



# VAJIRAM & RAVI

( Institute for Civil Services Examination )

## AUGUST 2021

# *the* RECITALS

Explore Current Affairs Through Q&A



**Featured  
Articles**



**Prelims  
Q & A**



**Bridging  
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Technology And UN Peacekeeping

Block Chain

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# **VAJIRAM & RAVI**

## *The Recitals*

**Explore Current Affairs Through Q&A**

*(August 2021)*

### **VAJIRAM & RAVI**

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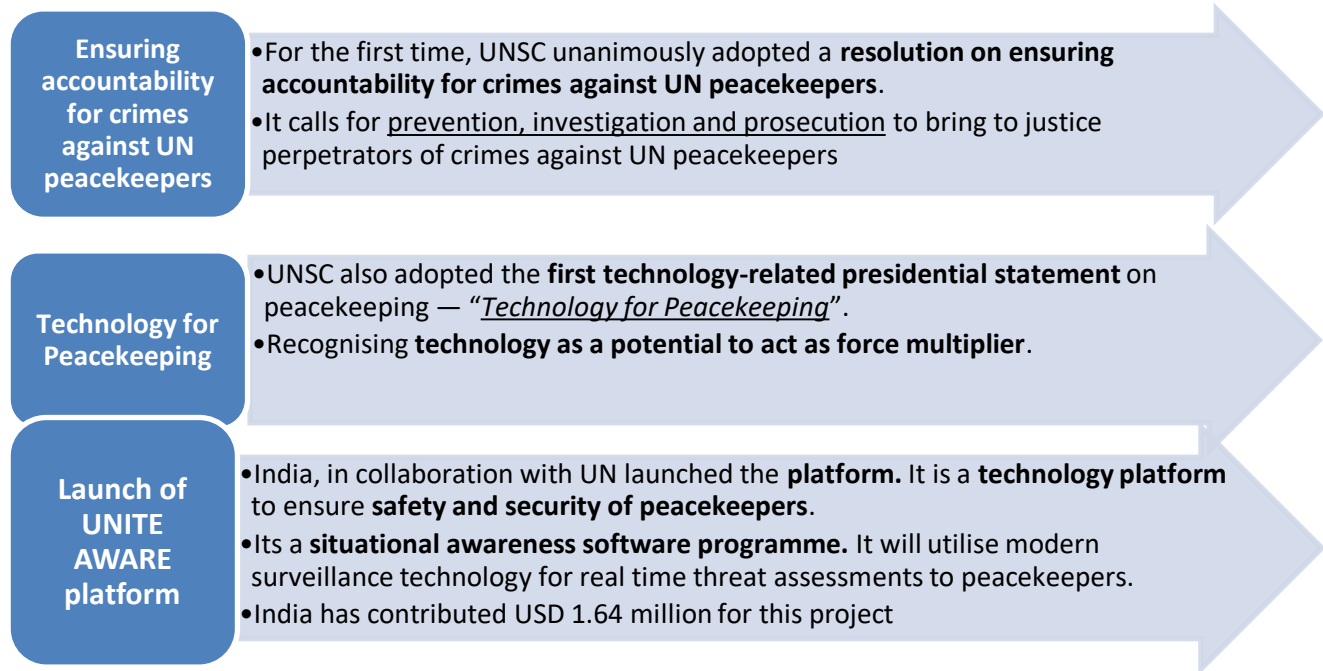
## Technology and United Nation Peacekeeping

- The United Nations Security Council (UNSC) has organised a **high-level open debate on United Nations Peacekeeping Operations** under Indian Presidency.
- Theme of debate was **“Protecting the protectors”**.

### 3 Signature Events Under India’s Presidency

1. Debate on global cooperation for maritime security
2. Debate on UN Peacekeeping Operations
3. Debate on counter-terrorism

### Key Outcomes



### India Proposed 4 Point Framework for Protection of UN Peacekeepers (often referred to as Blue Berets or Blue Helmets)

- Deployment of proven, cost-effective, field-serviceable technologies
- Consistent training and capacity building of peacekeepers in field of technology
- Ensure regular technological improvements for peacekeepers
- Establish a sound information and intelligence foundation for ensuring early warning and mobilising a coherent and early response

### Why Digital Transformation of UN Peacekeeping is Needed?

- Besides increasing the efficiency, it helps the peacekeeping forces to **adapt to changing conflict dynamics**.
- New technologies pose profound threats. These are reflected by the **online proliferation of violent extremist ideologies, cyber-attacks and misinformation**.
- Anonymous actors are able to **target critical infrastructure** such as power stations, hospitals, government facilities etc.

## UN Peacekeeping Operations & India

### Contribution with Troops

- India has been a pioneer in UN Peacekeeping, deploying *more than a quarter of a million troops* over the years in as many as **49 UN Peacekeeping Missions**.
- It has been actively participating in peacekeeping right from 1950 when it supplied medical personnel and troops to the **UN Repatriation Commission in Korea**.
- India has a long tradition of sending women on UN peacekeeping missions. In 2007, India became the first country to deploy an all-women contingent to a UN peacekeeping mission.
- It has troop deployment in Lebanon, Golan Heights, Congo and South Sudan in addition to staff officers in other missions.
- Nearly 80% of Indian peacekeepers are deployed in hostile regions such as **Central African Republic and South Sudan in various sections**.
- So far, **174 gallant Indian soldiers have made the supreme sacrifice** over the years, the largest number among troop contributing countries.
- In April 2019, a total of 150 Indian peacekeepers serving with the **UN Mission in South Sudan (UNMISS)** have received **medals of honour**.

#### Statistics

- India is **Fifth largest troop contributor** with 5,424 personnel across 9 missions
- India's contribution to the **peacekeeping budget stands at 0.16%**.
- **US has never contributed** with ground troops

### Training and Capacity Development

- **Centre for United Nations Peacekeeping (CUNPK)** set up in September 2000 in New Delhi, to oversee training of contingents earmarked for peacekeeping operations.
- These courses have now been formally **endorsed by Department of Peacekeeping Operations at UN HQ**.
- In 2016, **India and the USA** began a joint annual initiative "**UN Peacekeeping Course for African Partners**".
- In August 2021, an MOU was signed between CUNPK (India) and C4ISR Academy for Peace Operations (UN) for new training modules for UN peacekeepers.

### Other Contribution

- India provided **2,00,000 doses of COVID-19 vaccines** for UN Peacekeeping personnel.
- During the pandemic, **India upgraded its hospitals** in UN Mission in South Sudan (**UNMISS**) and United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (**MONUSCO**).

### India's Grievances with UN Peacekeeping Operations

- India believes that the peacekeeping missions cannot be a long-term response to what are fundamentally political problems.
- Hence, it has urged the UNSC to address these issues **rather than burden peacekeeping missions beyond their mandate**.
- Also, UNSC should decide peacekeeping operations within 30 days or a maximum period of 90 days in order to **avoid tragedies because of delays**.

### Conclusion

Acknowledging India's contribution, **UN secretary general Antonio Guterres** said that it would be an understatement to say that India's contribution to global peace has been remarkable. India's spontaneous and unreserved participation in UN peacekeeping operations is a clear demonstration of the **country's commitment to the objectives set out in the UN Charter**.



# BLOCKCHAIN

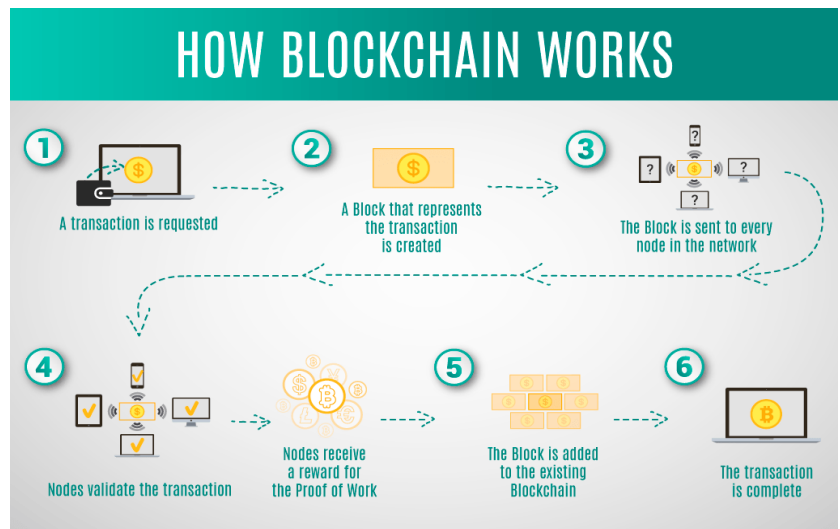
- Contracts, transactions, and their records are the defining structures in economic, legal, and political systems. They govern interactions among nations, organizations, communities, and individuals. Yet these critical tools have not kept up with the economy's digital transformation.
- **Blockchain** promises to solve this problem. It is a system of recording information in a way that makes it difficult to change, hack, or cheat the system.
  - It is essentially a **digital ledger of transactions** that is **duplicated** and **distributed** across entire network in a secured manner to enable peer-to-peer transactions based on a trustworthy source.
  - The **decentralised database** managed by multiple participants is known as **Distributed Ledger Technology (DLT)**.

## Core Components of Blockchain Architecture

- **Node** - User or computer
- **Transaction** - Smallest building block (records, information, etc.) that serves as the purpose of blockchain.
- **Block** - A data structure used for keeping a set of transactions which is distributed to **all nodes** in the network.
- **Chain** - A sequence of blocks in a specific order.
- **Miners** - Specific nodes which perform the **block verification** process before adding anything.
- **Consensus protocol** - A set of rules and arrangements to carry out operations.
- **Peer to peer transmission:** Communication occurs directly between peers instead of through a central node. Each node stores and forwards information to all other nodes.

## Functioning of Blockchain

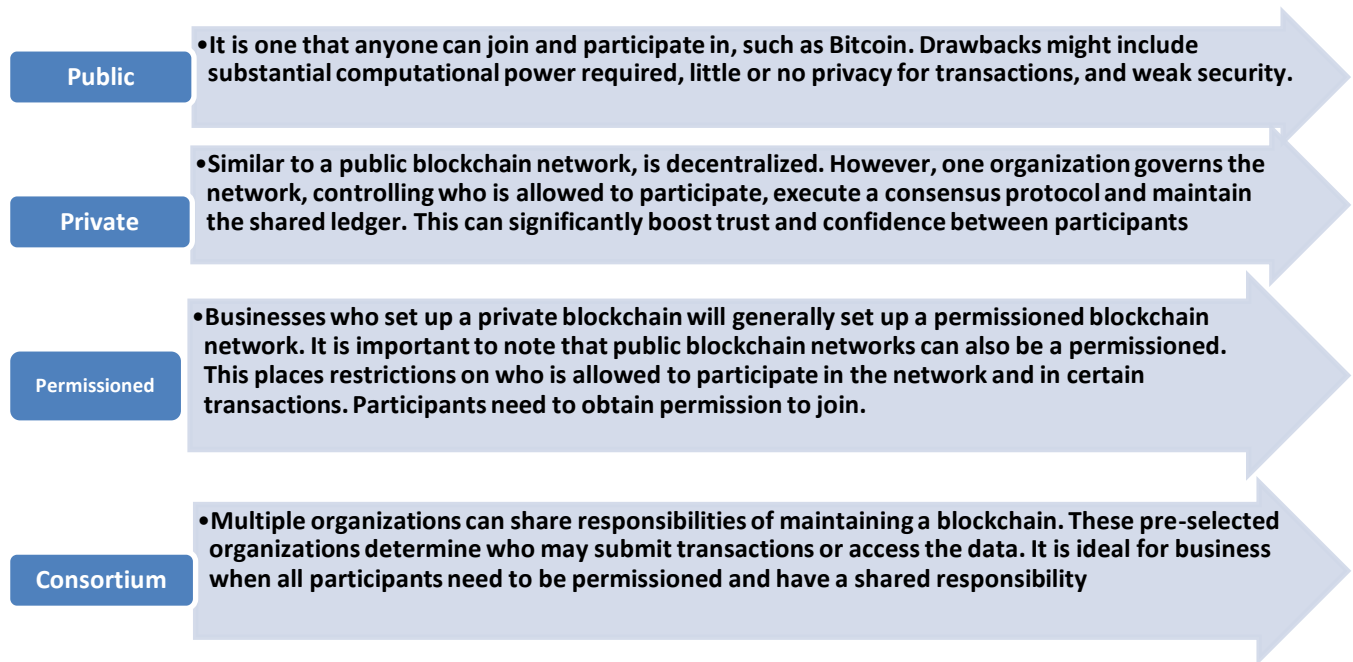
- Every block in a blockchain is a **record of transactions** and more the transactions, longer the chain. Every block is linked to a unique '**digital signature**' of the transacting participants. Moreover, every block is **distinguished** from another through a **unique code** which is a string of numbers.
- When a debit or credit card is used to make a transaction, VISA or Mastercard employ their technology to verify the bank account, connect with banks and process a transaction.



- In blockchain applications, **this verifying role is outsourced** to several computers on a network where each has **the exact same copy of the block**. These computers verify the genuineness of transaction by solving mathematical problems that require a lot of computational power, and therefore electricity.
- Every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger. This means if a block in a chain is changed, it would be immediately visible that it has been tampered. If hackers want to corrupt a blockchain system, they would have to change every block in the chain, across all the distributed versions of the chain.



**Types Of Blockchain Networks**



**Applications**

1. **Financial Services:** The existing capital markets infrastructure is slow, expensive, and often requires several intermediaries which makes performing and receiving financial services difficult.
2. **Government Services:** Governments can improve the way they deliver services, prevent tax fraud, eliminate bureaucracy, increase transparency and reduce waste.
3. **Health Sector:** Blockchain based Patient Record Management System can enable companies to simplify claim processing, secure medical records, monitor the pharma supply chain and collaborate with network stakeholders.
4. **Digital Identities:** While digital identities are emerging as a part of the connected world, securing online information is coming under intense scrutiny. Blockchains based identity systems can provide a with stronger **cryptography** and distributed ledgers by increasing privacy of user.
5. **Internet of Things (IoT):** Blockchain can be used in tracking billions of connected devices, enable the processing of transactions and coordination between devices and allow for significant savings for IoT industry manufacturers.
6. **Monetary Application**
  - Cryptocurrencies provide people across the globe with instant, secure, and frictionless money and blockchains provide the permanent record storage for their transactions.
  - Blockchain technologies obsolete prior method of payment and there is no longer a need to rely on a third-party to ensure payment transfers, thus creating a person-to-person environment.
7. **Real Estate:** Utilizing blockchain applications in functions such as payment, escrow, and **title** can reduce fraud, increase financial privacy, speed up transactions, and internationalize markets.
8. **Supply Chain :** Linking and creating the links to distribute goods and services looks much more like a web than a chain in the increasingly smaller global world.

### **Limitations of Blockchain**

- 1. Signature verification:** Transaction must be digitally signed and verified using a public or private key cryptography scheme. This signature verification process is very complex and consumes time.
- 2. Redundancy:** For every node to be processed, it has to traverse and process every intermediate node independently to reach the target node. In contrast, a centralized database system can process nodes in parallel without any dependencies from the other nodes. Thus, the redundancy affects its performance.
- 3. Attaining Consensus:** In a decentralized technology like blockchain, every transaction made must ensure that every block must reach a common consensus. Depending on the network size and the number of blocks or nodes involved, the back-and-forth communications involved to attain a consensus can consume a considerable amount of time and resources.
- 4. Security:** Like all other distributed systems, blockchain is not 100% resistant. For it to remain stable and to avoid corruption in a network, it needs a huge set of users and nodes connected with a robust network.
- 5. Storage Issues:** As an unchangeable distributed chain of blocks, the size of the blockchain grows at a very rapid pace, and this can cause serious storage concerns.
- 6. Computing Power:** Blockchain relies on encryption to provide its security as well as establish consensus over a distributed network. This essentially means that, in order to prove that a user has permission to write to the chain, complex algorithms must be run, which in turn require large amounts of computing power.

### **Conclusion**

True blockchain-led transformation of business and government, will not take place in the near term. That's because blockchain is not a disruptive technology, which can attack a traditional business model with a lower-cost solution and overtake incumbent firms quickly. Blockchain is a foundational technology and over time it will create new foundations for economic and social systems of the world.





## Social Issues

3. Which of the following is *not* a source of funding for Saansad Adarsh Gram Yojana (SAGY)?

- Funds from Members of Parliament Local Area Development Scheme.
- Corporate Social Responsibility (CSR) funds.
- Budgetary allocation for SAGY.
- State Finance Commission Grants.

Answer: C

### Explanation

The Minister for Rural Development recently shared steps taken by the Ministry for the successful implementation of Saansad Adarsh Gram Yojana (SAGY) in adopted Gram Panchayats (GPs).

#### Saansad Adarsh Gram Yojana (SAGY)

- SAGY was launched in **2014**, with the aim to translate the comprehensive vision of Mahatma Gandhi about an ideal Indian village into reality.
- An MP (from both Lok Sabha and Rajya Sabha) should develop the first Adarsh Gram by 2016 and remaining two by 2019. From 2019 to 2024, five more Adarsh Grams (one per year) must be developed by each MP.
- Objective:** It aims to bring about *convergence in government schemes* to improve developmental parameters in the selected village. It also intends to *create models of local development* which can be replicated in other villages.
- Funding:** SAGY has **no budgetary allocation** and resources can be raised through funds from existing schemes, MPLADS, GP's own revenue, Central and State Finance Commission grants and CSR funds.
- Implementation Strategy:** A *village development plan* is prepared under the leadership of the MP, by involving the villagers. The distinct feature of SAGY is that it is *demand driven; inspired by society; and based on people's participation*.

#### Identification of Villages

MPs can select any GP, other than their own village or that of their spouse, to be developed as an Adarsh Gram. The village must have a population of 3000-5000 people if it is located in the plains, or 1000-3000 people if located in hilly areas.

- Lok Sabha MPs have to choose a village from their constituency
- Rajya Sabha MPs choose a village from the state from which they are elected
- Nominated members can choose a village from any district of the country
- MPs which represent urban constituencies can choose from a neighbouring rural constituency

**Measures Taken For Successful Implementation**

- The Ministry of Rural Development (MoRD) informed that it has developed a compilation of 127 Central Sector and Centrally Sponsored and 1806 State Schemes, that serves as a reference for MPs, District and Village level officials, for possible convergence.
- **Capacity building programmes** for officers in charge are organized periodically through *National Institute of Rural Development and Panchayati Raj, Hyderabad*.
- Parameters for **dynamic ranking of GPs** have been recently developed and placed on the portal to develop a spirit of competition amongst the selected SAGY GPs.
- **Review mechanism:** At national level, a separate web-based **Management Information System (MIS)** is available on SAGY website, which helps to monitor the scheme with States/UTs regularly updating the progress of implementation of projects. This helps to facilitate cross-learning and initiate corrective actions where necessary.

**Performance Evaluation**

- The official data shows 2,111 gram panchayats have so far been identified under this programme and of that, 1,618 have prepared their development plans. A total of 79,316 activities have been planned for these villages, of which 49,756 have been completed.
- An audit conducted last year found SAGY to be ineffective in bringing about development in chosen GPs.
- In many SAGY villages, MPs did not allocate significant money from MPLADS. In isolated cases, where MPs have been proactive, some infrastructure development has taken place, but the scheme has not made any noticeable impact.
- With each passing year, fewer MPs have been adopting villages under SAGY. Thus, the audit recommended the ministry to review the scheme for enhancing its impact.

**4. Samagra Shiksha scheme was launched by subsuming which of the following schemes?**

- |  |                      |
|--|----------------------|
| 1. Sarva Shiksha Abhiyan               | 2. Saakshar Bharat   |
| 3. Rashtriya Madhyamik Shiksha Abhiyan | 4. Teacher Education |

Select the correct answer using the code given below:

- |                    |                    |
|--------------------|--------------------|
| a) 1 and 2 only    | b) 1 and 3 only    |
| c) 2, 3 and 4 only | d) 1, 3 and 4 only |

**Answer: D**

**Explanation:**

- The Union Cabinet recently approved the extension of Samagra Shiksha Scheme for another 5 years, from April 2021 to March 2026.
- It was launched by the Ministry of Education in **2018**, as an integrated scheme for school education extending from **pre-school to class 12**, by subsuming **three Schemes - Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE)** - with the broader goal of improving school effectiveness.

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- The merger was done because the scheme envisages the 'school' as a continuum from pre-school, primary, upper primary, secondary to Senior Secondary levels. Its Vision is to ensure inclusive and equitable quality education from **preschool to senior secondary stage** in accordance with the Sustainable Development Goal for Education (**SDG-4**).
  - The main emphasis of the Scheme is on improving quality of school education by focussing on the **two T's – Teacher and Technology**.
- **SDG 4.1** - By 2030, ensure that all boys and girls complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
  - **SDG 4.5** - By 2030, eliminate gender disparities in education and ensure equal access to all levels of Education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples etc.

covers 1.16 million schools

156 million+ students

5.7 million teachers of Govt. & Aided schools

### Objectives

Major objectives of the Scheme is to support States and UTs in -

- Implementation of Right of Children to Free and Compulsory Education (RTE) Act, 2009
- Implementing the recommendations laid under National Education Policy 2020 (NEP 2020)
- Early Childhood Care and Education (ECCE)
- Enhancing learning outcomes of students
- Bridging social and gender gaps in school education

### Implementation Framework

- **State level:** The Scheme is implemented as a Centrally Sponsored Scheme (Centre-State Share: 90:10 for 8 North-eastern States and 2 Himalayan States; while it 90:10 for all States and UTs without legislature) through a single **State Implementation Society (SIS)**.
- **National level:** There is a *Governing Council/Body* headed by the Minister of Education and a Project Approval Board (PAB) headed by Secretary, Department of School Education and Literacy. The Governing Council/body is empowered to modify financial and programmatic norms and approve the detailed guidelines for implementation within the overall Framework of the scheme.

### New Interventions Under Samagra Shiksha 2.0

#### A. Institutional Interventions

- The scheme will have a *convergence architecture* with various Ministries/ developmental agencies of the Centre and State Governments.
- Provision for establishment of new State Councils for Educational Research and Training (**SCERTs**) and new District Institutes for Education and Training (**DIETs**) in districts created up to March 2020.
- Set up an **assessment cell** preferably at SCERT to conduct various achievement surveys, develop test materials, data collection analysis and report generation, etc.
- Support for **social audit** covering 20% of schools per year so that all schools are covered within 5 years.



**B. Infrastructure Development**

- Strengthening infrastructure of schools from pre-primary to senior secondary. The first phase of the scheme **did not** include the **pre-primary level**.
- Provision of Information & Communications Technology (ICT) labs, including support for digital boards, smart classrooms, virtual classrooms and DTH channels.
- Additional **Sports grant** of up to Rs 25000 to schools in case at least 2 students of that school win a medal in **Khelo India** school games at the National level.

**C. Miscellaneous Interventions Across All Levels Of School Education**

- All child-centric interventions will be provided directly to the students through **Direct Benefit Transfer (DBT)** mode. The DBT would include **RTE entitlements** such as **textbooks, uniforms & transport allowance**.
- To encourage Indian languages, the revamped scheme has a new component for **appointment of language teachers**, which includes salaries, training costs as well as bilingual books and teaching learning material.
- **Pre-primary Education** funding to government schools, i.e. for teaching and learning materials, indigenous toys and games and play-based activities. Master trainers for pre-primary teachers and anganwadi workers will also be supported.
- Enhanced **Foundational Literacy and Numeracy (FLN) under NIPUN Bharat Mission**. Its aim is to ensure that every child achieves the desired learning competencies in reading, writing and numeracy **at the end of grade III & not later than grade V. (For more on NIPUN Bharat, refer The Recitals - July 2021)**
- Support under **vocational education** has been extended to Government aided schools, in addition to Government schools.
- A 360-degree, multi-dimensional report showing progress/ uniqueness of each learner will be introduced in the form of a **Holistic Progress Card (HPC)**.
- For **out of school children** at **16 to 19** years of age, support will be provided to SC, ST, disabled children, up to *Rs 2000/child/grade* to complete their secondary/senior secondary levels.
- 3 months training for inculcating self-defence skills under '**Rani Laxmibai Atma Raksha Prashikshan**'.

**5. Consumption of fortified rice can lead to:**

1. **Iron deficiency.**
2. **Gut inflammation.**
3. **Hypervitaminosis.**

Select the correct answer using the code given below:

- |                 |                 |
|-----------------|-----------------|
| a) 1 only       | b) 3 only       |
| c) 1 and 2 only | d) 2 and 3 only |

**Answer: D**

**Explanation:**

The Prime Minister has recently announced that rice **distributed** under various government schemes, including the public distribution system (PDS) and Midday meals, will be fortified by 2024.

**Rice Fortification**

Various technologies are available for rice fortification, such as **coating** and **dusting**. For rice fortification in India, *extrusion* is considered to be the best technology.

- In **extrusion technology**, dry rice flour is mixed with a premix of micronutrients, and water is added to this mixture. This mixture is then processed to produce **fortified rice kernels (FRK)** similar in shape and size to rice.
- As per the Food Ministry’s guidelines, 10 g of FRK must be blended with 1 kg of regular rice. FRK has a shelf life of at least 12 months.
- Rice kernels *can be* fortified with several micronutrients, such as iron, folic acid and other B-complex vitamins, vitamin A and zinc.
- The Food Safety and Standards Authority of India (FSSAI) regulations of 2016 **notified five staple product** with F+ logo
  - Fortified **rice** and **wheat** contains Iron, Vitamin B12 and Folic Acid.
  - Fortified **Milk, Edible Oil** (Vitamins A and D) and Double Fortified **Salt** (Iodine and Iron)
- The cost of producing FRK with three micronutrients will be around Rs 0.60 per kg. This cost will be shared by the Centre and the states. The government will pay this cost to rice millers.

**Fortification**

- It is the practice of deliberately increasing an essential micronutrient in food, so as to improve the nutritional quality of the food and to provide public health benefit with minimal risk to health.
- Conventional food fortification differs from biofortification. In biofortification there is an increase in nutrient levels in crops during plant growth rather than through manual means during processing of the crops.
- It is a cost effective, scientifically proven and a globally recognised approach, to address the challenge of micronutrient deficiencies.
- Seven countries have mandated rice fortification: United States, Panama, Costa Rica, Nicaragua, Papua New Guinea, Philippines, and the Solomon Islands.

Need For Fortification	Issues Related To Fortification
<ul style="list-style-type: none"> <li>• Regular milled rice is low in micronutrients and serves primarily as a source of carbohydrate only. Many micronutrients are removed due to a multi-level milling process.</li> </ul> <p><b>NFHS 4( 2015-16)</b></p> <hr style="border: 1px solid blue;"/> <p><b>India has nearly 59% of children and 50% of pregnant women being anaemic</b></p> <hr style="border: 1px solid blue;"/> <p><b>Underweight, stunted and wasted children under five was at 35.7, 38.4 and 21.0% respectively.</b></p> <hr style="border: 1px solid blue;"/> <p><b>Child and maternal malnutrition is responsible for 15% of the country's total disease burden</b></p> <hr style="border: 1px solid blue;"/> <ul style="list-style-type: none"> <li>• India ranks 94 out of 107 countries on the Global Hunger Index (GHI) 2020, which puts it in the ‘serious hunger’ category.</li> <li>• Rice is consumed by about 2/3rd of the population.</li> </ul>	<ul style="list-style-type: none"> <li>• A major problem with chemical fortification of foods is that <u>nutrients don’t work in isolation but need each other for proper absorption</u>.</li> <li>• <b>Undernourishment</b> in India is caused due to <u>high cereal-based diets and low consumption of vegetables and animal protein</u>. Thus, <u>dietary diversity and higher protein consumption</u> are key to <b>solving undernutrition</b> in India, instead of fortification which could harm the health of consumers.</li> <li>• For example, a 2010 study showed that iron fortification caused <b>gut inflammation</b> in undernourished children. Moreover, both anaemia and Vitamin A deficiencies are over diagnosed, meaning that mandatory fortification could lead to hypervitaminosis.</li> </ul> <p style="text-align: center;"><b>Hypervitaminosis</b> is a condition of <u>abnormally</u></p>

<p>Per capita rice consumption in India is 6.8 kg/month. The government distributes over 300 lakh tonnes of rice under the National Food Security Act (NFSA), 2013. Therefore, fortifying rice with micronutrients can help to easily reach wider, vulnerable populations through existing food delivery systems.</p>	<p><u>high storage levels of vitamins</u>, which can lead to various issues including <b>toxicity</b>.</p> <ul style="list-style-type: none"> <li>Moreover, mandatory fortification would <u>harm the vast informal economy</u> of Indian farmers and food processors, and instead <b>benefit</b> a small group of multinational corporations that engage in <b>cartelisation</b>, leading to price hikes.</li> </ul>
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**6. Project SAMVAD is associated with:**

- |   |   |
|---|---|
| <p>a) Skill Development</p> <p>c) Women Empowerment</p> | <p>b) Mental Health</p> <p>d) None of the above</p> |
|---|---|

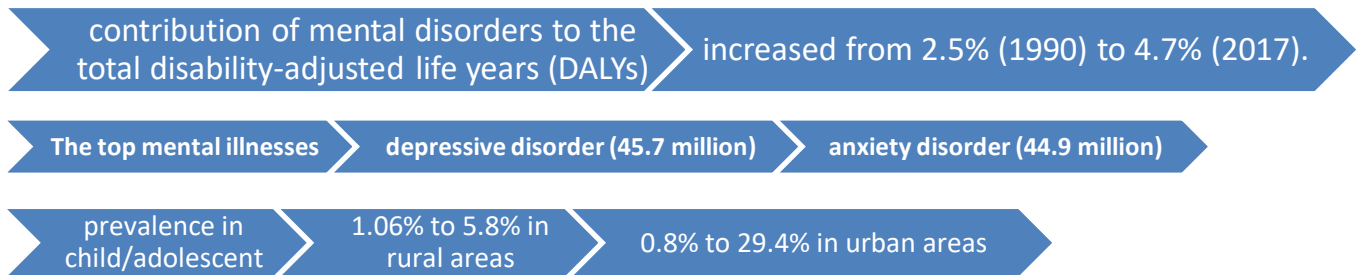
**Answer: B**

**Explanation:**

- The 2<sup>nd</sup> phase of project **SAMVAD** (Support, Advocacy & Mental health interventions for children in Vulnerable circumstances And Distress) was recently launched. The 1<sup>st</sup> phase was launched in June last year.
- It is **funded by Ministry of Women and Child Development, implemented by** National Institute of Mental Health And Neuro Sciences (**NIMHANS**) and is run in collaboration with the **Ministry of Panchayati Raj**.
- SAMVAD is a national initiative and integrated resource for child protection, mental health and psychosocial care. It encompasses a specialized **training curriculum** on childhood trauma, **interventions** for children in conflict with the law, forensics in child and adolescent psychiatry and mental health.
- In the last 1 year, close to 1 lakh stakeholders have been trained under SAMVAD to provide coping mechanisms to children in distress.
- To improve service delivery at the grassroots level, work will soon begin with Panchayati Raj systems to integrate aspirational districts across the country.

**Situation Of Mental Disorder In India**

A report published in The Lancet Psychiatry in Feb 2020 indicates that in 2017, there were 197.3 million people with mental disorders.



- The National Mental Health Survey 2016 reported that the prevalence of mental disorders is **similar in both genders**.

7. The Indus Waters Treaty gives complete control to India over the waters of which of the following rivers?

- |           |           |
|-----------|-----------|
| 1. Ravi   | 2. Jhelum |
| 3. Beas   | 4. Sutlej |
| 5. Chenab |           |

Select the correct answer using the codes given below

- |                    |                     |
|--------------------|---------------------|
| a) 2, 3 and 5 only | b) 1, 2 and 4 only  |
| c) 1, 3 and 4 only | d) 1, 2, 3, 4 and 5 |

Answer: C

Explanation:

Parliamentary Standing Committee on Water Resources recently released a report on *flood management* in the country including *International Water Treaties* in the field of Water Resource Management.

**Recommendations Of The Report**

**A. On Flood Management**

- Immediately set up a permanent institutional structure in the form of **National Integrated Flood Management Group** under the chairmanship of the Minister of Jal Shakti, with concerned Ministers of the State Governments as members of this group.
- This group should meet **at least once a year** and take up the overall responsibility of coordination between all agencies responsible for management of floods and their consequences on life and property.

**B. On Indus Water treaty (IWT)**

**Renegotiation of IWT**

- It was framed on the basis of knowledge & technology existing at the time of its agreement in 1960s. Back then, perspectives of both nations were only restricted to water use through construction of dams, barrages, canals and hydropower generation.
- Important present day issues such as **climate change, global warming and environmental impact assessment** etc. are **missing** from IWT.
- Thus, there is a need to renegotiate the treaty to establish an **institutional structure** or legislative framework to address challenges which are not covered under the Treaty.

**Utilisation of Waters**

- The government should also examine the possibility of **full utilization** of all accessible water of the **eastern rivers** under IWT. India has fully utilised eastern rivers through dams such as **Ranjit Sagar(Ravi), Pong (Beas) and Bhakra Nangal (Satluj)**.
- But, Canals in **Punjab and Rajasthan** such as the **Rajasthan Feeder & Sirhind Feeder** had become **old** and were not maintained properly. This had resulted in the lowering of their water carrying capacity. Thus, the water from **Harike Barrage** on the confluence of **Beas & Satluj** in Punjab was usually released downstream into Pakistan.
- Government should quickly complete projects like **Ujh (Ravi)** in J&K & **Shahpur Kandi(Ravi)** in Punjab, to exploit the full potential of the western rivers for irrigation & other purposes.

C. Other Treaty/Agreement

Monitoring Chinese actions

- Chinese authorities have approved 3 hydropower projects on main stream of Brahmaputra River in **Tibet Autonomous Region**.
- These projects may not necessarily lead to diversion of waters. However, there is a possibility that water can be stored in **pondages** and released for running the turbines. **Pondage** refers to small water storage in hydroelectric projects.
- This may lead to **variation** in downstream flow, impacting water flows in Brahmaputra river. Thus, India should constantly monitor Chinese actions to ensure that they do not pursue any major interventions on Brahmaputra river which would adversely affect India’s national interests.
- **There is no water treaty between India and China at present.**

Cooperation with Bhutan

- A scheme titled “**Comprehensive Scheme for Establishment of Hydro-meteorological and Flood Forecasting Network** (32 in total) on rivers Common to India and Bhutan” is in operation. These stations are located in Bhutan and maintained by the Royal Government of Bhutan with funding from India for flood forecasts .
- Rivers common to India and Bhutan include Manas river, Sankosh river, etc.

For details on IWT, please refer The Recitals- July 2021

8. Halam community belongs to:

- a) Chhattisgarh
- b) Tamil Nadu
- c) Gujarat
- d) None of the above.

Answer: D

Explanation:

People of **Halam sub-tribes**, who had taken **refuge in Assam** after clashes with **Bru refugees** in *north Tripura*, recently started returning back to their home in Damcherra (**Tripura**). Damcherra is Tripura’s last village before inter-state boundary with Mizoram.

**Halams**

- Ethnically Halam communities (Classified as a **Scheduled Tribe** in **Tripura**) belong to the **Kuki-Chin tribe** of Tibeto-Burmese ethnic group. Their **language** is also similar to that of the **Tibeto-Burman family**.
- They are also known as **Mila Kuki**, though they are not at all Kukis in terms of language, culture and living style.
- They are divided into several **sub-clans**, referred as **Barki-Halam**.

2011 Census

Their total population is 57,210

## VAJIRAM & RAVI

- They live in typical **Tong Ghar** specially made of **bamboos and Changrass (thatch)**. Apart from plain land cultivation, they still practice **Jhum cultivation**.

### Bru Community

- Brus are original **inhabitants of Mizoram**, but they are ethnically different from Mizos, with their own distinct language and dialect.
- The Bru community is spread across **Tripura, Mizoram and parts of Assam**.
- After ethnic clashes in **1997 in Mizoram**, ~35,000 Brus took shelter in relief camps in North Tripura. In **Tripura**, they are recognised as a Particularly Vulnerable Tribal Group (**PVTG**).
- There are currently over 40,000 Brus living in Mizoram.

#### Background

- In **June 2018**, community leaders from **Bru camps** signed an agreement with the **Centre** and the **two state governments**, providing for **repatriation in Mizoram**. But most camp residents **rejected** the terms of the agreement.
- In January 2020, an agreement was signed between the **Centre, Tripura and Mizoram** government and **Bru community representatives** that allowed **permanent resettlement** of over 32,000 Brus in **Tripura**. The pact was --

Home Ministry has committed to incur the whole expenditure of settlement in Tripura

Each refugee family would get: A plot, fixed deposit of Rs. 4 lakh, free ration and a monthly stipend of Rs. 5,000 for two years.

Each family will also be provided Rs. 1.5 lakh to construct a house

### Swachh Survekshan 2021: Water Plus City

- **Indore** was recently declared as the first **Water Plus City (WPC)** in country under Swachh Survekshan 2021.
- As per the protocols of Ministry of Housing and Urban Affairs, a city can be declared as Water Plus and given the certificate, if all wastewater released from households, commercial establishments etc. is treated to a satisfactory level, before releasing the treated wastewater to the environment.

#### Criteria for Water Plus City

Dirty water from the city should not go into any river or drain

30% of the city's sewer water has to be recycled and reused.

All public toilets in the city must be connected to **sewer lines** and must be cleaned

#### Swachh Survekshan

- It is an **annual** survey of cleanliness, hygiene and sanitation in cities and towns in India.
- It was launched in **2016** as a part of Swachh Bharat Mission. It is conducted by **Ministry of Housing and**

**Urban Affairs** with **Quality Council of India** as its implementation partner.

- It has been instrumental in promoting a spirit of **healthy competition** among towns and cities to improve their service delivery to citizens and towards creating cleaner cities through citizen participation.

**International Day of World’s Indigenous Peoples or the World Tribal Day**

- It is celebrated every year on **9th August** to recognise the contribution and achievements of indigenous communities and to raise awareness around the issues faced by them.
- It was marked for the first time in **1994** by United Nations General Assembly (UNGA), to commemorate the **first meeting** of UN Working Group on Indigenous Populations, in **1982**.
- This year’s **theme is** ‘*Leaving no one behind: Indigenous peoples and the call for a new social contract*’.
- Through this, the UN seeks to encourage societies to treat indigenous communities as stakeholders since they were not included in the initial social contract, which was formulated by dominant communities.

**Significance Of Indigenous Peoples**

- The UN estimates that there are more than **476 million** indigenous people, accounting for **6.2%** of the global population, spread across **90 countries**, and representing 5,000 different cultures. They speak almost 7000 languages in the world.
- They have retained social, cultural, economic and political characteristics that are distinct from those of the dominant societies in which they live.
- Their time-tested, age-old agricultural practices do not cause harm to nature and such methods are resilient to climate change. Crops grown by them are highly adaptable and can survive drought, altitude, flooding and extremes of temperature.
- Their territories are home to **80% of the world’s biodiversity** and they can teach the world how to rebalance its relationship with nature and reduce the risk of future pandemics.

**Tribes in India**

- India hosts around 104 million people (8.6% of country’s population) categorized in 705 ethnic groups that have been formally identified. Out of these around 75 are Particularly Vulnerable Tribal Groups (PVTGs).
- Odisha has the largest number of tribal communities
- The Gond comprise the largest tribal group of India.

Issues Faced By Indigenous Peoples	International Efforts For Protection
<ul style="list-style-type: none"> <li>• Despite their cultural differences, they share common problems related to <b>protection of their rights</b> as distinct peoples.</li> <li>• They have sought recognition of their identities, way of life and their right to traditional lands, territories and natural resources for years, yet throughout history, their rights have always been violated.</li> </ul>	<ul style="list-style-type: none"> <li>• The UN has been working towards constitutional reforms at international level to address the ill-treatment of indigenous communities.</li> <li>• UNGA adopted United Nations Declaration on the Rights of Indigenous Peoples (<b>UNDRIP</b>) in 2007.</li> </ul>



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• They experience poor access to healthcare, significantly higher rates of diseases, food insecurity, lack of access to essential services, sanitation etc. Moreover, one indigenous language dies every two weeks.</li> </ul> | <ul style="list-style-type: none"> <li>• In 2022, the UN will start the <b>Decade of Indigenous Languages (2022-2032)</b>. It aims to conserve indigenous languages, which helps preserve their cultures, world views and visions, as well as expressions of self-determination.</li> </ul> |
|---|---|

**TAPAS Portal**

- An online portal, **TAPAS** (Training for Augmenting Productivity and Services), was recently launched. It is developed by National Institute of Social Defence (**NISD**), **Ministry of Social Justice and Empowerment** (MoSJE).
- TAPAS is a standard **MOOC** (Massive Open Online Course) platform that provides access to **filmed lectures** by subject experts, **e-study material** etc.
  - It is different from SWAYAM MOOC platform since SWAYAM was dedicated to young students for higher education and skill courses
  - MOOC is a free Web-based distance learning program designed for the participation of geographically dispersed students.
- The courses can be taken up by **anyone** and there is **no fee** for joining. It includes **five basic courses** on: Drug (Substance) Abuse Prevention; Geriatric/Elderly Care; Care and Management of Dementia; Transgender Issues; and Social Defence Issues.
- It also includes discussion forums to support and encourage interactions among students and course coordinators.
- It will supplement the physical classroom and enhance knowledge and skills for the **capacity building** of the participants.
- The platform has been made with a quadrant approach

Discussions

Video

Text

Self Assessment

**National Institute of Social Defence (NISD)**

- NISD is a **central advisory body** for MoSJE. It is a **Centre of Excellence** on research and training in the field of **social defence**.
- It develops preventive, curative and rehabilitative tools, programmes and policies in the field of social defence, and also undertakes research, training, consultancy, documentation and publication in the field.
- It coordinates between government and NGOs at state, national and international levels.

**Student Entrepreneurship Program 3.0**

- Atal Innovation Mission (AIM) recently launched the 3<sup>rd</sup> series of Student Entrepreneurship Program (SEP 3.0) in collaboration with Dassault Systemes Foundation (DSF), France, for young innovators of Atal Tinkering Labs (ATL). SEP 1.0 was launched in 2019.

- The **theme** of SEP 3.0 is based on ‘Made in 3D - Seed the Future Entrepreneurs Program’ conceptualized by DSF in 2017.
- A total of 50 teams (10 from Aspirational Districts and 10 from J&K, Ladakh and North east regions) are selected for SEP 3.0. It includes top 20 teams of ATL Marathon, in which students identify community challenges and create grassroots innovations and solutions.
- Each team will be allocated **seed funding** for creating a **pseudo start-up**. They have to design and prototype their innovation using 3D printing, prepare marketing campaigns, define product pricing, and create an expansion strategy.
- At the end of the program, the teams will participate in a playful competition and present their marketing campaign in front of experts from industry and academia.

### Benefits

- By working closely with DSF and French students, they will gain knowledge of mentor support, prototyping, testing support, end-user feedback, Intellectual Property registration along with cultural knowledge thereby enhancing track 3 diplomacy.
- Students and teachers will also have an opportunity to connect and interact with French schools and students for cultural and technical knowledge sharing.
- It will help to develop an innovative mind-set, give exposure to start-up culture, and accelerate the entrepreneurial journey of young innovators in creating a new innovative India.
- It is expected to reduce the unemployment rate and will lead to wealth creation in India.
- It will help in the promotion of children from Aspirational districts.

### Atal Innovation Mission (AIM)

- AIM is a flagship initiative of **NITI Aayog** to promote innovation and entrepreneurship.
- Its objective is to serve as a platform for the promotion of innovation hubs, grand challenges, start-up businesses and other activities, particularly in technology driven areas.
- It includes the following programmes

-  Atal Tinkering Labs (ATL)
-  Atal Incubation Centres (AIC)
-  Atal New India Challenges and Atal Grand Challenges
-  Industry, Academia, Government and Global Collaborations

### Atal Tinkering Labs (ATLs)

- ATLs are established in schools across India with a vision to ‘**Cultivate one Million children in India as new Innovators**’.
- Its objective is to promote **creativity** in students and develop skills such as design mindset, computational thinking, adaptive learning etc.
- Students also get a chance to work with tools and equipment to understand the concepts of **STEM** (Science, Technology, Engineering and Math).

- **Eligibility:** Schools (minimum Grade VI-X) managed by Government, local body or private trusts or societies.
- With more than 7,200 labs across the country, over 3.5 million students have been trained under the initiative.

**Quality of Life for Elderly Index**

- The Quality of Life for Elderly Index, created by **Institute for Competitiveness**, was recently released by the Economic Advisory Council to Prime Minister (EAC-PM).
- It identifies the **regional patterns of ageing** across Indian states and assesses the overall ageing situation in India. It gives a deeper insight into how India is supporting the well-being of its ageing population.
- It also promotes **healthy competition among states** through fair rankings.

**Framework of the Index**

- The index framework includes **four pillars**



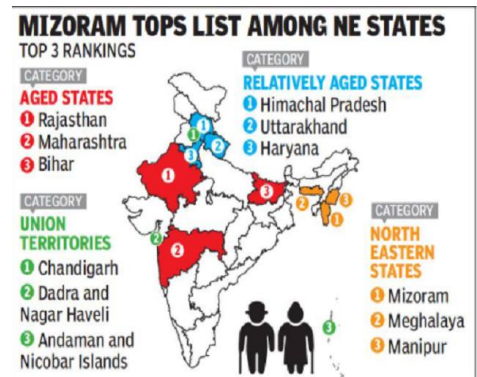
- It has **eight sub-pillars**: economic empowerment, educational attainment and employment, social status, physical security, basic health, psychological well-being, social security and enabling environment.

**Importance Of The Index**

- The share of elders, as a % of the total population in the country, is expected to increase from around 7.5% in 2001 to almost 12.5% by 2026, and surpass 19.5% by 2050.
- Decade of Healthy Ageing (2020-2030) was endorsed by 73rd World Health Assembly in 2020.

**Findings of the Index**

- The **Health System pillar** got the highest national average score of 66.97, followed by 62.34 in **Social Well-being**.
- The national average for **financial well-being** was 44.7, which is lowered by the low performance of 21 States across the Education Attainment & Employment pillar.
- States have performed particularly worse in the **Income Security pillar** (lowest across all pillars). Over half the States have a score below the national average of 33.03-



- Top scoring regions across different categories are shown in figure beside.
- Telangana and Gujarat scored the lowest in the aged states and relatively aged states categories, respectively.
- J&K and Arunachal Pradesh scored the lowest among Union Territories and north-eastern states respectively.
- Aged states refer to states with an elderly population of more than 5 million, whereas relatively aged states refer to states with an elderly population of less than five million.





- **Entitlements:** Under the scheme, which became effective from December 2018, the Centre provides Rs 6,000 per year to eligible farmers in three equal instalments of Rs 2,000.
- **Identification:** The state governments and Union Territory administration identify the farmers who are eligible for the scheme and share the list with the Centre. The central government then directly transfers the fund to the bank accounts of the beneficiaries.
- **Eligible Farmers:** The Scheme initially provided income support to all Small and Marginal Farmers' families across the country, holding cultivable land upto 2 hectares. In June, 2019, the scheme was extended to cover **all farmer** families in the country irrespective of the size of their land holdings.

However, the following categories of people holding cultivable land have been excluded from the scheme:

- Institutional landholders.
- Present or retired employees of state/central government/PSUs/government autonomous bodies.
- Income Tax payers in the last assessment year.
- Farmer families holding constitutional posts.
- Professionals like doctors, engineers and lawyers.
- Retired pensioners with a monthly pension of over Rs 10,000.

#### Issues

- India's poverty line is ₹32 per person/day in rural areas and ₹47 in urban areas, according to the **Rangarajan Committee**. PM-KISAN support of ₹17 a day for a household is largely **insufficient** for even bare minimum sustenance.
- Due to Volatility of Markets and price fluctuations in different regions, it is important to **index the cash transfers to local inflation**.
- The scheme does not provide a clear framework for effective grievance redress.

#### 11. Which of the following is *not* a feature of the Hydrocarbon Exploration and Licensing Policy (HELP)?

- a) Graded system of royalty.
- b) Single license covering exploration of all types of hydrocarbons.
- c) Profit Sharing Model.
- d) Open Acreage Licensing.

**Answer: C**

#### Explanation:

- The Ministry of Petroleum and Natural Gas has recently launched the **sixth round** of e-bids under the Open Acreage Licensing Programme (OALP). The blocks would be awarded to winning bidders at the end of Nov' 2021.
- In earlier rounds, the Oil Ministry had awarded 105 blocks covering an area of around 156,580 sq km, which attracted a total committed investment of about \$2.4 billion.

- This Bid Round-VI is expected to add further 35,346 sq km (under 21 blocks), taking the total area for exploration to 191,926 sq. km under the Hydrocarbon Exploration and Licensing Policy (HELP) regime.

**Hydrocarbon Exploration and Licensing Policy (HELP)**

- India imports more than 80% of its crude oil requirements, which makes the country heavily dependent on foreign sources of supply. This leads to a huge financial burden on the country, apart from subjecting the country to global swings in crude oil price.
- To address these concerns, the Hydrocarbon Exploration and Licensing Policy (HELP) was launched in **2016**. HELP replaced the New Exploration Licensing Policy (NELP) of 1997-1998. HELP had **2 key drivers**, both of which were launched in June 2017



- HELP’s objective is to increase India’s indigenous oil and gas production by maximising the potential of hydrocarbon resources in India. It aims to **increase investment** in the energy and petroleum sector and provide **operational flexibility** to the investors.

**Provisions Under HELP**

- **Single license** that covers exploration and production of all types of hydrocarbon viz. conventional & unconventional resources eg oil and gas, coal-bed methane, shale oil, gas hydrates, etc.
- **Open Acreage Licensing Programme (OALP)**
  - Under NELP, the bidders could choose only from the blocks offered by the government and had to wait for the government to undertake bidding for blocks which were of interest to the bidders.
  - To address this issue, the government introduced **OALP** under HELP. OALP gives investors the freedom to carve out blocks of their choice after assessing Exploration & Production data available at **National Data Repository** and submit an **Expression of Interest (Eoi)**.
  - Eoi can be submitted **thrice a year** without waiting for a formal bid round from the government. These blocks are later offered through a biannual (twice a year) formal bidding process. The entity offering the maximum share of oil and gas to the government is awarded the block.

Benefits of OALP	Concerns Related to OALP
<ul style="list-style-type: none"> <li>• Removing red-tapism: It has reduced multiple licences for extracting different hydrocarbons even from the <b>same well</b>.</li> <li>• Brought in a quantum jump in the Exploration &amp; Production sector by the successful roll-out of the HELP regime, followed by OALP Bid Rounds</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Lesser involvement of Private Players:</b> Public Sector Companies like ONGC and Oil India (OIL) are the major winners of the bidding rounds.</li> <li>• <b>Higher Tax and Cess:</b> Proposal by the Petroleum Ministry to reduce the oil cess charge on domestic production of crude has been rejected by the Finance Ministry</li> <li>• <b>Less Participation of Foreign Companies:</b> Indian attempts to attract Foreign Energy Giants are not yielding expected results.</li> </ul>





- It will be a **person-specific and purpose-specific** payments system. For example, if someone has an e-RUPI voucher for Covid-19 vaccine, then it can be redeemed for vaccines only.
- The beneficiaries will be identified using their mobile number and a code for the transaction will be delivered to the mobile phones of beneficiaries in the form of an **SMS-string or a QR code**.

#### **Benefits of e-RUPI**

- It will enable **leak-proof delivery of welfare benefits** in education, nourishment, healthcare, agriculture etc. as voucher redemption can be tracked by the issuer.
- The most distinguishing feature of e-RUPI compared to other digital payment systems is that the **beneficiary need not be banked**. This would translate into higher adoption rates in rural areas
- The private sector can also use e-RUPI for **employee welfare** and **corporate social responsibility (CSR)** programmes.
- Vouchers can be redeemed without any credit or debit card, a mobile app or internet banking, as **no physical interface** is required for transactions.
- Being pre-paid in nature, it will ensure **timely payment** to the service provider without the involvement of any intermediary.
- It can drive **greater adoption of digital payments**, as even non-smartphone users can use it.
- It offers a **secure transaction process**, as the beneficiary details are completely **confidential**, which helps to maintain privacy.

**Limitations of e-RUPI:** Since the beneficiary is not required to disclose their identity, these vouchers are also likely to be claimed by other people

#### **Difference between e-RUPI and Central Bank Digital Currencies (CBDC)**

- CBDCs are digital currencies issued by a central bank (like RBI in India). In simple terms, a CBDC would be a **digital banknote**, which can be used by individuals to pay shops, each other or between financial institutions to settle trades in financial markets. Several countries are trying to develop CBDCs in their respective countries.
- e-RUPI is backed by the existing Indian rupee as the underlying asset and cannot be classified as a CBDC or virtual currency, as its usage is restricted to the purpose for which it has been issued, thus putting it closer to a **voucher based** payment system.

#### **Case for CBDCs in India**

- RBI is working towards a phased implementation strategy for CBDC in India.
- The spread of private virtual currencies such as Bitcoin and Ethereum, makes it important for the RBI to explore CBDC in India, as central banks have a duty to **safeguard people's trust** in the money of the country.
- RBI believes that the **increasing penetration of digital payments** in the country will help the growth of digital currencies in India.
- Moreover, the **high currency to GDP ratio** in India will also support the adoption of CBDC in the country.

#### **National Payments Corporation of India (NPCI)**

- Set up in 2008, NPCI is an umbrella organisation for operating retail payments (physical as well as electronic) and settlement systems in India.







**Benefits**

- **Enhance India's competitiveness in select sectors** through finance and handholding support.
- **Identify underperforming Indian companies** that have strong fundamentals and **enhance their export business**.
- Assist existing exporters in widening their basket of products and **target new markets** through a strategic **export market development initiative**.



- Thus, the programme will **help MSMEs** to grow, generate more employment, enhance exports and consequently boost the growth of the economy.
- It can facilitate the success of **One District One Product (ODOP) scheme**, which aims to convert each district of the country into an export hub by identifying products with export potential in the district.

**Alternative Investment Fund (AIF)**

- As per **Regulation Act, 2012** of **SEBI**, AIF is any fund incorporated in **India** which is a **privately pooled investment vehicle**.
- It collects funds from **both Indian and foreign investors**. Generally, high net worth individuals and institutions invest in AIFs, unlike Mutual Funds.
- It can be established in the form of a **company or a corporate body or a trust or a Limited Liability Partnership (LLP)**.
- AIFs are divided into 3 unique categories – **Category I, Category II and Category III**.



**16. Consider the following statements about e-Shram portal:**

1. It is a database of unorganised workers.
2. It provides accidental insurance coverage through Pradhan Mantri Suraksha Bima Yojana.

Which of the statements given above is/are correct?

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

**Answer: C**

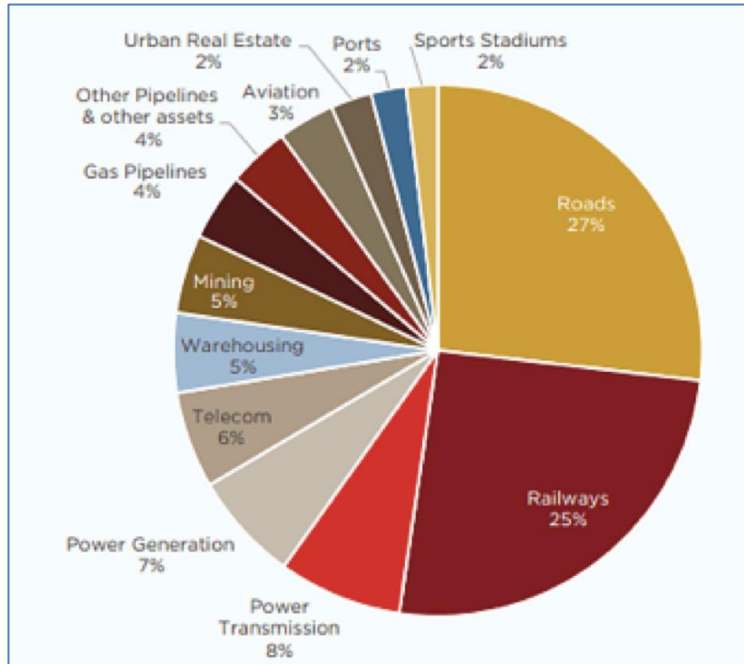
**Explanation:**

- The **Ministry of Labour and Employment** has recently launched the National Database for Unorganised Workers (**NDUW**) or **e-Shram portal**, to build a comprehensive database of more than **38 crore unorganised workforce**, comprising of construction labourers, migrant workers, street vendors, platform workers etc.





- Funds from NMP will be used for infrastructure creation under the **National Infrastructure Pipeline** which has a targeted infrastructure investment of Rs 111 lakh crore over FY 2020-25.
- The **top 5 sectors** (by estimated value) capture approximately 83% of the aggregate pipeline value {roads (27%), railways (25%), power (15%), oil & gas pipelines (8%) and telecom (6%).}
- Monetisation will take place through a range of instruments including **public private partnership, Infrastructure Investment Trusts (InvIT), Real Estate Investment Trust (REIT)** etc.
- Currently, only assets of **central government line ministries** and **Central Public Sector Enterprises (CPSEs)** in infrastructure sectors have been included



**Central Government’s Assistance to State Governments**

- To encourage states to pursue monetisation, the Central government has already set aside Rs 5,000 crore as incentive.
- If a state government divests its stake in a public sector undertaking, the Centre will provide a 100% matching value of the divestment to the state.
- Similarly, if a state lists a public sector undertaking in the **stock markets**, the Central government will give it **50%** of that amount raised through listing.
- Finally, if a state monetises an asset, it will receive 33% of the amount raised from monetisation from the Centre

**InvIT and REIT**

- InvITs are institutions similar to mutual funds, with an objective to facilitate investment into the infrastructure sector in India.
- REIT is an investment tool that owns and operates income producing commercial real estate properties like offices, residential units, hotels, shopping centers, warehouses, etc.
- InvIT and REIT allow both individual and institutional investors to invest using these platforms.

Benefits of NMP	Challenges in NMP
<ul style="list-style-type: none"> <li>• It will mobilise private capital by using idle assets for future investments, <b>without selling government assets</b>.</li> <li>• This will lead to new infrastructure creation, employment generation and enable high</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of identifiable revenue mechanism in various assets; lack of independent sectoral regulators in certain sectors and dispute resolution can act as challenges.</li> <li>• Further, low capacity utilisation in gas and</li> </ul>

<p>economic growth by integrating rural and semi-urban areas for overall public welfare.</p> <ul style="list-style-type: none"> <li>• New models like InvIT and REIT will create new areas of investments for common people.</li> </ul>	<p>petroleum pipeline networks; regulated tariffs in power sector assets; and low interest among investors in national highways below four lanes can also act as impediments.</p>
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**18. Palm oil is used in the production of:**

- |                       |                      |
|-----------------------|----------------------|
| 1. <b>Cooking oil</b> | 2. <b>Detergents</b> |
| 3. <b>Plastics</b>    | 4. <b>Cosmetics</b>  |
| 5. <b>Biofuels</b>    |                      |

Select the correct answer using the codes given below:

- |                              |                            |
|------------------------------|----------------------------|
| a) <b>1 only</b>             | b) <b>1 and 5 only</b>     |
| c) <b>1, 3, 4 and 5 only</b> | d) <b>1, 2, 3, 4 and 5</b> |

**Answer: D**

**Explanation:**

The Union Cabinet has recently approved the launch of **National Mission on Edible Oil –Oil Palm (NMEO-OP)** to boost domestic oilseed production. The proposed scheme will subsume the current National Food Security Mission-Oil Palm programme

**Status Of Edible Oil Production And Consumption**

- Palm oil is currently the world’s most consumed vegetable oil. It is also used extensively in the production of detergents, plastics, cosmetics, and biofuels. Top consumers of palm oil are India, China, and the European Union (EU).
- In India, around 94% of palm oil is used in food products, especially for cooking purposes.
- India imports about 60% of its annual edible oil demand of about 25 million tonnes, with palm oil having 55% share in total edible oil imports.
- Oil palm produces 10 to 46 times more oil per hectare compared to other oilseed crops and has a yield of around 4 tons oil per hectare. Thus, it has enormous potential for cultivation.

**National Mission on Edible Oil-Oil Palm (NMEO-OP)**

- NMEO-OP is a **Centrally Sponsored Scheme** with a special focus on **North-East (NE) and Andaman and Nicobar (A&N) Islands**. It will invest more than Rs 11,000 crore in the cooking oil ecosystem over a five-year period.
- It aims at increasing the total area under oil palm cultivation from the current 3.5 lakh hectares to 10 lakh hectares by 2025-26. With this, production of Crude Palm Oil (CPO) is expected to go up to -



- There is a sunset clause for the scheme which is 1st November 2037.

**Interventions (2 Major focus areas)**

- For the first time, the government will give a **price assurance** to the oil palm growers producing Fresh Fruit Bunches (FFBs) from which oil is extracted by the industry. Presently the prices of these FFBs are linked to the **international Crude Palm Oil (CPO) prices fluctuations**.
- This assurance will be known as the **viability price (VP)**. It will be **fixed yearly**. VP is 14.3% of last 5-year-average crude palm oil (CPO) price adjusted for wholesale inflation.
- A **Formula Price (FP)** will also be **fixed monthly**, which will be 14.3% of CPO.
- The **viability gap funding** will be **VP-FP** and if the need arises, it would be paid directly to the farmers as DBT.
- The assurance to farmers will be in the form of **viability gap funding** and the industry will have to pay 14.3% of the CPO price which will eventually go up to 15.3%
- **The other focus of the scheme** is to provide **assistance for inputs** including planting material, inter-cropping, seed gardens etc and this has increased from Rs 12,000 per ha to Rs 29000 per ha. Special assistance @ Rs 250 per plant is being given to replant old gardens for rejuvenation of old gardens
- In NE and A&N regions, special provisions will be made for half-moon terrace cultivation, bio fencing and land clearance along with integrated farming.

Benefits	Concerns
<ul style="list-style-type: none"> <li>• Along with promoting the cultivation of oil palm, the mission will also expand the cultivation of other traditional oilseed crops. This will help the country to become <b>self-reliant</b> in edible oil production and <u>reduce dependence on imports</u>.</li> <li>• Price assurance will protect farmers from fluctuations in international CPO price. They will further benefit from <u>higher yields and better returns</u> and consumers will be able to get quality cooking oils at a cheaper rate.</li> <li>• Moreover, it would benefit processors and the entire value chain, creating job opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Oil palm needs large quantities of water and is a monoculture crop with a long gestation period <u>unsuitable for small farmers</u>.</li> <li>• Introducing oil palm in tropical rainforests or biodiversity-rich areas such as N-E and A&amp;N, might <u>reduce forest cover and destroy habitat of endangered wildlife</u>.</li> <li>• In these regions, it could also <u>detach tribal people from their identity</u>, linked with community ownership of land.</li> </ul>

**NERAMAC Revival Package**

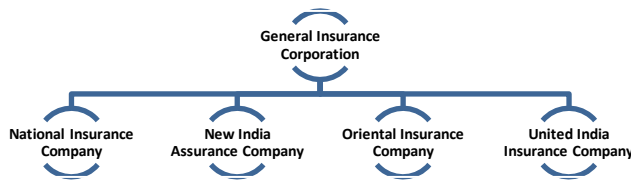
- The Cabinet Committee on Economic Affairs (CCEA) has approved a revival package of Rs.77.45 crore for North Eastern Regional Agricultural Marketing Corporation Limited (NERAMAC).
- NERAMAC is a **central public sector enterprise** under the administrative control of the Ministry of Development of North Eastern Region (**MDoNER**).
- It was set up to support farmers/producers of North East getting remunerative prices and reduce the gap between the farmers and the market.
- It also aims to enhance the agricultural, procurement, processing and marketing infrastructure of the North eastern Region (NER).
- It is expected to generate direct and indirect **employment** for about 33,000 persons.

**General Insurance Business (Nationalisation) Amendment Bill, 2021**

The Parliament has recently passed the General Insurance Business (Nationalisation) Amendment Bill, 2021, which allows the government to **privatize state-run General Insurance Companies (GICs)**. The Bill amends the General Insurance Business (Nationalisation) Act, 1972.

**General Insurance Business (Nationalisation) Act, 1972**

- The 1972 Act was enacted to **nationalise** all the private companies undertaking general insurance in India. GIC was also set up under the Act.
- Business of the companies nationalised were **restructured in four subsidiary companies of GIC**:



**Insurance Sector In India**

- It is basically divided into two categories: **Life Insurance, and Non-life Insurance (general insurance)**.
- IRDAI is the regulatory body that governs both Life insurance and General insurance
- Challenges: Low penetration and density rates, Inadequate investment in insurance products, deteriorating financial health of public-sector players

- The Act was **amended in 2002** to **transfer the control** of these four subsidiary companies **from GIC to the central government**, thereby making them independent companies.
- It also made it mandatory for the Central government to have **at least 51% shareholding** in these companies.
- Since 2000, GIC has exclusively undertaken the **reinsurance business** whereby one entity (the reinsurer) takes on all or part of the risk covered under a policy issued by an insurance company in consideration of a premium payment.

**Objectives Of The Bill**

- Increase private participation in the public sector insurance companies
- Enhance insurance penetration and social protection
- Secure the interests of policyholders and contribute to faster growth of economy

**Key Provisions Of The Bill**

- **Change in Govt Shareholding:** The bill removes the mandatory requirement of 51% central government shareholding in GICs.
- **Change In Definition:** The 1972 Act defines general insurance business as **fire, marine or miscellaneous** insurance business. It **excludes** *capital redemption and annuity certain businesses* from the definition. The Bill removes this definition and refers to the definition provided by the Insurance Act, 1938, which includes capital redemption and annuity certain businesses.
  - **Capital redemption insurance** involves payment of a sum of money on a specific date by the insurer after the beneficiary pays premiums periodically.
  - **Annuity certain insurance**, the insurer pays the beneficiary over a period of time.

**• Transfer of Control**

- The Act will not apply to the specified insurers after the central government gives up control of the insurer. **Control** in this case means, *power to appoint a majority of directors or power over the management or policy decisions.*
- The Act empowers central government to notify the **terms and conditions of service** of employees of the specified insurers.
- Under the current bill, schemes formulated by central government in this regard will be deemed to have been adopted by the insurer. The Board of Directors of the insurer may change these schemes or frame new policies.
- Further, powers of central government under such schemes (framed under the Act) will be transferred to the Board of Directors of the insurer.

- **Director’s Liabilities:** The Bill increases the liability of the **non-whole-time director**. These directors will be *held responsible for acts of omission and commission committed* with their knowledge and consent.

Benefits	Concerns
<ul style="list-style-type: none"> <li>• It will bring in <b>more private capital</b> in the general insurance business and help the government to meet its <b>disinvestment target</b>.</li> <li>• It will also help to improve the <b>reach and efficiency</b> of the business and make <b>more products</b> available to customers.</li> </ul>	<ul style="list-style-type: none"> <li>• There are fears that the move may lead to <b>complete privatisation</b> of the sector.</li> <li>• Furthermore, the <u>government will lose money through <b>dividends</b></u> in the proportion of shares being offered.</li> <li>• <b>Pensioners</b> in general insurance companies are <u>worried about the safety of their future pensions</u> post privatisation</li> </ul>

**Global Manufacturing Index 2021**

- It is developed by the United States based consultant Cushman & Wakefield.
- The index assesses the **most advantageous locations for global manufacturing among 47 countries** in *Europe, the Americas and Asia Pacific.*
- The index ranks countries based on **four key areas:**

- **Bounce Back:** Country’s capability to restart manufacturing.
- **Conditions:** Business environment, including availability of talent/labor, access to markets.
- **Costs:** Operating costs including labor, electricity and real estate.
- **Risks:** Political, economic and environmental.

**Key Findings**

- **India** has surpassed the US to become the world’s **2<sup>nd</sup> most desired manufacturing destination**, from the 3<sup>rd</sup> position last year. This indicates growing interest in India by manufacturers as a preferred manufacturing hub over other countries.

- **China** maintained its number one position. The US is placed 3rd, followed by Canada, Czech Republic, Indonesia, Lithuania, Thailand, Malaysia, and Poland.

### Reasons for India's Growth

- Rise in India's rank is due to its operating conditions, cost competitiveness and successfully meeting outsourcing requirements.
- India has relatively cheap land and labour, ever-improving infrastructure, and favourable policies. Moreover, rules regarding land acquisition have been relaxed over the years.
- India has reduced **corporate tax** from 30% to 25%, which is the lowest in Southeast Asia. **Ease of Doing Business** has improved significantly, placing India at the 63rd position.
- **Make in India** and **Skill India** have also facilitated growth in the manufacturing sector and enhanced skill development to create a large pool of skilled human resources.
- It is also working to enhance its **supply chain capacities**, which will cater to foreign companies looking to shift from other neighbouring countries (like China) to India.
- Compared to its Asian rival, India also has a **huge population**, which means a **younger workforce** with innovative capabilities.

### Way Ahead

India has to work on areas like managing geopolitical risks involved in running business and its ability to restart its manufacturing business after the second wave of Covid-19.

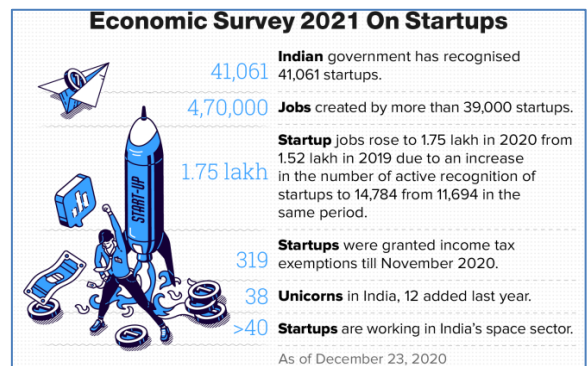
### SAMRIDH Programme

- The Ministry of Electronics and Information Technology (**MeitY**) has recently launched the SAMRIDH (Start-up Accelerators of MeitY for pRодукt Innovation, Development and growth) programme.
- It is part of a larger goal to create a conducive platform for **Indian Software Product startups** to enhance their products and secure investments for scaling their business. It would **support 300 startups** by connecting them with investors, new customers and providing **international exposure** in the next **three years**.
- It will be implemented by **MeitY Start-up Hub (MSH)**. MSH acts as a national coordination, facilitation and monitoring centre that integrates all the incubation centres, startups and innovation related activities of MeitY.
- Startups will get an investment of up to **Rs 40 lakh**, based on their current valuation and growth stage through selected accelerators. It will also facilitate *equal matching investment by the accelerator or investor*.

Startup **accelerators & incubators** are organizations that help in mentorship, advice, and resources to succeed.

### Eligibility for Accelerators

- Accelerators in the incubation business for at least **three years** that have supported more than 50 startups, with at least 10 having a non-public business, will be able to apply for the scheme.



- Accelerators must also have operations in India & the necessary space & infrastructure.

### Significance

- It will **boost the startup ecosystem (presently 63 unicorns)** in the country and **generate employment** in new age industries.
- Along with funding support to startups, it will help to bring skill sets together.
- The technology developed by these startups will help to reach people in remote parts of the country and create a better life for the marginalised sections of the society.

### Report On Rising Unemployment

The Parliamentary Standing Committee on Labour recently released a report on the impact of pandemic on rising unemployment and job loss.

#### Highlights Of The Report

Citing the Periodic Labour Force Survey (PLFS), the report said:



- The pandemic has devastated the labour market, denting the employment scenario and threatening the survival of millions of workers and their families.
- Informal workers have been hit the most, because of the seasonality of their employment and lack of formal employee-employer relationship.

#### Recommendations

- Increase in the maximum days of work guaranteed under **MGNREGS from 100 days to 200 days** and devise an **employment guarantee programme** for **urban workforce** in line with MGNREGS.
- A **mandatory health insurance to workers** by amending the payment schedule.
- **Direct cash transfers** should be given to informal workers during adverse conditions like Covid-19.
- Convert loans granted to street vendors under the **PM-SVANidhi (Street Vendor's AtmaNirbhar Nidhi) Scheme** to **direct cash grants**, which would enable the vendors to restart their income activity in a regular manner. Under PM-SVANidhi, street vendors can avail a working capital loan of Rs 10,000.
- The committee noted that the annual PLFS for 2019-2020 and 2020-21 are not yet available even after two waves of Covid-19. Thus, it asked the Labour Ministry for **timely completion of PLFS**.
- Going forward, formalising the unorganised sector, increasing its productivity, strengthening existing livelihoods, creating new opportunities and improving social security measures are major thrust areas.

#### **Periodic Labour Force Survey (PLFS)**

The PLFS is an **annual survey** conducted by the **National Statistical Office (NSO)**. It was started in **2017**, and it collects data on variables such as:



Labour Force  
Participation RateWorker-Population  
Ratio (WPR)Unemployment Rate  
(UR)Types of employment  
and their shares

Earlier, it was done by Employment-Unemployment Surveys which was conducted once every 5 years

**Taxation Laws (Amendment) Bill, 2021**

- The **Taxation Laws (Amendment) Bill, 2021** that seeks to nullify retrospective taxation was recently passed in the Parliament. It amends the Income Tax Act, 1961 (IT Act) and the Finance Act, 2012.
- 2012 Act had amended IT Act, to impose **capital gain** tax on indirect transfer of Indian assets on a **retrospective basis** (i.e. applicable to transactions done even before 2012).
- The 2012 retrospective tax law was used to impose tax on 17 companies including **Vodafone and Cairn Energy**. Last year, both Vodafone and Cairn Energy had won international arbitrations for the said tax disputes.

**Provisions Of The Bill**

- The Bill removes the provision of retrospective taxation. Thus, no tax demand will be raised in future on the basis of the 2012 amendment. However, tax on indirect transfer of Indian assets will continue to apply for all transactions post the 2012 amendment.
- Tax raised for the indirect transfer of Indian assets before May 2012 would be "nullified on fulfillment of specified conditions" such as the withdrawal of pending litigation and an undertaking that no damages claims would be filed.
- Moreover, the government will also refund the tax collected under this provision without any interest.

**Impact**

- It will help to avoid unnecessary litigation and save time and costs of the government.
- It will lead to a predictable tax regime and improve ease of doing business.
- This will boost confidence of investors (domestic and foreign), leading to more investments.

**Faceless Assessment Scheme (or e-assessment)**

- Income Tax Department created **3 separate email IDs** for grievances related to the **faceless assessment process, penalties** and **appeals** using AI. It is aimed to further improve taxpayer services in alignment with the **Taxpayers' Charter**.
- Faceless Assessment scheme was launched in 2019 to streamline tax administration, minimise physical interface from taxmen, increase accountability and introduce **team-based assessments**. It is a **central electronic-based system** that picks up tax returns for scrutiny based on **risk parameters and mismatches**.
- Cases which are exempted includes serious frauds, major tax evasion, sensitive & search matters, International tax and Black Money Act & Benami Property.

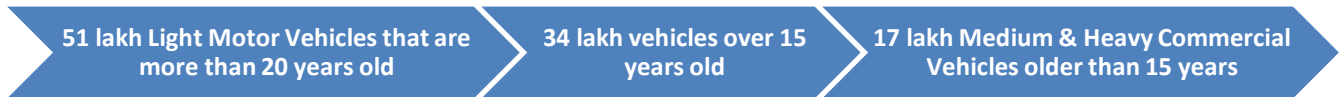


Key Features of Faceless e-Assessment Scheme	Other Initiatives
<ul style="list-style-type: none"> <li>No discretion in selection of assessment cases, while earlier, case selection used to happen manually.</li> <li>In place of single territorial jurisdiction, we now have automated <b>random allocation</b> of cases.</li> <li>Issue of notices will now be done through a central mechanism by <b>National e-assessment Centre (NeAC)</b> or <b>Regional e-assessment Centre (ReAC)</b> in electronic mode using Document Identification No. (<b>DIN</b>)</li> <li>No physical meeting with any officer</li> <li>Wide discretion and subjective assessment are being replaced by <b>team-based assessment</b> wherein draft order is issued in one city, review is done in another city and finalization is done in another city</li> </ul>	<ul style="list-style-type: none"> <li><b>Dispute Resolution Committee proposed</b> in Budget 2021 in order to provide quicker relief to small taxpayers having a taxable income of up to Rs. 50 lakh and a disputed income of up to Rs. 10 lakh.</li> <li><b>Vivad Se Vishwas Scheme</b> provides for settlement of disputed tax, interest, penalty or fees in relation to an assessment or reassessment order on payment of 100% of the disputed tax and 25% of the disputed penalty or interest or fee.</li> </ul>

**Vehicle Scrappage Policy**

The Prime Minister has recently launched the **Vehicle Scrappage Policy** which aims to replace old and polluting vehicles with the new ones.

**Current Status**



- These old vehicles are estimated to cause 10-12 times more pollution than the latest vehicles.
- Delhi** is the **only city** where diesel vehicles older than 10 years and petrol vehicles older than 15 years get automatically deregistered. However, people are unable to scrap them since there are not enough authorised scrapping centres.

**Details Of The Policy**

- Commercial vehicles over **15 years old** and personal vehicles **over 20 years old** will be **deregistered and scrapped** if they fail an **automated fitness test**. If a vehicle passes the fitness test, it will have to repeat the test after every 5 years.
- Criteria** to determine vehicle fitness: Emission tests, braking, safety equipment, among many other tests which are as per the Central Motor Vehicle Rules, 1989.
- Mandatory testing of heavy commercial vehicles will start in **April 2023** and for other categories in a phased manner, from **June 2024**.
- Policy also outlines key steps to set up support infrastructure with **automated testing stations (ATS)** and **registered vehicle scrapping facilities (RVSF)**.

- Owing vehicles older than 15 years will become expensive as renewal fitness cost will increase significantly. In addition, states will impose green tax over and above the road tax applied on every vehicle.



**INCENTIVES FOR VEHICLE OWNERS**

**Scrap value:** 4-6% of ex-showroom price of new vehicle to be given to the owner by the scrapping centre

**Tax rebate:** States may be advised to offer a road tax rebate of up to 25% for personal vehicles and up to 15% for commercial vehicles against

**Discount on new vehicle:** Vehicle manufacturers will be advised to give 5% discount on new vehicles against a scrapping certificate

**Fee waiver:** Registration fees may also be waived for purchase of new vehicle against the scrapping certificate

**Benefits Of The Policy**

- It will encourage the use of fuel efficient, environment friendly vehicles, which will reduce vehicular pollution and oil import bill of the country.
- It will formalize the currently informal vehicle scrapping industry and promote a circular economy. In a circular economy, products are designed for durability, reuse and recyclability, which minimises the use of resources, generation of waste, pollution and carbon emissions.
- **Creation of Scrap yards:** India had to import 23,000 crore worth of scrap steel last year.
- **Prices of auto components would fall** substantially with the recycling of metal and plastic.
- The new vehicle will also lower maintenance cost, and lead to savings on fuel.
- It will bring in new investment of more than ₹10 thousand crores, create more than 35,000 jobs and help the Centre and States to earn up to Rs 40,000 crore in GST.

**Gati Shakti**

- Recently it was announced that the **PM Gati Shakti National Master Plan**, worth Rs 100 lakh crore, for integrated infrastructure development would soon be launched.
- It will build upon the **National Infrastructure Pipeline (NIP)**.
- It is aimed at developing **easier inter-connectivity** between road, rail, air and waterways for an integrated economy. It will include projects under existing flagship schemes like Bharatmala, Sagarmala, Udaan, Bharat Net etc.

- High supply chain and logistics cost make Indian products less competitive in the global market. The current supply chain and logistics costs in India account for around 14% of the country's GDP compared to the global average of approximately 8%.
- It will help to reduce transit time, increase productivity of the industry and generate employment opportunities
- It will make local manufacturers globally competitive and develop new possibilities for creation of future economic zones.
- It will boost the post-pandemic economy and improve the country's indigenous production of technologies to reduce dependency on other nations.

**National Infrastructure Pipeline (NIP)**

- NIP is a first-of-its-kind, whole-of-government exercise to provide world-class infrastructure across the country.
- It aims to improve project preparation, attract investments (both domestic and foreign) into infrastructure, and will be crucial for target of becoming a \$5 trillion economy by FY 2025.
- The Final Report of NIP Task Force has projected total infrastructure investment of Rs **111 lakh crore** during the period FY 2020-25. The NIP captures all projects — **greenfield or brownfield**, under implementation or under conceptualisation — costing greater than Rs 100 crore per project.  
A **greenfield** project refers to a completely new project and **brownfield** projects are pre-existing projects that are modified or upgraded.
- While Centre and states are expected to have almost equal share in implementing NIP, private sector contribution is expected around 21 %.
- Out of the total expected capital expenditure of Rs 111 lakh crore, projects of Rs 44 lakh crore (40 % of NIP) are under implementation, projects worth Rs 33 lakh crore (30 %) are at conceptual stage and projects worth Rs 22 lakh crore (20 %) are under development.
- Of the total project capital expenditure, sectors such as energy (24 %), urban (17 %), railways (12 %) and roads (18 %) are expected to contribute nearly 70 % of the infra investments in India.
- The NIP project database would be made available on the India Investment Grid (IIG). IIG is an interactive and dynamic online platform that showcases updated and real-time investment opportunities in the country.

## *Polity And Governance*

19. Consider the following statements with regard to Jan Shikshan Sansthan

1. It provides vocational skills to non-literate, neo-literates as well as school drop-outs.
2. It is currently run by the Ministry of Human Resource Development

Which of the statements given above is/are correct?

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

**Answer: A**

**Explanation:**

The Jan Shikshan Sansthan (JSS), a Union government initiative for skill development in rural areas, has brought high-speed internet to some of the remotest tribal hamlets deep inside the Nilambur jungle.

**About Jan Shikshan Sansthan**

- JSS, formerly known as Shramik Vidyapeeth, provides **vocational skills** by identifying skills that have a market in the region of their establishment.
- It has been **transferred from Ministry of Human Resource Development to Ministry of Skill Development and Entrepreneurship** in July-2018.
- **Target Group**
  - **non-literate, neo-literates** (education upto 8th standard) **as well as school drop-outs** (age group of 15-35 years)
  - Socio-economically backward and educationally disadvantaged groups of **rural/urban** population.
  - Priority given to women, SC, ST, OBC and Minorities in rural areas and urban slums.
- JSSs are registered under the Societies Registration Act, 1860. It is implemented through NGOs with 100% grants from the Government of India.
- Livelihood cell to be encouraged for self and wage employment and linkages with national / state portal for promotion of employment and job melas etc.
- Courses having NSQF Compliant which has production, service and IT oriented.
- Life Enrichment Education part of Skill training programme and Digital Literacy are also incorporated across the course curriculum.

20. Consider the following statement with respect to Census in India

1. The first complete census of an Indian city was conducted in 1830 by Henry Walter in Dacca (now Dhaka).
2. It provides information on fertility, mortality, religion and migration.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

**Answer: C****Explanation:**

Owing to the outbreak of COVID-19 pandemic, Census 2021 and other Census-related field activities have been postponed until further orders of the Ministry of Home Affairs.

**What is a Census?**

- Census provides detailed and authentic information on economic activity, **literacy** and education, housing and household amenities, urbanisation, fertility and mortality, SCs/STs, language, religion, migration, disability and many other socio-cultural & demographic data.
- Census is conducted under the provisions of the **Census Act 1948**, and in India, this data is collected every 10 years. The information collected during the process is **confidential**.
- The first complete census of an **Indian city** was conducted in 1830 by **Henry Walter in Dacca**.

**How Is Census 2021 Different From Previous Census**

- The country's 16th Census (Census 2021) will be done digitally for the first time. Till now, the process involved visiting every household and filling up forms. This year, workers going door-to-door will have *tablets or smartphones* that will let them enter information digitally.
- This would help in getting results almost immediately, unlike earlier cases where it used to take multiple years for the data to be analyzed and published.
- There is a provision of working offline.
- Also, there is a provision for **self-enumeration via** a mobile app for the collection of data.
- **Census portal** for *management and monitoring* of various Census related activities will act as a **single source** to provide **multi language support**.
- There will not be any caste data as was collected in previous Socio-Economic Caste Census (SECC) which was conducted alongside Census 2011.
- For the first time data will also be collected under **Transgender Head**.

**Centrally Sponsored Scheme for Fast Track Special Courts (FTSCs)**

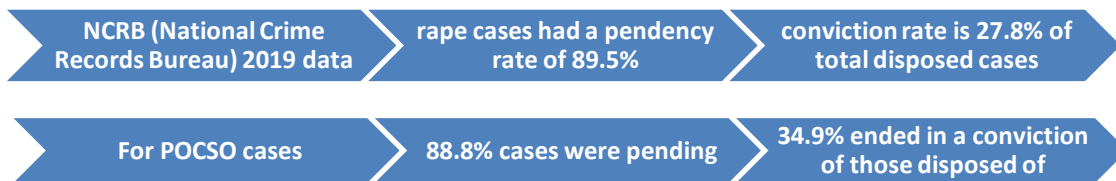
- The Union Cabinet approved the continuation of 1,023 FTSCs, including 389 exclusive **POCSO Courts**, as a **Centrally-Sponsored Scheme (CSS)** from April 1, 2021 to March 31, 2023.
- **Fast Track Special Courts** are dedicated courts expected to ensure swift dispensation of justice, and thus act as a deterrent for sexual offenders.
- The Central share is from **Nirbhaya Fund**, which is disbursed by **Union Ministry of Women and Child Development**.

**Background**

- Fast track courts (FTCs) were first recommended in 2000 and were funded by the central government. In 2011, the central government stopped funding FTCs.
- This was **challenged in the Supreme Court (SC) in 2012**, but the court said it was up to the **states** to continue/shut down these courts depending on their financial situation.
- Following **2012 Nirbhaya case**, the Union Government set up a 'Nirbhaya Fund', amended the Juvenile Justice Act and set up fast-track Mahila Courts.
- Finally, the Scheme for **fast track special courts** was **launched in 2019 for expeditious disposal of pending rape cases and crimes under the POCSO Act**.
- Since the setting up of FTSC, over 51,600 cases of rape and POCSO offenses have been expeditiously disposed through 660 FTSCs in 26 states.

**Issues Related to Fast Track Special Courts (FTSC):**

- FTSC (set up under the Nirbhaya Fund) were not clear whether **all cases of gender-based violence** such as eve-teasing or domestic violence came under their purview.
- Burdening **pendency and low rate of conviction**.



- **Absence of witnesses** was seen as one of the main reasons for adjournments.
- Decision of a FTSC is generally challenged in the HCs or SC.
- Judges from sessions courts are given the extra responsibility of FTSC.

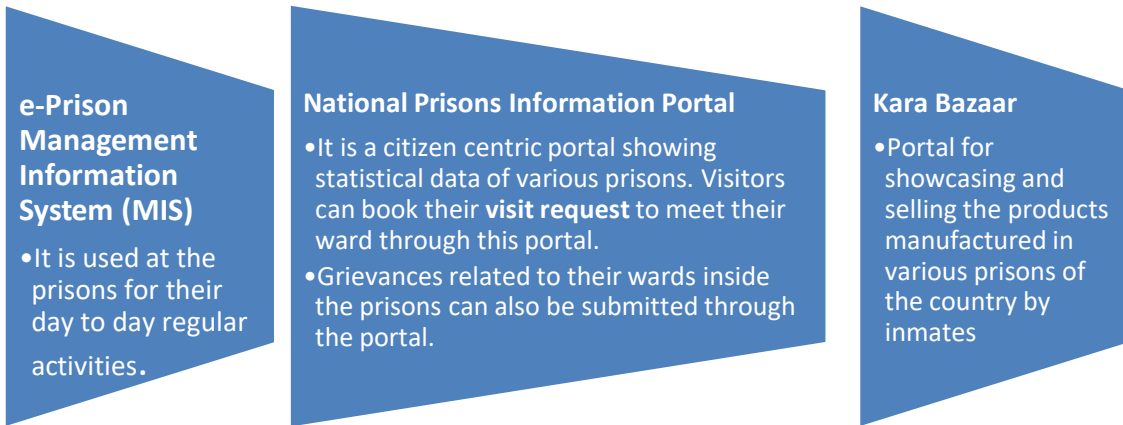
**E-Prisons Project**

- The **Ministry of Home Affairs** has provided financial assistance of Rs.99.49 crores to the States and UTs for e-Prison project. Prison is a **state subject**.
- The e-Prisons, which aims at **computerization of the functioning of prisons** in the country, has been operationalised in all States and UTs.
- e-Prisons data has been integrated with Police and Court system under the **Inter-operable Criminal Justice System (ICJS)**.
- e-Prisons uses data maintained by the States and Union Territories on the **National Prisons Information Portal**.
- The system is developed by National Informatics Centre (NIC) network, MeitY and can be accessed exclusively by the authorized officials of Law Enforcement Agencies and Prisons, through ICJS.



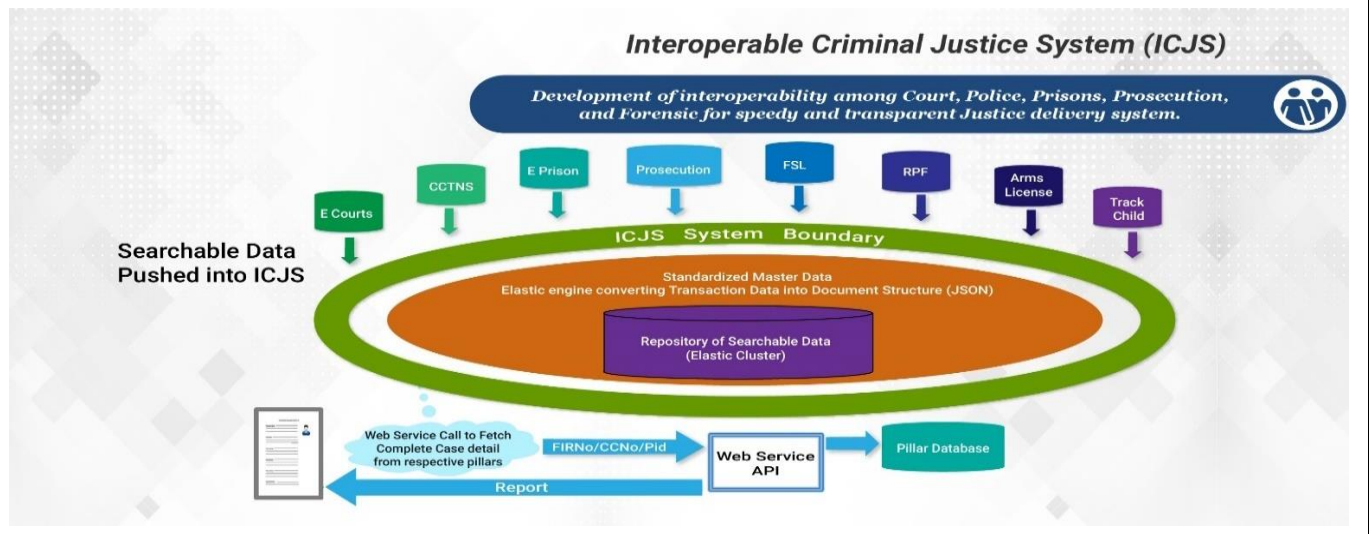


- It has **3 components**:



**About ICJS**

- Inaugurated in September **2019**, its purpose is to reduce **errors and time taken** in sharing of information between the pillars, which leads to longer trials, poorer convictions, transit losses of documents etc.
- It aims to **integrate CCTNS** (Crime and Criminal Tracking Network and System) **project** initiated in **2009** with **e-Courts** and **e-Prisons database** in the first instance and with other pillars of judiciary like **forensic labs, prosecution and juvenile homes** etc.
- In order to build an effective criminal justice system, it is essential that data across all pillars of criminal justice is interoperable and is accessible across all the pillars.



**Administrative Reforms**

- Union Minister of State (Independent Charge) for Science & Technology gave the information on Major Administrative Reforms which were introduced in recent years
- These reforms aims to encourage greater efficiency, transparent and corruption free governance, accountability and reduce scope for discretion.



**Major Initiatives for Administrative Reforms**

1. **Launch of “Mission Karmayogi”**- National Programme for Civil Services Capacity Building (NPCSCB) -a new national architecture for civil services capacity building has been launched. Under this mission, the government will be providing mid-career training to civil servants. The training which was earlier available for only All India Services will now be compulsory for all officers at all levels.
2. **e-Samiksha**- A real time online system for *monitoring and follow up action* on the decisions taken by Government at apex level in respect of implementation of important Government programmes / projects;
3. **e-Office**- e-Office Mission Mode Project (MMP) has been strengthened for enabling Ministries/ Departments to switchover to paperless office and efficient decision making;
4. **Citizen Charters**-Government has mandated Citizen Charters for all Ministries/Departments which are updated and reviewed on a regular basis.
5. **Good Governance Index 2019** assesses the Status of Governance and impact of various interventions taken up by the State Government and UTs.
6. **National e-Governance Service Delivery Assessment** aims at assessing the States, UTs and Central Ministries on the efficiency of e-Governance service delivery;
7. **Centralized Public Grievance Redress and Monitoring System (CPGRAMS)**-The Government is undertaking CPGRAMS reforms in the top grievance receiving Ministries/ Departments by enabling questionnaire guided registration process and providing for automatic forwarding of grievances to field level functionaries thereby reducing the redress time.

**Features Of Mission Karmayogi**

- **Digital Learning Framework:** Mission Karmayogi programme will be delivered by setting up a digital platform called *iGOTKarmayogi*. The platform will act as a launchpad for the NPCSCB, which will enable a comprehensive reform of the capacity building apparatus at the individual, institutional and process levels.
- **Governance:** NPCSCB will be governed by the *Prime Minister’s Human Resource Council*, which will also include State Chief Ministers, Union Cabinet Ministers and experts. This council will approve and review civil service capacity building programmes. Besides this, there will be a *Cabinet Secretary Coordination Unit* comprising of select secretaries and cadre controlling authorities.
- **Civil Service Competency Framework** — FRAC (Framework of Roles, Activities and Competencies) — which will contain the competency requirements for every role. The learning records of the officials will signal their existing competency details. Matching the two will help to identify the right person with the right competencies for the right job.
- **Capacity Building Commission:** It will prepare and monitor annual capacity building plans and audit human resources available in the government. It includes experts in related fields and global professionals.
- **Funding:** To cover around 46 lakh central employees, a sum of Rs 510.86 crore will be spent over a period of 5 years from 2020-21 to 2024-25. The expenditure is partly funded by multilateral assistance to the tune of \$50 million.

**Tribunal Reforms**

The Tribunals Reforms Bill, 2021 was passed in Lok Sabha. Recently, the Supreme Court has challenged the government to produce material showing its reasons for introducing the Tribunal Reforms Bill of 2021. The Bill replaces the Tribunals Reforms (Rationalisation and Conditions of Service) Ordinance, 2021 which was quashed by the Supreme Court.

**Need For The Bill**

The Supreme Court recently expressed its discontentment over the functioning of tribunals.

- i) **Huge Unfilled Vacancy: India now has 16 tribunals** including the National Green Tribunal, the Armed Forces Appellate Tribunal, the Debt Recovery Tribunal among others which suffer from crippling vacancies. In 13 tribunals, there are around 138 vacancies out of 352 posts.
- ii) **Mounting Pendency:** Analysis of data of the last three years has shown that tribunals in several sectors have *not necessarily led to faster justice delivery* and they are also at a considerable expense to the exchequer. CAT and others tribunals had a pendency of 2.5 Lakh cases.
- iii) **Conflict Of Interest:** The tribunals are not independent. The Executive holds key positions in Tribunals and the government is the *biggest litigant*. So, the cases might not be decided fairly.
- iv) **Non-uniformity across tribunals with respect to service conditions**, tenure of members, varying nodal ministries in charge of different tribunals
- v) **Bypassing the jurisdiction of the High Court** in certain Tribunals like NGT, NCLAT, CAT, etc have provisions allowing for direct appeals to the Supreme Court.

**Key Features Of The Bill**

- **Abolition of Appellate Tribunals:** The Bill seeks to dissolve certain existing appellate bodies (*Film Certification Appellate Tribunal, Intellectual Property Appellate Tribunal, Custom, Excise And Service Tax Appellate Tribunal, Airport Appellate Tribunal, National Highway Tribunal,*) and transfer their functions, such as adjudication of appeals, to other existing judicial bodies.

The Bill states that the **Chairpersons and Members** of the tribunal being abolished shall cease to hold office, and they will be entitled to claim compensation equivalent to three months' pay and allowances for their premature termination.

- **Selection Of Tribunal Members:** Chairpersons and judicial members of tribunals are former judges of High Courts and the Supreme Court and they will be appointed on the recommendation of a Search-cum-Selection Committee. The central government must decide on the **recommendations** of selection committees preferably within **three** months from date of the recommendation.

**Search-cum-selection Committees:** The Bill **amends the Finance Act, 2017** to specify that the members of the committee will be

- i) **Chairperson (with casting vote):** The Chief Justice of India, or a SC Judge nominated by him.
- ii) Two Secretaries nominated by the central government,
- iii) The sitting or outgoing Chairperson, or a retired Supreme Court Judge, or a retired Chief Justice of a High Court, and
- iv) The Secretary of the Ministry under which the Tribunal is constituted (with no voting right).

**State administrative tribunals will have separate search-cum-selection committees.** These Committees will

consist of:

- i) The Chief Justice of the HC of the concerned state, as the Chairman (with a casting vote)
- ii) The Chief Secretary of the state government and the Chairman of the Public Service Commission of the concerned state,
- iii) The sitting or outgoing Chairperson, or a retired High Court Judge, and
- iv) the Secretary or Principal Secretary of the state's general administrative department (with no voting right).

- **Eligibility and Term of office:** The Bill provides for a **four-year term of office** (subject to the upper age limit of 70 years for the Chairperson and 67 years for members; and minimum age limit of 50 years.).
- **Removal of Tribunal Members:** While the Bill provides for **uniform pay and rules for the search and selection committees** across tribunals, it also provides for removal of tribunal members. It states that the central government shall, on the recommendation of the **Search-cum-Selection Committee**, remove from office any Chairperson or a Member, who has —
  - i) been adjudged as an insolvent; or
  - ii) been convicted of an offence which involves moral turpitude; or
  - iii) become physically or mentally incapable of acting as such Chairperson or Member; or
  - iv) acquired such financial or other interest as is likely to affect his functions as such Chairperson or Member; or
  - v) so abused his position as to render his continuance in office prejudicial to the public interest.

#### Key Issues Raised By SC And Analysis

- **Unconstitutional Legislative Overriding of The SC Judgement:** There was lack of discussion over the bill, and the government has re-enacted the very same provisions (regarding conditions of service and tenure) struck down by the Court in Madras Bar Association case, 2021.

The SC in Madras Bar Association case (2020) had fixed the term of **5 years** for the Chairpersons, Vice-Chairpersons and members of the Tribunal. In violation of the verdict, the tenure of 4 years is now fixed by the bill.

- ✓ The Supreme Court stated that specifying **four years of term of office bill violates the principles of separation of powers**, independence of judiciary, rule of law, and equality before law.
- ✓ Short tenure of members of a tribunal along with provisions of re-appointment increases the **influence and control of the Executive over the judiciary**.
- ✓ It also discourages meritorious candidates from applying for such positions as they may not leave their well-established careers to serve as a member for a short period.
- No judicial impact assessment was conducted prior to abolishing the tribunals despite the Supreme Court's direction in **Rojer Mathew vs. South Indian Bank case, 2019**.
- The dissolution of certain tribunals and appellate bodies, and the transfer of their functions to High Courts are criticized on the grounds that **Indian courts are already overburdened with their existing caseload**.

Pendency in HCs of as of June 2021. > 91,885 pending cases of more than 30 years

- **Lack of specialisation** in regular courts could be detrimental to the decision-making process. For example, the FCAT exclusively hear appeals against decisions of the censor board, which requires expertise in art and cinema.
- It allows the Central Government to take a decision on the recommendations made by the selection Committee, preferably within three months
- **It undermines the length/security of tenure:** In past judgements, the Supreme Court (2020) has stated that advocates with at least 10 years of relevant experience must be eligible to be appointed as judicial members, as that is the qualification required for a High Court judge. **A minimum age requirement of 50 years** may prevent such persons from being appointed as tribunal members.

### Preventive Detention

Supreme Court in a recent judgment held that Preventive detention, the dreaded power of the State to detain a person without trial, could be used **only to prevent public disorder**.

#### Key Points Of The Judgement

- The court must ensure that the facts brought before it **directly and inevitably** lead to a harm, danger, alarm or feeling of insecurity among the general public or any section thereof at large.
- The State should not arbitrarily resort to “preventive detention” to deal with all and sundry “law and order” problems, which could be *dealt with by the ordinary laws* of the country.
- Preventive detention must fall within **Article 21** (due process of law) read with **Article 22** (safeguards against arbitrary arrest and detention) and the **statute in question**.

#### What Is Preventive Detention

- Under Section 151 of **Criminal Procedure Code, 1973 (CrPC)**, preventive detention is **action taken on grounds of suspicion** that some wrong actions may be done by the person concerned.
- A police officer can arrest an individual **without orders from a Magistrate and without any warrant** if he gets any information that such an individual can commit any offense.
- Grounds For Preventive Detention:



#### Preventive Detention Laws in India

- India got its first preventive detention law, the **Preventive Detention Act, 1950 (PDA)**.
- Since then, India has periodically enacted various such laws. One of the most prominent among them is the **Maintenance of Internal Security Act, 1971 (MISA)**. MISA is infamous for its use during the Emergency period in the 1970s to arrest opposition party leaders. MISA remained effective till 1978.
- Two years later, the **National Security Act, 1980 (NSA)** was enacted which continues to be effective to date.

#### Safeguard Against Misuse Of Preventive Detention

To prevent reckless use of Preventive Detention, certain safeguards are **provided in the constitution**.

- **Article 22(4):** Firstly, a person may be taken to preventive custody **only for 3 months at the first instance**. If the period of detention is extended beyond 3 months, the case must be referred to an **Advisory Board** consisting of persons with qualifications for appointment as judges of High Courts. It is implicit that the period of detention may be extended beyond 3 months, only on approval by the Advisory Board.
- **Article 22(5):** The detaining authorities must **communicate to detainee the grounds** on which the order has been made and give him the earliest **opportunities for making representation against the detention**. These safeguards are **not available to enemy aliens**.

Also, the state, however, **may refuse to divulge the grounds of detention** if it is in the public interest to do so. This power conferred on the state leaves scope for arbitrary action on the part of the authorities.

**Difference Between Preventive Detention And Arrest**

An 'arrest' is done when a person is charged with a crime. An arrested person is produced before a magistrate within the next 24 hours.

**Governors Can Pardon Prisoners, Including Death Row Ones**

- The Supreme Court held that the Governor's power to pardon **overrides Section 433A** of Code of Criminal Procedure (CrPC).
- **Section 433A:** It states that where a sentence of **imprisonment for life** is imposed for an offence *for which*
  - i) **death is one of the punishments** provided by law, or
  - ii) where a sentence of death has been **commuted** under section 433 **into imprisonment for life**

Then, such person shall not be released from prison unless he had served **at least** fourteen years of imprisonment.

**Key Points Of The Judgement**

- **SC held that the Governor of a State can pardon prisoners, even before they have served a minimum 14 years of prison sentence.**
- **Section 433-A** of the Code cannot and does not in any way affect the constitutional power conferred on the **President/Governor** to grant pardon under Articles 72 or 161 of the Constitution.
- This sovereign power of a Governor to pardon a prisoner (article 161) is actually exercised by the State government and **not the Governor on his own**.
- The action of **commutation and release** can thus be pursuant to a governmental decision and the order may be issued even **without the Governor's approval**. However, under the Rules of Business and as a **matter of constitutional courtesy**, it **may seek** approval of the Governor, if such release is under Article 161

**Power of Governor Under Article 161 Of Indian Constitution**

- The Governor of a State shall have power to grant pardons, reprieves, respites or remissions of punishments or to Suspend, remit or commute the sentence of any person Convicted of any offence **against any law relating to a matter to which the**

**Pardoning Powers Of President Vs Governor**

The pardoning power of President under Article 72 is wider than the pardoning power of Governor under Article 161. The power differs in the ways that Governor can't pardon a sentence by a **Court Martial** or in case of **death sentence**, whereas President's pardoning power extend to both the cases.

**executive power of the State extends.**

- **Purpose of Granting Pardon**

- Pardon may substantially help in saving an innocent person from being punished due to **miscarriage of justice or in cases of doubtful conviction.**
- The hope of being pardoned itself serves as an incentive for the convict to behave himself in the prison institution and thus, helps considerably in solving the issue of prison discipline.

**Revocation of Pardon**

It is quite possible that the pardon granted by the executive may be revoked or withdrawn. The question of revocation may come up for the Consideration of the executive **in two cases --**

1. Pardon can be revoked when the pardon itself is obtained by fraud, misrepresentation or misinformation.
2. In case of violation of the **condition Imposed by the executive** on the person seeking pardon. The pardon can either be **free or conditional.** The fulfilment of the condition is always necessary and the breach of the same can always put the person behind the bars once again.

**Power Of Pardoning In Various Countries**

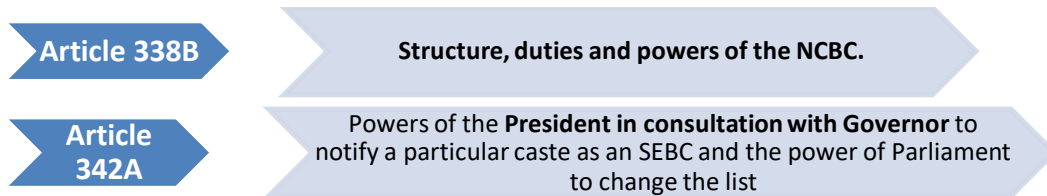
- The American Constitution gives the **President** the power to grant reprieves or pardons for offences against the **Federal Law, except in case of impeachment.** Pardon in the case of violation of a State law has to come from the Governor of the State concerned.
- In UK, the **Constitutional monarch** can pardon or show mercy to a conviction on ministerial advice.
- In Canada, pardons are considered by the **National Parole Board** under the Criminal Records Act.

**127th Constitution Amendment Bill (CAB)**

Parliament has recently passed the Constitution (127th Amendment) Bill, 2021.

**Why is 127th CAB Needed**

- The bill is required since Supreme Court in its Maratha reservation verdict of 5 May 2021, had ruled that **only the Centre had the power to draw up the OBC list,** as per the Constitution (**102nd Amendment) Act** enacted in 2018 by Parliament.
- The Constitution 102nd Amendment Act had granted constitutional status to **National Commission for Backward Castes (NCBC),** which was a statutory body earlier. It inserted 2 articles in constitution --



**What Powers Does the Amendment Give the States?**

- There will be a consequential amendment in Articles 366(26C) (which defines SEBCs) and 338B (9), after which states will be able to directly notify OBC and SEBCs without having to refer to the NCBC.
- **Consultation with the NCBC:** Article 338B of the Constitution mandates the central and state governments to consult the NCBC on all major policy matters affecting the socially and educationally backward

classes. **The Bill exempts states and union territories** from this requirement for matters related to preparation of their list of socially and educationally backward classes.

- The "state list" will be completely taken out of the ambit of the President and will be notified by the state Assembly.
- Nearly 671 OBC communities would have lost access to reservation in educational institutions and in appointments if the state list was abolished. Moreover, nearly one-fifth of the total OBC communities would have been adversely impacted by this.

### India's Flag Code And The Rules Governing Display Of Tricolour

- The Indian flag was adopted in its present form during a meeting of the **Constituent Assembly** held on July 22, 1947.
- The first national flag, which consisted of **three horizontal stripes of red, yellow and green**, is said to have been hoisted on August 7, 1906, at the **Parsee Bagan Square** in Calcutta.
- Later, in 1921, freedom fighter **Pingali Venkayya** met Mahatma Gandhi and proposed a basic design of the flag, consisting of **two red and green bands**.
- After undergoing several changes, the tricolour was adopted as our national flag at a **Congress Committee meeting in Karachi in 1931**.

### Rules Governing The Display Of Tricolour

The Emblems and Names  
(Prevention of Improper  
Use) Act, 1950

The Prevention of Insults to  
National Honour Act, 1971.

Flag Code of India , 2002

1. **The Emblems and Names (Prevention of Improper Use) Act, 1950:** It restricts the use of **national flag**, the coat-of-arms used by a government department, the official seal of the President or Governor, the pictorial representation of Mahatma Gandhi and the Prime Minister, and the Ashoka Chakra.
2. **Prevention of Insults to National Honour Act, 1971** prohibits the desecration of or insult to the country's national symbols, including the *national flag*, the Constitution, the national anthem and the Indian map.
  - A person who is convicted for the following offences under the Act is disqualified to contest in the elections to the Parliament and state legislature for 6 years.
  - Further, **putting any kind of inscription upon the flag**, using it to cover a statue, a monument or platform, and embroidering or printing it on cushions, handkerchiefs, napkins or any dress material is also considered disrespect to the Tricolour, according to the Act.
  - Moreover, the **flag should not be allowed to touch the ground or trail in water**, or be put up in an inverted manner.
3. In 2002, the **Flag Code of India** came into effect which allowed the **unrestricted display** of the Tricolour as long as the honour and dignity of the flag were being respected. The Flag Code 2002 states that there will be no restriction on the display of the flag by public and private bodies and educational institutions except to the extent as laid down in the Emblems and Names (Prevention of Improper Use) Act, 1950 and the Prevention of Insults to National Honour Act, 1971. The flag code **did not replace the pre-existing rules** governing the display of the flag.



4. **Article 51A (a):** It shall be the duty of every citizen of India to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.

### **Right To Move, Reside Across India**

The Supreme Court (SC) said that a **person's fundamental right to reside and to move about freely anywhere in India** cannot be refused on "flimsy grounds".

#### **Background**

- The SC bench was hearing an **externment order**, issued by Deputy Commissioner of police in Maharashtra against a journalist, in which he was prohibited from entering Maharashtra's Amravati city for a year.
- The journalist had filed several queries under the Right to Information Act against misappropriation of public funds and government grants at the madrassas in Amravati.
- However, FIR filed against him, alleging that the journalist was extorting money under the pretext of **threatening to expose the activities of the madrassas**.
- Following the accusations, an externment order was issued under Section 56(1)(a) &(b) of the **Maharashtra Police Act**. The section provides for the removal of individuals from an area, if the authorities suspect that they may commit an offence.

#### **SC Judgement**

- Sections 56 to 59 of the Maharashtra Police Act are intended to prevent lawlessness and deal with a class of lawless elements in society who cannot be brought to book by established methods of penal action, upon judicial trial.
- An externment order **may sometimes be necessary for maintenance of law and order**. "However, the drastic action of externment should only be taken in exceptional cases, to maintain law and order in a locality and/or prevent breach of public tranquillity and peace."
- A threat to lodge complaint cannot possibly be a ground for passing an order of externment, more so, when the responses of government authorities to queries raised by the appellant under the Right to Information Act clearly indicate that the complaints are not frivolous ones or without substance.

### **Quota Benefit Can't Be Availed Simultaneously In Two States**

- The Supreme Court has ruled that a person belonging to a **reserved category** is entitled to **claim the benefit of reservation in either of the successor States** upon their reorganization, but cannot claim the benefit of the quota simultaneously in both.
- A resident of Jharkhand, a member of Scheduled Caste, filed an appeal against the HC order denying him an appointment in state civil service examination of 2007 on the ground that his address proof showed that he was a permanent resident of Patna, Bihar.

#### **Key Points Of The Judgement**

- The court ruled that a person cannot claim the benefit of reservation **simultaneously** in both the successor states upon their reorganization.

- For Example: Members of the reserved category, who are residents of the successor State of Bihar, while participating in **open selection in Jharkhand**, shall be treated to be migrants, and they can participate in the **general category** without claiming the benefit of reservation and vice versa.
- If that is permitted, it will defeat the mandate of **Articles 341(1) and 342(1) of the Constitution**.
- **Section 3 of Bihar Reorganisation Act, 2000**, makes it apparent that such persons whose place of origin/domicile on or before (November 15, 2000) was of Bihar now falling within the districts/regions which form a successor State, i.e. Jharkhand became ordinary resident of the State of Jharkhand.
- So far as the **employees** who were in public employment in Bihar on or before November 15, 2000, apart from those who have domicile of either of the district which became part of Jharkhand, such employees who have exercised their option to serve in Jharkhand their existing service conditions shall stand protected by virtue of Section 73 of the Act, 2000.

**Additional Information**

- **Article 341:** The President may with respect to any State or Union territory, and where it is a State after consultation with the Governor thereof, by public notification, specify the castes, races or tribes or parts of or groups within castes, races or tribes which shall for the purposes of this Constitution be deemed to be **Scheduled Castes in relation to that State or Union territory**, as the case may be.
- **Article 342:** The President may with respect to any State or Union territory, and where it is a State, after consultation with the Governor thereof, by public notification, specify the tribes or tribal communities or parts of or groups within tribes or tribal communities which shall for the purposes of this Constitution be deemed to be **Scheduled Tribes in relation to that State or Union territory**, as the case may be.

21. Gilgit-Baltistan is situated to

- The east of Pakistan's Khyber Pukhtunkhwa province
- The south of Afghanistan's Wakhan Corridor
- Both A and B
- Neither A nor B

Answer: C

Explanation

Geographical Location of Gilgit Baltistan

- West - Borders Pakistan's Khyber Pukhtunkhwa province
- North - A small portion of the Wakhan Corridor of Afghanistan,
- Northeast - China's Xinjiang Uyghur Autonomous Region,
- Southeast- The Indian-administered J&K,
- South - Pakistani-administered state of Azad J&K



Background

- Gilgit-Baltistan is one of the disputed, high-altitude strategic territory as it borders Pakistan, Afghanistan and China.
- The region is claimed by India as part of the erstwhile princely state of J&K as it existed in 1947 at its accession to India. However, it has been under Pakistan's control since 4th November, 1947, following the invasion of Kashmir by tribal militias and the Pakistan army.
- Following this invasion, India moved to UNSC to raise the issue of Pakistan's invasion. On 1st January 1948, the UNSC passed a resolution: "Pakistan to **withdraw** from all of Jammu and Kashmir and **then** India had to reduce its forces to the minimum level **following which a plebiscite** would be held to ascertain people's wishes". However, no withdrawal was ever carried out and it remains a point of contention between two countries.
- Through Karachi Agreement 1949, **Pakistan quietly divided PoK into two** – Azad Kashmir (AJK) and Gilgit Baltistan.
- The coordination of all affairs of Gilgit Baltistan was kept with Pakistan. Gilgit-Baltistan's status was **elevated to that of a full-fledged province** of Pakistan in September 2021. Draft of the bill titled '26th Constitutional Amendment Bill' had been prepared in this regard.
- It is an autonomous region now and after the bill is passed, it will become the 5th province of the country. Currently, Pakistan has four provinces namely Balochistan, Khyber Pakhtunkhwa, Punjab, and Sindh

What is Going to Happen Once the Bill is Passed

- Decision to **elevate** Gilgit Baltistan to a **province** will grant the region Pakistan's constitutional rights, comprising representation in the upper and lower houses of the parliament.

- The Supreme Appellate Court of Gilgit-Baltistan may be abolished.
- The region's election commission will be merged with the Election Commission of Pakistan.

#### What Is The Current State Of The Region

- Its administrative system is different from that of PoK. Gilgit-Baltistan is **mostly governed by an executive fiat**. Until 2009, the region was called the Northern Territory.
- The **last elections were held in July 2015**, and the term of the Legislative Assembly ended in July 2020. New elections could not be held due to the epidemic.
- In 1994, **Indian Parliament adopted a resolution** reiterating that Gilgit-Baltistan and PoK are Indian territories occupied illegally by Pakistan.
- **In 2017, the British Parliament, too, adopted a resolution** stating that Gilgit-Baltistan legally belongs to India by virtue of accession of princely state of Jammu and Kashmir to India.

#### Impact Of This Step:

- **Strengthening the Legal Hold of Pakistan** - Pakistan is trying to ensure that if India and Pakistan (and China) come to the point of an open war in Kashmir, this part of Kashmir **remains constitutionally safe, and out of reach of any meddling United Nations resolutions** that will come into play as hostilities break out.
- **Pakistan is securing its only territorial frontier**, and thus a land route, with China.
- **Legalises China-Pakistan Economic Corridor (CPEC)** which connects Gwadar Port in Pakistan's Balochistan with China's Xinjiang province. It is the flagship project of **China's Belt and Road Initiative (BRI)**.
- It is **rich in minerals deposits** (metallic, non-metallic, energy minerals, precious stones). The southern areas of this region have substantial deposits of nickel, lead, copper and zircon. In its northern regions, it contains deposits of iron, silver, gold, garnet and topaz.
- **Easing Chinese access** - The legalising of Pakistan's stranglehold over Gilgit-Baltistan means that roadblocks to Chinese investors in setting up industry or buying up land will be removed.

#### India's Stand:

- India has clearly conveyed to Pakistan that the entire union territories of Jammu and Kashmir and Ladakh, including the areas of Gilgit and Baltistan, **are an integral part of the country** by virtue of its **fully legal and irrevocable accession**.
- Hence, Government of Pakistan or its judiciary has **no locus standi** on territories illegally and forcibly occupied by it.

#### 22. Consider the following areas

- |                       |                                    |
|-----------------------|------------------------------------|
| 1. The Gulf of Mannar | 2. The Andaman and Nicobar Islands |
| 3. Lakshadweep        | 4. The Gulf of Kutch               |

Which of the areas given above are Coral reef areas?

- |                 |                  |
|-----------------|------------------|
| a) 1 and 2 only | b) 2 and 3 only  |
| c) 1 and 3 only | d) 1, 2, 3 and 4 |

**Answer: D**

### **Explanation**

- Thailand has banned **sunscreens containing chemicals** that damage coral from all of its marine national parks.
- Four ingredients commonly found in sun creams are believed to destroy coral larvae. These are - *oxybenzone, octinoxate, 4-methylbenzylidene, camphor or butylparaben*.
- These chemicals kill coral larvae, impede coral reproduction and cause reef bleaching.
- The **Pacific Island of Palau** and the **US state of Hawaii** had also introduced similar bans.

### **Hong Kong to Adopt China's Anti-Sanctions Law**

Hong Kong is **set to adopt China's anti-sanctions law in some form**. If adopted, the law could undermine Hong Kong's reputation as a global financial hub.

#### **What is China's Anti-Sanction Law**

- The US and EU started **increasing pressure by imposing sanctions** on China over issues like trade, technology, Hong Kong and Xinjiang
- Anti-Sanction law was passed by mainland China to **counter foreign sanctions**. Under the law, **individuals or entities who formulate or comply** with sanctions against Chinese businesses or officials **could be put on an anti-sanctions list**.
- This law empowers Chinese govt. to deny visas, deport, or seize assets of such persons/entities.
- Foreign companies can be **sued in Chinese courts for applying sanctions** and the law can also be **wielded against family members**.

#### **Challenges In Front Of International Companies**

- International companies might **face punishment by each side** if they adhere to either sanctions regime. For example, a bank that refuses to implement U.S. sanctions could find itself cut off from access to the dollar.
- On the other hand, if it implements US sanctions against Chinese officials, it will be penalised under China's Anti-Sanction Law.

#### **Political System of Hong Kong**

- Hong Kong is a **special administrative region of China**.
- It has its **own currency, political system and cultural identity** but it belongs to China.
- The city was a **colony of the UK**, until the British **handed it back over to China in 1997**.
- At the time of handover, Chinese Communist leadership had agreed to a unique arrangement "**One Country, Two Systems**". This was agreed upon to maintain Hong Kong's prosperity, and its legal system and culture.
- Under this policy, Hong Kong maintains a de-facto constitution, known as **Hong Kong Basic Law**. It guarantees freedoms that **are unavailable to Chinese mainlanders**, such as the **right to protest, the right to a free press and freedom of speech**.
- But in recent years, Beijing has repeatedly reinterpreted the Basic Law and now it says it has "**complete jurisdiction**" over Hong Kong.

### China's Three-Child Policy

- National legislature of China has **formally endorsed the three-child policy**.
- The amended law also calls for **supportive measures (finances, taxes, insurance, education, housing and employment)** to ease the financial burden of raising children.

### **Why China Is Changing Its Child Policy?**

- China had been following **one-child policy until 2016**. The one-child policy was enforced by then-leader Deng Xiaoping in 1980
- Chinese officials claim the one-child policy implemented for over 3 decades has prevented over 400 million births.
- In 2016, a “two-child policy” was introduced that largely failed to boost birth rates. The prime reason quoted was the high education cost of children.
- The National Bureau of Statistics said that **12 million babies were born last year, the lowest number since 1961**.
- **Change in Demographic Structure:** Compared to census 2010, the recent census had recorded an increase in the population in the age group of 60+ (5.4% increase). **On the other hand**, the population in the 15-59 age group has declined (6.7% since 2010)
- **Declining Workforce:** China's workforce in the 15-59 age bracket peaked at 925 million in 2011. It had dropped to 894 million in this census.
- **Fertility rate** well below the replacement rate - The fertility rate was 1.3 children per woman in 2020, which is far below the replacement level of 2.1. It is similar to the **fertility rates in Japan and Italy**, which are home to some of the **world's oldest populations**.
- **Fear of Economic Burden** - A shrinking working age population and a growing retired population would hamper China's economic growth and strain social services.
- **Increase in sex-based abortions** – Previous policy had led to selective sex-based abortions, causing a sex imbalance to form over time. In 2020, China had 723.34 million men, compared to 688.44 million women. The skewed sex ratio also led to **increased trafficking of women and forced prostitution**.
- **Previous Policy and Controversies over Human Rights** – Under earlier policy, the state used brutal tactics such as **forced abortions and sterilisations**
- China was accused of **enforcing reproductive limits as a tool for social control**. E.g. The **Uighur Muslims** were forced to have fewer children to restrict the growth of their population.

### **Criticism**

Due to previous policy, cultural shift has taken place in China. Many couples now believe that one child is enough. Hence, relaxing limits on reproductive rights along with supportive measure would not yield the desired result.

### European Union (EU)'s Data Protection Law

Amazon has been handed a massive fine of close to \$900 million under the **EU's data protection law**. The tech giant has been fined under the **General Data Protection Regulation (GDPR)** enacted in 2018.

### Why Was Amazon Fined

- EU's GDPR requires companies to seek people's consent before using their personal data. However, Amazon was found to be processing personal data in violation of the rules. Amazon had **manipulated customers' data**. The advertising targeting system imposed by Amazon is carried out without free consent
- The penalty was imposed by the **Luxembourg National Commission for Data Protection** under a collective complaint filed against Amazon by 10,000 people.

### About GDPR

- The regulation ensures that personal data is gathered legally and under strict conditions. The organisations are obliged to protect the collected data from misuse and exploitation.
- Some of the **key privacy and data protection requirements** of the GDPR include:

- Requiring the consent of subjects for data processing
- Anonymizing collected data to protect privacy
- Providing data breach notifications
- Safely handling the transfer of data across borders
- Requiring companies to appoint a data protection officer to oversee GDPR compliance

- Any company that markets goods or services to EU residents, regardless of its location, is subject to the regulation.

### Data Protection Framework in India

- **Right to privacy** has been made a fundamental right in the landmark decision of **K.S. Puttaswamy v. Union of India 2017**.
- Justice B.N. Srikrishna Committee report presented a draft **Personal Data Protection Bill, 2018**.
- In 2019, a new Bill named as **Personal Data Protection Bill, 2019** was presented in the Parliament. It is yet to be passed.
- **Information Technology Act, 2000** provides for safeguard against certain breaches in relation to data from computer systems.



23. Recently, Ministry of External Affairs in collaboration with Indian Air Force launched “Operation Devi Shakti”. This operation is related to

- a) Providing relief materials to Sri Lanka
- b) Help Maldives in its fight against terrorism
- c) Evacuate Indian citizens from Middle East
- d) Evacuate Indian citizens and foreign nationals from a war-torn Afghanistan

Answer: D

Explanation

- Operation Devi Shakti was jointly launched by **Ministry of External Affairs and Indian Air Force**.
- Under it, the **Indians and the foreign nationals are being evacuated** from Afghanistan following Taliban's takeover of the country. So far, India has evacuated more than 800 people from Kabul under this operation.
- India is carrying out the evacuation missions in coordination with the US and various other countries. It has been allowed to operate two flights per day from Kabul to evacuate its nationals stranded in Afghanistan.

#### India Starts *Single Entry* e-visa Facility for Afghans

- India has introduced a **new category of e-visa for Afghan nationals**. This category is aimed at fast-tracking applications of those **who want to come to India in view of the prevailing situation in Afghanistan**.
- **Taliban swept into Afghanistan's capital on 15<sup>th</sup> August** when the government collapsed. President Ashraf Ghani fled the country.

○ **New category of e-visa is called “e-Emergency X-Misc Visa”**

○ **It is to facilitate the stay of Afghan nationals fleeing Afghanistan for 6 months in India**

○ **There is no clarity yet on what will happen after this validity period of 6 month expires**

- It should be noted that India does not have a refugee policy. It grants shelter to foreigners **facing persecution** in their countries **on a case-to-case basis**.

#### **X-Misc Visa-Policy**

- Foreign nationals apply for a visa under prescribed category (specifying purpose of visit).
- However, if purpose is **not specifically covered under any visa category**, these persons may be granted **‘X-Misc’ Visa for appropriate duration**.
- Such a visa is granted only with **single entry** and **for specific duration**.
- If the visa is granted for a **period of stay exceeding 180 days**, the foreigner will have to **register** with the FRRO/ FRO concerned **within 14 days of arrival**.

**India's Earlier Visa-Policy Regarding Afghanistan**

- The e-visa facility was **not extended to nationals** of Afghanistan until now.
- In the past, India granted **long duration visas to Afghan nationals of all religions — facing persecution** in that country and not to economic immigrants.
- Stay Visa/ Residential **Permit for one year at a time** is granted by FRRO/ FRO to such Afghanistan nationals **on a case-to-case basis**.
- It should be noted that Afghanistan falls under the **Prior Reference Category** countries for grant of visa to India.
- This means that to visit India for any purpose, **Afghan national has to take clearance from MHA**.
- Citizens of Pakistan, Iraq, Sudan, foreigners of Pakistani origin & stateless persons also fall in this category.

**India – Australia Bilateral Relation: Key Highlights****Comprehensive Strategic Partnership (CSP) 2020**

- During a **virtual bilateral summit in June 2020**, India and Australia signed CSP 2020.
- CSP talks about cooperation on COVID-19, supply chains, cyber security, defence science and technology, and reforming the WTO.
- It talks about increasing the **frequency of Prime Ministerial contact** through reciprocal bilateral visits and annual meetings in the margins of international events.
- It established **Foreign and Defence Ministers meeting in a '2+2' format** to discuss strategic issues at least every two years. Both countries are expected to hold the **first 2+2 meeting in September 2021**.
- Expressed its commitment to enhance cooperation under annual **Australia-India 'Energy Dialogue**.

**Bilateral Defence Relationship**

This has strengthened over the years. This is evident from the following:

**Economic Cooperation**

- In 2018-19, **trade between the two countries** was around **US\$ 21 billion**. Australia's cumulative investment in India is about US\$ 10.74 billion whereas India's total investment in Australia is US\$ 10.45 billion.

- **Australian Super Pension Fund** has invested US\$ 1 billion in India's National Investment and Infrastructure Fund.
- In the virtual summit of June 2021, India and Australia jointly decided to **explore the possibility of launching the Indian RuPay Card in Australia.**

**Conclusion:**

Australia recognised India as the "**pre-eminent maritime power among Indian Ocean countries**" and a "**front-rank partner of Australia**", in its White Paper on Foreign Policy on 2017. This highlights the importance Australia attaches to India. Now is the best time to take this relationship to a new height.

**Australia's Special Trade Envoy for India**

- **Former Australian PM Tony Abbott** visited India in his capacity of **Australian Prime Minister's Special Trade Envoy for India.**
- He discussed ways to further strengthen bilateral trade, investment and economic cooperation to realize the full potential of India-Australia Comprehensive Strategic Partnership.
- During his visit, he focused on **reviving negotiations** for a Comprehensive Economic Cooperation Agreement (CECA). India and Australia held nine rounds of negotiations on CECA between May 2011 and September 2015. Since then, talks remain stalled over differences on key issues.

**India - Australia Agreement to Boost Naval Ties**

- Chiefs of the Indian and the Australian navies have signed a **guidance document to boost naval ties.**
- The document is aligned to the '**2020 Comprehensive Strategic Partnership**'. It aims to ensure a **shared approach** to regional and global security challenges.
- The document talks about close cooperation in regional and multilateral fora which includes -



**External Affairs Minister's Visit to Iran**

External Affairs Minister of India visited Iran to **attend the swearing-in ceremony** of the new President of Iran. Iran had elected **Ayatollah Sayyid Ebrahim Raisi** as its new President.

**Significance**

- **Warmth in Relationship**
  - This was the **second meeting** between the leaders of the two nations in one month.
  - This visit puts a spotlight on India's desire to build ties with the new President of Iran.
  - It also indicates a desire to **move on** from some of the tensions in ties during the Rouhani era (previous President of Iran).
- **Peace and Stability in the Region**
  - This visit also assumes significance amidst the situation unfolding in Afghanistan.
  - Islamic Emirate in Afghanistan is considered as a security threat for both the countries.
- **India and Iran not Included in Troika plus**
  - The *U.S.-Russia-China-Pakistan grouping* on Afghanistan (also known as **Troika plus**) had been meeting to discuss the unfolding situation in Afghanistan.

- India and Iran share a common bond as the **two key regional powers left out of the “Troika plus”**.

**Point of Tension in India-Iran Relationship**

From Iran’s Perspective	From India’s Perspective
<ul style="list-style-type: none"> <li>• India’s decision to <b>cancel oil imports from Iran</b> by accepting U.S. sanctions against Iran.</li> <li>• Delay in execution of Chabahar port project by India.</li> <li>• India’s decision to opt <b>out of Chabahar railway project to Zahedan</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Iran and China signed \$400 billion 25-year infrastructure partnership in 2020.</li> <li>• <b>Provoking comments by the Iranian leadership</b>, including Supreme leader Khomeini, on India’s decision to revoke Jammu-Kashmir’s autonomy.</li> <li>• Decision of Iran to <b>develop the Farzad B gas field on its own</b> (ONGC Videsh Ltd., in 2008, discovered Farzad-B gas field in the Persian Gulf).</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"><b>Farzad B Gas Field for India’s Energy Security</b></p> <ul style="list-style-type: none"> <li>• holds <b>23 trillion cubic feet</b> of in-place reserves, of which about 60% is recoverable</li> <li>• holds gas <b>condensates of about 5,000 barrels per billion</b> cubic feet of gas</li> <li>• envisages <b>daily production of 28 million cubic meters</b> of sour gas over five years</li> </ul> </div>

**Indian Air Force Chief Visit to Israel**

- **Indian Air Chief Marshal RKS Bhadauria** paid a **four-day visit to Israel** to hold discussions on all bilateral Air Force interactions.
- As a strategic partner, India and Israel enjoy strong, multi-dimensional ties with defence cooperation and military level exchanges as an important pillar.

**India-Israel Defence Ties**

- Israel has been among the **top four arms suppliers** (along with US, Russia and France) to India with military sales worth around \$1 billion every year.
- Indian armed forces have inducted a wide array of Israeli weapon systems, ranging from **Phalcon AWACS** (airborne warning and control systems) and **drones (Heron, Searcher-II, Harop)** to **Barak anti-missile defence systems** and **Spyder quick reaction anti-craft missile system**.
- It also includes Israeli missiles and precision guided munitions, from **Python and Derby** air-to-air missiles Crystal Maze and **Spice-2000 bombs** (used during Balakot strike).
- India is now finalising **“Project Cheetah”** to arm Heron drones with laser-guided bombs with Israel’s help.

**Greater Male Connectivity Project**

- India and Maldives will sign a contract on the **mega Greater Male Connectivity project (GMCP)**, the **largest infrastructure project in the country**.
- The project is funded by an **Indian grant of \$100 m** and a **Line of Credit of \$400 m**.
- GCMP will involve the **construction of a 6.74 km long bridge and causeway link** connecting the *capital Male* with the adjoining islands of Villingli, Gulhifalhu and Thilafushi.
- This is a direct result of the **‘India First’ foreign policy of the Maldives and India’s ‘Neighbourhood First’ foreign policy**.

## Summits And Organisation

24. Consider the following statements regarding the International Criminal Court (ICC):

1. It is among the UN’s 6 principal organs
2. Situated in Geneva, it was created by the Rome Statute.

Which of the statements given above is/are correct?

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

Answer: D

### Explanation

Sudan decided to hand Omar al-Bashir to the International Criminal Court (ICC) along with other officials. These persons have been wanted by ICC over the **Darfur conflict** and *not for South Sudan Independence movement*.

### What is Darfur Conflict?

- The root of the problem was tension over land and grazing rights between the mostly nomadic Arabs vs the tribal Africans.
- The war in Darfur began in 2003 after ethnic African rebels revolted against former President Omar al-Bashir's government.
- Bashir responded by arming local Arab militias - infamously known as the **Janjaweed**. These militias targeted non-Arab tribes and hundreds of thousands of people died.



### South Sudan Independence Movement Background:

- Sudan achieved independence from the British in 1956. It has been ruled from Khartoum by a small group of predominantly Arab elites.
- Southern Sudan and Darfur each belong to the poorest and war-torn periphery. Root of the problem was that South Sudan feels that North Sudan is just taking away money from all oil & gas Resources from the South yet not doing any Development in the region.
- The government in Khartoum train and arm ethnically-based militias (**Murahleen Arab Militia**) and granting them impunity to murder, rape, forcibly displace, and loot property from civilians the government accuses of supporting the rebellion.
- Finally in 2011, South Sudan gained independence

### About ICC

- Situated in **The Hague**, it has been part of the global justice system since 2002.
- It was **established by the Rome Statute, 1998**. Some countries, like the United States, have **never joined** due to concerns about ceding sovereignty to an international body.
- Some countries **haven’t even signed the treaty** such as China, India, Pakistan, Indonesia & Turkey.
- Others, including Egypt, Iran, Israel & Russia, have signed but remain dubious & haven’t ratified.

- It investigates and, where warranted, tries **individuals** charged with the **gravest crimes like** genocide, war crimes, crimes against humanity and the crime of aggression. [ICJ, on other hand, rules on disputes between governments and **cannot prosecute individuals**]
- It is meant to be a "**court of last resort**," a place to try dictators and other people who cannot be brought to justice domestically.
- The **ICC is not part of the UN**, but the two bodies have a **cooperation agreement**.
- The court has automatic jurisdiction **only for crimes committed on the territory of a state which has ratified the treaty**; or by a citizen of such a state; or **when the United Nations Security Council refers** a case to it.
- The Court cannot impose a death sentence. The maximum sentence is 30 years. However, in extreme cases, the Court may impose a term of life imprisonment.

International Criminal Court (ICC) Vs International Court of Justice (ICJ)		
	ICC	ICJ
<b>Year of Establishment</b>	2002	1946
<b>Established by</b>	Rome Statute	ICJ Statute, UN Charter
<b>Situated at</b>	The Hague (The Netherlands)	The Hague (The Netherlands)
<b>Relationship with UN</b>	Not part of the UN	Principal Organ of UN, also called Official court of UN/ World's Court
<b>Jurisdiction</b>	Countries which have ratified the treaty	UN Member States
<b>Language of the Court</b>	English, French	English, French

**Criticism of ICC**

- **Undue focus on Africa:** In the court's history, it has only brought charges against black Africans.
- The **ICC has no police force** of its own to track down and arrest suspects. It relies on national police services to make arrests and seek their transfer to The Hague.
- Earlier, several ICC signatory countries, including Chad and Kenya, had refused to co-operate in Bashir's arrest against whom ICC had issued a warrant.
- It can deal only with crimes committed after 1 July 2002 when the Rome Statute came into force.

**25. Consider the following statements regarding Asian Development Bank (ADB):**

1. It is headquartered in Manila.
2. The two largest shareholders of ADB are the United States and Japan.
3. It is an official United Nations Observer.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

**Answer: D**

**Explanation**

India and the ADB has signed a \$500 million loan to expand metro rail network in Bengaluru.

**About ADB**

- ADB (founded in 1966) is an international development finance institution whose mission is to help its developing member countries **reduce poverty and improve the quality of life**.

- **Headquartered in Manila**, ADB is owned and financed by its 67 members, of which 48 are from the Asia Pacific region and 19 are from other parts of the globe.
- The two largest shareholders are the Japan(15.677%) & United States(15.567%). India is a founding member with share (5.812%).
- ADB is an official United Nations Observer.
- Voting rights in ADB are **distributed in proportion with members' capital subscriptions**.

**26. Consider the following statements regarding G-20:**

1. **It is a group of finance ministers and central bank governors from 20 individual countries.**
2. **Russia is no longer a member of G-20.**

**Which of the statements given above is/are correct?**

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

**Answer: D**

**Explanation**

The **first-ever G20 ministerial conference on Women's Empowerment** was held in **Santa Margherita Ligure, Italy** in a hybrid format. The **current chair is held by Italy**.

**India's Stand**

- India was represented by Union Minister of Women & Child Development.
- India joined the **Gender Equality Ministers of the G20** in committing to promote gender equality and empowerment of women through cooperation and coordination at all relevant fora.

**About G-20**

- It is a group of finance ministers and central bank governors from **19 individual countries and European Union**. It was established in 1999.
- It was **elevated to a forum of Heads of State/Government** in 2008 to **effectively respond to the global financial crisis of 2008**.
- It is a forum, **not a legislative body**. Its agreements and decisions have **no legal impact**, but they do influence countries' policies and global cooperation.
- **Members** - Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, **Russia**, Saudi Arabia, South Africa, Turkey, United Kingdom, United States and the European Union.

**Significance of G20**





- **Promotes Multilateralism** – It is better positioned than older groups to navigate the divide between *developed and emerging economies*, and the practice of rotating the chair gives them all a chance to shape the global agenda.
- **A number of overarching themes** – It has gradually broadened its focus to areas like counterterrorism, Climate change, North Korea and Iran.
- It was also credited with **helping avert a shift to protectionism post-global financial crisis in 2008, tripling the International Monetary Fund’s budget** and giving development banks more remit.
- **United Fight against COVID-19 Pandemic** – In March 2020, G-20 virtual summit was called to discuss the global challenges posed by the coronavirus outbreak. The leaders pledged to **inject \$5 trillion** into the global economy to reduce the economic impact of the coronavirus pandemic. They also agreed to contribute to **WHO’s COVID-19 Solidarity Response Fund** on voluntary basis. This would be in addition to \$5 trillion.

**27. Consider the following statements regarding Forum of the Election Management Bodies of South Asia (FEMBoSA):**

1. It promotes contact among the Election Management Bodies of SAARC countries.
2. Maldives is not a member of this forum.

**Which of the statements given above is/are not correct?**

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

**Answer: B**

**Explanation**

Chief Election Commissioner of India inaugurated the **11<sup>th</sup> Annual meeting** of the FEMBoSA for the year 2021.

**Key Highlights**

- This meeting was **hosted by Bhutan**.
- **Theme** - Use of Technology in Elections.
- **Thimphu Resolution** was unanimously adopted. It decided to **extend tenure of chairmanship to two years** during the current pandemic situation.
- **Participating Countries** – All members of SAARC except Pakistan.
- **Bhutan assumed the Chair** of this forum for the year 2021-22. India was the outgoing Chair.

**FEMBoSA**

- **Established** in May,2012 during the **3<sup>rd</sup> Conference** of Heads of Election Management Bodies (EMBs) of **SAARC Countries**.
- **Aim** – To promote contact among the Election Management Bodies of SAARC countries
- **Members** – All the 8 members of SAARC
- **Logo** - golden pearls which stands for the eternal values of transparency, impartiality, democracy and cooperation.

**UNSC Debate on Maritime Security**

PM Modi chaired a high-level open debate on maritime security held by UNSC. He became the **first Indian Prime Minister** to preside over a UN Security Council Open Debate.

**Key Facts**

- India assumed the rotating Presidency of the UNSC for the month of August. This was India's **tenth** tenure at the UNSC as President. Last one was in **November 2012**.
- This was the **first time** that **maritime security was discussed** as an exclusive agenda item in such a high-level open debate.

**Key Highlights**

**A. Five-point Agenda** forwarded by PM to enhance maritime cooperation are --

- Removal of barriers to legitimate maritime **TRADE**
- Promoting responsible maritime **CONNECTIVITY**
- Conservation of marine **RESOURCES**
- Fight **THREATS** from natural disasters, non-state actors
- Resolution of maritime **DISPUTES** peacefully in accordance with international law

**B. Primacy of the UNCLOS (United Nations Convention on the Law of the Sea)**

- The debate session **highlighted the primacy of the UNCLOS**, which sets out the **legal framework** applicable to activities in the oceans, including countering illicit activities at sea.
- An **outcome document**, in this regard, was adopted. Initially, China resisted. However, under international pressure, it submitted to asserting the primacy of UNCLOS.

**United Nations Convention on the Law of the Sea**

- It establishes rules governing all uses of the oceans and their resources. It was adopted in December 1982 and came into force in 1994. India became a signatory to the UNCLOS in 1982.
- It divided marine areas into five main zones - **Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) & High Seas**.
- It **created three new institutions** - The International Tribunal for the Law of the Sea, The International Seabed Authority, The Commission on the Limits of the Continental Shelf.

**C. India's Role as the Net Security Provider**

- Indian PM highlighted India's role as the **"Net Security Provider"** for the Indian Ocean region.
- He referred to Indian Navy's anti-piracy patrolling, India's support to other nations under **SAGAR Doctrine**, hydrographic survey conducted by India & enhancing maritime domain awareness.

**D. UNSC** has finally **adopted** the first-ever presidential statement on maritime security.

- Member States were asked to consider ratifying, acceding to and implementing the **2000 United Nations Convention against Transnational Organized Crime** and the Protocols thereto.

UNTOC is also known as the **Palermo Convention** since it was adopted in Palermo in Italy in 2000, entered into force in 2003. India joined UNTOC in 2002

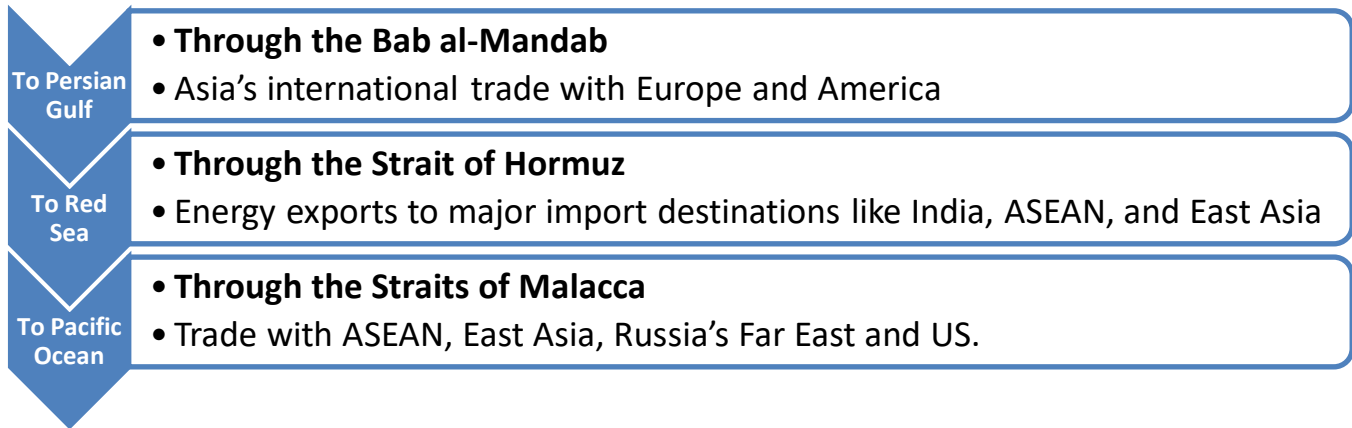
- Called on Member States to implement the **International Ship and Port Facility Security (ISPS) Code**: The ISPS Code is a set of measures to enhance the security of ships and port facilities. It was developed in response to the perceived threats to ships and port facilities after the 9/11 attacks.

**Importance for India**

- **Long Maritime Boundary:** With a coastline of over 7,500 km, India has a natural interest in enhancing maritime security. The Indian Ocean region transports 75% of the world’s maritime trade and 50% of daily global oil consumption.



- Securing **3 major Sea Lanes of Communication (SLOCs)** through **Indian Ocean:**



**Efforts By India To Enhance Maritime Cooperation**

- **Deep Ocean Mission** – Launched in 2021, it proposes to explore the deep ocean similar to the space exploration started by ISRO.
- **Indo-Pacific Oceans’ Initiative (IPOI)** - Put forwarded in 2019, it focusses on seven pillars of maritime security including *Maritime Ecology; Maritime Resources; Capacity Building and Resource Sharing; Disaster Risk Reduction and Management; Science, Technology and Academic Cooperation; and Trade Connectivity and Maritime Transport.*
- **White Shipping Information Fusion Centre** established in Gurugram in 2018 for Sharing data on threats to commercial shipping
- **SAGAR** (Security and Growth for All in the Region) - Articulated in 2015, it focusses on cooperative measures for sustainable use of oceans and providing a framework for a safe, secure and stable maritime domain in the region.
- Indian Navy has been **patrolling to counter piracy** in the Indian Ocean since 2008.

**New Permanent Forum of People of African Descent**

The UN General Assembly approved a resolution establishing a Permanent Forum of People of African Descent. The resolution calls for the forum's first session to take place in 2022

**What Would The Forum Do?**

- This forum will provide expert advice on addressing the challenges of racism, racial discrimination, xenophobia and intolerance.

- The forum would also serve as a platform to improve safety and quality of life and livelihoods of people of African descent.
- It would ensure full political, economic and social inclusion of people of African descent.

**Issues Faced By African Descent**

- Limited access to quality education, health services, housing and social security
- Discrimination in their access to justice, high rates of police violence and racial profiling.
- Low political participation, both in voting and in occupying political positions.

**Members of the Forum:**



**Few Facts:**

- The **International Decade for People of African Descent** was established by the General Assembly (January 1, 2015- December 31, 2024).
- **-UN World Conference Against Racism (2001)** was held in **Durban**. It acknowledged that people of African descent were victims of slavery, the slave trade and colonialism and continue to be victims of their consequences. The conference adopted the **Durban Declaration and Programme of Action**. It called for the eradication of the scourges of racism, racial discrimination, xenophobia and intolerance.
- Around 200 million people identifying themselves as African descent live in the Americas. Many millions live in other parts of the world, outside of the African continent.

**BRICS Working Group on Agriculture**

Recently, **India chaired** BRICS working group on agriculture. It was a virtual meeting of Ministers of agriculture of BRICS nations. It was the 11<sup>th</sup> meeting of this group. The first meeting was held in March 2010 in Russia.

**Key Highlights**

- **Theme** - BRICS Partnership for Strengthening Agro Biodiversity for Food and Nutrition Security
- **Action plan for 2021-24** for agricultural cooperation of BRICS countries and BRICS Agriculture Research Platform were also discussed. Once endorsed by the BRICS working group, Action Plan of 2021-24 will be adopted in BRICS annual meeting.

**Few Facts**

- BRICS countries produce **more than a third of the global agricultural output**.
- As per UN, BRICS countries are capable of taking a leading role in helping to achieve the objectives of the

2030 SDGs to **eradicate hunger and poverty**.

- **BRICS Agriculture Research Platform** has been **developed by India**. It promotes cooperation in the areas of agricultural research, extension, technology transfer, training and capacity building.
- BRICS nations have signed an agreement for **cooperation in remote sensing satellite data sharing**. It was signed under India's Chairmanship. This deal will enable building a virtual constellation of specified remote sensing satellites of BRICS space agencies. It will increase the multilateral cooperation in meeting the challenges such as global climate change, major disasters and environmental protection. It would also promote cooperation in space data for development and achieving social objectives outlined in SDGs.

### **7th Meeting Of BRICS Environment Ministerial 2021**

India Chaired 7th Meeting Of BRICS Environment Ministerial 2021.

#### **Key Highlights**

- The conclave adopted the '**New Delhi Statement on Environment**'. This statement is aimed at furthering the spirit of Cooperation for Continuity, Consolidation and Consensus in Environment **among the BRICS Nations**.
- During the meeting, BRICS nations expressed concern regarding the proposals for introducing **trade barriers**, such as **unilateral carbon border adjustment**.

Note: EU has incorporated **Carbon Border Adjustment mechanism** under its "**Fit For 55**" initiative (Please refer "*Fit for 55*" in *The Recitals- July 2021*).

- The participating countries have agreed to focus on cooperation on **waste management**.
- India has launched an initiative of **BRICS Resource Efficiency and Circular Economy Dialogue**. The aim of this dialogue is to facilitate an exchange of knowledge and best practices on waste management, resource efficiency and circular economy.

#### **India's Stand**

- Acknowledged that **IPCC Climate Change 2021 Report** may be the last signal for taking concrete **collective global actions**.
- Actions should be guided by **equity, national priorities** and circumstances, and the principles of "**Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC)**".

### **31st Special Session of UN Human Rights Council on the Situation in Afghanistan**

- A **special session of the UN Human Rights Council** (UNHRC) was held on the situation in Afghanistan.
- It was convened on the basis of a request submitted by **Pakistan, the coordinator of the Organization of Islamic Cooperation (OIC) and Afghanistan**.

#### **Statement Made by India at the Session**

- India called upon the international community to ensure full support to the Afghan people.
- It called for an inclusive and broad-based arrangement in Afghanistan that represents all sections of society.
- It asserted that Afghan soil must not be used by terror groups such as Lashkar-e-Taiba (LeT) and Jaish-e-Mohammed (JeM).

**Analysing India's Statement**

- India only raised concerns related to the **“precarious” security situation in Afghanistan**. There was **no criticism of or direct reference** to the Taliban.
- Many analysts believe that by not criticizing, India has kept **open the possibility of engaging with Taliban**, if the situation so demands in future.

**About UNHRC**

- The Human Rights Council is an inter-governmental body (having **47 States**) **within the United Nations system**. It was created in 2006 by UNGA.
- Members of the Council serve **for a period of three years**. They are **not eligible for immediate re-election after serving two consecutive terms**.

**Procedure for Calling Special Session**

- The UNHRC can call for special sessions only if a **request receives the support of 1/3<sup>rd</sup>** members.
- The request for organising special session on Afghanistan received support from 89 states (including members and observers).

*Defence And Security*

28. Consider the following statements regarding Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP):

1. Indian Coastal guard (ICG) acts as the focal point within India for ReCAAP.
2. Information sharing, capacity building and mutual legal assistance are the three pillars of co-operation under this agreement.

Which of the statements given above is/are not correct?

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

Answer: D

Explanation

**Director General of Indian Coast Guard (ICG) K Natarajan** has been elected as the next executive director of the ReCAAP. The Indian candidate defeated the candidates of China and the Philippines. This fact highlights the **Indian contribution to maritime security.**

**Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP):**

- The ReCAAP is the **first regional government-to-government agreement** to promote and enhance **cooperation against piracy and armed robbery** against ships in Asia.
- It was launched in November, 2006 with 14 Asian contracting parties including North, Southeast, and South Asian countries and is headquartered at **Singapore**. The ReCAAP Information Sharing Centre (ReCAAP ISC) was also established during the launch.
- **Information sharing, capacity building and mutual legal assistance** are the three pillars of co-operation under the agreement.
- Indian government has designated Indian Coastal guard (ICG) **as the focal point within India.**

29. Consider the following statements regarding Border Road Organization (BRO):

1. It works under the administrative control of the Ministry of Home Affairs.
2. World’s highest motorable road has been constructed by BRO.

Which of the statements given above is/are correct?

- |                 |                    |
|-----------------|--------------------|
| a) 1 Only       | b) 2 Only          |
| c) Both 1 and 2 | d) Neither 1 nor 2 |

Answer: B

Explanation

- The Border Roads Organisation (BRO) has constructed the **highest motorable road in the world**. This road is situated at the height of 19,300 feet at **Umling La Pass** in eastern Ladakh.



- It is constructed at an altitude higher than the Mt Everest Base Camps.
- With this road, Umling La Pass is now connected with a Black Top Road. It will offer an alternate direct route **connecting Chisumle and Demchok from Leh.**
- This road bettered the previous ~~better~~ record of a road near volcano Uturuncu in Bolivia at 18,953 ft.

**Significance**

- The road now connects the important towns in Chumar sector of Eastern Ladakh. It will offer an alternate direct route connecting Chisumle and Demchok from Leh.
- The road will promote tourism in Ladakh, and also help to enhance the socio-economic conditions of the region.
- It is built under **‘Project Himank’** and is close to the Line of Actual Control (LAC) and will allow quick movement of troops/equipment.

Project Himank of BRO started in 1985 for the construction and maintenance of roads and related infrastructure in Ladakh along LAC. It ensures access to sensitive military areas including the world's highest battleground at the Siachen Glacier and Pangong Tso Lake.

**About BRO:**

- It develops and maintains road networks in India's border areas and friendly neighboring countries.
- Officers from the Border Roads Engineering Service (BRES) and personnel from the General Reserve Engineer Force (GREF) form the parent cadre of the Border Roads Organisation.
- It consists of the Border Roads Wing under the **Ministry of Defense** and the General Reserve Engineer Force (GREF).

**30. Recently, the government has approved the establishment of Defence Cyber Agency (DCA). Consider the following statements regarding DCA:**

1. **DCA will be Headquartered in New Delhi**
2. **It will work under the aegis of the Ministry of Electronics and Information Technology (MEITY).**
3. **The DCA draws personnel from all three branches of the Armed Forces.**

**Which of the statements given above is/are not correct?**

- a) **1 Only**
- b) **2 Only**
- c) **3 Only**
- d) **None of the above**

**Answer: B**

**Explanation**

- Defence Cyber Agency (DCA) is now fully functional under the aegis of the Ministry of Defence.
- It will bolster India’s capabilities to tackle threats emanating from hackers, mostly from China and Pakistan.

**About DCA**

It draws **personnel from all three branches** of the Armed Forces. The head of the DCA is an **officer of two-star rank**. He reports to the Chief of Defence Staff (CDS). It’s headquartered at New Delhi.

**Need to Restructure Institutions Managing Cybersecurity**

- There was a **recent cyber-attack on the Kudankulam nuclear power** plant. Hackers were also targeting the ISRO as it was working on its moon mission. These attacks have pointed towards a larger problem that must be addressed in terms of **India’s internet governance**.
- India’s institutional ecosystem on cybersecurity is **diffused and fragmented**. Several ministries and agencies manage cybersecurity.
  - The Ministry of Electronics and Information Technology (MEITY), Ministry of Home Affairs (MHA), Ministry of Defence, the National Security Council Secretariat and the National Technical Research Organisation have their own cybersecurity units.
  - Additional specialised units include the Computer Emergency Response Team (CERT), the National Critical Information Infrastructure and the National Cyber Coordination Centre.
- So far, **Command and control** has **not risen as a policy priority** in cyberspace.
- **Absence of a unified agency** has affected India’s ability to take a **principled stand on the issue of global governance of cyberspace**.
- Till now, India has not unveiled a clear position regarding responsible state behaviour in cyberspace.

**31. Consider the following pairs highlighting the exercise and participating countries:**

Exercise	Participating Countries
1. Zayed Talwar 2021	Armies of India and UAE
2. Al-Mohed Al-Hindi	Navies of India and Saudi Arabia

**Which of the pair(s) given above is/are correctly matched?**

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

**Answer: B**

**Explanation**

<b>Zayed Talwar 2021</b>	Recently, Zayed Talwar 2021 exercise was held off the coast of Abu Dhabi. It is a <b>bilateral naval exercise</b> between <b>India and UAE</b> . The exercise was aimed at enhancing interoperability and synergy between the two navies.
<b>Al-Mohed Al-Hindi Exercise</b>	Recently, India conducted its <b>first-ever naval exercise with Saudi Arabia</b> called “Al-Mohed Al-Hindi”. The exercise comprises a number of shores and sea-based exercises between the two Navies.
<b>International Army Games – 2021</b>	Indian Army contingent participated in International Army Games or War Olympics 2021 that was held in Russia. It is an annual Russian military sports event.

**32. Consider the following statements regarding Defence India Startup Challenge (DISC):**

1. It has been launched by the Ministry of Defence in partnership with the Private Players.
2. It is aimed at supporting Startups/MSMEs/Innovators to create prototypes or solutions in the area of National Defence and Security.

Which of the statements given above is/are correct?

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

Answer: B

**Explanation**

- 5th edition of Defence India Startup Challenge (DISC 5.0) has been launched under Innovations for Defence Excellence - Defence Innovation Organisation (iDEX-DIO) program.
- The challenge consists of 35 Problem Statements (13 from the Services and 22 from Defence Public Sector Undertakings (DPSUs)) like AI, Augmented reality, 5G etc designed to ensure military advantage in the foreseeable future.

**Innovations for Defence Excellence (iDEX)**

- Launched in 2018 to achieve self-reliance and foster innovation & technology development in defence and aerospace sectors
- Forms a link between youth, academia, R&D, start-ups and the Armed Forces
- Supports Startup ecosystem, promotes innovation and self-reliance
- It will take forward the vision of 'Make in India – Make for the World'

**About Defence India Start-up Challenge (DISC)**

- DISC has been launched by Ministry of Defence in partnership with Atal Innovation Mission.
- Aimed at supporting Startups/MSMEs/Innovators to create prototypes and/or commercialize products/solutions in the area of National Defence, Security and aerospace .
- Every edition of DISC is launched with Problem Statements from Armed Forces and Ordnance Factory Board (OFB)/DPSUs for resolution by innovators.

Benefits	Challenges
<ul style="list-style-type: none"><li>• This indigenisation will help in reducing the <b>fiscal deficit</b> as India is the 2nd largest arms importer.</li><li>• These innovations will lead to spin off effect thereby generating more <b>employment</b></li></ul>	<ul style="list-style-type: none"><li>• Budget Constraint as most of it goes into salaries and maintaining equipments</li><li>• Lack of coordination between academia, military and industry</li></ul>

**ITBP Inducts Women Officers in Combat**

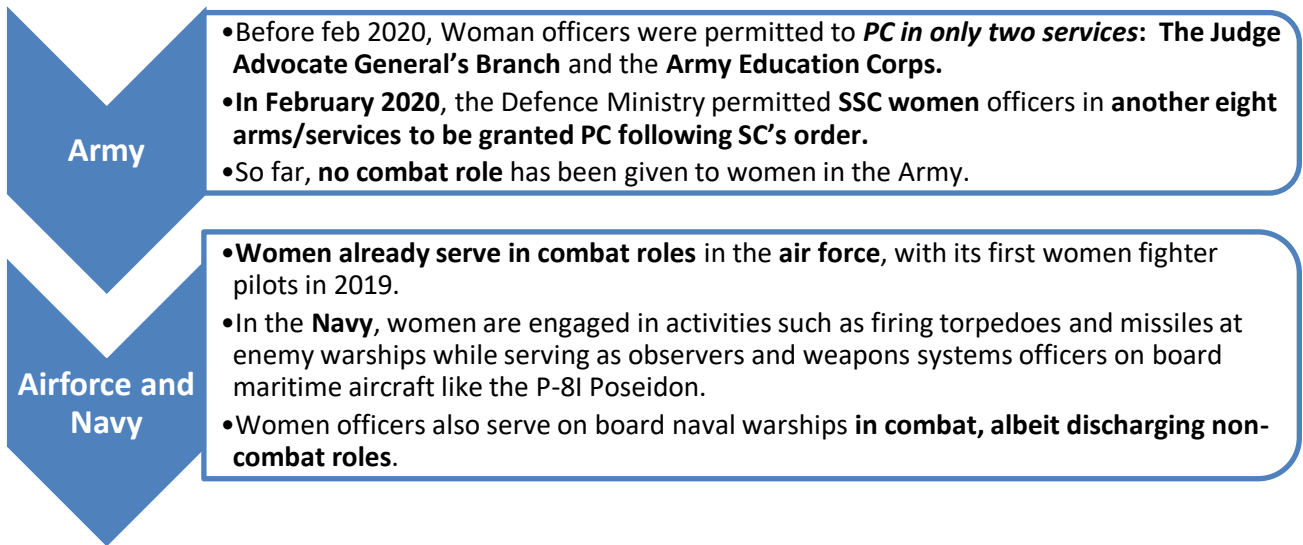
The Indo-Tibetan Border Police (ITBP) has inducted two women officers in combat for the first time.

**Background**

- The Army, Air Force and Navy began inducting women as **short-service commission (SSC)** officers in 1992. This was the first time when women were allowed to join the military **outside the medical stream**.
- In 2015, Indian Air Force (IAF) decided to induct them into the fighter stream.

- In 2016, the appointment of women as **combat officers** through the Central Armed Police Forces (CAPF) entrance exam was approved.
- In 2020, the Supreme Court (SC) ordered the granting of **Permanent Commission (PC)** to women officers in the Army's **non-combat** support units on par with their male counterparts.
- Earlier, the Delhi High Court, in 2010, ordered the government to grant permanent commission to all short-service commission officers **while upholding a policy decision to keep out women from the combat units.**

**Current Situation**



Arguments Opposing The Combat Role	Arguments in Support
<ul style="list-style-type: none"> <li>• <b>Physical Ability</b> - The standards of physical fitness during <b>training</b> have been set to suit men, and women attempting to reach them will over-stretch themselves and will suffer high injury rates.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ability vs Gender</b> - As long as an applicant is qualified for a position, one's gender is arbitrary.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Military Readiness</b> - Menstruation and Pregnancy can affect the deployability of a unit when the unit has a disproportionate number of women or is understaffed</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Military Readiness</b> - Women, who choose to become active combat soldiers, are unlikely to shirk their duty by becoming pregnant after a call-up.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Abuse by Enemy</b> - Both male and female prisoners are at risk of torture and rape, but misogynistic societies may be more willing to abuse woman prisoners. The issue of military sexual trauma (MST) and its effect on the physical and mental well-being of women combatants is grave.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Changing Traditions</b> - Cultures change over time and the masculine subculture can evolve too. Many previously masculine professions have been successfully opened to women over the past century.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Possible insubordination</b> – In India, most of the</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Wider base</b> - Having a wider personnel base</li> </ul>

jawans are from rural origin, may not be ready to accept a woman as their officer.

allows militaries to have the best and most diplomatic soldiers working to end conflict quickly.

### Conclusion

- Many countries including **Germany, Australia, Canada, the US, Britain, Denmark, Finland, France, Norway, Sweden and Israel have allowed women in combat roles.**
- India can certainly gain from their experience although there is a variance in the cultural milieu.

### Supreme Court Allows Women to Appear for NDA Exam

- Recently, the Supreme Court, in its **interim order**, has allowed **women to appear for the upcoming entrance exam of the National Defence Academy (NDA)**. It should be noted that the admission of women candidates will be subject to the **final ruling** on the petition.
- The top court made an observation that the army's policy decision to not allow women to appear for the exam is **based on gender discrimination**
- The SC was hearing a plea seeking directions to allow eligible women to appear for the entrance examinations of the NDA and Naval Academy, conducted by the UPSC.

### India's First Indigenous Aircraft Carrier- INS Vikrant

- India's **first indigenous aircraft carrier (IAC-1)**, named '**Vikrant**', has started its sea trials. It is the first aircraft carrier designed and built in India as a part of Atmanirbhar Bharat. It is likely to be commissioned in 2022.
- It will be christened INS Vikrant after the country's first aircraft carrier, which was acquired from UK in 1961 and eventually decommissioned in 1997. The original INS Vikrant also played a major role during 1971 war.
- An aircraft carrier is a large ship that carries military aircraft and has a long, flat surface where they take off and land.

### Significance

- India's area of responsibility ranges from the east coast of Africa to the Western Pacific. High percentage of India's trade passing through the South China Sea. Also, India is a dominant force in Indo-Pacific region.
- Aircraft Carrier enhances a Navy's capability to travel far from its home shores to carry out air dominance operations.
- Hence, IAC will help Indian Navy in its **transition from Brown Water Navy to Blue Water Navy** (one that has the capacity to operate across the high seas).
- Aircraft carriers are a necessity for India to tackle the China threat.
- So far, only five or six nations have the capability of manufacturing an aircraft carrier. India joins this elite club now. It will give a boost to **Make-in-India programme**.

### Comparative Analysis

- **IAC-1 Vikrant is a 40,000-tonne** carrier. The Navy now wants **36 new** multi-role fighters to meet the shortfall in the number of jets required for both INS Vikramaditya and IAC-1.

- US Navy has as many as 11 “super” 100, 000-tonne carriers, each of which can carry 80-90 fighters.
- China has two operational aircraft carriers (Liaoning & Shandong) in the Indian Ocean Region and the third one is under construction with the aim of having 10 of them.

### Does India Plan to Build More Carriers?

Since 2015, the Navy has been seeking approval to build a third aircraft carrier for the country. This proposed carrier is to be named **INS Vishal** and will become India’s second Indigenous Aircraft Carrier. However, it has not yet been approved by the government

### India’s Earlier Aircraft Carriers

- **INS Vikramaditya** - The Navy’s only aircraft carrier in **service currently** (Russian built, commissioned in 2013). India procured 45 MiG-29Ks to operate from its deck.
- **INS Vikrant** – It was British-built HMS Hercules; Commissioned in Indian Navy in 1961.
- **INS Viraat** - It was British-built HMS Hermes; Commissioned in Indian Navy in 1987.

### Ladakh Removes Inner Line Permit Restrictions

The Ladakh administration has **removed the need for an inner line permit (ILP)**. Now all Indian nationals, including domestic tourists, can visit the protected areas of Ladakh. However, those visiting these regions will still have to pay a **green fee or the environment fee** of INR 300 and **Red Cross Fund fee** of INR 100.

**Significance:** It will further **underline India’s sovereignty** over Ladakh and will make visiting Ladakh easier for Indian tourists.

### What Was The Existing System Till Now?

- Domestic visitors were required to obtain an ILP from authorities to visit the inner areas of Ladakh. **Foreigners were required to have the Protected Area Permits.**
- These permits were not required for residents of Jammu and Kashmir and children below the age of 12 years.

**Protected Area Permit (PAP)**

- Required for foreigners to visit the restricted area
- Regulated by **Foreigners (Protected Areas) Order 1958**
- A foreign national is normally not allowed to visit these areas unless it is established **to the satisfaction of the Govt** that there are extraordinary reasons to justify such a visit.

### What is Inner Line Permit (ILP) System?

- ILP is an official document that allows an Indian citizen to visit or stay in a state that is protected under the system.
- Originated under the **Bengal Eastern Frontier Regulation Act 1873**, the British restricted the entry and regulated the stay of outsiders in designated areas.
- The idea was to protect commercial interests of British by preventing “British subjects” (Indians) from trading within these regions.
- However, after the independence, Indian government retained this system to **protect the interests of the indigenous people** from outsiders.
- An **ILP is issued by the state government concerned**. It can be obtained after applying either online or physically.
- Presently, **four North-eastern states** - Arunachal Pradesh, Nagaland, Manipur (added in December 2020 by Presidential order), and Mizoram - are covered under this system.

## Science And Technology

### COVID BEEP

- **COVID BEEP (Continuous Oxygenation & Vital Information Detection Biomed ECIL ESIC Pod)** is India's first indigenous, cost effective, wireless physiological parameters monitoring system for COVID-19 patients, developed by ESIC Medical College Hyderabad in collaboration with Electronics Corporation of India Ltd. (ECIL) and **Department of Atomic Energy**.
- COVID BEEP will greatly reduce the transmission risk as well as help save resources like PPEs.
- COVID BEEP has incorporated the following: **NIBP (Non-invasive Blood Pressure monitoring), ECG monitoring, and the Respiratory Rate**.

### Ladakh to Have Battery Storage System

- India will be calling for bids for the **largest global tender** for 13 gigawatt-hours (GWh) **grid-scale battery storage** system in Ladakh Region.
- The Plan involves building 10GW of large green energy capacity projects in the Ladakh region, comprising both **solar and wind projects**.
- These large battery storage projects will be used to store the electricity generated to supply to the rest of the country through transmission link

### **Importance Of The Project**

- According to the Central Electricity Authority (CEA), India's power requirement would be **817GW by 2030**. More than half of this would be clean energy.
- It is estimated that **to balance the national electric grid** there will be a need for a **27GW grid-scale battery** energy storage system by 2030 with **four hours of storage**.

### **About Lithium ion (Li-ion) batteries**

- It is a type of rechargeable battery, used in mobile phones and **electric cars** and are currently the dominant storage technology.
- India is heavily dependent on import of these cells on China for both the raw material and cells. The recent move to ink sourcing pacts for lithium with other countries like Argentina is also seen as a move to reduce its dependency.
- Disadvantages of Li-ion Batteries include long charging times and being expensive to manufacture

### Guinea Records West Africa's First Marburg Virus Case

- It is the first time that the deadly disease has been identified in **West Africa**. There have been 12 major Marburg outbreaks since 1967, mostly in southern and eastern Africa.
- Guinea's new case was first identified last week, just **2 months** after the country was declared free of Ebola.

### **About Marburg virus**

- It is a highly infectious **hemorrhagic fever** similar to Ebola.



- Fatality rates have varied from 24% to 88% depending on virus strain and case management.
- **Causes:** Human infection initially results from prolonged **exposure to mines/ caves** inhabited by **Rousettus bat colonies**.
- **Transmission:** It is transmitted to people from fruit bats. It can spread through **human-to-human transmission** via infected body fluids and tissue.
- **Treatment:** There are no **approved vaccines** or antiviral treatments for the virus yet.

### Pusa Decomposer

It is a **new low-cost capsule which can convert paddy stubble into bio-manure. It is developed by ICAR**

- The **capsule consists of a fungi-based liquid solution** that can soften hard stubble to the extent that it can be easily mixed with soil in the field to act as compost.
- This 'decomposer capsules' is a composition of **eight microbes**, will help ready the land for the sowing of the next crop without the farmers burning the crop residue. **4 capsules**, which will cost just **Rs 20**, can be used to make 25 litres of solution effective for one hectare of land.
- It will reduce the time it takes to decompose paddy straw. Additionally, unlike burning which erodes the soil quality, this option also makes the land fertile.
- Concern: The **window of time** required for the Pusa Decomposer solution to work is around 20 to 25 days. Farmers argue that this is too long for them.

### India Internet Governance Forum (IIGF) - 2021

The Government has announced the launch of IIGF 2021 which will be the **first** Internet Governance Forum in the country.

#### **About IIGF 2021**

- **Purpose:** It will act as the platform for various stakeholders to discuss public policy issues related to the Internet.
- Duration: It will be planned for 3 days, starting from 20th October, 2021.
- **Theme: Inclusive Internet for Digital India.**
- It will be the **Indian chapter** of the UN based **Internet Governance Forum (IGF)**.
- The coordination committee has apt representation from civil society, Government, Industry, Industrial association, trust, and other stakeholders.
- Starting from August 2021, **multiple Pre-IIGF engagement** events will be held at several colleges and universities. The idea behind this is to engage the youth and students for their participation in the October event and prepare the next generation to be part of policy formation.

**Significance:** India is the **second-largest broadband subscription** country in the world and also has the **highest data consumption/ user/month**.

<h4><b>About Internet Governance Forum (IGF)</b></h4>
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- |  |
|--|
| <ul style="list-style-type: none"><li>• <b>IGF is a multi-stakeholder governance group</b> for policy dialogue on issues of Internet governance with</li></ul> |
|--|

its **Secretariat at the UN** Office in Geneva, Switzerland. Its first meeting was first convened in 2006 and has held an annual meeting since then.

- It is financed through the extra-budgetary Trust Fund Account managed by the United Nations Department of Economic and Social Affairs (UNDESA).

### Pegasus Spyware

**Israel's NSO Group** is at the heart of the alleged **state surveillance** of thousands of human rights activists, lawyers, journalists, politicians and dissidents in countries including India. The narrative they built was that government agencies would use it to tackle terrorism, drug-trafficking, etc. The NSO Group's founders come from Israel's elite defence force.

### **About Pegasus Spyware**

- An earlier phishing method worked by sending an **exploit link (text links or messages)** and if the target user clicks on the link, the malware or the code is installed. The spyware is designed to take advantage of bugs in popular apps such as i-Message and WhatsApp to infiltrate the system.
- It can also use **unsecured websites** to infiltrate.
- It evolved to **'zero-click' attacks** which do not require any action from the user. It helps spyware to gain control over a device **without human interaction**. It can also be used to **plant messages/mails**.
- It can be **deleted remotely**. It's very hard to detect once it's deleted.
- Here Software tries to gain **Root privilege** where it become device administrators. This level of control means Pegasus can turn on the phone's **cameras** and **microphones** into a **spying device** without the owner's knowledge.

**Malware** (malicious software) refers to any kind of software that is designed to cause damage to a computer, server, or computer network. Ransomware, Spyware, Worms, viruses, and Trojans are all varieties of malware.

**Phishing** is the method of trying to gather personal information using deceptive e-mails and websites.

### ISRO's Earth Observation Satellite (EOS-03)

Recently, ISRO's **Earth Observation satellite (EOS-03)** faced a setback minutes after it was launched due to performance anomaly in the **cryogenic stage**. This is the **second** launch for ISRO in 2021 after its successful mission in February, which was **Brazil's earth observation satellite Amazonia-1 and 18 co-passenger satellites**.

### **EOS-03**

- **GSLV-F10** was used for placing it in **Geosynchronous Transfer Orbit (GTO)**. GTO is a circular orbit positioned approximately 35,900 km above Earth's equator and having a period of the same duration and direction as the rotation of Earth.
- It was capable of **imaging the entire country four to five times** every day.
- It is being sent **ahead of EOS-02**, which has been delayed. EOS-02 is now rescheduled for a launch in September-October 2021.
  - EOS-02 was supposed to ride on ISRO's new **SSLV (Small Satellite Launch Vehicle)** rocket.

- SSLVs will broaden ISRO's current rocket range that comprises PSLVs and GSLVs, and cater to the demand for launching of small commercial satellite

### Significance of EOS-03



Capable of obtaining vital information for application in different sectors including agriculture, forestry, water bodies as well as for disaster warning, **cyclone monitoring, cloudburst, or thunderstorm** monitoring.

This earth observation satellite would provide **real time images** of the country and borders

**Cryogenic stage** is the **last stage** of GSLV. The word refers to technology of sub-zero temperature where production and behaviour of materials is studied at below -150 degree Centigrade. A cryogenic rocket stage is more efficient and provides **more thrust** for every kilogram of propellant it burns *compared to solid and earth-storable liquid propellant* rocket stages.

### Chandrayaan 2 Finds Unambiguous Detection Of OH And H<sub>2</sub>O

In a path-breaking discovery, ISRO's **Chandrayaan-2 orbiter** has detected water molecules on the moon's surface. There was widespread lunar hydration and **unambiguous detection of OH and H<sub>2</sub>O signatures** on the moon between 29 degrees -62 degrees north latitude. The data is obtained by the orbiter's imaging infrared spectrometre (IIRS),

#### Reason of Formation

- The formation of hydroxyl or water molecules occurs due to a process called **space weathering**, which is when the **solar winds** blow over the lunar surface.
- It was also observed from the data that the **brighter sunlit highland** regions at higher latitudes of the Moon were found to have **higher hydroxyl** or possibly water molecules.

**Significance:** The study is crucial for future planetary exploration for resource utilisation as several international missions are lined up to the moon for the next few years.

*For details on Chandrayaan 2, read The Recitals- June 2021.*

### IndiGau

It is India's **first Cattle Genomic Chip** for the conservation of pure varieties of **indigenous cattle breeds** like Gir, Kankrej, Sahiwal, Ongole etc.

#### About IndiGau

- The chip is purely **indigenous** and the largest cattle chip of the world. It has 11,496 markers **SNPs** (single nucleotide polymorphisms) more than that placed on 777K Illumina chip of US & UK breeds.
- This was developed by **National Institute of Animal Biotechnology (NAIB)**, an autonomous institution under the aegis of **Department of Biotechnology (DBT)**.



- The manufacturing of this chip is in synergy with **Rashtriya Gokul Mission** and a great example of Atmanirbhar Bharat.

**Significance**

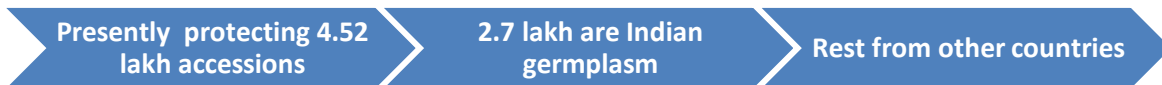
- This chip will have practical utility in Government's schemes to achieve the goal of conservation of our own breeds with better characteristics and help towards doubling farmers' income by 2022.
- DBT is looking forward to implement this technology with the help of other agencies like National Dairy Development Board (NDDB), Department of Animal Husbandry, Dairying and Fisheries (DAHDF), ICAR etc.
- To further the use of this chip in generating **phenotypic (physical properties) and genotypic correlations**, NIAB has entered into a collaborative agreement with NDDB for any important **trait detection**, like high milk yield or heat tolerance etc.
- SNP is a **variation at a single position** in a DNA sequence which is formed from a chain of four nucleotide bases: A, C, G, and T. If more than 1% of a population does not carry the same nucleotide at a specific position in the DNA sequence, then this variation can be classified as a SNP. This will eventually help in **elite bull selection** and improvement of productivity characters of Indian cattle.

**Importance of Indigenous Breeds**

- Productivity is less likely to be impacted by the adversities of climate change.
- The milk is high in fat and SNF (solids-not-fat) content. SNF content are the substances in milk other than butterfat and water in the form of casein, lactose, vitamins and minerals which contribute significantly to the nutritive value.

**World's Second-largest National Gene Bank**

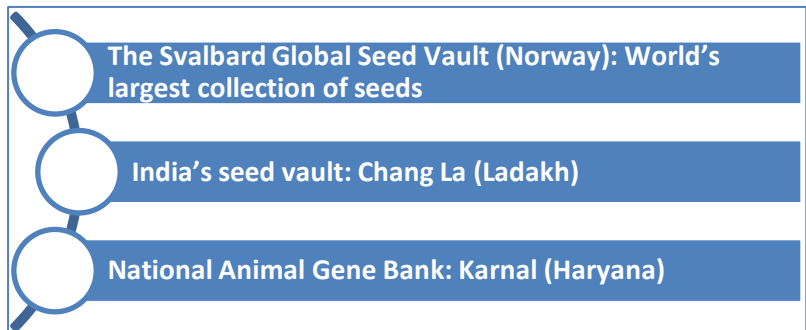
- Union Minister for Agriculture and Farmers Welfare inaugurated the world's **second-largest refurbished** state-of-the-art **National Gene Bank** at National Bureau of Plant Genetic Resources (NBPGR), Pusa, Delhi.
- The National Gene Bank, established in the year **1996** to preserve the seeds of Plant Genetic Resources (PGR) for future generations, has capacity to preserve about **one million germplasm** in the form of seeds.
- Germplasm is living tissue from which new plants can be grown.



- NBPGR is meeting the need of **in-situ and ex-situ** germplasm conservation through Delhi Headquarters and 10 regional stations in the country.

**National Bureau of Plant Genetic Resources (NBPGR)**

It functions under the control of **Indian Council of Agricultural Research (ICAR)**. There is **Base collection-long-term conservation** of accessions in closed containers at -18°C and at 3–7% moisture (depending upon species). Under these conditions, plant germplasm could be preserved with minimal changes over hundred and more years.

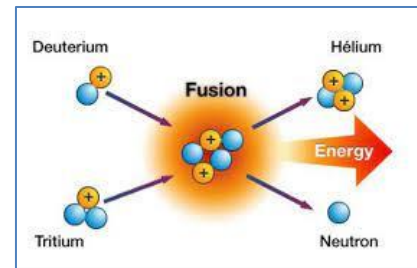


### Fusion Ignition

Lawrence Livermore National Laboratory in California announced that an experiment carried out in its **National Ignition Facility** has made a breakthrough in nuclear fusion research.

#### **About The Experiment:**

- They applied **laser energy** on fuel pellets (small targets) to heat and pressurise them at conditions similar to that at the centre of our Sun.
- This triggered the fusion reactions with the pellets containing **deuterium and tritium** getting fused and producing more energy.
- These reactions released **alpha particles**, which in turn heated the surrounding plasma. At high temperatures, electrons are ripped from atom's nuclei and become a **plasma or an ionised state of matter**. Plasma is also known as the **fourth state of matter**
- The **heated plasma** also released **alpha particles** and a self-sustaining reaction called **ignition** took place. Ignition helps amplify the energy output from the nuclear fusion reaction



#### **About Nuclear Fusion**

- It powers our sun and harnessing this fusion energy could provide an **unlimited amount of renewable energy**. In the sun, the extreme pressure produced by its immense **gravity** creates the conditions for fusion to happen.
- Nuclear fusion energy is a good choice as the baseload energy in the future with many advantages, such as **inexhaustibility of resources, inherent safety, no long-lived radioactive wastes, and almost no CO2 emissions**
- Fusion doesn't employ fissile materials like uranium and plutonium. (Radioactive tritium is neither a fissile nor a fissionable material.) There are no enriched materials in a fusion reactor that could be exploited to make nuclear weapons.
- No risk of meltdown as it is difficult to reach and maintain the precise conditions. If any disturbance occurs, the plasma cools within seconds & reaction stops.

#### **Significance:**

Reproducing the conditions at the centre of the Sun will allow us to study states of matter we've never been able to create in the lab before, including those found in stars and supernovae. It gives insights into quantum states of matter and even conditions closer to the beginning of the Big Bang – the hotter we get, the closer we get to the very first state of the Universe

### Zycov-D

The Drug Controller General has granted emergency approval to the Zycov-D, a COVID-19 vaccine developed by Zydus Cadilla group, making it the **first vaccine in India** that can be administered to adults as well as those **12 and above**.

- This is the fifth vaccine, after Covishield, Covaxin, Sputnik V and Moderna to be approved for use in India.
- It's also the **only DNA-based Covid vaccine** in the world **and** can be administered **without a needle (intradermal vaccine)**, purportedly minimising chances of reactions.

- With a DNA vaccine, the virus' genetic information is transmitted to another molecule that is called the messenger RNA (mRNA). **This means RNA or mRNA vaccine are one step ahead of a DNA vaccine.** The mRNA goes into the cell, and the cell translates it into proteins which are the ones that the organism sees and induces the immune response.
- Another difference is that a DNA vaccine delivers the message via a small electrical pulse, which “literally pushes the message into the cell”. The disadvantage is that it requires a special device that provides the electrical pulse.
- Though, **RNA vaccines** can be produced **faster, cheaper**, and in a more standardized fashion, which improves responsiveness to outbreaks but the advantage of **DNA vaccine** is that it is very **stable at higher temperatures**.

The vaccine has been developed in partnership with the Department of Biotechnology under the ‘Mission COVID Suraksha’. The three-dose vaccine once administered produces the spike protein of the SARS-CoV-2 virus and elicits an immune response. The plug-and-play technology on which the plasmid DNA platform is based can be easily adapted to deal with mutations in the virus, such as those already occurring.

### First Trial for an mRNA Vaccine for HIV

Moderna, American biotechnology company, has indicated that it may begin **human trials** for a vaccine for HIV (human immunodeficiency virus) in September employing the same mRNA platform that it has used in its COVID-19 vaccine.

- This is the **first trial for an mRNA** vaccine for **HIV** after the success of mRNA vaccines with Covid-19.
- **Traditional vaccines** are made up of small or inactivated doses of the whole disease-causing organism, or the proteins that it produces.
- mRNA vaccines work by using messenger RNA, which is the molecule that essentially puts **DNA instructions into action**. Inside a cell, mRNA is used as a template to build a protein. This triggers the body into producing some of the viral proteins itself.
- The larger purpose of stimulating the **B cells** (class of white blood cells ) is to generate what are called **broadly neutralising antibodies (bnAbs)**, which are specialised **blood proteins** that attach to **the surface proteins of HIV and disable them** by accessing key but hard to-reach regions on the virus.
- B-cells fight bacteria and viruses by making proteins called antibodies.
- Over the last decade, there have been advances in identifying new bnAbs from HIV-infected individuals that were seen to target very specific sites in the outer envelope of the HIV

### **Challenges**

- According to the WHO, there were around 37.7 million living with HIV as of 2020. Of the people living with HIV, over two thirds are in Africa. Any success in containing the HIV pandemic would mean drastically cutting the rates of transmission there.
- m-RNA vaccines are sensitive to temperature and thus a challenge for developing countries.



**Hindustan-228 -Civil Aircraft**

Hindustan Aeronautics Limited (HAL) carried out successful trials of a commercial aircraft “Hindustan-228” (Do-228) for ‘**Type Certification**’ by the Directorate General of Civil Aviation (DGCA). The type certification by the DGCA will enable HAL to get an **international certification** for the aircraft.

- This **19 seater** is the **first major attempt** in India to develop a small civil transport aircraft after the 14-seater Saras aircraft development program at the National Aeronautics Laboratory (NAL) was shelved in 2009 following a major crash.
- It will **promote UDAN** (Ude Desh Ka Aam Nagrik) **Scheme** under which central government aims to set up 1,000 new air routes and establish 100 new airports.
- It is built on the existing frame of the **German Dornier 228** defence transport aircraft
- It is conceived to be a **multirole utility aircraft** capable of being used for VIP /passenger transport, air ambulance, flight inspection roles, cloud seeding, para jumping, aerial surveillance, photography, remote sensing, air-taxi operations, coast guard duties maritime surveillance and cargo transport.

**Smog Tower**

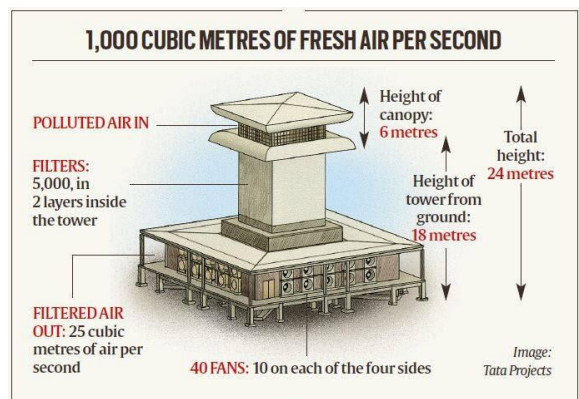
Delhi got a ‘smog tower’, a technological aid to help combat air pollution.

- **Tata Projects Limited (TPL) built it with technical support from IIT-Bombay and IIT-Delhi.**
- **National Biofuel Coordination Committee (NBCC) India Ltd is the project management consultant.**
- **Delhi Pollution Control Committee was in charge of the Project.**

- Tower’s each fan can discharge **25 cubic metres per second of air**, adding up to **1,000 cubic metres per second** for the tower as a whole.
- Polluted air is sucked in at a **height of 24 m**, and filtered air is released at the bottom of the tower, at a height of about **10 m** from the ground.
- When the fans at the bottom of the tower operate, the negative pressure created sucks in air from the top. The ‘macro’ layer in the filter traps particles of 10 microns and larger, while the ‘micro’ layer filters smaller particles of around 0.3 microns.
- The tower uses a ‘**downdraft air cleaning system**’.
- **Updraft System** is used in China’s 60-metre smog tower (**world’s largest smog tower**). Here air is sucked in from near the ground, and is propelled upwards by heating and convection.

**Need For This**

Since 2009, an increase from 258% to 335% had been observed in the concentration of PM10 in Delhi. But the most





prominent pollutant in Delhi and neighbouring areas is PM2.5 due to which Delhi is declared the most polluted capital city for the **3rd** consecutive year.

**Challenges**

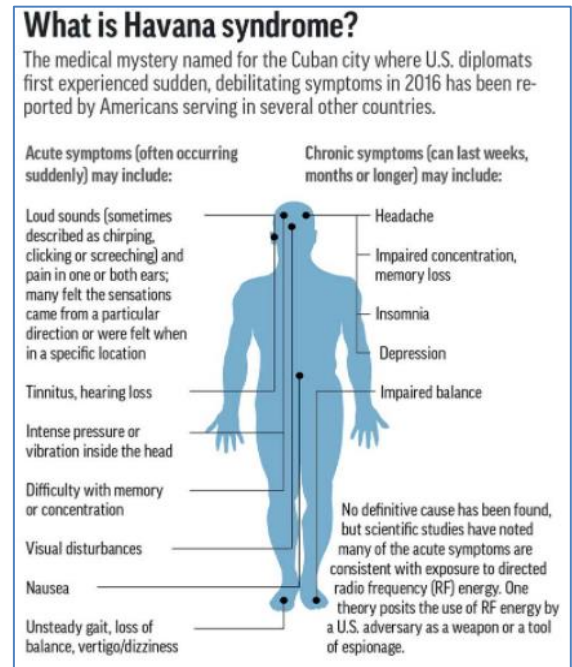
- It is a **costly** quick-fix measure with no scientific evidence to back their efficacy.
- The tower could have an impact on the air quality up to 1 km from the tower. However, the actual impact will be assessed by IIT-Bombay and IIT-Delhi in a two-year pilot study

**Havana Syndrome**

US Vice-President Vietnam’s trip was delayed after reports suggested someone in Hanoi had come down with ‘Havana Syndrome’

**What Is Havana Syndrome (Mysterious Illness)**

- Back in 2016, reports first emerged of US diplomats and other employees of the government falling ill in Havana ( capital of Cuba). The patients said they **heard strange sounds** and experienced **odd physical sensations** in their hotel rooms or homes and had symptoms of nausea, severe headaches, fatigue, dizziness, sleep problems and hearing loss.
- In December 2020, a report by the **National Academies of Sciences (NAS)** found **“directed energy beams-radiofrequency (RF)”** as the **“most plausible”** cause of the Havana Syndrome.
- By calling it “directed” and “pulsed” energy, the report left no room for confusion that the victims’ exposure was **targeted** and not due to common sources of microwave energy, such as a mobile phone.
- The report also mentioned that the immediate symptoms patients reported including sensations of pain and buzzing sound apparently emanated from a **particular direction**, or occurred in a specific spot in a room. The report warned about the possibility of future episodes.



**Microwave Weapons**

- Few countries have developed these to target both humans and electronic systems
- China first put on display Poly WB-1 at an air show in 2014
- United States has also developed its prototype, called Active Denial System

### Yuktdhara

The new portal “Yuktdhara” has been released by **Ministry of Rural development**. The word ‘Yukt’ is derived from ‘Yojanam’ (**planning**) and ‘Dhara’ indicates **flow**.

#### **About The Portal**

- It is a Joint effort of **ISRO** and **Ministry of Rural development** made towards realising a **G2G** service for *rural planning* in support of decentralized decision making.
- The portal works under **Bhuvan portal**. Due to its rich information base, satellite images and analytical capabilities, Bhuvan, in fact, has become a **de-facto** geospatial platform for number of developmental planning activities.
- It will facilitate **planning** of **new MGNREGA** assets using **Remote Sensing** and **GIS based information**.
- This platform will also serve as a **repository of assets (Geotags)** created under various national rural development programmes i.e. MGNREGA, Integrated Watershed Management Programme, Per Drop More Crop and Rashtriya Krishi Vikas Yojana etc., along with field photographs.
- It integrates wide variety of thematic layers, **multi-temporal high resolution earth observation data** with **analysis tools**.
- Planners will analyse previous assets under various schemes and facilitates identification of new works using online tools. Plans prepared will be evaluated by appropriate authorities under State Departments.

#### **Bhuvan Portal**

- It is a type of **web portal** used to find and access geographic information and associated geographic services (display, analysis, etc.).
- It is the **Indian version of Google Maps**, a multi-purpose end-user satellite application platform.
- This software application allows the users to explore a **2D/3D** representation of the surface of the Earth.
- Aligned with Mission of Atmanirbhar Bharat, it uses **MapmyIndia maps** and applications. Users can chart routes, plot areas, and view terrain profile.

#### **Significance**

Yuktdhara based plans will be prepared by **grassroot functionary** and verified by appropriate authorities for relevance and resource allocation. This would ensure quality of plan and enable a long term monitoring of the assets created over the years.

### **Merger of 3 Super Massive Blackholes**

- Department of Science and Technology reported that a rare **merging of three supermassive black holes** has been spotted.
- They were observing the merging of **two galaxies** named **NGC7733** and **NGC7734** in celestial neighbourhood when they detected **unusual emissions** from the center of the latter and a curious **movement of a large bright clump** within it, having a **different velocity** than that of NGC7733.
- Inferring that this was a **separate galaxy**, the scientists named it **NGC7733N**.
- All three merging black holes were part of galaxies in the **Toucan constellation**.

Comparatively a **small constellation**, Toucan is located in **southern hemisphere** of the sky. It is visible at latitudes south of 15 degrees between August and October. It is completely below the horizon for anyone north of 30 degrees.

- These merging blackholes are quite far away when you think that our nearest **Andromeda galaxy** (2.5 million light years away).

#### Collision of Galaxies

- If two galaxies collide, their black hole will also come closer by transferring the **kinetic energy** to the **surrounding gas**.
- The distance between the blackholes **decreases with time** until the separation is around a **parsec (3.26 light-years)**.
- The two black holes are then **unable** to lose any further kinetic energy to get even closer and merge. **This is known as the final parsec problem.**

#### Active Galactic Nuclei (AGN)

- At the center of most galaxies, there's a **super massive black hole** (several million solar masses in size) accumulating gas, dust, and stellar debris around it.
- AGN is formed when the **gravitational energy** of these materials, being pulled towards the black hole, is **converted into light**.
- Around 15% AGN emits charged particles called **jets** travelling at speeds close to the speed of light which can be observed using light spectroscopy.

#### Significance of Finding



The presence of a 3rd black hole can solve final parsec problem



Many AGN pairs have been detected in the past, but triple AGN are extremely rare



The two galaxies can come closer when another black hole or a star passes by and takes away some of their combined angular momentum

#### ICGS Vighraha

Defence Minister dedicated to the Nation, indigenously built **Indian Coast Guard Ship 'Vighraha'**

- It is the **last vessel** in the series of **seven Offshore Patrol Vehicles (OPVs)** built by Larsen & Toubro under Ministry of Defence contract signed in 2015.
- In May 2021, **OPV Sajag** was commissioned into the ICG.
- Within 7 years, not only launch but also the commissioning of all these 7 vessels has been completed.

#### About

- The **98 meters** OPV is fitted with advanced technology radars, navigation and communication equipment, sensor and machinery capable of operating in **tropical** sea conditions.
- The ship is designed to carry **one Twin Engine Helicopter** and **four high speed boats** for Boarding Operation, Search and Rescue, Law Enforcement and Maritime Patrol.
- The vessel is armed with a **40/60 Bofors gun** and fitted with two 12.7 mm **Stabilised Remote Control Gun (SRCG)** with Fire Control System.

- The ship is also capable of carrying limited **pollution response equipment** to contain oil spill at sea.

### **NASA's Boeing Starliner Spacecraft**

The launch of Boeing's **unscrewed** Starliner **Orbital Flight Test-2 (OFT-2)** has been postponed once again.

- The spacecraft, which is called the **Crew Space Transportation-100 (CST-100)**, is part of an **uncrewed TEST flight** to the International Space Station (ISS).
- But the mission is part of **NASA's Commercial Crew Program**.

### **What is CST-100 Starliner Spacecraft**

- It has been designed to accommodate **seven passengers or a mix of crew and cargo** for missions to **low-Earth orbit**. It is supposed to carry more than 400 pounds of NASA cargo and crew supplies and will take roughly 24 hours to reach the ISS.
- It has an innovative, weldless structure and is **reusable up to 10 times with a six-month turnaround time**.
- It also features wireless internet and tablet technology for crew interfaces

### **Purpose of Starliner Spacecraft:**

When this **test flight** takes off, it will check the capabilities of the spacecraft from launch, docking, atmospheric re-entry and a landing at a desert in the US. The spaceflight will also help NASA to ascertain and certify the transportation system to carry astronauts to and from the space station in the future.

### **NASA's Commercial Crew Program**

- The main objective of the Program is to make access to space easier in terms of its cost, so that cargo and crew can be easily transported to and from the **ISS**, enabling greater scientific research.
- Through this program, NASA plans to **lower its costs** by sharing them with **commercial partners** such as **Boeing and SpaceX**, and also give the companies incentive to design and build the **Commercial Orbital Transportation Services (COTS)**.
- By encouraging private companies such as Boeing and SpaceX to provide crew transportation services to and from low-Earth orbit, NASA can focus on building spacecraft and rockets meant for **deep space exploration missions**.
- Boeing and SpaceX were selected by NASA in September **2014** to develop transportation systems meant to transfer crew from the US to the ISS.

## Geography And Environment

33. Hirakud reservoir, recently in the news, is located in?

- a) Odisha  
 b) Madhya Pradesh  
 c) West Bengal  
 d) None of the above

Answer: A

Explanation:

- The Odisha Forest and Environment Department is set to begin ‘**Island Odyssey**’ and ‘**Hirakud Cruise**’ **ecotourism packages** for tourists to islands inside the reservoir when COVID-19 restrictions are lifted.
- ‘Cattle island’, one of **three islands in the Hirakud reservoir**, has been selected as a sight-seeing destination.
  - The island is a submerged hill. Before the construction of Hirakud Dam, it was a developed village. During the resettlement period, villagers left some of their cattle behind.
  - As the area started to submerge following the dam’s construction, the cattle moved up to Bhujapahad, an elevated place in Jharsuguda district. Subsequently named ‘Cattle island’.

**About Hirakud Reservoir**

- Hirakud is **the longest earthen Dam in the world** and stands across the mighty river, **Mahanadi**, in the Sambalpur region of **Odisha**.
- It was the **first major multipurpose river valley project** after India’s Independence in 1947.
- With an area of 1,33,090 sq km, the Dam is **more than twice the area of Sri Lanka**. The main Hirakud Dam has an overall length of 4.8 km, stretching across the **Laxmidungri hills on the left** and the **Chandili Dunguri hills on the right**.
- The bulk of the Dam contains earth and concrete enough to construct a road 8 meters wide – **from Kanyakumari in the south to Kashmir in the north**, and further across from Amritsar to Assam!

34. What is ‘Minervarya Pentali’ which was recently seen in the news?

- a) Newly-discovered frog species  
 b) A gene that makes plants pest-resistant  
 c) An early human species  
 d) A herbicidal substance synthesized in generally modified crops

Answer: A

Explanation:

- DU researchers discovered a new frog species, named Minervarya Pentali, which is **endemic to southern Western Ghats**. This species is also among the smallest known Minervarya frogs.
- The frog species is named after Prof. Deepak Pental, the former vice chancellor of University of Delhi, in appreciation of his support and



encouragement for setting up of Systematics Lab at University of Delhi.

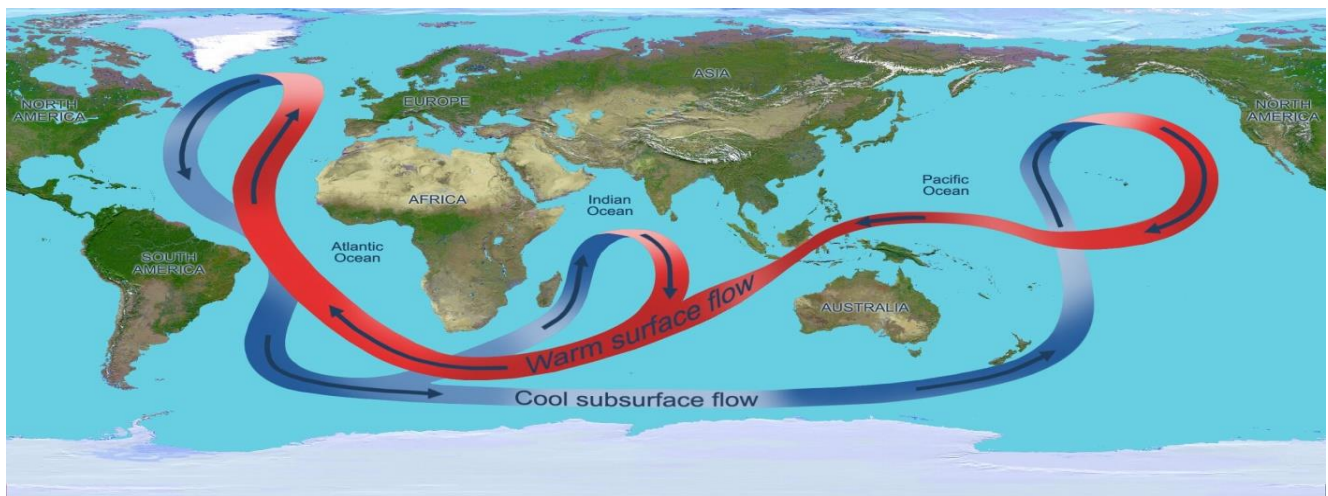
- The amphibian diversity in this region is particularly remarkable as more than half of **nearly 230 species of all known Indian species** (~450 species) are found in the Western Ghats. Besides, over **90% of these are endemic to this region**, which means they are not found anywhere else in the world.

### Slowing Down Of Atlantic Ocean Current System And Its Implications

- A study published in Nature Climate Change notes that the circulation, known as the **Atlantic Meridional Overturning Circulation (AMOC)**, is losing its stability.
- According to the IPCC's Report (AR6) released recently, it is very likely that **AMOC will decline over the 21st century**.
- The findings support the assessment that the AMOC decline is **not** just a fluctuation or a linear response to increasing temperatures but likely means the approaching of a critical threshold beyond which the circulation system could collapse.

### **What is AMOC**

- The AMOC is a **large system of ocean currents**. It is the **Atlantic branch of the ocean conveyor belt** or Thermohaline circulation (THC), and distributes heat and nutrients throughout the world's ocean basins.
  - THC is a part of the large-scale ocean circulation that is driven by **global density gradients** created by **surface heat** and **freshwater fluxes**.
  - Density differences in ocean water contribute to a global-scale circulation system, also called the global conveyor belt. It includes both surface and deep ocean currents that circulate the globe in a 1,000-year cycle.
  - The global conveyor belt's circulation is the result of two simultaneous processes: warm surface currents carrying less dense water away from the Equator toward the poles, and cold deep ocean currents carrying denser water away from the poles toward the Equator
- AMOC carries **warm surface waters from the tropics** towards the Northern Hemisphere, **where it cools and sinks**. It then **returns to the tropics and then to the South Atlantic as a bottom current**. From there it is distributed to all ocean basins via the Antarctic circumpolar current.





### Implications of AMOC Shutdown

- **Gulf Stream, a part of the AMOC**, is a warm current responsible for mild climate at the Eastern coast of North America as well as Europe. Without a proper AMOC and Gulf Stream, **Europe will be very cold**.
- Modelling studies have shown that an AMOC shutdown would **cool the northern hemisphere and decrease rainfall over Europe**. It can also have an **effect on the El Nino**.
- AMOC collapse brings about large, markedly **different climate responses**:
  - **A prominent cooling** over the northern North Atlantic and neighbouring areas,
  - **Sea ice increases** over the Greenland-Iceland-Norwegian seas and to the south of Greenland
  - **A significant southward rain-belt migration** over the tropical Atlantic.

### Causes of Slowing Down of AMOC

- **Global warming**: Climate models have predicted that global warming can cause a weakening of the major ocean systems of the world.

A part of the Arctic's ice called "**Last Ice Area**" has also melted. The freshwater from the melting ice (eg greenland) **reduces the salinity and density** of the water. These changes make the ocean water lighter and so reduce the sinking in the 'conveyor belt'. Now, the water is **unable to sink** as it used to and weakens the AMOC flow.

- **Warming of Indian Ocean**: As the Indian Ocean warms faster and faster, it generates additional precipitation. With so much precipitation in the Indian Ocean, there will be **less precipitation** in the Atlantic Ocean, leading to **higher salinity** in the waters of the **tropical** portion of the Atlantic. This **saltier water in the Atlantic**, as it comes **north** via AMOC, will get cold much quicker than usual and sink faster.

### Past Instances of Weakening of AMOC

- AMOC and THC strength has always been fluctuating, mainly at the late **Pleistocene time period (last 1 million years)**.
- Information about past fluctuations were obtained by studying **paleoclimate proxies** such as sea surface temperatures (SST), salinity, and isotope signatures from single-celled organisms called foraminifera.
- But the changes we experience in the last 100-200 years are **anthropogenic**, and these abrupt changes are **destabilising the AMOC**, which could collapse the system.

### Genetically Modified (GM) Soyabean

The **poultry industry** is demanding that the Central government permit the **import of crushed genetically modified (GM) soy seeds** for captive consumption of farmers as the domestic price of soymeal has skyrocketed from Rs 40 per kg to Rs 110 per kg.

### Need for Import

- In US, soymeal is available at around \$550 a tonne, while **domestic prices in India are more than twice the rate**.
- Soyabean meal is a **key feed material for fish, shrimp, cattle, dairy** and poultry farmers.
- **Shortage in feed availability** has resulted in a surge in soymeal prices that is hurting livestock farmers.



- Recently high speculation activities in soya contracts on National Commodity and Derivatives Exchange Limited (NCDEX) has affected the price of eggs and chicken product in retail market.

#### **Present Status**

- India allows the import of GM soybean and canola oil but **not** the GM soya bean seeds fearing that it will contaminate non-GM varieties.
- Soymeal is the protein rich solid **left after the oil** is expelled from the seed and is used as a raw material for poultry feed.
- However, **soya de-oiled cake or meals** do not fall under these categories. It falls under the non-living organism category.

#### **What Are Genetically Modified Seeds**

- Conventional plant breeding involves **crossing species** of the same genus to provide the offspring with the desired traits of both parents. Genetic engineering aims to transcend the genus barrier by **introducing an alien gene in the seeds to get the desired effects**. The alien gene could be from a plant, an animal or even a soil bacterium.
- **Bt cotton, the only GM crop that is commercially allowed in India**, has two alien genes from the soil bacterium
  - Bacillus thuringiensis (Bt) that allows the crop to develop a protein toxic to the common pest pink bollworm.
  - **Ht Bt** (herbicide-tolerant Bt) cotton on the other is derived with the **insertion of an additional gene, from another soil bacterium**, which allows the plant to resist the common herbicide glyphosate.
- **In Bt brinjal**, a gene allows the plant to resist attacks of fruit and shoot borer.
- **In DMH-11 mustard**, genetic modification **allows cross-pollination** that self-pollinates in nature.
- Across the world, GM variants of maize, canola and soyabean, too, are available.

#### **Concerns Associated With GM Crops**

- **Unauthorised crops** are widely used. Industry estimates say that of the 4-4.5 crore packets (each weighing 400 gm) of cotton sold in the country, 50 lakh are of the unapproved Ht Bt cotton.
- Environmentalists argue that the **long-lasting effect of GM crops is yet to be studied** and thus they should not be released commercially.
- Genetic modification, they say, brings about **changes that can be harmful to humans in the long run**.

#### **Legal Position Of Genetically Modified Crops In India**

- In India, the **Genetic Engineering Appraisal Committee (GEAC)** is the apex body that allows for commercial release of GM crops.
- In 2002, the GEAC had allowed the **commercial release of Bt cotton**. More than 95 per cent of the country's cotton area has since then come under Bt cotton.
- Food Safety and Standards Authority of India (FSSAI) is the authorised body to regulate the imported crops.
- Use of the unapproved GM variant can **attract penal provisions** under the **Environmental Protection Act ,1989**.

### Swinhoe's Softshell Turtle

Swinhoe's softshell turtles, also known as the Hoan Kiem turtle, were pushed to the brink of extinction by habitat destruction.

- **Significance:** For centuries, it has held special cultural significance in **Vietnam** since it is a symbol of Vietnam's independence and prosperity.
- **Conservation Status:**
  - **IUCN:** Critically Endangered.
  - **CITES:** Appendix II.



### The India Plastics Pact

The India Plastics Pact, the first in Asia, will be launched in September at the **Confederation of Indian Industry (CII) Annual Sustainability Summit**.

#### **What Is India Plastics Pact?**

- The Plastics Pacts are business-led initiatives and **transform the plastics packaging value chain** for all formats and products.
- The Pacts bring together everyone from across the **plastics value chain** to implement practical solutions. All Pacts unite behind **three targets**:

- To eliminate unnecessary/problematic plastic packaging through redesign and innovation
- To ensure all plastic packaging is reusable or recyclable
- To increase the reuse, collection, and recycling of plastic packaging

- The Pact will develop a road map for guidance, form action groups composed of members, and initiate innovation projects. Members' accountability is ensured through **ambitious targets and annual data reporting**.
- The **first Plastics Pact was launched in the U.K. in 2018** by WRAP, a global NGO based in the U.K., in partnership with the Ellen MacArthur Foundation. This model is active in a number of countries including the U.K., South Africa, and Australia. In India, it is now being launched by **CII and WWF India**.

#### **Global Scenario**

- 2019 report by Center for International Environmental Law suggests that by 2050, **GHG emissions from plastic could reach over 56 gigatonnes** (10-13% of remaining carbon budget).
- Mismanagement of more than 7.7 billion metric tonnes of plastic waste globally over the next 20 years which is equivalent to 16-times the weight of the human population.

#### **Need For A Plastic Pact In India**

- India generates **9.46 million tonnes** of plastic waste annually. 40% plastic waste goes uncollected. 43% of all plastics produced in India are used for packaging, majority of them being single-use.
- Post-consumer segregation, collection and disposal of plastics make up about half of the income of 1.5- 4 million waste-pickers in India.

**Expected Outcome**

- The Pact will support the **Extended Producer Responsibility framework** of the government and improve solid waste management as envisioned in the Swachh Bharat Abhiyan.
- Integral to the Pact's framework is the **involvement of the informal waste sector** crucial to post-consumer segregation, collection and processing of plastic waste.
- Deeper and long-lasting benefits will be felt across the supply chains of these businesses, most of which comprise MSMEs. The Pact will **encourage development and maturing of the entire plastics production and management ecosystem**.
- Apart from benefits to society and economy, delivering the targets will **drive circularity of plastics and help tackle pollution**. They will lead to significant **reduction in GHG emissions**.
- The India Plastics Pact is supported by WRAP and this association will ensure access to expertise and knowledge from different Pacts worldwide.

**Extended Producer Responsibility (EPR)**

- It is a policy approach under which producers are given a significant responsibility, financial and/or physical, for the treatment or disposal of post-consumer products.
- Assigning such responsibility could in principle provide incentives to prevent wastes at the source, promote product design for the environment and support the achievement of public recycling and materials management goals.

**Ozone Levels Exceeding Permitted Levels**

A Centre for Science and Environment study has found that ozone levels are exceeding the permitted levels even during winter in Delhi-NCR, making the **smog more "toxic"**.

**Key Findings**

- Ozone is now a **round-the-year problem** requiring urgent action and the situation demands refinement of a Clean Air Action Plan to add strategies for ozone mitigation, with stronger action on vehicles, industry and waste burning.
- Despite the pandemic and lockdowns, more days and locations witnessed higher and longer duration of ozone spells.
- Contrary to the notion that ozone, *produced photochemically from interaction between gases in the presence of sunlight*, is predominantly a summer phenomenon, the analysis finds the gas has emerged as an equally strong concern during winter as well.

**About Ozone Pollution**

- **Tropospheric ozone** (often termed "bad" ozone) is man-made, a result of air pollution from internal combustion engines and power plants.
- **Automobile exhaust and industrial emissions** release a family of nitrogen oxide gases (NOx) and volatile organic compounds (VOC), by-products of burning gasoline and coal.
- **NOx and VOC combine chemically** with oxygen to form ozone during sunny, high-temperature conditions of late spring, summer and early fall.

- Photochemical smog is created when sunlight reacts with nitrogen oxides and at least one volatile organic compound (VOC) in the atmosphere. This kind of smog requires neither smoke nor fog.

### **World Lion Day**

- World Lion day is observed every year on August 10 to raise awareness about the conservation of lions.
- According to WWF, lions were once found throughout Africa, Asia and Europe but their numbers have dwindled over the years in these continents. There has been a **decline in 80 % of the population of lions** in the past 100 years mainly due to trophy hunting and habitat loss.
- **India is also recorded as the highest lion population** with an increase of 29 percent from 2015 to 2020 and now stands at 674.
- Earliest known references found in the pillars of the Mauryan empire. The National emblem is adorned by the majestic lion on all four sides.

### **About Asiatic Lion**

- **Conservation Status:** Listed in Schedule I of Wildlife (Protection) Act 1972, in Appendix I of CITES and as Endangered on IUCN Red List.
- **Characteristics:** Asiatic lions are **slightly smaller** than African lions. The most striking morphological character is a longitudinal fold of skin running along belly of Asiatic Lions.
- **Habitat and Distribution:** At present, Gir National Park and Wildlife Sanctuary in Gujarat is the only abode of the Asiatic lion. These lions face significant threats of poaching.

### **Conservation Efforts Taken**

- **Project Lion:** It was announced in August 2020 and modelled on Project Tiger and Project Elephant. Six new sites apart from the Kuno-Palpur Wildlife Sanctuary have been identified under this.
  - The project will involve **habitat development** by engaging modern technologies in management as well as in addressing the issue of **diseases** in lion.
  - It will also be addressing the Human-Wildlife conflict
- **Asiatic Lion Conservation Project:** It was launched by the Union Ministry of Environment, Forests and Climate Change (MoEFCC). It was approved for three financial years from 2018 to 2021. This project has a “Species Conservation over a large landscape” approach.

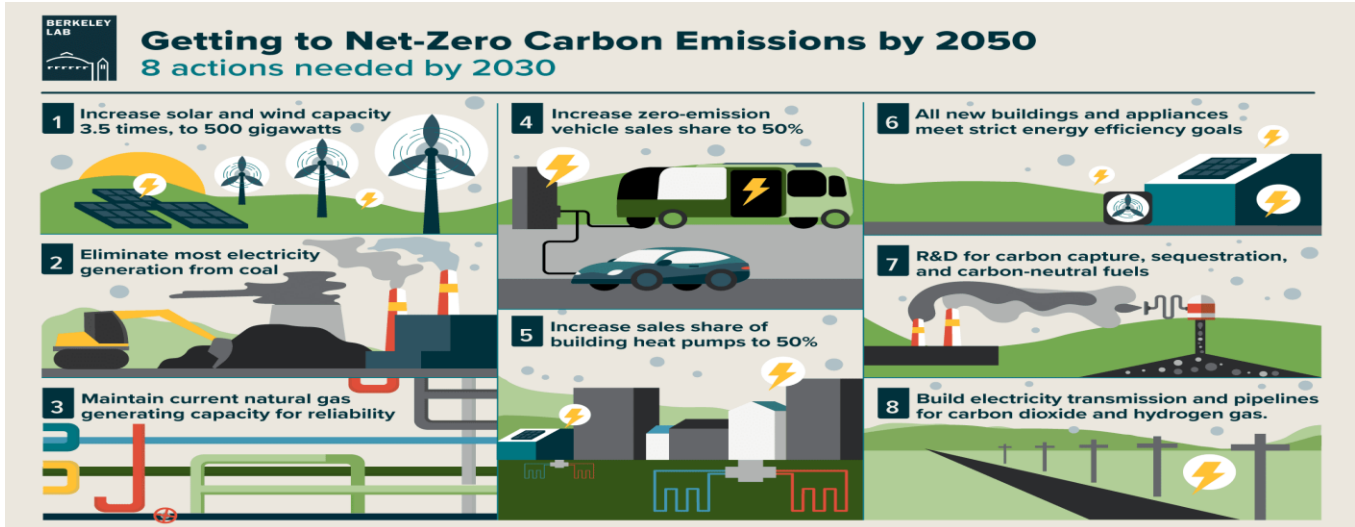
### **Net Zero’ Carbon Targets**

Oxfam in its report has said that ‘net zero’ carbon targets that many countries have announced may be a *dangerous distraction from the priority of cutting carbon emissions*.

### **What Does Net-Zero Mean**

- Net-zero, which is also referred to as **carbon-neutrality**, does not mean that a country would bring down its emissions to zero. That would be **gross-zero**, which means reaching a state where **there are no emissions at all**, a scenario hard to comprehend.
- Therefore, net-zero is a state in which a country’s emissions are compensated by absorption and removal of greenhouse gases from the atmosphere.

- One way by which carbon can be absorbed is by **creating carbon sinks**. Until recently, the **Amazon rainforests in South America**, which are the largest tropical forests in the world, were carbon sinks. But eastern parts of these forests have **started emitting CO<sub>2</sub> instead of absorbing carbon emissions** as a result of deforestation.
- ~~This way,~~ It is even possible for a country to have **negative emissions**, if the absorption and removal exceed the actual emissions. **Bhutan has negative emissions**, because it absorbs more than it emits.
- Countries that have recently announced net-zero targets are **New Zealand, UK, USA, EU, and China**.



### Key Findings Of The Report

- The 'net zero' schemes are a Land-hungry scheme. If the challenge of change is tackled only by way of planting more trees, then about **1.6 billion hectares of new forests would be required** to remove the world's excess carbon emissions by the year 2050.
- If the entire **energy sector** -whose emissions continue to soar- were to set similar 'net-zero' targets, it would require an **area of land nearly the size of Amazon rainforest**, equivalent to a third of all farmland worldwide.
- Significantly, if only **land-based methods to deal with climate change** are used, **food prices** are expected to rise even more. Oxfam estimates that they could rise by 80 % by the year 2050.
- To limit global warming below 1.5°C and to prevent irreversible damage from climate change, the world needs to collectively be on track and should aim to **cut emissions by 45 per cent by 2030 from 2010 levels**.
- Currently, countries' plans to cut emissions will only lead to a **1% reduction by the year 2030**.
- The report emphasises that reducing emissions cannot be considered a substitute for cutting emissions, "and these should be counted separately."

### India's Objections

India is the only country **opposing this target** because it is likely to be the most impacted by it. Over the next two to three decades, India's emission is likely to grow at the fastest pace in the world. No amount of afforestation or reforestation will be able to compensate for the increased emissions. **According to India, the net-zero goal does not figure in the 2015 Paris Agreement**. India is arguing that instead of opening up a parallel

discussion on net-zero targets outside the Paris Agreement framework, countries must focus on delivering on what they have already promised.

**India Decides To Ratify Kigali Agreement (Amendment to Montreal Protocol)**

India has decided to ratify Kigali Agreement. Negotiated in 2016, Kigali agreement is a key amendment to the 1989 ozone-saving Montreal Protocol.

**What is Montreal Protocol?**

- The Montreal Protocol on Substances that Deplete the Ozone Layer, is an international environmental treaty for the protection of Ozone Layer by phasing out the production and consumption of man-made chemicals referred to as ozone-depleting substances (ODS).
- India became a Party to the Montreal Protocol in June 1992 and has successfully met the phase-out targets of all the Ozone Depleting Substances as per the Montreal Protocol Schedule.

**Need For Kigali Amendment**

- Under Montreal Protocol, participating countries were to phase out ODS. HFCs were introduced as **non-ozone-depleting alternative** to support the timely phase-out of **CFCs and HCFCs**.
- While HFCs **do not deplete the stratospheric ozone layer**, they **have high global warming potential** ranging from 12 to 14,000.
- Recognizing the growth in use of HFCs, especially in the **Refrigeration and Air-conditioning sector** the Parties to the Montreal Protocol, reached an agreement at their 28th Meeting of the Parties (MOP) held in 2016 in Kigali, Rwanda to **add HFCs to the list of controlled substances** and approved a timeline for their gradual reduction by 80-85% by the late 2040s.
- United States, China and India are in separate groups of countries, with different time schedules to phase out their HFCs and replace them with climate-friendly alternatives. India has to reduce its HFC use by 80% by 2047, while China and United States have to achieve the same target by 2045 and 2034 respectively.
- India will complete its phase-down of HFCs in 4 steps from 2032 onwards with a cumulative reduction:



**Benefits**

- HFC phasedown is expected to **prevent greenhouse gas emissions** (105 million tonnes of CO2 equivalent thus avoiding ~0.5 degrees Celsius rise by 2100).
- There would be scope for **domestic manufacturing of equipment** as well as alternative non-HFC and low-global warming potential chemicals to enable industry to transition to low global warming alternatives.
- In addition, there would be opportunities to **promote domestic innovation for new generation alternative refrigerants** and related technologies

**Algal Bloom**

- An algal bloom currently ravaging Florida’s **Gulf of Mexico** coast have been aggravated due to the release of 215 million gallons of contaminated water into **Tampa Bay**.



- **Karenia Brevis**, a type of algae commonly known as ‘**Red Tide**’, has swept Florida’s Gulf of Mexico Coast,—killed 1,400 tonnes of fish in and around Tampa alone.



### What is Algal Bloom

- It is a **rapid increase in the population of algae** in an aquatic system.
- Algal blooms may occur in freshwater as well as marine environments. Algal blooms can be in many colors, including blue-green, yellow, brown, pink, and red.

### Causes of Algal Blooms:

- **Nutrient Pollution:** Nutrients like nitrogen and phosphorus are essential to plant growth. But when they run off urban and rural surfaces and flow into water bodies in excess—a phenomenon known as nutrient pollution—they act like fertilizer and promote the growth of algae and bacteria.
- **Warm Water:** Warm water gives cyanobacteria a competitive advantage. These bacteria grow faster than more benign algae in higher temperatures, and once a bloom forms, a feedback loop can be triggered. As blooms grow thicker, the dark surfaces of the algae mats absorb more sunlight, which leads to warmer water and more algal growth.
- **Still Water:** Slow-moving or stagnant water can also become thermally stratified, meaning that a layer of warm water, which favours algal blooms, floats on top of cooler water.
- **Climate Change:** Climate change is both increasing the frequency and duration of droughts in many parts of the country and intensifying extreme storms. Periods of drought interspersed with strong precipitation increase runoff from agricultural lands, lawns, and other sources, leading to higher nitrogen levels in rivers—and therefore harmful algal blooms.

### Red Tide

- Red tide is a phenomenon caused by Red algal blooms during which algae become so numerous that they discolor coastal waters.
- The algal bloom may also deplete oxygen in the waters and/or release toxins that may cause illness in humans and other animals.

### Effects of Freshwater Harmful Algal Blooms (HAB)

- **Health risks:** People can be exposed to HAB toxins by swallowing or swimming in affected waters, eating poisoned fish or shellfish or inhaling airborne droplets of affected water.
- **Economic costs:** HABs cause lakes, reservoirs, and rivers to become unsightly and at times dangerous, reducing tourism, recreation, commercial fishing, and increasing water quality monitoring, management, and treatment costs.
- **Sickened animals:** The toxins released from a HAB can cause large-scale fish kills and work their way up the food web, impacting mammals, birds, and other wildlife.
- **Dead zones:** Even nontoxic HABs can have a detrimental impact on aquatic ecosystems in the form of dead zones, areas in a water body with so little oxygen that aquatic life can’t survive.
- **Increased turbidity:** A bloom of algae on the water’s surface creates a turbid (cloudy) underwater environment, one that prevents much of the sun’s light from reaching bottom-dwelling organisms, including plants. Underwater plants are often a critical source of food and shelter for other organisms, and without them, entire aquatic food webs and ecosystems can suffer.



**Way forward:**

- **Better farming practices:** On farms, regenerative practices that improve soil health help to capture rain where it falls instead of allowing nutrient-packed runoff to wash into bodies of water. These practices include planting cover crops, diversifying what's grown, reducing tillage, properly applying compost and manure, and following fertilizer best practices.
- **Green infrastructure:** Every year, an estimated 10 trillion gallons of untreated stormwater washes off paved surfaces, through storm sewer systems, and into waterways. The solution is to use more green infrastructure in cities such as adding green roofs, planting trees, and building gardens of rain-absorbing plants etc.
- **Smart water policies and conservation:** Protecting wetlands, which act as natural filters to improve water quality, capture runoff, and enhance biodiversity, is vital.
- **Monitoring, mitigation, and collaboration:** Improved monitoring and increased research into HABs is also much needed. There is a need for a nationwide system for collecting data on and responding to HABs.

**Climate Change 2021: The Physical Science Basis Report**

It is the **first part** of IPCC's Sixth Assessment Report (AR6).

**Key Highlights Of The Report**

- Global temperatures have already risen by about 1.1 degrees Celsius from pre-industrial times and warn that 1.5-degree-Celsius threshold was likely to be breached before 2040.
- Even if we limit temperatures to 1.5 degrees Celsius from pre-industrial levels, we will continue to see extreme weather events. Some changes are locked in, such as rising sea levels and melting glaciers, which can now no longer be reversed.
- Coastal areas will **see continued sea-level rise throughout the 21st century**, resulting in coastal erosion and more frequent and severe flooding in low-lying areas.
- **Global mean sea level in the Indian Ocean** is rising at 3.7 mm annually.

**India Specific Findings**

- **Heat Waves**
  - Heatwaves, humid heat stress and cold extremes will be more intense.
  - An increase in heat waves is marked by other emissions like aerosol. If there is a reduction in aerosols, we will see a further increase in heatwaves.
- **Changes In Monsoon**
  - Changes in monsoon precipitation are also expected, with both annual and summer monsoon precipitation projected to increase.
  - **The presence of aerosols and particulate matter** due to human activity have reduced rainfall events in the Indian subcontinent. The dominant cause of the observed decrease of South and Southeast Asian monsoon precipitation since the mid-20th century is the increase in aerosols and particulate matter due to human activity.

- It is predicted that in the long-term, South and Southeast Asian monsoon and East Asian summer monsoon precipitation will increase.
- **Climate Change**
  - Flash floods, sizzling temperatures, droughts and intense cyclones are likely to be commonplace in India because of climate change.
  - **Melting of glaciers in the Hindu Kush-Himalayas**, the consequent rising of the sea level and regular and **more intense tropical cyclones** in South Asia may devastate parts of the region unless drastic measures to cut carbon emissions are put in place.

### **Sambhar Salt Lake is Constantly Shrinking**

- The world-famous Sambhar Salt Lake in Rajasthan is constantly shrinking with the degradation of soil and water quality and a decline in the population of migratory birds.
- More than 20,000 migratory birds belonging to about 10 species had died due to **avian botulism**.
- Botulinum is a natural **toxin** produced by bacteria known as Clostridium botulin. It produces the toxin when it starts reproducing. The bacteria are commonly found in the soil, river, and seawater.
- Botulinum affects **both humans and animals** but the type of toxin varies — botulinum C in birds and A, B and E in humans.
- It needs a faster restoration for conservation of its wetland and **salt brine worth \$300 million**.

### **About Sambhar Lake**

- Situated 80 km from the southwest of Jaipur, it is the **country's largest inland saline water body**.
- **It receives water from five rivers**, namely Samaod, Khari, Mantha, Khandela, Medtha, and Roopangarh.

### **Milky Seas**

Scientists are using new satellite technology **Day/Night Band** to find glow-in-the-dark milky seas of maritime lore.

#### **What is Milky Seas**

- They are a **rare nocturnal phenomenon** in which the ocean's surface emits a steady bright glow which can cover thousands of square miles.
- Also called **Mareel**, the milky sea is caused by **bioluminescent bacteria**, billions of trillions of them that live throughout **the water column from the surface to the sea floor**. However what causes these displays remains a mystery. If bacteria growing on algae were the main cause of milky seas, they'd be happening all over the place, all the time.
- Yet, as per surface reports, **only about two or three milky seas occur per year worldwide**, mostly in the waters of the northwest Indian Ocean and off the coast of Indonesia.
- Sometimes exceeding 1,00,000 sq km, it persists for **days to weeks**
- **Satellites** offer a practical way to monitor the vast oceans, but it takes a special instrument to detect light around 100 million times fainter than daylight.

