all year round. Through its national grid, India will receive the power, either for its own use or for export.
- **Background:** In 2017, China Three Gorges International Corporation set up a joint venture to develop the project. It withdrew from the project in 2018.
- The Seti Gandaki River is also known as the Seti River or the Seti Khola.
- The Seti river is a river of western Nepal.
- It originates from the glaciers around the twin peaks of Api and Nampa in the south facing slopes of the main Himalayas. The area is near the tri junction of the borders of Nepal, India (Uttarakhand), and China.
- The river finally joins the Karnali or Ghagra River (which is Nepal's longest river).

11.2. Geothermal Power

Why In News?

- The state-run explorer Oil and Natural Gas Corporation (ONGC) will generate **electricity on a utility scale by tapping steam** gushing from the earth's bowels at Puga, Ladakh.

About

- This will be India's **first** geothermal energy project, and also the **world's highest**.
- ONGC started drilling its first well for the project recently and encountered **high-pressure steam at 100 degrees Celsius** with a discharge rate of **100 tonne geothermal energy per hour**.
- **Phases:**
    - In the first phase, the company will drill **1,000-metre-deep wells** to run a one-megawatt power plant as a pilot.
    - The third phase envisages a **deeper exploration** of the geothermal reservoir and a higher capacity demonstration plant.
    - A **commercial size plant** will be set up in the third phase.
- **Promising Prospects:**
    - **Puga and Chumathang** area in general, are deemed as the most promising geothermal prospects.
    - Puga is a remote valley located at an **altitude of over 14,000 feet**, near the de-facto border with China.
    - These areas were discovered in the 1970s and initial exploratory efforts were made in the 1980s by the Geological Survey of India (GSI).
- **Global Leaders:**
    - The US, Indonesia, Philippines, Turkey and New Zealand have gigawatt-size geothermal capacities.
    - Mexico and Italy have 900 megawatt-plus capacity, while Kenya has over 800 mw, followed by Iceland, Japan and others.

Significance of Project

- It will **boost Ladakh's potential** to emerge as one of the **country's clean energy bowls** by expanding the area's horizon beyond solar/wind power.
- A bigger plant will provide **24x7 supply** for the far-flung settlements and the large defence establishment in the eastern sector, reducing their dependence on diesel for running generators.
- The plant can also play a **vital role as a stabiliser** for the 15 GW solar/wind project being planned in the nearby morey plains in the south-west.
- The geothermal foray is part of a strategy adopted by the ONGC, India's largest oil and gas producer, to **offset its carbon footprint**.
- The pilot plant provides **power and heating needs of the nearby settlements** of Tibetan pastoralist refugee settlements at Sumdo and nearby areas.
- The hot water from the spring could be used for space-heating and establishing hot swimming pools to attract tourists, which will give a **boost to tourism** in Ladakh.

Geothermal Energy

- **About:**
    - The word geothermal comes from the Greek words **geo (earth) and therme (heat).**
    - It refers to the heat stored **beneath the earth's surface** that is carried to the surface by water and/or steam.
- **Sources:**
    - This thermal energy is contained in the **rock and fluids** beneath Earth's crust.
    - It can be found from the shallow ground to several miles below the surface, and even farther down to the **extremely hot molten roc**k called magma.
    - Rocks and water **absorb heat** from magma deep underground.
    - The **slow decay of radioactive particles** in the earth's core produces geothermal energy.
- **Usage:**
    - It is carbon-free and provides a **perpetual supply of heat**.

- It can be **directly used or converted** into electricity.
- Geothermal water can be used directly to **heat homes** and offices or grow plants in greenhouses.

Advantages

- This energy is **clean, sustainable, carbon-free, continuous, uninterrupted and environment-friendl**y.
- It can be **extracted without burning fossil** fuels like coal, gas, or oil.
- Geothermal fields produce only about 1/6th of the carbon dioxide (CO2) that a **relatively clean** natural-gas-fueled power plant produces.
- Unlike solar and wind energy, geothermal energy is always **available throughout the year**.
- It's also **relatively inexpensive** and savings from direct use can be as much as 80 percent over fossil fuels.

Disadvantages

- **High Initial Cost:** Though the energy provides free heat production, the initial capital costs tend to be higher.
- **Toxic Metals:** Sometimes the reservoirs are detected with toxic heavy metals, including mercury, arsenic, and boron.
- **Unpleasant Gases:** The process of extraction releases hydrogen sulfide, a gas that smells like a rotten egg at low concentrations.
- **Disposal Issue:** Another issue is the disposal of some geothermal fluids, which may carry low levels of toxic materials.
- **Diminishing Steam:** Geothermal sites are capable of providing heat for many decades; however, specific locations may cool down eventually.

Conclusion

- Geothermal energy is considered a cheap, **never-ending resource** and a base-load generator.
- These resources can be exploited from naturally occurring heat, rock, and water or through **enhanced geothermal systems**.

11.3. Drought as a Planetary Disaster

Why In News?

- Recently, a study has revealed that the drought as a disaster has become planetary because around **300 million people** in Africa, Europe, North America and Asia are in the grip of drought.

Major outcomes of the recent study

Country wise assessment:

- **Africa** holds the highest burden of this disaster.
  - **East Africa** is reeling under its worst drought in four decades.
- **Europe** has also witnessed 45 major droughts in the last century.
- Nearly half of the **US** is dry
- **Countries like France and Portugal** are enduring the worst drought on record.

India based study:

In India, states like **Odisha, Jharkhand** and those in the **North East** are already under drought-like conditions, notwithstanding the severe floods that hit these areas.

Drought emergency:

- The **failure of seasonal rain**, **long dry spells** and **gradual drying up of moisture in land** with **effects on crops** are the usual stages that lead up to a drought emergency.

What is Drought?

- Drought is a **prolonged dry period** in the **natural climate cycle** that **can occur anywhere** in the world.
- It is a **slow-onset disaster** characterized by the **lack of precipitation, resulting in a water shortage.**
- In recent decades, drought has emerged as one of the biggest drivers of **human life loss and economic loss** among **weather-related disasters.**
- By 2030, or in the next eight years, drought will potentially **displace an estimated 700 million people worldwide.**
- **Classification:**
  - **Meteorological Drought:**

    - It is classified based on rainfall deficiency with respect to long term average, where 25% or less is normal, 26-50% is moderate and more than 50% is severe.
- **Hydrological Drought:**
    - It is defined as deficiencies in surface and subsurface water supplies leading to a lack of water for normal and specific needs.
    - Such conditions arise even in times of average (or above average) precipitation when increased usage of water diminishes the reserves.
- **Agricultural Drought:**
    - It is identified with soil moisture deficiency in relation to meteorological droughts and climatic factors and their impacts on agricultural production and economic profitability.

Effects of the increasing droughts

- **Environmental Impacts:**
    - Losses or destruction of fish and wildlife habitat
    - Lack of food and drinking water for wild animals
    - Increased stress on endangered species or even extinction.
    - Increase in disease in wild animals.
    - Migration of wildlife.
    - Lower water levels in reservoirs, lakes, and ponds; loss of wetlands
    - More wildfires
    - Wind and water erosion of soils
    - Poor soil quality
- **Social impacts:**
    - Health problems because of low water flows, poor water quality and dust
    - Threat to public safety and loss of human life due to an increased number of forest and range fires
    - Reduced incomes
    - Human migrations
- **Economic impacts:**
    - Most affected would-be agriculture and allied industries.
    - Rise in the prices of foodstuffs and overall inflation.

Challenges faced by people and economy

- **Affecting rich and poor both**: It has hit both the poor and rich in developed and developing countries, although the intensity of impact is more for the poor.
- **Increased frequency**: Since 2000, several UN agencies point out; the frequency and duration of droughts have increased by nearly 33 per cent.
- **Loss of land**: The world loses 12 million hectares of land every year to drought and desertification, according to the UN Convention to Combat Desertification (UNCCD).
- **Displacement of people**: Forecasts by agencies like the International Organization for Migration show that by 2050, some 215 million people could be displaced due to drought and other climate-related factors.
    - Two-thirds of the world population could be affected by drought by 2050.
- **Climate change**: It is fuelling the intensity of drought in the already vulnerable regions while tightening its grip on not-so-vulnerable areas.
- **Existential hazard**: Drought has been an existential hazard for those who depend on natural resources such as land for sustenance.

International Efforts:

- The **United Nations Development Programme** (UNDP) launched the **Integrated Drylands Development Programme** (IDDP) with the overall goal to **strengthen resilience** by working on the **twin vulnerabilities of poverty and unsustainable land management** in the drylands.
- The **United Nations Office for Disaster Risk Reduction** (UNISDR) developed a **Drought Risk Reduction framework** that takes an integrated development approach and provides a comprehensive framework for both higher-level and local action.
- The **Integrated Drought Management Programme** (IDMP) and its partners have adopted **three pillars of drought management:**
    - Drought monitoring and early warning systems to determine drought status.
    - Vulnerability and impact assessment to determine who and what are at risk and why.
    - Mitigation, drought preparedness, and response to set out actions and measures to mitigate drought impacts and to prepare to respond to drought emergencies.

- There is a **need for a more organized and common conceptual framework for assessing drought risk** and for analysing the "**Benefits of Action and Costs of Inaction**" (BACI).
    - The framework is set out within the model for the overall process of developing a **National Drought Management Policy**, which was codified by the **World Meteorological Organization** (WMO) and the **Global Water Partnership** (GWP) in their **2014 National Drought Management Policy Guidelines**.

Way forward/ Steps taken to prevent drought

- **Water and soil conservation measures**
    - These are mostly water and soil conservation measures that protect agriculture from dry spells and ensure enough water for domestic consumption.
- **Returning to their roots**
    - The world both rich and poor, must return to its roots and to indigenous communities who have mastered ways to tame disasters.
- **The Ministry of Water Resources** is involved in drought management mainly on policy guidelines, monitoring and technical and financial assistance.
- **Integrated farming systems** and **non-agricultural developments** may also be considered for livelihood support and poverty alleviation.
- **Policy intervention** is also made facilitating **relaxation in project clearances, funding** etc. for **drought-prone areas**.
- **The Integrated Drought Management Programme (IDMP)** and its partners have adopted three pillars of drought management:
    - Drought **monitoring** and **early warning systems** to determine drought status.
    - **Vulnerability** and **impact assessment** to determine who and what are at risk and why.
    - **Mitigation**, **drought preparedness**, and **response** to set out actions and measures to mitigate drought impacts and to prepare to respond to drought emergencies.

12. History- Art & Culture

12.1. Chola Dynasty

Why In News?

- Recently, the Idol Wing-CID has submitted documents to U.S. officials through the Central government to **retrieve six exquisite Chola-era bronze idols.**

About

- These idols went missing from the **Veeracholapuram temple in Kallakurichi district** in the 1960s.
- The temple was constructed 900 years ago by **Chola king Rajendra Chola**.

Chola Dynasty

- **Origin**:
    - The reign of the Cholas began in the **9th century** when they **defeated the Pallavas** to come into power.
    - This rule stretched over for over **five long centuries** until the 13th century.
    - The Early periods of the Chola rule saw the **onset of the Sangam literature**.
- **Developments**:
    - One of the **longest-ruling dynasties** in the southern regions of India.
    - The medieval period was the era of **absolute power and development** for the Cholas.
    - Cholas made South Asia and South-East India into a **military, economic and cultural power**.
- **Prominent Rulers:** Vijayalaya, Aditya I, Rajaraja Chola I, Rajendra Chola I, Rajadhiraja

Chola, Virarajendra Chola and Kulothunga Chola I

About Rajendra Chola I

- Succeeded the mighty **Rajaraja Chola**.
- Rajendra I was the **first to venture** to the banks of Ganges. He was popularly called the **Victor of the Ganges**.
- Built new capital called the **Gangaikondacholapuram** where he received the title of 'Gangaikonda'.
- He built the **Brihadisvara Temple** and upgraded several others.
- His period is referred to as the **golden age** of the Cholas.

12.2. Nuakhai agricultural festival

Why in News?

- Nuakhai is an annual harvest festival celebrated in Odisha. Celebrated a day after Ganesh Chaturthi, this festival is the most auspicious and important social festival in western Odisha.

More Details:

- In Nuakhai, Nua means new and Khai means food. The festival of Nuakhai is celebrated by the farmers of Odisha after the harvesting of grain.
- On this festival, Odia people, even those living in far off lands return to their native places to be the part of the celebration.
- The festival is celebrated by wearing new clothes and offering prayers to God, following which a feast is thrown and food prepared using newly harvested crops is consumed.
- The Nuakhai festival is the most famous social festival celebrated in the Western Odisha and nearby areas of Simdega in Jharkhand. A similar festival is that of Nabanna which is celebrated in Coastal Odisha.
- Odisha has a vibrant culture of festivals and the Nuakhai festival is just one of the 13 festivals celebrated in Odisha. This is popularly called as in the local Odia language as the 'Bara Massa re Teraa Parva'

12.3. Puli Thevar

Why In News?

- The Prime Minister has paid tributes to brave Puli Thevar on his birth anniversary.

About Puli Thevar

- He was one of the earliest opponents of British rule in South India. He was involved in a vendetta with the Nawab of Arcot who was supported by the British.
- Puli Thevar, is considered the first south Indian to rebel against British rule.
- He fought between the 1750s and late 1760s.

12.4. Mohenjo-daro

Why In News?

- Pakistan's Department of Archaeology warned that heavy rainfall in the Sindh province threatened the World Heritage status of **Mohenjo Daro**

About Mohenjo-daro

- Mohenjo-Daro or the "Mound of the dead" lies in **Larkana district of Sindh** (Pakistan), about 5 km away from the Indus.
- It is one of the largest of the Indus Valley Civilization sites.
- It was discovered by archeologists **Rakhaldas Banerji** and **Sir John Marshall**.
- The site is famous for its elaborate town planning with street grids with brick pavements, developed water supply, drainage, and covered sewerage systems, homes with toilets, and monumental buildings.
- Its excavations revealed findings like the **Great Bath**, **Great Granary**, a large assembly hall, temple-like structure, the seal of **Pashupati** and a **bust of a bearded man**.

- It is the most glaring example of town planning in the Harappan civilization. The city is divided into **citadel and lower city**.
- The civilization went into decline in the middle of the second millennium BC for reasons that are believed to include catastrophic climate change.

12.5. World's largest museum of Harappan culture

Why in News?

- The world's largest museum on Harappan culture is currently being set up in Rakhigarhi, Haryana.

More Details:

- The museum on Harappan culture in Rakhigarhi would showcase some 5,000-year-old artefacts belonging to the Indus Valley Civilization.
- This world class museum would display photographs depicting Rakhigarhi's history.
- The museum, which is currently under construction, would give recognition to Rakhigarhi at the international and national levels and increase job opportunities for the local communities.
- A special zone is being created in the museum for children to make them aware of the history in a recreational manner.
- The museum would also house an open-air theatre and a library.

About Rakhigarhi

- The village of Rakhigarhi was part of the Indus Valley Civilization from 2600 to 1900 BC. The two villages Rakhi Khas and Rakhi Sahapur currently host the archeological remains of the Indus Valley site. It was excavated for the first time in 1969. It is currently the largest settlement of the Indus Valley Civilization.

13. Awards

13.1. INSPIRE Awards

Why in News?

- Union Minister of Science and Technology Dr Jitendra Singh has recently provided financial aid to around 53,000 students under the INSPIRE Scheme.

What is INSPIRE Scheme?

- The Innovation in Science Pursuit for Inspired Research (INSPIRE) scheme has been implemented by Indian Government's Department of Science and Technology (DST) to encourage people aging 10 to 32 years to pursue science and a career in research.
- Its purpose is to attract talent to science at an early age and create the required resource pool for strengthening the science and technology system and research and development base in the country.
- It has three components – Scheme for Early Attraction of Talent (SEATS), Scholarship for Higher Education (SHE) and Assured Opportunity for Research Careers (AORC).

About INSPIRE Award – MANAK

- The Indian Government confers INSPIRE Award – MANAK (Million Minds Augmenting National Aspiration and Knowledge) every year under the SEAT Program.
- Under the INSPIRE AWARDS – MANAK Scheme, students across India are encouraged to send original and creative technological

ideas or innovations that can solve common problems.
- The chosen ideas will be provided with complete incubation support required to promote the entrepreneurial journey of students.

13.2. United Nations (UN) award

Why in News?

- India has won the United Nations (UN) award for its 'India Hypertension Control Initiative (IHCI)', a large-scale hypertension intervention under the National Health Mission (NHM) that saw 3.4 million hypertensive people identified and put on treatment at various government health facilities.

More Details:
- The award is for India's initiative to control and prevent hypertension under the government's NHM.
- It has been recognized for India's exceptional work within India's existing primary healthcare system.
- IHCI is a collaborative initiative of the Ministry of Health and Family Welfare, Indian Council of Medical Research (ICMR), state governments and the World Health Organization(WHO)-India.

13.3. Oscars 2023

Why in News?
- Gujarati film "Chhello Show", a coming-of-age drama about a young boy's love affair with cinema in a village in Saurashtra, is India's official entry for the 95th Academy Awards or Oscar awards, the Film Federation of India (FFI) announced.

About the "Chhello Show or Last Film Show":

- The film, which will represent the country in the best international feature film category at the Oscars, is produced by Siddharth Roy Kapur's banner Roy Kapur Films, Jugaad Motion Pictures, Monsoon Films, Chhello Show LLP and Marc Duale.
- The story is inspired by Nalin's own memories of falling in love with movies as a child in rural Gujarat. It won multiple awards during its festival run, including the Golden Spike at the 66th Valladolid Film Festival in Spain where it also enjoyed commercial success during its theatrical run.

13.4. French civilian honour

- Swati Piramal, Vice Chairperson, Piramal Group has been conferred the Chevalier de la Légion d'Honneur (Knight of the Legion of Honour). The highest French civilian award comes in recognition of Piramal's outstanding achievements and contribution in the fields of business and industry, science, medicine, art and culture, both nationally and internationally.

13.5. Sahitya Puraskar

- Telugu writer and actor, Tanikella Bharani was presented with the annual Sahitya Puraskar of the Loknayak Foundation (18th Loknayak Foundation Award) at an award ceremony held at Kalabharathi Auditorium, Visakhapatnam, Andhra Pradesh.

About the Award:

- The award is popularly referred to as 'Andhra Jnanpith'. It carries a cash prize of Rs 2 lakh.
- The award is given annually to an eminent Telugu writer or poet or a person credited with service for the cause of Telugu literature.
- Generally, the award is presented on the 18th of January annually to mark the death anniversaries of former Chief Minister(CM) NT Rama Rao(NTR) and writer Harivansh Rai Bachchan. Both the luminaries passed away on January 18th and hence the significance.
- Loknayak Foundation award winners are announced on 24th November every year on the birthday of Dr Lakshmi Prasad Yarlagadda.

14. Government Initiatives

14.1. Regulator for Uniform Board Exams

Why in News?

- Union government is planning to set up a national regulator PAREKH (Performance Assessment, Review and Analysis of Knowledge for Holistic Development) for achieving a benchmark framework to assess students at the secondary and higher secondary level.
- PARAKH, is also part of the National Education Policy (NEP) 2020.

What is PAREKH?

About:

- It's a proposed regulator, which will act as a constituent unit of the NCERT, and will also be tasked with holding periodic learning outcome tests like the National Achievement Survey (NAS) and State Achievement Surveys.
- Its team will consist of leading assessment experts with a deep understanding of the education system in India and internationally.
- It 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.

Objectives:

Uniform Norms & Guidelines:

- Setting norms, standards and guidelines for student assessment and evaluation for all recognized school boards of India,

Enhance Assessment Pattern:

- It will encourage and help school boards to shift their assessment patterns towards meeting the skill requirements of the 21st century

Reduce Disparity in Evaluation:

- It will bring uniformity across the state and central boards which currently follow different standards of evaluation, leading to wide disparities in scores.

Benchmark Assessment:

- The benchmark assessment framework will seek to put an end to the emphasis on rote learning, as envisaged by the National Education Policy (NEP) 2020.

Suggestions:

Hold Board Exams Twice:

- Various states have endorsed the NEP's proposal to hold board exams twice a year, including one for helping students improve their scores.

Two types of Exams for Math:

- States are also on board regarding a proposal to offer two types of papers on mathematics — a standard exam, and another to test higher-level competency.

Significance:

Reduce Fear:

- It will help reduce the fear of maths among students and encourage learning.

Removes Disparity in college Admission:

- It will help tackle the problem of students of some state boards being at a disadvantage during college admissions as compared to their peers in CBSE schools.

Innovative Evaluation:

- It will develop and implement the technical standards for the design, conduct, analysis and reporting of tests at all levels of school education.

Way Forward

- PAREKH creates a level playing field and reduces the disparity among various state boards and further aims to facilitate an inclusive, participatory and holistic approach to education, which takes into consideration field experiences, empirical research, stakeholder feedback, as well as lessons learned from best practices.
- It is a progressive shift towards a more scientific approach to education.
- The prescribed structure will help to cater to the ability of the child – stages of cognitive development as well as social and physical awareness.

14.2. PM SHRI Scheme Gets Cabinet Nod

What is PM Shri Scheme?

- The Union Cabinet has approved a new centrally sponsored scheme of **₹ 27,360 crores for the development of over 14,000 schools across the country as PM Schools for Rising India (PMSHRI).**
- The scheme is expected **to benefit 1.87 million students.**
- Under the scheme, more than 14,000 schools, including Kendriya Vidyalayas and Navodaya Vidyalayas as well as schools run by state governments and local bodies, **will be strengthened** to emerge as PMSHRI Schools.
- Prime Minister announced the scheme on September 5 on Teachers Day **to upgrade and modernise existing schools** from amongst those managed by the central and state governments, as well as local bodies.

Features of the Scheme

- **General Features:**
  - The selected schools **will be monitored vigorously to assess progress** and understand the challenges faced in the implementation of the new **National Education Policy (NEP), 2020.**
  - It will provide high quality education in an **equitable, inclusive and joyful school environment.**
  - It will take care of the **diverse background, multilingual needs, and different academic abilities of children.**
  - It will endeavour to make them **active participants in their own learning process as per the vision of NEP 2020.**
  - The PMSHRI Schools **will provide leadership** to other schools in their respective regions by providing mentorship.
- **School Identification Methodology:**
  - The PM SHRI scheme will be application-based, which means **states will have to identify schools for upgradation** under the scheme. Subsequently, schools will be required to self-apply online. The portal will be opened four times a year, once every quarter, for the first two years of the scheme.
  - According to the selection methodology decided by the central government, **states and UTs interested in getting included under the scheme will have to first agree to implement the NEP in its entirety.** Also, only those schools that meet a certain benchmark will qualify — the qualification criteria will include around 60 parameters from the availability of electricity to toilets.
  - In the third stage, teams of state government officials, KVs, and JNVs will verify the claims made by the applicant school through a physical inspection. **"Maximum two schools (one Elementary & one Secondary/ Senior Secondary) would be selected per block/ ULB…" (urban local body)** as per the plan. The final call will be taken by an expert committee.

How different these Schools will be

- **Green Schools**
  - These schools **will be developed as ´Green schools´,** incorporating environment friendly aspects like solar panels and LED lights, nutrition gardens with natural farming, waste management and plastic free.
  - Water conservation and harvesting, the study of traditions and practices related to the protection of the environment, climate change related hackathon and awareness generation to adopt a sustainable lifestyle will also be included.
- **Pedagogy**
  - Pedagogy adopted in these schools will be more experiential, holistic, integrated, play and toy based (particularly, in the foundational years) inquiry driven, discovery oriented, learner centred, discussion based, flexible and enjoyable.
- **Resource Utilisation**
  - It will include assessment of resources available and their effectiveness in terms of availability, adequacy, appropriateness, and utilisation for each of the domains and their key performance indicators.
    - It will look for filling of gaps in a systematic and planned manner.
- **Skill Development and Employment Generation**
  - PM SHRI Schools **will be linked with Sector Skill Councils and local industry** for enhancing employability and providing better employment opportunities will also be explored.

15. Persons & Appointments

15.1. Queen Elizabeth II

Why In News?

- Britain's longest reigning monarch, Queen Elizabeth II, died on September 8 at the age of 96.

About

- **Early Life :** Elizabeth Alexandra Mary Windsor on April 21, 1926, in Mayfair, central London.
    - She is the first child of the Duke and Duchess of York, who will become King George VI and Queen Elizabeth, the Queen Mother.
- **Marriage and family :** In 1947 Princess Elizabeth married Prince Philip at Westminster Abbey.
    - Their first child, Prince Charles, was born in 1948. A daughter, Anne, arrived in 1950, followed by Andrew in 1960 and Edward in 1964.
- **Coronation**:She was crowned at Westminster Abbey on June 2, 1953, in front of 8,500 assembled guests.
- **Platinum Jubilee:** On February 6, she became the first monarch in British history to rule for 70 years.

15.2. SC Judge DY Chandrachud

- Supreme Court judge Justice DY Chandrachud has been appointed as the next executive chairperson of the National Legal Services Authority (NALSA). The post was previously held by the Chief Justice of India UU Lalit.
- President Droupadi Murmu has appointed Justice D.Y. Chandrachud as the executive chairman of the NALSA. Before being elevated as a judge of the Supreme Court, Justice Chandrachud served as the Chief Justice of the Allahabad High Court and prior to that a judge of the Bombay High Court.

15.3. Roger Federer Retires

Why in News?

- Roger Federer announced his retirement from the international tennis.

More Details:

- The Laver Cup, which is set to commence on September 23, will be Roger Federer's final tournament.
- He will retire at the age of 41.
- The current net worth of Federer is around 550 million USD. 1 billion USD came after endorsements of brands and wearing their clothing.
- About 130 million of Federer's earnings came from official prize money – the second highest in tennis after Djokovic's 152 million USD.
- He was the first person in the world to win 20 grand slam titles.
- These are 8 Wimbledon, 6 Australian, 5 US Open and a solitary French title.
- He held the world's top spot in the ATP ranking for more time than any other player except Novak Djokovic.
- Federer has been in 31 major finals, 1 less than Djokovic, including a record 10 in a row.
- He spent 310 weeks as the world number 1, with 237 of them held consecutively.
- He was nominated for the Sportsmanship Award for a record of 13 times and has won ATP Fan's Favourite for 17 consecutive years.
- He was named the ATP Player of the Year and ITF World Champion 5 times.
- He holds the record of being the only individual to win the BBC Overseas Sports Personality of the Year award 4 times.
- He is also known for becoming the oldest ever World Number 1 at the age of 36.
- This legendary tennis player was born on August 8, 1981 in Basel, Switzerland.
- In his teens, he trained at the Swiss National Tennis Center in Ecublens, Switzerland.
- His career took off in 2001, when he faced off against seven-time Wimbledon champion Sampras.

16. Important Days

16.1. 1st to 7th September: National Nutrition Week

- To make people aware and understand the significance of nutrition, every year National Nutrition Week (NNW) is celebrated from 1st to 7th of September annually by the Food and Nutrition Board under the Ministry of Women and Child Development, Government of India.
- With the aim to improve the overall nutritional status POSHAN Abhiyan, 2018-2022 was introduced to minimize child under-nutrition and low-birth by 2% a year and anaemia across all age groups by 3%.

16.2. 2nd September: World Coconut Day

- Every year, September 2 is celebrated as World Coconut Day. The theme of World Coconut Day 2021 is "Building a Safe Inclusive Resilient and Sustainable Coconut Community amid COVID-19 Pandemic and Beyond".
- It is one of the most popular fruits consumed in the world. This day also commemorates the formation day of the Asian Pacific Coconut Community (APCC).
- The aim of celebrating this holiday is to bring coconuts into the spotlight and recognize their importance and benefits — not just health-wise but economically too.

16.3. 5th September: Teachers' Day (Dr. Radhakrishnan's birthday)

- In India, Teachers' Day has been celebrated annually on September 5 since 1962 to mark the birthday of the country's former President, scholar, philosopher, and Bharat Ratna awardee, Dr. Sarvepalli Radhakrishnan, who was born on this day in 1888.
- From giving us a purpose to setting us up as successful citizens of the world, teachers inspire in us a drive to do well and succeed in life and to recognise this hard work of our mentors and gurus, Teachers' Day or Shikshak Divas is celebrated in India with great pomp and show.

16.4. 5th September: International Day of Charity

- The International Day of Charity serves to increase and enhance social responsibility across the entire world, increasing our support for charitable causes.
- The date of 5 September was chosen in order to commemorate the anniversary of the passing away of Mother Teresa of Calcutta.

16.5. 8th September: World Literacy Day

- Every year on September 8th, International Literacy Day is commemorated to raise awareness of the importance of literacy, which is undeniably a question of dignity and human rights.
- The theme of world literacy day 2021 is "Literacy for a human-centered recovery: Narrowing the digital divide".

16.6. 11th September: 9/11 Remembrance Day

- The National Day of Service and Remembrance, often known as 9/11 Day, is observed this year on its 20th anniversary.
- In remembrance of those lost and hurt on September 11, 2001, the day offers an opportunity to assist others.

16.7. 14th September: Hindi Diwas

- Hindi Diwas is celebrated on 14th September in India to commemorate the date 14 September 1949 on which a compromise was reached during the drafting of the Constitution of India on the languages that were to have official status in the Republic of India.
- Hindi comes under the most spoken language in the world.

16.8. 15th September: Engineer's day in India

- Engineer's Day is observed in several countries on various dates of the year.
- In India, the birth anniversary of Sir M Visvesvaraya is celebrated as Engineer's Day since 1968 as a tribute to a great engineer who helped in building some of the architectural marvels, including the Krishna Raja Sagar dam in Karnataka.

16.9. 15th September: International Day of Democracy

- In 2007 the United Nations General Assembly resolved to observe 15 September as the International Day of Democracy with the purpose of promoting and upholding the principles of democracy and invited all member states and organizations to commemorate the day in an appropriate manner that contributes to raising public awareness.

16.10. 16th September: World Ozone Day

- World Ozone Day is observed on September 16 every year to spread awareness among people about depletion of the Ozone Layer and find possible solutions to preserve it.
- The ozone layer protects life on earth by absorbing the UV rays of Sun.

16.11. 17th September: International Red Panda Day

- Every year, International Red Panda Day is celebrated on 18th September to spread awareness regarding yet another species that is near extinction.
- The day was launched by the Red Panda Network in 2010, and the first international red Panda day was celebrated in September that very year. Since then, the need to continue honoring the day has only increased due to global warming and climate change.

16.12. 18th September: World Bamboo Day

- Every year on September 18, World Bamboo Day is marked as a day of celebration to raise global awareness of bamboo.
- Bamboo has been an everyday usage wood in areas where it grows naturally, but its use does not seem to be sustainable owing to exploitation.

16.13. 21st September: International day of peace

- The International Day of Peace, also officially known as World Peace Day, is a United Nations-sanctioned holiday observed annually on 21 September.
- The UN General Assembly has declared this as a day devoted to strengthening the ideals of peace, through observing 24 hours of non-violence and cease-fire.

16.14. 22nd September: Rose Day (Welfare of Cancer patients)

- World Rose Day, celebrated on September 22, is a ray of hope for cancer patients all around the world who are facing the big 'C.
- 'An arduous and prolonged struggle awaits those who choose to fight cancer. The day is

celebrated in the memory of 12-year-old Melinda Rose from Canada who was diagnosed with Askin's Tumour, a rare form of blood cancer.

16.15. 24th September: World Maritime Day

- This year, National Maritime Day is celebrated for the 59th time in India.
- The day is observed to spread awareness about international trade and the economy. The theme of National Maritime Day 2022 is 'Sustainable Shipping beyond Covid-19'.

16.16. 25th September: Antyodaya Diwas

- Antyodaya Diwas is celebrated every year on 25 September to mark the birth anniversary of Pandit Deendayal Upadhyaya, one of the most prominent personalities in the history of Indian politics.
- This day was given its national importance when Prime Minister Narendra Modi, in 2014, dedicated it in honour of late Pandit Deendayal Upadhyaya to mark his birth anniversary.
- This year, the Antyodaya Diwas marks the 105th birth anniversary of Upadhyaya.

16.17. 26th September: World Environmental Health Day

- World Environmental Health Day is observed on September 26.
- International Federation of Environmental Health (IFEH) has brought together environmental health professionals across the globe to discuss the theme "Prioritizing Environmental Health for Healthier Communities in Global Recovery".
- This year's theme is 'Only One Earth', which draws our attention towards playing our role effectively while living in perfect harmony with nature – without proving a burden on it.

16.18. 26th September: World River Day

- World Rivers Day is celebrated on the fourth Sunday of September every year to increase public awareness about rivers and to encourage their conservation.
- The day celebrates Earth's waterways, in which over 60 countries participate every year. River enthusiasts from around the world came together to organize the inaugural WRD event. That first event in 2005 was a great success and Rivers Day was celebrated across dozens of countries.

16.19. 27th September: World Tourism Day

- World Tourism Day has been held on 27 September each year since 1980. With the theme of "Rethinking Tourism", the international day of observance will this year focus on re-imagining the sector's growth, both in terms of size and relevance.
- The purpose of this day is to raise awareness on the role of tourism within the international community and to demonstrate how it affects social, cultural, political and economic values worldwide.

16.20. 28th September: World Rabies Day

- World Rabies Day is observed on September 28. A global health observance started in 2007 to raise awareness about rabies and bring together partners to enhance prevention and control efforts worldwide.
- 28 September also marks the anniversary of Louis Pasteur's death, the French chemist and microbiologist, who developed the first rabies vaccine.

16.21. 29th September: World Heart Day

- World Heart Day is celebrated every year on 29 September. The day is observed to spread awareness about cardiovascular diseases.
- The aim of World Heart Day is to inform people around the globe that heart diseases are the world's leading cause of death and highlight the actions that need to be taken for prevention and control.

16.22. 30th September: World Maritime Day

- World Maritime Day is observed on September 30.
- The theme of world maritime day 2022 is 'New technologies for greener shipping', reflecting the need to support a green transition of the maritime sector into a sustainable future while leaving no one behind.

17. Miscellaneous

17.1. One Nation-One Fertilizer (ONOF)

Why In News?

- Recently, the ministry of chemicals and fertilizer has **issued directions** to all companies to use the new brand name, **Bharat**, and logo of the subsidy scheme on the bags.

About

- The concept of **One Nation-One Fertilizer (ONOF)** will be implemented from October 2,2022.
- As part of the initiative, crop nutrients -- urea, di-ammonium phosphate (DAP) or muriate of potash (MOP) will be **sold under a single brand name**, 'Bharat' irrespective of the manufacturing companies.
    - All fertilizer bags, whether containing urea or di-ammonium phosphate (DAP) or muriate of potash (MOP) or NPK will sport the brand name '**Bharat Urea', 'Bharat DAP', 'Bharat MOP' and 'Bharat NPK**' irrespective of the company that manufacturers (private or public)
- The concept is brought under the Centre's fertilizer subsidy scheme, **Pradhanmantri Bhartiya Janurvarak Pariyojana (PM-BJP)**
- New brand name and logo with subsidy title, Pradhanmantri Bhartiya Janurvarak Pariyojana, will occupy:
    - **Two-thirds** of the printable area on the bag and
    - **One-third** will be used for putting details of the fertilizer companies and its symbol with other information as per the rules.
- **Benefits:**
    - A single brand name will help in the **reduction of freight charges** due to stopping of crisscross movement of fertilizers,
    - Reducing the **transit time**, and
    - **Ensuring the availability** of fertilizers throughout the year irrespective of brand preferences.
    - It will also stop the diversion of urea for industrial purposes.
- The Government gives a **huge subsidy on these products** which is more than maximum retail price, therefore, subsidy schemes will also be mentioned on the bag.

17.2. Southern Rice Black-Streaked Dwarf Virus (SRBSDV)

Why In News?

- Recently, the scientists at Punjab Agricultural University (PAU) decoded the mystery disease which hit the paddy crop causing "dwarfing" of the plants.

Southern Rice Black-Streaked Dwarf Virus (SRBSDV)

- **Origin:**
  - Named after **Southern China** where it was first reported in 2001, was found to be the factor causing the disease.
  - The incidence of stunting was more pronounced in early sown paddy crops, irrespective of the variety.
- **Impact:** In **severely infected rice fields, t**he infected plants showed withering.
  - The height of the stunted plants showed reduction from 1/2 to 1/3rd than the normal plants.
  - These plants had shallow roots and could be easily uprooted.
  - These plants were observed in almost all the cultivated varieties in the farmer's fields.
- **Transmission:**
  - The SRBSDV is **transmitted** by white-backed plant hopper (WBPH) in a persistent circulative and propagative manner.
  - In addition to rice, SRBSDV also infects different weed species as nymphs of WBPH can transmit the virus more efficiently as compared to adults.
  - **Long-distance transmission** of this virus may occur through WBPH migrating with the typhoons and strong convection winds.
- **Precaution:**
  - Since there was no corrective measure for the viral disease, farmers should **regularly monitor the crop** for the presence of WBPH and a few plants should be slightly **tilted and tapped 2-3 times** at the base at weekly intervals.
  - If WBPH nymphs/adults are seen floating on water, then insecticides, including Pexalon 10 SC (triflumezopyrim) @ 94 ml/acre or Osheen/Token 20 SG (dinotefuran) @ 80 g/acre or Chess 50 WG (pymetrozine) @ 120 g/acre, can be **sprayed** towards the base of the plants.

17.3. Indian Navy's new ensign

Why in News?

- Prime Minister Narendra Modi recently unveiled the new ensign of the Indian Navy which takes inspiration from the seal of the great Indian emperor Chhatrapati Shivaji Maharaj.

More Details:

- This new ensign has two main components: the canton national ensign in the upper left, and a navy blue-gold octagon in the center of the fly side away from the staff.
- St. George's Cross has been removed from this new ensign. Now the tricolor is drawn in the top left. Next to it is the emblem of Ashoka in gold on a blue background. Below it is written 'Sham no Varunah' in Sanskrit language. It means that Varuna, the god of water, is auspicious for us.
- The blue octagonal shape in this new ensign represents the eight directions, symbolizing the multi-faceted reach and multi-functional operational capability of the Indian Navy, while the anchor symbol represents "firmness".

History Behind the Naval Ensign

- India became independent from the British colony, but the ensign of the Indian Navy remained a glimpse of the British period. The red cross seen on the Navy ensign is the 'St George's Cross', which was once part of the English flag, the Union Jack.
- It bears the insignia of the Red Cross Navy and the tricolor was placed in the top left. In the year 2001, changes were made to this ensign and the Red Cross was removed from it and in its place the Ashoka symbol was made in blue color.
- However, there was a complaint that the blue color mixes with the sea and the sky, due to which it is not visible. After this it was changed again in 2004 and the Red Cross was established. But this time the Ashoka symbol was placed in the middle of the Red Cross.
- In 2014, it was changed again and 'Satyamev Jayate' was written below the Ashoka emblem.

17.4. UGC 'e-Samadhan' portal

Why in News?

- The University Grants Commission (UGC) has recently launched an online portal named 'e-Samadhan'.

More Details:

- Through this portal, students taking admission in any university or facing any kind of problem after admission will be able to find solutions to their problems.
- Students will now be able to directly report their problems to the UGC for any problem in Central and State Universities, their affiliated colleges and other government and private sector higher education institutions across the country through this portal.
- This will benefit all stakeholders in the higher education sector – 1,043 universities, 42,343 colleges, 3.85 crore students and 15.03 lakh teachers.
- Through this portal, students and employees can register any grievance of theirs anytime within 24 hours. Apart from this, there will also be an option to register your problems on the UGC toll free number 1800-111-656.

17.5. Haridwar: Best Aspirational District

Why in News?

- NITI Aayog has declared Haridwar city of Uttarakhand as the best aspirational district on the basis of five parameters. Haridwar has secured first position in Basic Infrastructure theme. Now an additional allocation of Rs 3 crore will be made to this city.

Aspirational District Programme

- The programme was launched in January 2018 aims to quickly and effectively transform some of most underdeveloped districts of the country.
- This scheme has been implemented along with the central and state schemes. In its successful implementation, there is important cooperation of the 'in-charge' officers of the central, state level and district collectors.
- The competition between these districts is maintained through equated monthly delta rankings, so that they are eager to make it a success.
- The ranking of aspirational districts combines innovative use of data with practical governance, placing the district at the center of inclusive growth.
- As per the norms for planning of aspirational districts, each district should prepare an action plan in consultation with the State and Central officers in charge, after which it should be sent to NITI Aayog for final approval of the Empowered Committee of Secretaries constituted for the programme.

17.6. TB Mukt Bharat Abhiyan 'Ni-kshay 2.0' portal

Why in News?

- President Draupadi Murmu recently launched the 'Pradhan Mantri TB Mukt Bharat Abhiyan' and the Nikshay 2.0 portal to eliminate TB by 2025 through a virtual event.

More Details:

- Under this campaign, any person, any representative or organization can adopt TB patients and the adopted patients will be taken care of.
- More than 66 percent TB patients currently undergoing treatment in the country have given their consent for adoption under this campaign.
- Under this scheme, more than 62 lakh TB patients have received financial assistance of Rs 1,651 crore since 2018. This involves a direct transfer of Rs 500 to the patient's bank account.

Nikshay 2.0 Portal

- The NIKSHA 2.0 portal provides additional patient support to TB patients to take advantage of Corporate Social Responsibility (CSR) opportunities to improve treatment outcomes, enhance community participation

and fulfill India's commitment to TB eradication by 2025.

- The people and institutions who come forward to take care of the patients will be called "Nikshay Mitras".
- The period of Nikshay Mitra support can be chosen from one year to three years. They can also choose the state, district, block, health facilities.
- Around 13.5 lakh TB patients are registered in the NIKSHA portal, out of which 8.9 lakh active TB patients have given their consent for adoption.
- The digital portal Nikshay will provide a platform for community support to TB patients.
- Under this initiative, individuals, organisations, corporates, cooperative organisations, elected leaders and NGOs can provide support to persons suffering from TB by adopting them. You can also login to Nikshay 2.0 Portal.
- As part of the programme, Union Health Minister Mansukh Mandaviya will adopt 15 of the 87 patients who have given their consent for adoption in his home town Palitana in Gujarat.

17.7. National Pharmaceutical Pricing Authority (NPPA)

Why in News?

- The **National Pharmaceutical Pricing Authority (NPPA)** has celebrated its **Silver Jubilee.**

About

- At the inaugural session of the event, the **Integrated Pharmaceutical Database Management System 2.0 (IPDMS 2.0)** and **Pharma Sahi Daam 2.0 app** were launched.
- **IPDMS 2.0:** It is an integrated, responsive, cloud-based application developed by NPPA with technical support from **Centre for Advanced Computing (C-DAC).**
    - It is envisaged to optimise synergies in operations in order to promote the government's thrust on **'Ease of Doing Business'**.
    - It would provide a single window for submissions of various forms as mandated under **Drug Price Control Order (DPCO), 2013.** .
    - It would also enable paperless functioning of NPPA and facilitate the stakeholders to connect with it from across the country,
- **Pharma Sahi Daam 2.0 app:** This will have updated features like speech recognition, availability in Hindi and English, share button and medicine bookmarking.
    - This version of Pharma Sahi Daam also has a facility for launching complaints by consumers through the consumer complaint-handling module.

National Pharmaceutical Pricing Authority (NPPA)

- **About:**
    - The NPPA was set up as an **attached office of the Department of Chemicals and Petrochemicals** (now Department of Pharmaceuticals since July, 2008) on 29th **August 1997.**
- **Functions:**
    - To implement and enforce the provisions of the Drugs Price Control Order (DPCO), 1995/2013 in accordance with the powers delegated to it.
    - To undertake and/or sponsor relevant studies in respect of pricing of drugs/formulations.
    - To monitor the availability of drugs, identify shortages, if any, and to take remedial steps.

17.8. Project 75(I)

Why In News?

- Recently, Russia has withdrawn from Project 75(I) stating the terms and conditions in the Request For Proposal (RFP) for the construction of six advanced submarines as unrealistic.

About Project 75(I)

- **Background:** Indian Navy P-75 1 submarine project is listed in **Phase I of the Indian Navy's 30** Year **indigenous submarine construction** plan approved by the **Cabinet Committee on Security (CCS) on 13 Jul 1999.**
    - The plan envisages the **construction of 24 submarines** indigenously along with public and private industries, of appropriate designs in two phases.
    - In Phase I (2000 – 2015), the plan had two parts.
        - The first part is the construction of **P 75** was started in Oct 2005

- The first of the Project - 75 submarines was commissioned into the Navy in December 2017 .

    - The second part, Project 75(I), six submarines from the Eastern design like the 877EKM or a derivative like Amur 1650, was to be constructed simultaneously.

- Project-75(I) **envisages indigenous construction** of six modern conventional submarines (including associated shore support, Engineering Support Package, training and spares package) with contemporary equipment, weapons & sensors including Fuel-Cell based AIP (Air Independent Propulsion Plant), advanced torpedoes, modern missiles and state of the art countermeasure systems.
- **Significance :**The project would not only aid in boosting the core submarine/ship building industry but would also greatly enhance the manufacturing/industrial sector, especially the MSME by development of an industrial eco-system for manufacture of associated spares/systems/equipment related to submarines.
- The overall aim would be to progressively build indigenous capabilities in the public/private sector to design, develop and manufacture complex weapon systems for the future needs of the Armed Forces.

17.9. One Herb, One Standard and One Nation

Why In News?

- The Ministry of Ayush has taken a significant step to achieve **"One Herb, One Standard".**

One Herb, One Standard and One Nation

- **About:**
    - A Memorandum of Understanding (MoU) was signed between the Ministry of Ayush) and the Ministry of Health & Family Welfare) for Inter-Ministerial cooperation for promotion and facilitation of "**One Herb, One Standard".**
    - The primary objective of this MoU is the development of cooperative efforts between both the ministries to promote public health by facilitating the development of harmonised Herbal drug standards.
    - It will enable p**ublication of monographs**, which will be beneficial to everyone.
        - Each monograph will have Indian Standards along with the international quality requirements, so that all Indian quality standards become contemporary with the global standards for the same botanicals.
- **Significance:**
    - It will facilitate collaboration for promoting exchange of information in the area of standardization of Traditional medicine by sharing of scientific information and drug raw materials/extracts, seminars, workshops, training and brainstorming programs.
    - It will improve ease of **doing business in India** and also improve overall trade of Indian botanicals.

17.10. GEF Small Grants Programme

Why In News?

- The Ministry of Environment, Forest and Climate Change in collaboration with UNDP is implementing the **GEF Seventh Operational Phase of the Small Grants Programme in India (SGP-OP7).**
    - **The Energy and Resources Institute (TERI)** has been appointed the National Host Institution for executing this Project.

About GEF Small Grants Programme

- 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.
- **Launched in 1992**, SGP works closely with and complements other GEF projects and programs, supporting 136 countries since its inception.
- Evaluations led by the Independent Evaluation Offices of the GEF and the **United Nations Development Programme (UNDP**) have proven that civil society-led initiatives can generate environmental benefits, while supporting sustainable livelihoods, gender equality and civil society empowerment.
- The programme provides **grants of up to $50,000 directly to local communities including** indigenous people, community-based organisations and other non-governmental groups for projects in Biodiversity, Climate Change Mitigation and Adaptation, Land Degradation and Sustainable Forest Management, International Waters and Chemicals.

17.11. F16 Package to Pakistan

Why In News?

- Recently, India conveyed its concern over the recent U.S. approval of a $450-million sustenance package for **Pakistan's F-16 fighter fleet**.

About the deal

- **Pakistan first** received the **F-16 aircraft package from the Ronald Reagan administration** in the 1980s despite heavy objection from the Government of India which cautioned that the aircraft would be used against Indian targets.
    - Indian objection was based on the findings that Pakistan would arm the F-16s with nuclear weapons that it had procured in a clandestine manner.
- The supply of F-16 multi role aircraft continued throughout the post-9/11 era till the Biden administration and the latest package shows the consistent nature of partnership between US and Pakistan.
    - The US assistance will improve the precision-ability of the F-16 aircraft and allow Pakistan to access the latest air attack software from the United States.

17.12. KRITAGYA 3.0

Why in News?

- KRITAGYA 3.0 was launched by ICAR to promote "speed breeding" for crop improvement.

More Details:

- The Indian Council of Agricultural Research along with its National Agricultural Higher Education Project (NAHEP) and Crop Science Division is organizing a hackathon KRITAGYA 3.0 aimed at promoting speed breeding for the improvement of crops.
- This initiative would give opportunities for students, faculties, entrepreneurs, innovators and others to demonstrate innovative approaches and technological solutions for the crop improvement.
- Besides achieving desired solutions in the crop sector, it would also encourage wider adoption of technology-enabled solutions in agriculture sector.

- The KRITAGYA stands of KRI for Krishi, which means agriculture; TA for Taknik, meaning technology; and GYA for Gyan meaning knowledge.
- In this hackathon, students can collaborate with local startup-ups, students from technology institutions and can win a maximum of Rs.5 lakhs.
- It will provide an opportunity to learn, innovate and solve problems faced in the crop sector and boost employability and entrepreneurship in the country.
- It was launched in line with the National Education Policy, 2020.

17.13. UNEP launches Green Fins Hub

Why in News?

- The United Nations Environmental Programme (UNEP) and the UK-based charity Reef-World Foundation have launched the Green Fins Hub to boost sustainable marine tourism.

More Details:

- The Green Fins Hub is first-ever global marine tourism industry platform that would help diving and snorkelling operators across the world to make simple, cost-efficient changes in their daily practices by implementing international best practices that promotes sustainability of marine tourism.
- The platform would enable operators keep track of their yearly improvements and communicate with their communities and customers.
- It was developed by The Reef-World Foundation in collaboration with the UNEP.
- It would help spread awareness about the global best practices to protect the coral reefs and their fragile marine ecosystems.

17.14. Hybrid Propulsion System

Why In News?

- The Indian Space Research Organisation (ISRO) has successfully tested a hybrid propulsion system

About Hybrid propulsion system

- The 30 kN hybrid motor tested at ISRO Propulsion Complex (IPRC) at Mahendragiri in Tamil Nadu
- The test was supported by ISRO's Liquid Propulsion Systems Centre (LPSC).
- It uses a solid fuel and liquid oxidiser.
    - The motor used Hydroxyl-terminated polybutadiene (HTPB) as fuel and liquid oxygen (LOX) as the oxidiser.
- **Significance :** It is scalable and stackable, potentially paving the way for a new propulsion system for the forthcoming launch vehicles.
    - The use of liquids facilitates throttling, and the control over the flow rate of LOX enables the re-start capability
    - The hybrid system is more efficient, ''greener'' and safer to handle

17.15. SCALE App

Why In News?

- The **SCALE (Skill Certification Assessment for Leather Employees) app** was launched recently.

About the App

- Developed by the **Leather Sector Skill Council.**
    - The **Leather Sector Skill Council (LSSC)** is a non-profit organisation dedicated to meet the demand for skilled workforce in the leather industry in India.
    - **LSSC was set up in 2012** as one of the key sector skill councils approved by **National Skill Development Corporation (NSDC).**

- The App will provide a one-stop solution for the skilling, learning, assessment, and employment needs of the leather industry.
- It will allow 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.

Significance

- This will boost the efforts to strengthen the leather skilling ecosystem.
- It will help inch closer to fulfilling our Hon'ble Prime Minister's vision of making **'Atma Nirbhar Bharat'** the **'Skill Capital of the World'.**

17.16. Long Range Radio (LoRa)

Why In News?

- Recently, the **Institute for Development and Research in Banking Technology** (IDRBT), an arm of the **Reserve Bank of India (RBI)** has developed a new low cost financial network to take banking to remote areas.

About Long Range Radio (LoRa)

- LoRa technology is a **wireless modulation technique** in the **physical layer**, allowing **long-range communication** using **chirp spread spectrum**.
- **LoRa technology uses dedicated radios**, which are not usually present in end-user devices, limiting interferences from other devices.
- **LoRa is ideal for applications that transmit small chunks of data** with low bit rates.
- **It is a new dedicated low cost financial network** that can be used privately by banks to send encrypted texts to conduct financial transactions.

17.17. White Fly

Why in News?

- Recently, there has been a rise in the number of white fly attacks on cotton in various states like Punjab and Rajasthan.

About:

- Whitefly is a serious pest of cotton that lowers yield by feeding on the underside of the leaf and spreading diseases like Cotton Leaf Curl Virus.
- They feed on the sap of the leaves and release fluid onto the leaves on which a black fungus grows, this affects photosynthesis, the food-making process of the plant, and so lowers the strength of the plant.

17.18. Inauguration of 'Kartavya Path'

Why in News?

- Recently, Prime Minister Narendra Modi inaugurated the road 'Kartavya Path' between Rashtrapati Bhavan to India Gate.

More Details:

- From Rajpath to Kartavya Path, a 15.5 km long walkway has been made of red granite on both sides of this road. Also 16 bridges have been built in the canal area of 19 acres.
- There will be a seating arrangement on both sides of this duty path spread over 3.90 lakh square meters. This will also be completed with a completely green area.
- It is a living path of India's democratic past and all-time ideals. When the people of the country come here, Netaji's statue, National War Memorial, all these will give them a great inspiration, will inculcate a sense of duty in them.

17.19. Human Organ Transportation Drone

Why in News?

- Union Minister for Road Transport and Highways Nitin Gadkari recently inaugurated the country's first prototype drone for transporting human organs to facilitate quick transplantation in hospitals.

More Details:

- With this innovation, it will take much less time to transport the transplanted organs from airport to hospital. At present, this facility has been started by MGM Healthcare Hospital located in Chennai.
- This drone can be used to carry the organ box up to a distance of 20 km. For this, an agreement has been signed with a city-based drone company.
- This experiment will prove to be a milestone in the direction of seamless transport of organs after transplantation in this service.
- India ranks third in the world after United States and China, with a maximum of 17,000-18,000 solid organ transplants every year. And to defend such circumstances, the human organ transportation drone can be a boon.

17.20. India- UK conduct Counter Ransomware Exercise

Why in News?

- Recently India's National Security Council Secretariat (NSCS) and the British Government in collaboration with BAE Systems successfully conducted a virtual ransomware drill for 26 countries to prepare for a large, widespread cyber attack.

Theme

- The theme of the exercise is "Energy Sector" which aims to enable national cyber crisis management teams belonging to CRI affiliates to tackle ransomware attacks on multiple power distribution companies.

17.21. India's first intra-nasal Corona vaccine

Why in News?

- The country's first intranasal COVID vaccine iNCOVACC by Bharat Biotech has recently received DCGI approval for primary immunization against the infection for people above the age of 18 years.
- This vaccine has been named ChAd36-SARS-CoV-S COVID-19.

More Details:

- ChAd36-SARS-CoV-S COVID-19 (Chimpanzee Adenovirus Vectored) Recombinant Nasal Vaccine for COVID-19 by Bharat Biotech is the first of its kind needle-free vaccine.
- This is a new intranasal vaccine that is given without the help of a needle (injection).
- It will prove to be a safer and more effective option for middle-income countries.

17.22. UNESCO Network of Learning Cities

Why in News?

- Recently, three cities in India have joined the UNESCO Global Network of Learning Cities. These include two cities Thrissur and Nilambur in Kerala and Warangal in Telangana.

More Details:

- Warangal is the second UNESCO recognition for Telangana. Earlier, Ramappa Temple in Mulugu district was included in the list of UNESCO World Heritage Sites.
- This time, Ukraine's capital Kyiv, South African city Durban and UAE city Sharjah have been included in this list of UNESCO Global Network of Learning Cities.
- In the year 2022, 77 cities from 44 countries of the world including India have been included in this list.
- The inclusion of these cities will encourage exchange of ideas with other cities and share among themselves the methods of systems already implemented in these cities.

17.23. First Anniversary of Shoonya campaign

Why in News?

- NITI Aayog has recently hosted the inaugural edition of Shoonya Forum in Delhi to commemorate the first anniversary of Shoonya Campaign.

More Details:

- At the Shoonya Forum, 25 Shoonya partners have announced their commitment to accelerate India's transition to Electronic Vehicles and improve air quality for citizens in the country.
- Shoonya Campaign aims to promote the use of EVs for ride hailing and delivery services and minimise air pollution caused by these services. The campaign has 130 industry partners, including ride-hailing, delivery and EV companies.

17.24. Kantar BrandZ India 2022

Why in News?

- Kantar BrandZ India 2022 was released recently to broadly assess the impact of the COVID-19 pandemic on Indian brands, with the focus on FMCG, non-FMCG and technology brands.

More Details:

- According to the report, India's top 75 brands together are worth USD 393 billion, equal to 11 per cent of India's national GDP.
- The growth rate of top 75 most valuable Indian brands surpasses that of the rate of growth posted by other major markets across the globe.
- The Tata Consultancy Services, with the value of 45.5 billion USD, is the most valuable brand in India.
- Earlier, HDFC held this position since 2014, when the ranking was first launched.

17.25. UNEP launches Green Fins Hub

Why in News?

- The United Nations Environmental Programme (UNEP) and the UK-based charity Reef-World Foundation have launched the Green Fins Hub to boost sustainable marine tourism.

More Details:

- The Green Fins Hub is first-ever global marine tourism industry platform that would help diving and snorkelling operators across the world to make simple, cost-efficient changes in their daily practices by implementing international best practices that promotes sustainability of marine tourism.
- The platform would enable operators keep track of their yearly improvements and communicate with their communities and customers.
- It was developed by The Reef-World Foundation in collaboration with the UNEP.
- It would help spread awareness about the global best practices to protect the coral reefs and their fragile marine ecosystems.

17.26. JALDOOT App

Why in News?

- Recently, the Union Minister of Rural Development and Panchayat launched the **JALDOOT App.**

About

- The App will be used across the country to capture the water level of selected wells in a village.
- It will enable **Gram Rojgar Sahayak (GRS)** to measure the water level of selected wells **twice a year (pre-monsoon and post-monsoon).**
- These will be representative of the ground water level in that village.

Why is the measurement of the water table necessary?

- The country has taken many steps for improvement of water management both in the rural and urban areas, through watershed development, afforestation, water body development and renovation, rainwater harvesting and so on.
- However, withdrawal of groundwater, as also utilization of surface water sources has reached critical levels in many parts of the country, resulting in significant depletion of water levels causing distress to the community, including farmers.
- Therefore measurement and observation of the levels of water tables across the country has become necessary.

17.27. Asian Palm Oil Alliance (APOA)

Why In News?

- Asian Palm Oil Alliance (APOA)was launched during the Globoil Summit at Agra on September 21.

About Asian Palm Oil Alliance (APOA)

- The apex edible oil industry associations from five major palm oil importing countries of A**sia -- India, Pakistan, Sri Lanka, Bangladesh and Nepal** -- have come together to form the APOA.
- APOA is expected to safeguard the economic and business interests of the palm-oil consuming countries and create a level-playing field for all fats and oils used in food, feed and oleo-chemicals in Asia.
- It will further work towards increasing the consumption of sustainable palm oil in member countries.

17.28.Eklavya Model Residential Schools

Why in News?

- The Eklavya Model Residential Schools have been facing teacher shortage.

- About 4,000 teachers have been appointed across the 378 schools, of which nearly 70 per cent are either contractual teachers or on deputation from state government schools.

Shortage of Teachers

- According to the guidelines issued to states in 2020 by NESTS, each school had been recommended to have a total of 52 staffers, of which 30 were meant to be teaching positions.
- Therefore, 378 schools should have a total of 11,340 teachers.

What are EMRS?

- Eklavya Model Residential School (EMRS) is a Government of India scheme for **model residential schools, specifically for Scheduled Tribes across India.**
- It aims to ensure tribal students get access to quality education in the remote tribal areas.
- It is one of the **flagship interventions of the Ministry of Tribal Affairs, Government of India** and was introduced in the **year 1997-98.**
- EMRSs are set up in States/UTs with grants under **Article 275(1) of the Constitution of India.**

They provide modern state-of-the art educational facilities as per the norms of Central Board of School Education (CBSE) and National Educational Society for Tribal Students (NEST).

17.29. India's First Lithium Cell Plant

Why In News?

- The Minister of State for Electronics and Information Technology (MeitY)will inaugurate **India's first lithium cell manufacturing facility** at Tirupati, Andhra Pradesh.

About plant

- The state-of-the-art facility has been set up by the Chennai based Munoth Industries Limited with an outlay of Rs. 165 crores.
- The facility is located in one of the two Electronics Manufacturing Clusters set up in the temple town, by Prime Minister Narendra Modi in 2015.
- The installed capacity of the plant at present is 270 Mwh and can produce 20,000 cells of 10Ah capacity daily.
- These cells are used in power banks and this capacity is around 60 percent of India's present requirement.
    - Currently India imports complete requirements of lithium-ion cells primarily from China, South Korea, Vietnam and Hong Kong.
- Cells for other consumer electronics like Mobile Phones, hearable and wearable devices will also be produced.

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