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# Current Affairs (CONSOLIDATION)

**MARCH 2020**  
**(PART – I)**

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# Polity and Governance

## Highlights

- ECI not in Favour of State Political Fundings for Polls
- National Conference on Women in Police and CAPFs
- Ban on Cryptocurrency Trading Removed
- QS World University Subject Rankings 2020
- Unutilized Budgetary Funds in Education
- Court Documents Accessibility to Third-party
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- KIRAN Scheme
- National Biopharma Mission

## ECI not in Favour of State Political Fundings for Polls

### Why in News

Recently, the Minister of State for Finance has informed Lok Sabha that the Election Commission of India (ECI) is **not in favour of state funding of elections**.

- The state funding of elections was first recommended by the **Indrajit Gupta Committee** in 1998.

### ECI's View

- The ECI has stated that it **would not be able to prohibit or check candidates' expenditure or expenditure by others over and above that is provided for by the state**.
- It also mentioned that for addressing the **real issues with political fundings**, changes need to be made in the following elements of the election funding process
  - **Receipts of funds** by political parties.
  - **The manner** in which **received funds are spent** by the political parties.
  - **Complete transparency** in the political funding process.
- The **scrutiny** over these aspects will help bring **better transparency** in political funding.

## Recommendations on State Funding for Elections

- **Indrajit Gupta Committee (1998)**
  - The Indrajit Gupta Committee had suggested that **state funding** would ensure a **level playing field** for poorer political parties and argued that such a move would be in the public interest.
  - It had also recommended that **state funds should only be given to recognised national and State parties**.
  - It had recommended that funding should be given **in the form of free facilities provided to these parties and their candidates**.
- **Law Commission Report (1999)**
  - It had stated that a state funding of elections is 'desirable' provided that political parties are **prohibited from taking funds from other sources**.
- **National Commission to Review the Working of the Constitution (2001)**
  - It **did not support** state funding of elections but mentioned that the appropriate framework for the regulation of political parties would need to be implemented before state funding is considered.

## Recent Steps Taken by the Government

- The government has amended the **Income Tax Act** and **limited anonymous cash donations to Rs 2,000 to discourage cash transactions and bring in transparency** in the source of funding of political parties.

Note:



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- The 'Electoral Bond Scheme' was introduced in 2018 to establish a transparent political funding system in the country, with a well-established audit trail.
  - An electoral bond is a **bearer instrument** like a Promissory Note.
  - It can be purchased by **any citizen of India or a body incorporated in India** to donate to the political party of their choice. **The donor's name is not** mentioned on the bond.
  - These bonds can be used for making donations to the political parties registered under **Section 29A of the Representation of the People Act, 1951(RPA)** and which have secured **not less than one percent of the votes polled in the last general election** to the **House of the People or a Legislative Assembly**.

### Current Scenario of Political Funding

- Political Funding implies the methods that political parties use to raise funds to finance their campaign and routine activities.
- **Methods of Political Funding in India:**
  - **Individual Persons:** Section 29B of RPA allows political parties to receive donations from individual persons.
  - **Indirect State Funding:** It includes methods except direct funding, like free access to media, free access to public places for rallies, free or subsidized transport facilities. **It is allowed in India in a regulated manner.**
  - **Corporate Funding:** In India, donations by corporate bodies are governed by the **Companies Act, 2013**.
  - **Electoral Trusts:** A non-profit company created in India for orderly receipt of voluntary contributions from any person like an individual or a domestic company.

### Issues with Political Funding

- One of the biggest disadvantages of corporate funding is the **use of fake companies to route black money**.
- **Influence of people and companies over political parties** to which they provide funds.
- **Hidden sources of funding** lead to more spending of funds in election campaigns, thus impacting the economy of the country.

## National Conference on Women in Police and CAPFs

### Why in News

Bureau of Police Research and Development (BPR&D) organised the National Conference on Women in Police and Central Armed Police Forces (CAPFs) in New Delhi.

- It was inaugurated by the **Union Minister for Women And Child Development**.

### Key Points

- The main objective of the National Conference was to discuss and deliberate on the following two themes:
  - **Cyber Stalking and Bullying of Women:** Steps for Protection.
  - Challenges faced by **CAPF Women in Operational Areas**.
- Few important issues related to women in Police which were highlighted during the conference are:
  - **Workplace harassment** besides cybercrime.
  - Society should not look at working **women with bias** and hold the performance of men to be the only benchmark for success.
  - Training of members of the **Child Welfare Committees (CWC)**.
  - The need to **train more female forensic investigators and cybercrime experts**.
  - BPR&D was also advised to make an SoP for "**One Stop Centre for Women**".
- To commemorate this event, a hand-out – "BPR&D Mirror – Gender Benders" was released, which stated the recent initiatives taken by BPR&D to promote Woman Safety.

### Bureau of Police Research and Development (BPR&D)

- The Government of India established the Bureau of Police Research and Development (BPR&D), under the Ministry of Home Affairs in the 1970s.
- It replaced the Police Research and Advisory Council (1966), with the primary objective of modernization of the police force.
- In 1995 the Government of India decided to entrust issues relating to **Correctional Administration Work** to the BPR&D.

Note:

- Thereby BPR&D has to ensure the implementation of **prison reforms** as well.
- The Government of India further decided to create a National Police Mission under the administrative control of BPR&D to transform the police forces in the country.
- **Recently, BPR&D** observed its 50<sup>th</sup> foundation day.

#### Child Welfare Committees (CWC)

- **The Child Welfare Committee (CWC)** is constituted under the Juvenile Justice (Care and Protection of Children) Act, 2015. It is the sole authority to deal with matters concerning children in need of care and protection.
- The Committee is constituted for each district or group of districts.

## Ban on Cryptocurrency Trading Removed

### Why in News

The Supreme Court has struck down a ban on the trading of Virtual Currencies (VC) in India, which was imposed by the Reserve Bank of India (RBI) in April 2018.

- The RBI order prohibited banks and entities regulated by it from dealing in VCs or providing services for facilitating any person or entity in dealing with or settling VCs.
- Such services include maintaining accounts, registering, trading, settling, clearing, giving loans against virtual tokens, accepting them as collateral, opening accounts of exchanges dealing with them and transfer/receipt of money in accounts relating to purchase/ sale of VCs.

#### Virtual Currencies

- There is no globally accepted definition of what exactly is virtual currency. Basically, virtual currency is the larger umbrella term for all forms of non-fiat currency being traded online.
  - Fiat Money is a kind of currency, issued by the government and regulated by a central authority such as a central bank. Such currencies act like legal tender and are not necessarily backed by a physical commodity.
- Virtual currencies are mostly created, distributed and accepted in local virtual networks. Virtual Currencies **also includes cryptocurrencies**.

- Cryptocurrencies have an extra layer of security, in the form of encryption algorithms.

- Most cryptocurrencies now operate on the **blockchain or distributed ledger technology**, which allows everyone on the network to keep track of the transactions occurring globally.
- **Popular forms of cryptocurrencies** include Bitcoin, Ethereum, etc.

#### WHERE OTHER COUNTRIES STAND

**Canada:** Cryptocurrencies permitted as a payment system and as a form of investment; income from them is taxed

**Switzerland:** Permitted as a payment system (including consumer-to-government transactions) and as a form of investment

**Japan:** Permitted and regulated as a payment system

**China:** Banned for all purposes

- Satoshi Nakamoto, widely regarded as the founder of the modern virtual currency bitcoin and the underlying technology called blockchain, defines bitcoins as “a new electronic cash system that’s fully peer-to-peer, with no trusted third party (central regulator)”.

#### Reasons Behind Banning Virtual Currencies

- Lack of any underlying fiat, episodes of excessive volatility in their value, and their anonymous nature which goes against global money-laundering rules.
- Risks and concerns about data security and consumer protection.
- The potential impact on the effectiveness of the monetary policy.

#### Arguments in Support of Use of Virtual Currencies in India

- Digital/virtual currencies (both private or government-backed) are an integral part of digital economy and digital countries.
  - 5 million Indians are engaged in virtual currency activities.
  - India is the second-largest user of Pundi X’s blockchain wallet.
- India is at the forefront of all things digital and an inspiration to the world. Its balanced approach between risk and innovation can become a role model for the world.

#### Highlights of the Judgement

- **Test of Proportionality**
  - The ban did not pass the “proportionality” test. The test of proportionality of any action by the

Note:



government must pass the test of **Article 19(1)(g) of the Constitution**, which states that all citizens of the country will have the right to practice any profession or carry on any occupation or trade and business.

- Till date, the RBI has **not come out with a stand** that any of the entities regulated by it have suffered any loss or adverse effect directly or indirectly, on account of VC exchanges.
- Besides, the court found that the RBI **did not consider the availability of alternatives** before issuing the order i.e. achieving the same objective by imposing a less drastic restraint.
- **Inconsistent with the RBI's Stand:** The RBI's order was "disproportionate" with an otherwise consistent stand taken by the central bank that VCs are not prohibited in the country.
- **Referred to the Global Approach:** Organisations across the globe have called for caution while dealing with virtual currencies, while also warning that a blanket ban of any sort could push the entire system underground, which in turn would mean no regulation.
- **On RBI's Power:** The Court held that the RBI has powers to regulate any currencies in the system.

### **Possible Impact of the Judgement**

- With the order, resumption of operations at **cryptocurrency exchanges and backward linkages** with the banking sector are expected.
- Even as virtual currency investors and businesses will welcome the Supreme Court's order on cryptocurrency, the relief for such players may be only temporary given that the Centre, in a draft law, has **proposed to ban all private cryptocurrencies**.
- The Supreme Court's judgment could lead to the RBI rethinking its policies surrounding virtual currencies.

## **QS World University Subject Rankings 2020**

### **Why in News**

The 2020 edition of the QS World University Subject Rankings has ranked as many as 26 departments of higher education institutions in India among the top 100 in the world in their respective subject category.

- The QS World University Subject Rankings 2020 has been released from London by **Quacquarelli Symonds**. It is the world's leading provider of services, analytics, and insight to the global higher education sector.
- QS uses **four key metrics** to compile the rankings including **academic reputation, employer reputation, citations per paper** and the **h-index** which measures how productive an institution's research faculty are.
- 1,368 institutions have been ranked across 48 subjects in 5 broad categories across 159 locations.
- **Top Rankers:** Globally, Massachusetts Institute of Technology (MIT - USA) emerged as the world's best-performing institution, achieving 12 number-one positions, followed by Harvard University (USA) with 11 number-one positions and University of Oxford (United Kingdom) with eight top-ranked subjects.

### **India's Performance**

- As against **21 institutions getting ranked in 2019**, the latest edition has seen 26 Indian departments entering the top-100 list for their subjects. **All 26 departments are in institutions run by the Union government** — IITs, IIMs, IISc and Delhi University.
- QS has also seen an **increase in the number of Indian programs ranking among the global top 50**.
  - In terms of institutes and subjects, India's highest-ranked programs included Indian Institute of Technology (IIT) Bombay's Mineral & Mining Engineering program at 41st rank globally, shared jointly with the University of Delhi's Development Studies program.
  - Top-50 ranks have also been attained by IIT Kharagpur (46) for Mineral & Mining Engineering, IIT Delhi (49) for Electrical & Electronic Engineering and IIT Bombay (50) for Chemical Engineering.
- **IIT Bombay** emerged with more top-100 ranks than any other Indian university in QS World University Rankings by Subject 2020.
- In the **business and management studies subject category**, both Indian Institute of Management (IIM) Ahmedabad and IIM Bangalore were ranked in the 51-100 band.
- The **rankings indicate India's particular strength** in the natural sciences, life sciences, and in engineering disciplines.

Note:

## Unutilized Budgetary Funds in Education

### Why in News

Recently, the **Parliamentary Standing Committee** on Human Resource Development (HRD) has presented a report on the **2020-2021 demand for grants for school education** in the Rajya Sabha.

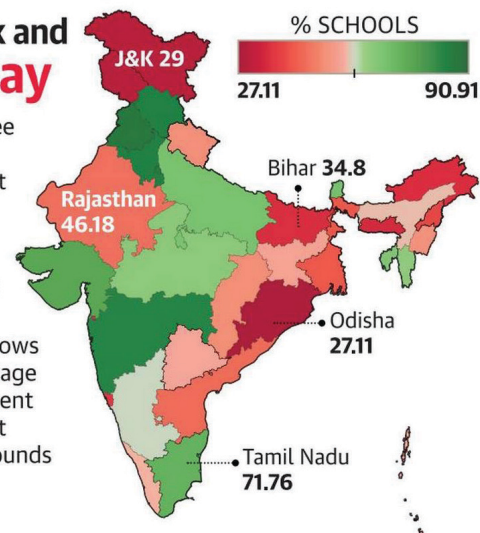
- The report identifies **shortfalls in budgetary funding and utilisation**, resulting in **critical infrastructure gaps** in the government schools in India.

### Key Points

- **Reduction in Finance:**
  - The budgetary allocations experienced a **27% cut from proposals** made by the School Education department.
  - Similarly, **27% of reductions** have been observed in the fund needed for the **implementation of Central and Centrally Sponsored Schemes**.
  - Also, the government has spent only 71% of allotted funds for the core **Samagra Shiksha Scheme** until 31<sup>st</sup> December 2019.
- **Access to Electricity and Playground:**
  - Almost **half of the government schools** in the country **do not have any electricity or playgrounds**.
  - **Only 56% of schools have electricity**, with the lowest rates in Manipur and Madhya Pradesh, where less than 20% have access to power.
  - **Less than 57% of schools have playgrounds**, including less than 30% of schools in Odisha and Jammu and Kashmir.
- **Overall Infrastructure:**
  - A **dismal rate of progress** has been observed in **building classrooms, labs and libraries** to strengthen government higher secondary schools.
  - **Almost 40% of schools did not have a boundary wall**, endangering the safety of students and school property.
  - The **higher secondary schools experienced greater infrastructural gaps** compared to secondary schools and primary schools.
  - Also, **less than 5% of proposed infrastructure facilities** such as ramps and special toilets for **differently-abled students** have been completed in the government schools.

## All work and no play

Almost three out of four government schools in Odisha did not have a playground as of 2018. The map shows the percentage of government schools that had playgrounds as of 2018



### Recommendations

- **Additional funds for implementation of the core schemes** such as Samagra Shiksha Abhiyan.
- **Collaboration of HRD Ministry with the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)** to construct boundary walls and other infrastructure facilities.
- **Collaboration with the Ministry of New and Renewable Energy** to provide solar energy and other renewable energy sources so that schools have access to power.

## Court Documents Accessibility to Third-party

### Why in News

A bench of the **Supreme Court** recently ruled that **court documents** such as **copies of judgments and pleadings** can now be **obtained by third-parties** or those not party to a case.

- The information will be only available **after the court rules permit it and not under the Right to Information (RTI) Act, 2005**.
- This decision comes a few months after a five-judge bench of SC **opened the office of the Chief Justice of India to scrutiny under the RTI Act**.

### Key Points

- **Rule 151 of Gujarat High Court Rules** were being upheld, which allows access to certified copies of

Note:



judgments, orders and pleadings **to a third-party, or those not party to a case, only under the order of an officer of the court.**

- **High courts of Bombay, Himachal Pradesh, Karnataka, Madras, etc** have similar provisions.
- The bench held that the **High Court holds the information as a trustee** for the litigants in order to adjudicate upon the matter and administer justice.
  - Third parties should not be permitted to have open and easy access to such personal information of the litigants or information given by the government in the proceedings because there could be a misuse of the court process and the information to an unmanageable level.
- According to the rules, litigants are entitled to receive copies of documents/judgments, etc on the filing of an application with prescribed court fees stamp.
  - Third parties are not given copies of judgments and other documents without the assistant registrar's order.
  - The registrar, on being satisfied with the reasonable cause for seeking the information/certified copies of the documents, allows access to the documents.

## India Pharma & India Medical Device 2020 Conference

### Why in News

The Department of Pharmaceuticals, **Ministry of Chemicals and Fertilizers, in association with Federation of Indian Chambers of Commerce and Industry (FICCI)** organised **India Pharma 2020 & India Medical Device 2020 Conference & Exhibition.**

- This is the **fifth edition**, and was **organised for the first time in the State of Gujarat** (which is also the partner state for this event) at Gandhi Nagar from March 5-7, 2020.

### Key Points

- **Theme** -“**India Pharma: Meeting Challenges of Affordable and Quality Healthcare and India Medical Device: Promoting Affordable responsible and Quality Medical Device for Universal Health Care**”.
- **Objectives**
  - To **encourage innovations to further reduce the cost of quality healthcare** for all and a platform to

the global investment community to connect with stakeholders in the **Medical Device Sector in India.**

- To **promote consumer-centric manufacturing** by involving Medical Electronics, Devices, Health Diagnostics, Hospitals and Surgical Equipment, etc.

### Indian Pharma Industry

- The Indian pharmaceutical market is the third largest in terms of volume and thirteenth largest in terms of value.
- India is the **largest supplier of generic medicines** globally.
- The **cost of manufacturing in India is approximately 33% lower** than that of the US.
- India is also the **largest vaccine producer** in the world.
- **Bio-Pharma is the largest sector** contributing to 62% of the total revenue.

### Medical Devices Sector in India

- The Medical Devices industry in India is valued at USD 5.2 billion, **contributing about 4-5%** to the USD 96.7 billion Indian healthcare Industry.
- Medical devices sector in India is very small in size as compared to the rest of the manufacturing industry, though **India is one of the top twenty markets for medical devices in the world** and is the 4<sup>th</sup> largest market in Asia after Japan, China, and South Korea.
- Indian medical devices industry is **growing at a CAGR of 15.8%**, vis-à-vis a CAGR of 4.1% for the Global medical devices industry.
  - India currently **imports 80-90% of medical devices** of the USD15 billion market, the vast majority of which are unregulated for quality and safety.
  - The **U.S., Germany, China, Japan and Singapore** constitute the five largest exporters of high technology medical equipment to India.

## Rules for Filing Complaints with Lokpal Notified

### Why in News

The Department of Personnel and Training (DoPT) has issued a notification providing the rules and prescribed format for filing complaints with the Lokpal.

Note:

### Key Points

- The notification, under the **Lokpal and Lokayuktas Act**, lays down the rules called the **Lokpal (Complaint) Rules, 2020**.
- **Identity Proof:** According to the complaint form, a complainant has to give valid proof of identity, as specified therein.
- **Foreign nationals can also lodge complaints.**
  - Only a copy of their passports will be accepted as proof of identity.
- **Mode of Complaint:**
  - The complaint can be filed electronically, by post or in person.
  - In case the complaint is filed electronically, its hard copy has to be submitted to the Lokpal within 15 days.
- **No complaints can be filed against** a public servant under the Army Act, Navy Act, Air Force Act and the Coast Guard Act.
- **Language:** A complaint may ordinarily be made in **English**, provided that the Lokpal may also entertain a complaint in any of the languages referred to in the **Eighth Schedule to the Constitution**.
- The complaints, which **are not filed within the limitation period of seven years**, or are pending before any other court, tribunal or authority, will have to be disposed of within 30 days.
- **Protection:** The identity of the complainant or the accused official will be protected by the Lokpal till the conclusion of inquiry or investigation.

#### The Lokpal Act

- This Act provides for the **establishment of a body of Lokpal for the Union and Lokayukta for States** to inquire into allegations of corruption against certain public functionaries and for matters connected therewith or incidental thereto.
- It was **passed in 2013**.
- Lokpal has to **enquire into allegations of corruption against public functionaries of the central government** in a time-bound manner.
- **Jurisdiction:** The Prime Minister, Ministers, Members of Parliament and officers and officials of the Central Government.
- **Composition:**

- The Lokpal consists of a **Chairperson** with a maximum of **8 members** of which **50% shall be judicial members**.
- 50% of the members of the Lokpal shall come from amongst the SCs, the STs, the OBCs, minorities, and women.
- **Selection of the Members:**
  - The selection of the Chairperson and the members of Lokpal shall be through a **Selection Committee consisting of the Prime Minister, the Speaker of the Lok Sabha, the Leader of the Opposition in the Lok Sabha, the Chief Justice of India** or a sitting Supreme Court Judge nominated by the Chief Justice of India and an **eminent jurist** to be nominated by the President of India on the basis of recommendations of the first four members of the selection committee.
  - A **Search Committee will assist the Selection Committee in the process of selection**. 50% of the members of the Search Committee shall also be from amongst the SCs, the STs, the OBCs, minorities and women.
- The **Prime Minister** has been brought under the purview of the Lokpal with **subject matter exclusions** and specific process for handling complaints against the Prime Minister.

## SC Order on Land Acquisition

### Why in News

Recently, the Supreme Court of India **reaffirmed its February 2018 ruling on Section 24 on land acquisition compensation awards** in the Indore Development Authority case.

- The five-judge Bench also overruled a 2014 ruling under the **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act of 2013**.

### Background

- The 2013 Act **replaced** the Land Acquisition Act, 1894 (1894 Act) and provides for **higher compensation to those deprived of land by the government** for both public and private sector projects.

Note:

- It also mandates **consent of a majority of land-owners** and contains provisions for rehabilitation and resettlement.
- Under **Section 24(2) of the 2013 Act**, land acquisition made under the old law of 1894 lapses if the award of compensation had been made five years before the new Act came into force, but has not been paid.
  - In such situations, the **process will start afresh under the new Act**, which mandates higher compensation.
- However, there have been cases of farmers and landowners refusing compensation which delays the possession by the government.
  - In such cases, the compensation is deposited in the government treasury and according to one interpretation, the acquisition process is saved.
  - This interpretation has been contended on the basis that such cases will fall under the new Act because compensation has not been paid to the landowners, and the lapsing clause in **Section 24 should be applied**.
- If a long-pending land acquisition process closes under the old law and fresh acquisition proceedings start under the new one, the land-owners will benefit and project proponents will have to pay higher compensation.
- In the **Pune Municipal Corporation vs Harakchand Misirimal Solanki case (2014)**, a three-judge bench held that acquisition proceedings initiated under the 1894 Act, which were initiated five years before the 2013 law was enacted (in 2014), would lapse if the land in question was not taken control of or if compensation was not paid to displaced farmers.
  - The judgment came as a relief for landowners.
- However, in the **Indore Development Authority vs Shailendra (D) Through LRS & Ors case 2018**, another three-judge bench declared the 2014 judgment "**per incuriam**".
  - It held that if a landowner refuses to accept the compensation offered by the developer, they cannot take advantage of their own wrongdoing and have the acquisition proceedings lapse under the old law.
  - This judgment was a relief for developers.

### Per Incuriam

- It literally translates as "**through lack of care**".
- A judgment can be declared per incuriam if it does not follow a statutory provision or a binding precedent that may have been relevant.
- Such judgments can be declared to be without any legal force and are not treated as a valid precedent.

### Key Points

- In the latest ruling, the Bench was interpreting **Section 24 (2) of the 2013 Act**.
- The provision said that **if the physical possession of land has not been taken or the compensation is not paid for five or more years prior to 1<sup>st</sup> January 2014, the acquisition proceeding is "deemed to have lapsed"**.
- The judgment said that the compensation would be considered paid if the amount is put in the Treasury.
  - There was no obligation that the amount should be deposited in the court in order to sustain the land acquisition proceedings.
- Thus, there is no lapse if possession has been taken and compensation has not been paid. Similarly, there is no lapse if compensation has been paid and possession not taken of the land.
- Further, it was also held that Section 24(2) of the 2013 Act does not give rise to a new cause of action to question the legality of concluded proceedings of land acquisition.

## Centre Cannot Brand Organisations 'Political': SC

### Why in News

The Supreme Court recently held that the **central government cannot brand an organisation political** and deprive it of its right to receive foreign funds for using legitimate forms of dissent to aid a public cause.

### Background

- This move comes in the background of a petition filed by the Indian Social Action Forum (INSAF) challenging certain provisions of the **Foreign Contribution Regulation Act (FCRA), 2010 and the Foreign Contribution (Regulation) Rules of 2011**.

Note:

- The FCRA 2010 **prohibits acceptance and utilisation of foreign contribution or foreign hospitality for any activities detrimental to the national interest.**
- Both the Act and the rules confer the Centre with **'unguided and uncatalyzed power'** to brand organisations political and shut down their access to foreign funds.
- **Section 5(1) of the FCRA** was challenged for being vague as it **allowed the Centre to decide freely whether a seemingly non-political organisation was actually political in nature.** The Court said that the provision was **expansive and not vague.**
- **Section 5(4) of the FCRA** was also questioned as it **did not exactly identify the authority** before which an organisation could represent its grievance. This contention was dismissed by the apex court.
- Various **clauses of Rule 3 of the 2011 Rules** were also challenged. This provision identified the various types of 'political' activities for which an organisations' foreign funding could be stopped by the government.

### Key Points

- SC observed that an **organisation, which supports the cause of a group of citizens** agitating for their rights **without a political goal or objective, cannot be penalised by being declared as an organisation of a political nature.**
- However, foreign funding could be stopped if an organisation took recourse to these forms of protest to score a political goal.
  - Organisations with political objectives in their memorandum of association or bye-laws cannot be permitted access to foreign funds because of their clear political nature.
- **Justifications behind the move:**
  - It is to make sure that the administration is not influenced by foreign-funded political organisations.
  - A prohibition from receiving direct or indirect foreign aid ensures that the values of a sovereign democratic republic are protected.
  - It will also protect the interests and fundings of voluntary organisations having no connection with either party politics or active politics.
- Foreign funding can continue for organisations of farmers, workers, students, youth based on caste,

community, religion, language, etc as long as they work for the social and political welfare of society and not to further political interests.

## Foreigners Tribunals

### Why in News

**Amnesty International** has raised **allegations over the functioning of the Foreigners Tribunals (FTs) in Assam.**

### Key Points

- In a report titled **'Designed to Exclude'**, Amnesty International has asserted that the Supreme Court and Gauhati High Court had enabled the FTs to create a statelessness crisis in Assam.
  - There appear to be aberrations in some cases to the policy of assessing the performance of a FT member.
- The organization has also called for a **review of the existing legislative regime governing the determination of nationality** in India.
- It has observed that the FTs that determined the paramount right to citizenship in Assam were often dismissive, used derogatory language, controlled their own procedures and applied them in arbitrary ways.

### Foreigners Tribunals in Assam

- The tribunals are **quasi-judicial bodies**, to determine if a person staying illegally is a "foreigner" or not.
- Every individual, whose name does not figure in the **final National Register of Citizens (NRC)**, can represent his/her case in front of the appellate authority i.e. Foreigners Tribunals (FT).
  - Assam has set up FTs, specifically to handle the cases of 19.06 lakh people left out of the updated National Register of Citizens (NRC).
- Under the provisions of **Foreigners Act 1946** and **Foreigners (Tribunals) Order 1964, only Foreigners Tribunals are empowered** to declare a person as a foreigner.
- The **Assam Police Border Organisation**, a wing of the State police tasked with detecting foreigners, readies the cases for the tribunals to decide who is a foreigner and who is not.

Note:



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### Foreigners Tribunal Member

- Each FT member is appointed under the Foreigners Tribunal Act, 1941, and Foreigners Tribunal Order, 1984, as per the guidelines issued by the government from time to time.
- A member can be a retired judicial officer of the Assam Judicial Service, a retired civil servant not below the rank of secretary and additional secretary with judicial experience, or a practicing advocate **not below the age of 35 years** and with **at least seven years of practice**.
- A member is also required to have a **fair knowledge of the official languages of Assam** (Assamese, Bengali, Bodo, and English) as well as be conversant with the historical background to the foreigners' issue.

### Amnesty International

- AI is an **international Non-Governmental Organization (NGO)** founded in London on May 28, 1961,
- It seeks to publicize violations by governments and other entities of rights recognized in the **Universal Declaration of Human Rights (1948)**, especially freedom of speech and of conscience and the right against torture.
- In 1977 AI was awarded the **Nobel Prize for Peace**.

## Mineral Laws (Amendment) Bill, 2020

### Why in News

Recently, the Parliament has passed the **Mineral Laws (Amendment) Bill, 2020**.

- The Bill replaces the **ordinance for amendment of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act)** and the Coal Mines (Special Provisions) Act, 2015 (CMSP Act) which was promulgated on 11<sup>th</sup> January 2020.
- The Bill is expected to open a **new era in Indian coal & mining sector especially to promote Ease of Doing Business**.

### Key Points

- **Removal of restriction on end-use of coal:**
  - Currently, companies acquiring Schedule II and Schedule III coal mines through auctions can use the coal produced **only for specific end-uses such as power generation and steel production**.

### Note:

- The **MMDR Act** regulates the overall mining sector in India.
- The **CMSP Act** provides for the auction and allocation of coal mines whose allocation was canceled by the Supreme Court in 2014.
  - **Schedule I** of the Act provides a list of all such mines; **Schedule II** and **III** are sub-classes of the mines listed in the Schedule I.
  - **Schedule II** mines are those where production had already started before the Supreme court's order in 2014 and **Schedule III** mines are ones that had been earmarked for a specific end-use.
- The Bill removes this restriction on the use of coal mined by such companies. And thus companies will be allowed to carry on **coal mining operations** for their own consumption, sale or for any other purposes, as may be specified by the central government.
- **Eligibility for auction of coal and lignite blocks:**
  - The Bill clarifies that the companies **need not possess any prior coal mining experience in India in order to participate in the auction of coal and lignite blocks**.
- **Composite license for prospecting and mining:**
  - The Bill adds a **new type of license**, called **prospecting license-cum-mining lease**. It will be a **composite license** providing for **both prospecting and mining activities**.
  - **Currently, separate licenses** are provided for **prospecting and mining of coal and lignite**, called **prospecting license**, and **mining lease**, respectively. **Prospecting** includes exploring, locating, or finding mineral deposits.
- **Advance action for auction:**
  - The Bill provides that state governments can take **advance action for auction of a mining lease before its expiry**.
  - Under the MMDR Act, mining leases for specified minerals (minerals other than coal, lignite, and atomic minerals) **are auctioned on the expiry of the lease period**.
- **Transfer of statutory clearances to new bidders:**
  - The Bill provides that the various approvals, licenses, and clearances given to the previous lessee will be **extended to the successful bidder for a period of two years**.

Note:



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- During this period, the new lessee will be allowed to continue mining operations. However, the new lessee **must obtain** all the required clearances **within this two-year period**.
- Currently, upon expiry, mining leases for specified minerals (minerals other than coal, lignite, and atomic minerals) can be transferred to new persons through auction. This **new lessee is required to obtain statutory clearances before starting mining operations**.
- **Prior approval from the central government:**
  - The Bill provides that **prior approval of the central government will not be required by the state government** in granting licenses for coal and lignite, in certain cases.
  - These include cases where the allocation has been done by the central government, and the mining block has been reserved to conserve a mineral.
  - Under the MMDR Act, state governments **require prior approval** of the central government for granting reconnaissance permit, prospecting license, or mining lease for coal and lignite.

## Scheme for Adolescent Girls

### Why in News

The Government is implementing the 'Scheme for Adolescent Girls (SAG)' across the country.

### About the Scheme

- **Introduced in:** 2010
- **Implemented By:** Ministry of Women and Child Development
- **Implemented Through:** Existing Anganwadi Centres (AWCs) under the **Integrated Child Development Scheme (ICDS)**.
- **Coverage:** Pan-India
- **Key Objective:** To facilitate, educate and empower Adolescent Girls (AGs) so as to enable them to become self-reliant and aware citizens.
- **Target Group:** Out of schoolgirls in the age group of 11-14 years. The scheme aims at motivating out of school girls to go back to formal schooling or vocational /skill training.
- **Components:**

- **Nutrition:** Provision for providing a specified amount of calories, protein and micronutrients to AGs, etc.
- **Non-nutrition:** Includes health check-up, mainstreaming out of school girls into the school system, Iron and Folic Acid (IFA) supplementation, life skill education, etc.
- **Funding Pattern:**
  - SAG is a **centrally sponsored scheme**, implemented through Centre and State share in the ratio of 50:50 for nutrition component and 60:40 for the rest of the activities.
  - For both components, the ratio is 90:10 for North Eastern and three Himalayan States and 100% for UTs without legislation.
- **Achievement of the Scheme is measured through:**
  - **SAG- Rapid Reporting System (RRS):** It is a role-based Management Information System (MIS) that captures details of the AGs that are taking benefits under this scheme.
  - **Kishore Health Card:** To record the information about the weight, height, Body Mass Index (BMI) of AGs along with other services provided under the scheme. These health cards for AGs are maintained at the AWCs.

## KIRAN Scheme

### Why in News

The **Knowledge Involvement in Research Advancement through Nurturing (KIRAN) Scheme** is one of the several pioneering initiatives started by the **Department of Science and Technology (DST)** for promoting women in science.

### Key Points

- The Department of Science and Technology (DST) is implementing the **KIRAN Scheme** to provide various career opportunities to women scientists and technologists.
- It is primarily aimed to **bring gender parity in the Science & Technology sector** by inducting more women talent in the research & development domain through various programmes.
- It also provides **fellowship support ranging from Rs 25000 to 55000 to women in the age group 27 to 57 years** for continuing higher education in Science and Technology **after a break in career**.

Note:



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## National Biopharma Mission

The **National Biopharma Mission (NBM)** is an **industry-academia collaborative mission** for accelerating **biopharmaceutical development** in the country.

- It was **launched in 2017** at a total **cost of Rs 1500 crore** and is **50% co-funded by World Bank loan**.
- It is being **implemented by the Biotechnology Industry Research Assistance Council (BIRAC)**.
  - BIRAC is a Public Sector Enterprise, set up by the Department of Biotechnology (DBT).
- The **oversight to the mission** activities is provided by the **inter-ministerial Steering Committee chaired by the Secretary-DBT** (Ministry of Science & Technology).
- The **Technical Advisory Group (TAG)** chaired by an eminent scientist provides **scientific leadership** to the mission drawing upon global expertise.

- Under this Mission, the Government has launched **Innovate in India (i3)** programme to create an enabling ecosystem to promote entrepreneurship and indigenous manufacturing in the biopharma sector.
- It has a focus on following **four verticals**:
  - **Development of product leads for Vaccines, Biosimilars** and Medical Devices that are relevant to the public health need by focussing on managed partnerships.
  - Upgradation of shared **infrastructure** facilities and establishing them as centres of product discovery/ discovery validations and manufacturing.
  - Developing **human capital** by providing specific training.
  - Developing **technology transfer offices** to help enhance industry academia inter-linkages.



Note:

# Economic Scenario

## Highlights

- Defence Expenditure as a Part of GDP
- Long Term Reverse Repo Operation
- Competition Commission of India
- Serious Fraud Investigation Office
- Nidhi Companies
- Sahyadri Megha: New Paddy Variety

## Defence Expenditure as a Part of GDP

### Why in News

The Minister of State for Defence gave information about the **defence expenditure as a part of GDP** in Rajya Sabha.

### Key Points

- The **Defence Expenditure** is **increasing every year** in absolute terms, implying **higher spending**.
- However, **Defence Budget as a percentage of GDP** may appear to be **decreasing** due to the **increasing trend** in the **growth of GDP**.
- In Budget Expenditure (BE) 2019-20, the total Defence Budget (including Miscellaneous and Pensions) is 15.47% of total Central Government Expenditure.
- In BE 2019-20, the Capital Budget of the Ministry of Defence is approximately 31.97% of the total capital expenditure of the Central Government Expenditure.

### GDP

- GDP stands for "Gross Domestic Product" and represents the total monetary value of all final goods and services produced (and sold on the market) within a country during a period of time.

### Capital expenditure

- Capital expenditure is the money spent on the acquisition of assets like land, buildings, machinery, equipment, as well as investment in shares.

### Capital Budget

Capital Budget consists of:

- **Capital receipts**

- Capital receipts are loans raised by the government from the public (called market loans), borrowings by the government from the Reserve Bank and other parties through the sale of treasury bills, loans received from foreign bodies and governments, and recoveries of loans granted by the Central government to state and Union Territory governments and other parties.

### ➤ Capital payments

- Capital payments consist of capital expenditure on acquisition of assets like land, buildings, machinery, and equipment, as also investments in shares, loans and advances granted by the Central government to state and Union Territory governments, government companies, corporations and other parties.
- The Capital Budget also incorporates transactions in the Public Account.

## Long Term Reverse Repo Operation

### Why in news

According to the **Reserve Bank of India (RBI)**, the response to the **Long Term Reverse Repo Operation (LTROs)** has been highly encouraging.

### Key Points

- Long Term Reverse Repo Operation (LTRO) is a mechanism **to facilitate the transmission of monetary policy** actions and the flow of credit to the economy. This helps in **injecting liquidity into the banking system**.
- Funds through LTRO are provided at the repo rate. This means that banks can avail one year and three-year

Note:

loans at the same interest rate of one day repo. But usually, loans with higher maturity period (here like 1 year and 3 years) will have a higher interest rate compared to short term (repo) loans.

- According to the RBI, the LTRO scheme will be in addition to the existing **Liquidity Adjustment Facility (LAF)** and the **Marginal Standing Facility (MSF)** operations.
  - The LAF and MSF are the two sets of liquidity operations by the RBI with the LAF having a number of tools like repo, reverse repo, term repo etc.
- The central bank has been conducting LTROs for one and three year tenors of appropriate sizes for up to a total amount of ₹1,00,000 crore at the policy repo rate from the fortnight beginning 15<sup>th</sup> February 2020.
  - The central bank received total bids of ₹1.94 lakh crore, for the three-year repo, compared with the notified amount of ₹25,000 crores.
  - In yet another (LTROs) ₹48,856 crores worth of bids were conducted for an amount of ₹25,000 crores with a three-year tenor.
- LTROs are conducted on the **Core Banking Solution (e-KUBER) platform**. The operations would be conducted at a fixed rate.

#### e-Kuber

- e-Kuber is the **Core Banking Solution (CBS)** of **Reserve Bank of India** which was introduced in **2012**.
  - CBS can be defined as a solution that enables banks to offer a multitude of customer-centric services on a 24×7 basis from a single location, supporting retail as well as corporate banking activities.
  - The centralisation thus makes a “one-stop” shop for financial services a reality. Using CBS, customers can access their accounts from any branch, anywhere, irrespective of where they have physically opened their accounts.
  - Almost all branches of commercial banks, including the Regional Rural Banks (RRBs), are brought into the core-banking fold.
- The e-Kuber system can be **accessed either through INFINET or Internet**.
  - The INFINET is a Closed User Group Network for the exclusive use of member banks and financial institutions and is the communication backbone for the National Payments System.

- The minimum bid amount would be Rs 1 crore and multiples thereof. There will be no restriction on the maximum amount of bidding by individual bidders.

#### Benefits of the LTROs

- **Enhance Liquidity:** It will enhance liquidity in the banking system by ₹1 lakh crore.
- **Bring down the cost of funds for banks:** The introduction of LTRO will bring down the cost of funds for banks without effectively cutting deposit rates. This decision is likely to make reverse repo rate as the operative policy rate over a point of time.
- **Boost Investment:** It is a measure that is expected to bring down short-term rates and also boost investment in corporate bonds.
- **Ensure banks have durable liquidity:** These efforts are being carried forward with a view to assuring banks about the availability of durable liquidity at a reasonable cost relative to prevailing market conditions.
- **Ensure credit flow to productive sectors:** This should encourage banks to undertake maturity transformation smoothly and seamlessly so as to augment credit flows to productive sectors.

## Competition Commission of India

#### Why in News

The **Competition Commission of India (CCI)** organised the **Fifth National Conference on Economics of Competition Law** at the India Habitat Centre, New Delhi.

#### Competition Commission of India

- Competition Commission of India is a **statutory body** responsible for enforcing the objectives of the **Competition Act, 2002**.
- CCI has been established by the Central Government with effect from 14<sup>th</sup> October 2003.
- **Composition:** A Chairperson and 6 Members appointed by the Central Government.
- **Duty of the Commission:**
  - To eliminate practices having adverse effects on competition.
  - Promote and sustain competition.
  - Protect the interests of consumers.
  - Ensure freedom of trade in the markets of India.

Note:

- The Commission is also required to **give an opinion on competition issues** on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.

#### The Competition Act

- The Competition Act, 2002, as amended by the Competition (Amendment) Act, 2007, follows the philosophy of modern competition laws.
- The Act **prohibits** anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which causes or likely to cause an appreciable adverse effect on competition within India.

## Serious Fraud Investigation Office

- It is a multi-disciplinary organization under the **Ministry of Corporate Affairs**, consisting of experts in the field of accountancy, forensic auditing, law, information technology, investigation, company law, capital market and taxation for detecting and prosecuting or recommending for prosecution white-collar crimes/frauds.
- It is **headquartered in New Delhi**.
- The **Computer Forensic and Data Mining Laboratory (CFDML)** was set up in **2013** to provide support and service to the officers of SFIO in their investigations.
- Section 211 of the Companies Act, 2013 has accorded **statutory status** to the SFIO.
  - SFIO **has powers to arrest people** for the violation of the Company law.
- SFIO **can initiate an investigation** into the affairs of a company under the following circumstances:
  - On receipt of a report of the Registrar or inspector under section 208 (Report on Inspection made) of the Companies Act, 2013.
  - On intimation of a special resolution passed by a company that its affairs are required to be investigated.
  - In the public interest.
  - On request from any department of the central government or a state government.

## Nidhi Companies

### Why in News

The Central Government has **amended the provisions related to Nidhi companies** under the Companies Act, 2013 and the Rules.

- The amendments have been made to make the regulatory regime for Nidhi Companies more effective.
- This will accomplish the **objectives of transparency & investor friendliness** in the corporate environment of the country.

### Key Points

- Under **Nidhi Rules, 2014**, Nidhi is a company which has been incorporated as a Nidhi with the object of cultivating the habit of thrift and saving amongst its members, **receiving deposits from, and lending to, its members only**, for their mutual benefit.
- It is a company registered under the **Companies Act, 2013**.
- It works on the principle of mutual benefits that are regulated by the **Ministry of Corporate Affairs**.
- Nidhi Company is a **class of Non-Banking Financial Company (NBFC)** and **Reserve Bank of India (RBI)** has powers to issue directives for them related to their deposit acceptance activities.
  - However, since these Nidhis deal with their **shareholder-members only**, RBI has exempted them from the core provisions of the RBI Act and other directions applicable to NBFCs.

## Sahyadri Megha: New Paddy Variety

### Why in News

The **University of Agricultural and Horticultural Sciences (UAHS)**, Shivamogga (Karnataka), has developed a **new variety of paddy, 'Sahyadri Megha'**.

- The University has developed a new variety to **prevent the decline in the area under paddy cultivation**.

### Sahyadri Megha

- Sahyadri Megha is a red variety of paddy that is **resistant to blast disease and rich in nutrients**.

Note:



**Reasons Behind Developing the New Variety**

- Paddy growers are **switching over to commercial crops** like areca nut, ginger and rubber for lucrative returns.
  - The area under paddy that was around 1.5 lakh hectares in Shivamogga district in 1990, has come down to around 1.05 lakh hectares.
- The **'Jyothi' variety** which is widely cultivated in the command areas of the Bhadra and the Tunga reservoirs and in semi-arid areas in Sorab, Shikaripur, Hanagal and Sirsi taluks in Karnataka has become **vulnerable to blast disease** and other infestations.
- **Demand by customers in urban areas for red rice** which is rich in fibre and protein.
  - **The red variety** gets its rich colour from an antioxidant called **anthocyanins**, which are also found in deep purple or reddish fruits and vegetables. The compound is believed to have properties that can reduce inflammation, allergy, prevent risks of cancer and help in weight management.

- It was developed under the **hybridization breeding method** by cross-breeding the best among the **'Jyothi'** varieties with that of **'Akkalu'**, a disease-resistant and protein-rich paddy variety.
- The new variety will be notified under the **Indian Seed Act 1966** shortly after which it will become part of the seed chain.
- **Key Attributes**
  - The **protein content in it is 12.48%, higher** than the other red rice varieties grown.
  - The **yield per hectare** from 'Sahyadri Megha' is around 65 quintals, substantially higher than other red paddy varieties.
  - It is a **medium-term paddy** that can be grown when there is a delay in the onset of monsoon. It can be **harvested after 120 days of sowing**.

**Blast Disease**

- It is caused by **fungus Pyricularia grisea (P. oryzae)**.
- Also known as **rotten neck or rice fever**.
- First recorded in India during 1918.
- Expected grain loss: 70 to 80%.



Note:

# International Relations

## Highlights

- USA-Taliban Peace Deal
- Visit of UN Delegation on Palestine to India
- India as an Observer at IOC

## USA-Taliban Peace Deal

### Why in News

The United States has signed a historic deal with Taliban insurgents that could pave the way for ending the 18-year-war in Afghanistan.

- The deal was signed in **Doha (Qatar)** and thus termed as **Doha Agreement**.
- India has welcomed the signing of the U.S.-Taliban peace deal by accepting an invitation to attend the ceremony for the same in Doha.



### Background

- The war in Afghanistan **was launched by the US in 2001 after the 9/11 attack**. The US-led coalition aimed to overthrow the Taliban.
- However, **the war in Afghanistan got derailed** as the U.S. shifted focus and resources **towards Iraq from 2003 onwards**.
- The end objective of a stable and peaceful Afghanistan began to recede as the **Taliban launched their insurgency in 2005** after they had recovered, regrouped and refocused themselves from their sanctuary in Pakistan.
- Since then, the insurgency has gathered momentum and also exposed the U.S.'s policy weaknesses.
- After taking over in 2009, President Barack Obama authorised **a surge in U.S. troop presence with the objective to gain a decisive victory over the insurgency**. He simultaneously announced the drawdown of forces would commence in 2011, and

by 2014 the Afghan security forces would take charge of all combat operations.

- However, this only encouraged the Taliban insurgency and exposed the shortcomings of the Afghan army and the police forces, in terms of numbers, training and equipment to deal with the post-2014 situation.
- In 2014, the U.S. announced the withdrawal of the bulk of soldiers but a few thousand U.S. soldiers were to stay behind to **"advise, train and assist"** the Afghan security forces under Operation Resolute Support.
- In 2017, the U.S. President Donald Trump laid out a strategy for "Afghanistan and South Asia".
- His policy was different from those of his predecessors as it stated that American involvement in Afghanistan was **"not for nation-building" but was limited to "killing terrorists"**.
- He called this policy **"Principled Realism"** – with a shift from a time-based approach to one based on conditions. This policy was based on two pillars:
  - **Military Involvement:** The additional troops which would serve two roles: counterterrorism missions and training the Afghan forces.
  - **Political Involvement:** A negotiated political settlement with the Taliban, if the situation moves in that direction.
- Since October 2018, Taliban representatives and US officials have been meeting to chalk out a peace treaty.

### Key Elements of the Deal

- The agreement set out a course for the **next 14 months**.
- **Comprehensive Ceasefire between the Afghan Government and the Taliban.**
- Timeline for the **withdrawal of all foreign forces from Afghanistan will be carried out**, provided the Taliban adhere to their security guarantees and ceasefire.

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- The prevention of the use of Afghanistan by any group or individual against the security of the United States and its allies.
- The facilitation of an **intra-Afghan dialogue**.
  - The participants of intra-Afghan negotiations will discuss the date and modalities of a permanent and comprehensive ceasefire, including agreement over the future political roadmap of Afghanistan.
- In turn, the Taliban has demanded the release of **5000 fighters from Afghan-run jails**.

### ***Peace Deal and the Possible Consequences***

- Taliban has **the ultimate goal of imposing Sharia in their respective regions**. This is in conflict with what the people in Afghanistan want.
- Afghanistan has its own **Constitution and people want to be governed as per the Constitution**. This will make any peace deal unsustainable.
- The Taliban will **hardly share power with the Afghan Government**. Thus, it is quite possible that even after the peace deal, the country will be back to civil war again.
- Then, the world will face **twin challenges in Afghanistan: ISIS and Taliban**.

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

- India has been always supportive of the inclusive peace process, specifically **Afghan-owned, Afghan-led and Afghan-controlled**.
- The participation of the Afghan government's delegation during the **Doha agreement as well as the upcoming intra-Afghan peace negotiations** would be following the path desired by India.
- The deal has reiterated India's commitment to Afghanistan's pursuit of **"sustainable peace and reconciliation"**.
- Thus, India has **accepted** the Doha Agreement (2020).

### ***Possible Issues for India***

- **Security of India:**
  - The deal mentions about prevention of the use of Afghanistan by any group against the security of the **United States and its allies**. However, it is **unclear whether India, which is not a U.S. ally**, is included in this clause, and whether Pakistan-backed groups that threaten India, would still operate in Afghanistan.

### ***Benefit for Pakistan:***

- The deal also promises to take Taliban leaders of the **UN Security Council's sanctions list**, which could considerably bring down the number of terrorists harboured by Pakistan. This might benefit Pakistan during the June 2020 FATF Plenary.

### ***Sidelining of Intra-Afghan Dialogue:***

- The U.S. has committed to clear five bases and withdrawal of troops and it intends to submit to the Taliban-led government. Thus, priority to future Taliban led government may sideline the **"Intra-Afghan" dialogue and India's support for the election process for leadership in Afghanistan**.

### ***One-sided Deal:***

- The deal is more burdened with the **Taliban demands**, while the actual terms of the 'peace deal' are yet to be negotiated between the Taliban and the Afghan side, facilitated by the U.S. and thus deal seems to be a one-sided deal.

### ***Way Forward***

- Achieving lasting peace in Afghanistan will require **patience and compromise** among all parties. And thus talking only with the Taliban is a **short-sighted policy**.
- To resolve conflict within Afghanistan, the battlefield needs to be isolated i.e. external support to the terrorist activities needs to be abandoned. Also, the countries need to keep their respective interests aside, to build peace in the region.
- The US needs to make its **policy vis-a-vis Afghanistan** clear.
- India and Central Asian Republics can help in establishing peace in the region.
- More militancy is witnessed in the region where the state fails to deliver. Thus, **administrative reforms within Afghanistan** are the need of the hour.

## **Visit of UN Delegation on Palestine to India**

### ***Why in News***

Recently, a **UN delegation on Palestine** visited New Delhi to seek India's political and diplomatic support for a peaceful resolution to the long-standing conflict between Israel and Palestine.

Note:

- The delegation of the **United Nations Committee on the Exercise of the Inalienable Rights of the Palestinian People (CEIRPP)** intends to **engage India in the settling of the question of Palestine**.

### Key Points

- During the visit of the UN delegation on Palestine, **India has reiterated its stand and supported the Two-State solution** for the **Israel-Palestine issue**.
- The visit aimed to **enhance the political and diplomatic support of India for a peaceful solution to the Israel-Palestine conflict** and engaging Indian counterparts on synergies in capacity building for staff and institutions of Palestine.
- The delegation intends to involve countries like India as it **shares good relations with both Israel and Palestine**, and are **also attached to multilateral principles**, to play a bigger role in the resolution of the issue.

### Two-State Solution

- The “two-state solution” is based on a **UN resolution of 1947** which proposed two states- one would be a state where Zionist Jews constituted a majority and the other where the Palestinian Arabs would be a majority of the population. However, the idea was rejected by the Arabs.
- For decades, it has been held by the international community as the only realistic deal to end the Israeli-Palestinian conflict.
- India has consistently voted in favour of those resolutions that **promote the two-state solution** with a Palestinian claim to East Jerusalem.

### India's Stand on Israel-Palestine Issue

- In **June 2019**, India voted in **favour of a decision introduced by Israel** in the **UN Economic and Social Council (ECOSOC)** that objected to granting consultative status to a Palestinian non-governmental organization.
- In **June 2018**, India had **voted in favour of Palestine on the UN General Assembly**



(UNGA) resolution to investigate an indiscriminate force usage by Israeli forces against Palestinian civilians.

- As a part of **Link West Policy**, India has **de-hyphenated its relationship with Israel and Palestine in 2018** to treat both the countries mutually independent and exclusive.
- In **December 2017**, India had **criticised the United States** vote for recognising **Jerusalem as the Israeli capital** at the UNGA vote.
- In **2014**, India favoured **UNHRC's** resolution to probe Israel's human rights violations in Gaza. Despite supporting the probe, **India abstained from voting against Israel in UNHRC in 2015**.

### Committee on the Exercise of the Inalienable Rights of the Palestinian People

- It was **founded in 1975 by the United Nations General Assembly**.
- It aims to formulate a programme to enable the Palestinian people to exercise their right to self-determination, to national independence and sovereignty, and the right of Palestine refugees to return.

## India as an Observer at IOC

### Why in News

India has been accepted as an **observer of the Indian Ocean Commission (IOC)**.

- India's joining of the IOC as an observer has **strategic importance** as the Commission is an important regional institution in the **Western/African Indian Ocean**.

### Indian Ocean Commission

- It is an **intergovernmental body created in 1984 to defend the interests of the Western Indian Ocean islands**.
- It consists of **Madagascar, Comoros, La Réunion (French overseas territory), Mauritius and Seychelles**.
- The Commission has **five observers — India, China, European Union (EU), Malta and International Organisation of La Francophonie (OIF)**.
  - OIF is a 54 french speaking nations collective.



Note:

### **Significance of an Observer Status of India**

#### ➤ Engagement with the Western Indian Ocean:

- It will facilitate **collective engagement with the islands** in the Western Indian Ocean that are becoming strategically significant.
- Given China's growing presence in the region, **India will be able to increase its naval presence** and gain support for its maritime projects across the **Indo-Pacific**.
- The **Western Indian Ocean (WIO)** is also a strategic location of the **Indian Ocean linking the Southeastern coast of Africa to the wider Indian Ocean and beyond**.

#### ➤ Opportunity in the Mozambique Channel:

- The IOC islands are situated around one of the key **chokepoints** in the **Indian Ocean – the Mozambique Channel**.
  - The Mozambique Channel is an arm of the Indian Ocean located between the African countries of Madagascar and Mozambique.

- The Mozambique Channel **lost its significance** post the **opening of the Suez Canal**, but the **recent hostilities near the Strait of Hormuz** brought the channel back into focus as the original route for bigger commercial vessels (especially for oil tankers).
- **Potential of natural gas reserves in the Mozambique Channel** further increases the significance of the region.

#### ➤ Cooperation with France:

- It will also help to boost **cooperation with France** that has a strong presence in the western Indian ocean.

#### ➤ SAGAR Policy:

- It will help to extend **India's SAGAR (Security and Growth for all in the Region) policy** in the region.
  - SAGAR is an articulation of India's vision for the Indian Ocean which aims for enhancement of capacities to safeguard land and maritime territories & interests; deepening economic and security cooperation in the littoral; action to deal with natural disasters and maritime threats like piracy, terrorism.



Note:



# Science and Technology

## Highlights

- Covid-19
- MAC Binding
- Fuel Cell Technology for Disaster Management
- National Supercomputing Mission
- Qubit
- ICONSAT 2020
- Indian National Centre for Ocean Information Services
- Methanotrophic Bacteria for Methane Mitigation
- Nuclear Power Plants in India
- Indigenously Developed Flow Diverters Stents
- Speeding up Generation of RBCs in the Lab

## Covid-19

- **Coronaviruses** are a specific family of viruses, causing illness ranging from **common cold** to **respiratory and intestinal diseases**.
  - 'Corona' is a **Latin word** which means '**Crown**'. It is named so, because of the presence of **crown-like spikes** on its surface.
  - Under an electron microscope, the image of the virus looks like a solar corona.
- It is an **RNA (RiboNucleic Acid) virus** because of which it **mutates at a faster rate** as RNA mutation rate is higher than the DNA (deoxyribonucleic acid) mutation rate.
- They are **zoonotic, meaning they are transmitted between animals and people**.
- Human **coronaviruses** were first identified in the mid-1960s. Till date scientists have identified six coronaviruses that can infect humans.
- The two coronaviruses that have been known to frequently cause severe symptoms are:
  - **Severe Acute Respiratory Syndrome (SARS) coronavirus.**
  - **Middle East Respiratory Syndrome (MERS) coronavirus.**

### MERS

- Middle East respiratory syndrome (MERS) is a viral respiratory disease caused by a novel coronavirus MERS-CoV that was first identified in Saudi Arabia in 2012.

- Typical MERS symptoms include fever, cough and shortness of breath. Pneumonia is common, but not always present.
- Approximately 35% of reported patients with MERS-CoV infection have died.

### SARS

- SARS coronavirus (SARS-CoV) virus was identified in 2003. It first infected humans in the Guangdong province of southern China in 2002.
- Transmission of SARS-CoV is primarily from person to person.
- Symptoms are influenza-like and include fever, malaise, myalgia, headache, diarrhoea, and shivering (rigors).

- The virus can affect humans as well as **mammals including pigs, cattle, cats, dogs, martens, camels, hedgehogs and some birds**.
- Coronavirus disease (**Covid-19**) is a new strain that was discovered in 2019 and **has not been previously identified in humans**.

### Origin of Covid-19

- According to Chinese reports, it is expected to have come from a **seafood market in Wuhan**, where the wildlife is illegally traded.
  - It is expected to have been transmitted from illegally-trafficked **pangolins**. Also, bats or snakes are also pointed out as the source of the virus by the scientists.
- Even the WHO highlights the **animal source** as the primary source of the outbreak.

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## Transmission, Symptoms and Prevention

### Transmission

- The virus enters the body through the **respiratory tract** (that's why a respiratory virus) and enters the **circulatory system**. It multiplies there, leading to **Acute Respiratory Distress Syndrome** (ARDS – a disease in which the lung loses its capacity to expand further).
- It is primarily transmitted:
  - Through **secreted fluids** (during coughing or sneezing) from the respiratory system,
  - By **touching** the hands of the **infected person**,
  - **Contacting** with a **surface or object that has virus** on it and then touching it with one's nose, eyes or mouth,
  - Rarely by **contact with feces**.

### Symptoms

- Common signs of infection include respiratory symptoms, **fever, cough, shortness of breath** and breathing difficulties.
- In more severe cases, the infection can cause **pneumonia**, severe acute respiratory syndrome, **kidney failure** and even **death**.

### Prevention

- Regular handwashing.
- Covering mouth and nose when coughing and sneezing.
- Avoiding close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing, etc.
- Currently, there is **no vaccine** for it. Developing a new vaccine to contain its spread will require a few more months.

## Impact of Covid-19 Outbreak

### Impact on the Global Economy

- **Sectors Affected**
  - **Travel & Tourism:** It is the **biggest sector** hit by the Coronavirus. Many countries have stopped their airline services to China. **Shipping and freight & container services** have also been affected.
  - **Industrial:** Many brands like Apple, Starbucks, etc. have shut down their plants in China. Around 50% of industries have shut down in Wuhan.
    - Indian **pharmaceuticals**, Bangladesh's **garment sector** (approx. 85%), and global **automobile and electronics** industries are dependent

upon the raw material that is imported from China (China exports commodities worth about \$2.5 trillion).

- **Education:** Out of the top 10 universities in China, 2 of them are located in Wuhan. Because of the Covid-19 outbreak, many Indian students studying there have returned to India.
- **Global Growth**
  - Due to the outbreak, it is **expected** that China's growth rate will **come down** by 1% and global growth by 0.3%.
  - **Crude Oil:** However, globally the Crude oil prices have come down in the recent time. And after the Coronavirus disruptive impact on global growth, there would not be much price rise.
  - **Belt & Road Initiative:** Due to dependency on physical transportation of steel, cement, etc., BRI's completion duration is expected to increase which will consequently affect the linked countries.
  - **ASEAN:** ASEAN is closely connected with China in the value chain because of which the ASEAN countries' growth will also get affected.

### Impact on Indian Economy

- **GDP Growth Rate**
  - The **Organisation for Economic Co-operation and Development (OECD)** has slashed India's growth forecast for 2020-21 by 110 basis points (bps) to 5.1%, warning that the impact of the Covid-19 outbreak on business confidence, financial markets and the travel sector, including disruption to supply chains, could shave 50 bps off global growth in 2020.
- **Pharmaceuticals:** Given the pharmaceutical industry's deep linkages to China, the supply chain of raw materials of drugs has taken a hit.
  - Active Pharmaceutical Ingredients (APIs), also called bulk drugs, are significant ingredients in the manufacture of drugs. The Hubei province of China, the epicentre of the coronavirus, is the hub of the API manufacturing industry.
  - India is heavily import-dependent for APIs from China.
- **Automobile Industry**
  - China is one of the leading suppliers of auto components in India, accounting for 27% of the total imports.

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- The coronavirus is expected to have an impact on the Indian automotive industry and therefore also on the automobile component and forging industries, which had already reduced their production rate due to the market conditions and on account of the impending change over to BS-VI emission norms from BS-IV from April 2020.
- **Stock Market**
  - Stock markets in India crashed on 9<sup>th</sup> March, 2020 as **Sensex** and **Nifty** indices saw their biggest ever fall in absolute terms.
  - The Sensex dropped 1,942 points or 5.17% to 35,635 and the Nifty dropped 538 points to 10,451, wiping out as much as Rs 6.8 lakh crore of investor wealth.
- **Currency**
  - The month of March is typically good for the Indian currency as remittances, from both overseas citizens and companies, tend to boost the exchange rate.
  - In the past decade, the rupee has appreciated seven times against the dollar in March. But March 2020 could be hard on the exchange rate and the rupee's sharp drop to more than Rs 75 per dollar. One of the reasons is an increase in the number of reported cases of coronavirus in India.
- **Cocoon production in Karnataka** has picked up to meet the growing demand for indigenous silk.
  - Silk imports from China have been badly hit on account of **COVID-19**.

#### Impact on India's International Relations

- The Indian Navy has postponed its multi-nation mega naval exercise 'MILAN' due to continuing spread of the coronavirus.
- India's Prime Minister visit to Bangladesh was cancelled due to coronavirus cases in Bangladesh.
- Recently, the **South Asian Association for Regional Cooperation (SAARC)** conference on **COVID-19** was held through video conference.
  - India has proposed to create a **COVID-19 Emergency Fund** which could be based on a **voluntary contribution** from all SAARC members.
  - Further, **\$10 million** has been extended by India as a contribution to the fund.
  - The fund can be used to meet the **cost of immediate actions** by any member and will be coordinated through foreign secretaries and embassies of the member countries.

#### Challenges Faced by India

- **Large Population:** India is highly vulnerable due to the **large population constantly travelling and working** in urban agglomerations like Delhi-NCR, Mumbai.
- **Poor Public Hygiene:** Public hygiene in India is poor despite the "Swachh Bharat (Clean India)" movements.
  - As many people spit and sneeze openly on the road.
  - Also, mobile phones, or keyboards, a virtual extension of hands are some of the **dirtiest reservoirs of viruses**.
- **Unknown Incubation Period:** The incubation period (interval between being infected and showing symptoms) is not very accurate. Hence, it can't be defined how long people should be quarantined.
  - Covid-19 usually follows what is known as a **biphasic or dual-phase infection**.
  - It means the virus persists and causes a different set of symptoms than observed in the initial bout. Also, sometimes, the recovered person can relapse.
- **Super Spreader Disease:** Currently, the cases and clusters in India are simple spreaders which means an infected person with normal infectivity. But Covid 19 can also have a "**super spreader**", which means an infected person with high infectivity who can infect hundreds in no time.
- **Rumours on Social Media:** As we grapple with the global Covid 19 anxiety and fear, unfortunately, people tend to rely on **social media platforms** where rumours spread faster than the virus.
- The **United Nations Conference on Trade and Development (UNCTAD)**, said the virus outbreak could cost the global economy up to \$2-trillion this year and that the pandemic could cause a recession in some countries causing global economic growth to clock in below 2.5%.
  - The Indian government is facing the twin challenge of containing the virus when the economy is already in the slowdown.

#### Steps to be Taken by India

- The public health response to such outbreaks comprises three phases: The containment phase, delay phase and mitigation phase.
  - **The containment phase:** The aim is to detect and isolate cases and trace people who have been in contact with those infected. In this regard, there is

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an urgent need to clamp down on all major cities and towns, in all aspects, from travel to mass gatherings to schools, colleges and workplaces.

- **The delay phase:** Delay is largely engineered through **social distancing strategies** and personal protection measures. These are the main tools to prevent accelerated transmission when no vaccine is available. This includes school closures, encouraging more home working and avoiding contacts like handshakes.
- **The mitigation phase:** The focus will be on providing optimal care for people who need hospitalisation and ensuring support for those who become infected but do not require hospital treatment. It also involves plans to minimise the impact of the disease on society, public services and the economy.
- **Immediate steps that should be taken**
  - The **National Crisis Management Committee (NCMC)** which was designed to be set up in situations of large natural calamities, should be leveraged. Also, NCMC should coordinate across ministries and departments.
  - A **dedicated web portal** should be set up, which includes a dashboard with key indicators, current case definitions, guidelines, risk communication materials and micro plans.
  - Strict norms to be followed for people who are **quarantined**.
  - The **response plan** should be able to maintain ongoing regular health programmes while at the same time devoting adequate resources to the response.
  - It is essential that at least two negative tests are obtained before a person is certified as being uninfected.
  - India must also **rapidly increase its operational labs for rapid diagnosis**, equip hospitals, and train medical staff for isolation and treatment of those infected.
- **Addressing fears at the individual level.**
  - There is a need for good reporting standards, the media should abide by the ethical framework of journalism.
  - The ICMR has advised the government to go into partial shutdown for implementing partial lockdown (restricting the travel from the countries that have reported the major number of infections).

- In order to deal with future epidemics, there is a need for a coordinated strategy between union and state governments.
  - In this pursuit, the subject of 'health' can be transferred to the Concurrent List of the Indian Constitution from the State List.
- **Large-scale behaviour change** will be the cornerstone of a successful response. It requires proper risk communication and adoption of an integrated approach towards **WASH (water, sanitation and hygiene), Cough hygiene (proposed by WHO) and community health programs**.

### **Response to COVID-19**

#### **Global Response**

- The COVID-19 outbreak was declared a **Pandemic** by the World Health Organization (WHO) on 30<sup>th</sup> January 2020.
  - According to the WHO, a **pandemic** is declared when a new disease for which people do not have immunity spreads around the world beyond expectations.
- According to recommendations by the WHO, the diagnosis of COVID-19 must be confirmed by the Real Time- Polymerase Chain Reaction (PCRT-PCR) or gene sequencing for respiratory or blood specimens, as the key indicator for hospitalisation.
- \$15 million dollars has been released from the UN's Central Emergency Fund to help fund global efforts to contain the spread of the COVID-19 coronavirus, particularly vulnerable countries with weak health care systems.
- Microsoft Bing team has launched a web portal for tracking COVID-19 infections worldwide.
- Google is working on COVID-19-related portal for US citizens. Google's website is being built by **Verily**, a subsidiary of Alphabet focused on healthcare services.
- Vaccines are being developed.

#### **Indian Response**

- The Indian government arranged for the evacuation of 366 Indian citizens from Wuhan in a special Air India flight. The passengers were placed under quarantine for a period of 14 days.
- The Central government has introduced travel restrictions and suspended visas from affected countries.

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- A detailed containment plan has been shared with states. States have been asked to identify possible isolation areas in hospitals that can accommodate larger numbers.
- The Central government advised people to approach the government helpline numbers regarding the doubts related to symptoms of the deadly disease. The situation is being monitored at the highest level.
- PCR Test: If PCR test is positive, the sample is sent to the National Institute of Virology in Pune, which is the only government laboratory currently doing genome sequencing, for final confirmation.
- The Indian Council of Medical Research (ICMR) has announced that it would start testing influenza patients **without any travel history or contact with COVID-19 for signs of community transmission.**
- Schools and colleges have been closed.
- The Central government has asked the States and Union Territories to invoke provisions of Section 2 of the Epidemic Diseases Act, 1897.
  - This law aims to provide for the better prevention of the spread of dangerous epidemic diseases.
- The central government has notified that **masks (2 ply and 3 ply surgical masks, N95 masks) and hand sanitizers as essential commodities** up to June 30, 2020, under the **Essential Commodities Act, 1955 (EC Act).**
  - The invocation of the EC Act aims to ensure that these products, key for preventing the spread of Covid-19 infection, are available to people at the **right price and of the right quality.**
- The annual **Chaitra Jatra festival** scheduled to be held on 17<sup>th</sup> March, 2020 at **Odisha's Tara Tarini hill shrine** has been **cancelled** as a precautionary measure against **COVID-19** infection.
  - The festival is **held on each Tuesday in the month of Chaitra**, which falls in March-April as per the English calendar.

## MAC Binding

### Why in News

- The authorities have **removed a ban on social media and restored full internet access** in Kashmir on 4<sup>th</sup> March 2020.

- Among various conditions, Internet connectivity will be made available **"with mac-binding"**.

### Key Points

- Every device has a **Media Access Control (MAC) address**, a **hardware identification number** that is unique to it. While accessing the Internet, every device is assigned an Internet Protocol (IP) address.
  - This forces a particular device to access the internet from a specific IP address.
  - If either the MAC (Media Access Control) address or the IP address changes, the device will not be able to access the internet.
  - MAC-binding will also enable authorities to trace a device on the basis of its online activity.
- Mobile internet services too will be available **only on postpaid connections**. Prepaid connections will not have access to the internet "unless verified as per the norms applicable to postpaid connections," the order said.
- Further, internet speed is **restricted to second-generation 2G networks**, while the high-speed 4G networks will remain blocked.

#### Media Access Control (MAC) address

- The address that uniquely defines a **hardware interface is called MAC (Media Access Control) Address.**
- It identifies the physical address of a computer on the internet.
- It is **48 bits (6 bytes) hexadecimal address.**
- MAC Address of each computer on a network is unique.

#### Internet Protocol (IP) address

- The address provided to a connection in a network is called IP (Internet Protocol) address.
- It identifies the connection of a computer on the internet.
- **IPv4 is a 32-bit (4 bytes) address**, and IPv6 is a 128-bits (16 bytes) address.
- IP address does not uniquely identify a device on a network but, it specifies a particular connection in a network.
- IP address changes each time a device is connected to the network as it is dynamically allocated to the device when it participates in the network.

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## Fuel Cell Technology for Disaster Management

### Why in News

The **International Advanced Research for Powder Metallurgy & New Materials (ARCI)**, Hyderabad has developed Polymer Electrolyte Membrane Fuel Cells (PEMFC).

- ARCI is an **autonomous** Research and Development (R&D) Centre of the Department of Science and Technology (DST).

#### Polymer Electrolyte Membrane Fuel Cells

- PEMFC convert the **chemical energy stored in hydrogen fuel directly and efficiently to electrical energy with water as the only byproduct** without the need for grid power as required by conventional battery backup systems.
- **Potential:** To reduce energy use, pollutant emissions and dependence on fossil fuels and providing sustainable electricity.
- **Advantage:** Operational capability at low-temperatures with applications in decentralised power generation systems.

### Key Points

- The ARCI has developed in-house PEMFC systems in the power range of **1 to 20 kiloWatt (kW)** at its Centre for Fuel Cell Technology, Chennai.
- ARCI is planning to set up a **PEMFC system at Tamil Nadu State Emergency Operation Centre (TN SEOC)** as a disaster management measure.
  - Tamil Nadu is generally affected by five to six cyclones every year, of which two to three are severe.
- In general, **Emergency Operation Centres (EOC)** backed with a **10 kW system** along with fuel cell stack, air moving subsystems, power control devices and control and monitoring system is being planned as a natural disaster management measure.
  - EOCs have been set up in the states as per the National disaster Management Guidelines.
  - An EOC is the hub to coordinate various activities during emergencies. The basic functions of the EOC includes collection and dissemination of early warnings on disaster, ensuring administrative and

community preparedness and coordinating with all emergency support functions.

- Fuel cell systems in EOCs offer a potential benefit in terms of providing sustainable electricity.

## National Supercomputing Mission

### Why in News

Recently, a **Right to Information (RTI)** reply has revealed that India has produced **just three supercomputers since 2015** under the **National Supercomputing Mission (NSM)**.

#### National Supercomputing Mission

- It was announced in **2015**, with an aim to connect national academic and R&D institutions with a grid of more than **70 high-performance computing facilities at an estimated cost of ₹4,500 crores** over the **period of seven years**.
- It supports the government's vision of '**Digital India**' and '**Make in India**' initiatives.
- The mission will be **implemented by the Department of Science and Technology** (Ministry of Science and Technology) and **Ministry of Electronics and Information Technology** (MeitY), through the **Centre for Development of Advanced Computing (C-DAC), Pune** and Indian Institute of Science (IISc), Bengaluru.
- It is also an effort to improve the number of supercomputers owned by India.
  - These supercomputers will also be networked on the **National Supercomputing grid** over the **National Knowledge Network (NKN)**. The NKN connects academic institutions and R&D labs over a high-speed network.
- Under NSM, the long-term plan is to build a strong base of 20,000 skilled persons over the next five years who will be equipped to handle the complexities of supercomputers.

### Key Points

- **Progress of NSM:**
  - NSM's first supercomputer named **Param Shivay** has been installed in IIT-BHU, Varanasi, in 2019.
  - It has 837 TeraFlop High-Performance Computing (HPC) capacity.

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- The **second supercomputer** with a capacity of **1.66 PetaFlop** has been installed at IIT-Kharagpur.
- The **third system, Param Brahma**, has been installed at IISER-Pune, which has a capacity of 797 TeraFlop.
- **Incomplete Utilization of Fund allocated to NSM:**
  - The **NSM** envisaged setting up a network of **70 high-performance computing** facilities in the country but **skewed funding** for the mission **during the initial years slowed down the overall pace** of building supercomputers.
  - **Only 16.67 % of the total budget of Rs 4,500 crore**, has been utilised during the **last four-and-a-half years** for execution of the mission.
- **Global Scenario:**
  - Globally, **China has the maximum number of supercomputers** and maintains the top position in the world, followed by the US, Japan, France, Germany, the Netherlands, Ireland and the United Kingdom.

**Note:**

- **Teraflops:** It is a unit of computing speed equal to one million million ( $10^{12}$ ) floating-point operations per second (FLOPS).
- **Petaflops:** It is a unit of computing speed equal to one thousand million million ( $10^{15}$ ) floating-point operations per second (FLOPS).

## **Qubit**

A quantum bit, or qubit, is the **basic unit of information for a quantum computer**, analogous to a bit in ordinary machines.

- But unlike a bit, which can have the value 0 or 1, a qubit can take on an infinite number of values.

### **Quantum computer**

- A quantum computer is **any device for computation** that makes direct use of distinctively quantum mechanical phenomena, such as superposition and entanglement, to perform operations on data.
- **Superposition** means that each qubit can represent both a '1' and a '0' at the same time.
- **Quantum entanglement** occurs when two particles become inextricably linked, and whatever happens to one immediately affects the other, regardless of how far apart they are.

## **ICONSAT 2020**

### **Why in News**

The **International Conference on Nano Science and Nano Technology (ICONSAT) 2020** was organized in March 2020 at **Kolkata (West Bengal)**.

- ICONSAT is the series of **biennial** international conferences held in India **under the aegis of Nano Mission, Department of Science and Technology (DST)**.

### **Key Points**

- The conference intends to bring out **cutting-edge developments** in the domain of physical, chemical, materials as well as biological sciences with the help of nanotechnology.
- The event emphasised on **5Ms – Mechanical, Material, Machines, Manufacturing and Manpower** and integration of these 5 Ms with nano-science and technology.
- It also aims to **integrate nanotechnology with sustainable development and new technology** (machine learning, artificial intelligence and so on).
- It emphasized the need to **create a network of experts in nano-science and to collaborate the knowledge across sectors** like energy, agriculture, transport, health and so on.
- It also aims to provide a **potential platform for young researchers and students from within the country and abroad** to keep pace with the latest development in the emerging areas of Nano Science and Technology.

### **Nano Mission**

- The Government of India launched the Nano Mission in **2007** as an "**umbrella capacity-building programme**".
- It is being implemented by the **Department of Science and Technology (DST)** under the Ministry of Science and Technology.
- The **objectives of the mission** are:
  - Basic research promotion.
  - Infrastructure development.
  - Nano applications and technology development.
  - Human Resource development.
  - International collaborations.

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- As a result of the efforts led by the Nano Mission, today, India is amongst the **top five nations in the world** in terms of **scientific publications in nanoscience and technology** (moving from 4<sup>th</sup> to the 3<sup>rd</sup> position).
- The Nano Mission has established national dialogues to promote R&D in the development of standards for nanotechnology and for laying down a **National Regulatory Framework Road-Map for Nanotechnology (NRFR-Nanotech)**.

## Indian National Centre for Ocean Information Services

### Why in News

Recently the **Indian National Centre for Ocean Information Services (INCOIS)**, Hyderabad celebrated **International Women's Day (March 8)**.

### Key Points

- INCOIS is an **autonomous organization under the Ministry of Earth Sciences (MoES)**.
- It is located in Hyderabad & was established in 1999.
- It is a **unit of the Earth System Science Organization (ESSO)**, New Delhi.

### Earth System Science Organization

- The ESSO operates as an **executive arm of the Ministry of Earth Sciences (MoES)** for its policies and programmes.
- **Aim:** To develop and improve capability to forecast, weather, climate and hazard related phenomena for social, economic and environmental benefits including addressing aspects relating to climate change science, and climate services.
- It is also responsible for the **development of technology towards the exploration and exploitation of marine resources**.
- It has **four major branches of earth sciences**.
  - Ocean Science & Technology
  - Atmospheric and Climate Science
  - Geoscience and Technology
  - Polar Science and Cryosphere
- It is **mandated** to provide the best possible ocean information and advisory services to society, industry,

government agencies and the scientific community through sustained ocean observations and constant improvement through systematic and focused research.

## Methanotrophic Bacteria for Methane Mitigation

### Why in News

Recently, scientists at the Agharkar Research Institute (ARI), Pune have enriched, isolated and cultivated 45 different strains of **methanotrophs (methane-utilising bacteria)** and created the first indigenous methanotroph culture.

- **ARI** is an autonomous institute under the **Department of Science & Technology**.

### Key Points

- Scientists used some of the isolated strains of methanotrophs as bio-inoculants in rice plants.
- They found that there was a **decrease in methane emissions** in inoculated plants with a positive or neutral effect on the growth of the rice. This finding could lead to the development of microbial inoculants for methane mitigation in rice.
- **Methanotrophs metabolise and convert methane into carbon-di-oxide** enabling them to reduce methane emissions from rice plants.
  - In rice fields, methanotrophs are active near the roots or soil-water interfaces.
  - Rice fields are human-made wetlands and are waterlogged for a considerable period.
    - **Anaerobic degradation** of organic matter results in the generation of methane.
    - **Rice fields** contribute to nearly **10% of global methane emissions**.

### Inoculation

- In microbiology, inoculation is defined as **introducing microorganisms into a culture** where they can **grow** and **reproduce**. More generally, it can also be defined as introducing a certain substance into another substance.
- **Bio-inoculants** are living organisms containing strains of specific bacteria, fungi, or algae. These are also known as microbial inoculants.

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### Significance

- **Methanotrophs** can effectively **reduce the emission of methane**, which is the second most important **greenhouse gas** (GHG) and 26 times more potent as compared to carbon-di-oxide.
- Native methanotrophs isolated from rice fields can be excellent models to understand the effect of various factors on methane mitigation.
- Besides methane mitigation studies, methanotrophs can also be used in methane value addition (valorization) studies.
  - Bio-methane generated from waste can be used by the methanotrophs and can be converted to value-added products such as single-cell proteins, **biodiesel**, and so on.

## Nuclear Power Plants in India

### Why in News

Recently, the government provided details related to various nuclear power plants in the country.

- Presently, **India has 22 operating reactors**, with an installed capacity of 6780 MegaWatt electric (MWe). Among these eighteen reactors are **Pressurised Heavy Water Reactors (PHWRs)** and four are **Light Water Reactors (LWRs)**.
  - The **nuclear energy programme** in India was launched around the time of independence under the leadership of Homi J Bhabha.
- **Prototype Fast Breeder Reactor (PFBR) is being implemented by the Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI)**, a wholly-owned Enterprise of Government of India under the administrative control of the Department of Atomic Energy (DAE).

### Pressurized Heavy Water Reactor

- PHWR is a nuclear power reactor, commonly using **unenriched natural uranium** as its fuel. It **uses heavy water (Deuterium oxide D<sub>2</sub>O)** as its coolant and moderator.
- While heavy water is significantly more expensive than ordinary light water, it yields a greatly enhanced neutron economy, allowing the reactor to operate without fuel enrichment facilities.

### Light Water Reactor

- The light water reactor is a type of **thermal – neutron reactor that utilizes normal water** as opposed to heavy water.
- It is fuelled by **Low Enriched Uranium**.
- It uses water as both a coolant method and a neutron moderator.
- It produces heat by controlled **nuclear fission**.

### Prototype Fast Breeder Reactor

- A breeder reactor is a nuclear reactor that **generates more fissile material than it consumes**. These are designed to extend the nuclear fuel supply for electric power generation.
- Breeder reactors achieve this because their neutron economy is high enough to create more fissile fuel than they use, by **irradiation of a fertile material**, such as **uranium-238** or **thorium-232** that is loaded into the reactor along with fissile fuel.
- **PFBR** is a 500 MWe fast breeder nuclear reactor presently **being constructed at the Madras Atomic Power Station in Kalpakkam (Tamil Nadu)**. It is **fuelled by Mixed Oxide (MOX) Fuel**.

#### Mixed Oxide (MOX) Fuel

- MOX fuel is manufactured from **plutonium recovered from used reactor fuel**, mixed with **depleted uranium**.
- Mixed oxide (MOX) fuel provides almost 5% of the new nuclear fuel used today.
- MOX fuel also provides a means of burning weapons-grade plutonium (from military sources) to produce electricity.

#### Depleted Uranium

- In order to produce fuel for certain types of nuclear reactors and nuclear weapons, uranium has to be "enriched" in the U-235 isotope, which is responsible for nuclear fission.
- During the enrichment process the fraction of U-235 is increased from its natural level (0.72% by mass) to between 2% and 94% by mass.
- The **by-product uranium mixture** (after the enriched uranium is removed) has reduced concentrations of U-235. This by-product of the enrichment process is known as **Depleted Uranium (DU)**.

Note:



### India's Nuclear Energy Programme

- The **main objectives** of the Indian Nuclear Energy programme are to provide safe and reliable electric power for the country's social and economic progress and to be self-reliant in all aspects of nuclear technology.
- Exploration of atomic minerals in India, undertaken since the early fifties, has indicated that **India has limited reserves of uranium** (natural uranium consists of mostly  $^{238}\text{U}$ , with 0.7 %  $^{235}\text{U}$ ), but **fairly abundant reserves of thorium** ( $^{232}\text{Th}$ ).
- Accordingly, India has adopted a **three stage strategy of nuclear power generation**:
  - **Stage 1 Pressurised Heavy Water Reactor (PHWR)**: Considering the growing energy demands and the necessity to increase the energy potential, a second line of **light water reactors** have been added to the current indigenous programme of Pressurised Heavy Water Reactors.
  - **Stage 2 Fast Breeder Reactor (FBR)**: India's second stage of nuclear power generation uses the  $\text{Pu-239}$  obtained from the first stage reactor operation, as the main fissile element of fuel core in fast breeder reactors (FBR). The Fast Breeder Programme is in the technology demonstration stage.
  - **Stage 3 Thorium based Reactor**: Thorium utilization is the long term objective of the Indian Nuclear Power Programme. The third phase of India's Nuclear Power Generation programme is breeder reactors based on Thorium- Uranium-233 cycle.

### Indigenously Developed Flow Diverters Stents

#### Why in News

The research team of Sree Chitra Thirunal Institute of Medical Science and Technology (SCTIMST), Thiruvananthapuram has developed an **intracranial flow diverter stent for the treatment of aneurysms of the blood vessels of the brain**.

- Currently, the flow diverter stents are **imported and are not manufactured in India**.
- The availability of indigenous technology will help to manufacture these stents at a **much lower price within the country**.



- SCTIMST is an **Institute of National Importance** under the **Department of Science and Technology**.

#### Key Points

- Flow diverter stents are deployed in the artery in the brain bearing the aneurysms to **divert blood flow away from the aneurysm**, thus reducing the chances of its rupture from the pressure of blood flow.
- The **weave shape of the designed stent** makes it **resistant to kinking or twisting** when it is placed in complex-shaped arteries.
- It is made up of **Nitinol**, a **superelastic alloy with shape memory** acquired from National AeroSpace Laboratories, Bengaluru (CSIR-NAL).
  - A shape-memory alloy is an alloy that can be deformed when cold but returns to its pre-deformed (remembered) shape when heated.

#### Nitinol

- Nitinol is a **nickel-titanium alloy** distinguished from other materials by its **shape memory and superelastic characteristics**.
- It was discovered while searching for materials that could be used in tools for dismantling magnetic mines.
- It is widely used in various kinds of industries but **majorly used in the medical industry due to its narrow temperature range**.

#### Brain Aneurysm

- Brain aneurysm is also known as **Intracranial aneurysm**.
- Intracranial aneurysm is a **localised ballooning, bulging or dilation of arteries** in the brain, caused by progressive weakening of the inner muscles of the wall of the blood vessels.
- Spontaneous rupture of the aneurysm can result in bleeding into the space around the brain **leading to paralysis, coma or death**.

### Speeding up Generation of RBCs in the Lab

#### Why in News

A team of Indian researchers have invented a process through which **generation of Red Blood Cells (RBCs) outside the body (in vitro) from Haematopoietic Stem Cells (HSCs) can be speeded up**.

Note:



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- The invented process would help to **fasten the process of transfusion of RBCs in life-saving treatments** for numerous conditions such as severe anaemia, transplant surgery, pregnancy-related complications, and blood-related cancers.

### Background

- The blood banks, particularly in developing countries, often face a **severe shortage of whole blood as well as components of blood** like red blood cells.
- Various groups have been able to produce RBCs in the laboratory from HSCs. However, the process takes a **long time, around 21 days**.
  - The **umbilical cord blood** contains special cells called hematopoietic stem cells that can be used to treat some types of diseases.
  - Hematopoietic stem cells **can mature into different types of blood cells** in the body.
- The resources required to grow cells in the laboratory over **such a long duration can be very expensive** for the generation of RBCs on a large scale for clinical purposes.

### Key Points

- The process of generation of RBCs in the laboratory from HSCs **can be speeded up** by adding a **very low concentration of a small protein molecule** called 'Transforming Growth Factor  $\beta 1$ ' (TGF- $\beta 1$ ), along with a **hormone** called 'Erythropoietin' (EPO).

- Usually, the **addition of only Erythropoietin (EPO)** to HSCs generates RBCs in **21 days**.
- Indian researchers have found that the addition of TGF- $\beta 1$  with EPO has **cut down the processing time by three days**.
- The physical appearance and the quality of the cells formed has revealed that the RBCs formed using this procedure are **normal**.

### Blood

- Blood is a **fluid connective tissue** that consists of plasma, blood cells and platelets.
- It helps to **circulate oxygen and nutrients** to various cells and tissues.
- The major types of blood cells include:
  - **Red Blood Cells**
    - These are also known as **Erythrocytes**.
    - RBCs contain the iron-rich protein called **haemoglobin** that gives blood its red colour.
    - RBCs are the most copious blood cells produced in bone marrow. Their main function is to transport oxygen from and to various tissues and organs.
  - **White Blood Cells**
    - These are also known as **Leucocytes** and are the **colourless** blood cells as it is **devoid of haemoglobin**.
    - It mainly contributes to **immunity and defence mechanisms**.



Note:

# Environment and Ecology

## Highlights

- Increased Recycling of E-waste in India
- Solar Charkha Mission
- Concentration of Black Carbon on Gangotri Glacier
- Water Crisis in the Himalayan Region
- CPCB Notifies Contaminated Sites
- White Giraffe
- Gir National Park
- Fishing Cat and Otters
- BEE – Star Rating Programme
- Whale Shark
- Red-Crowned Roofed Turtle
- World Wildlife Day
- Hubli-Ankola Railway Line Project

## Increased Recycling of E-waste in India

### Why in News

Recently, the government has informed that **E-waste recycling has doubled** in the country compared to 2017-18.

- The government has reported that the **recycling rate of 10% in 2017-18 has risen to 20% in 2018-19.**

### E-waste

- E-Waste is short for **Electronic-Waste**. It is the term used to describe old, end-of-life or discarded electronic appliances. It includes computers, mobiles, consumer electronics etc.
- It majorly includes electronic equipment, completely or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment and repair processes.

### Why should E-waste be managed properly?

- E-waste consists of toxic elements such as Lead, Mercury, Cadmium, Chromium, Polybrominated biphenyls and Polybrominated diphenyl.
- Non-Disposal and burning of e-waste can have serious implications on human health and can cause air, soil pollution and groundwater contamination.

### Key Points

- **Production of E-waste in India:**

- According to the **Global E-Waste Monitor 2017**, India generates about 2 million tonnes (MT) of E-waste **annually**.
- India ranks **fifth among E-waste producing countries** after the US, China, Japan, and Germany.
- However, the government has stated that the **E-waste produced in India is lower than estimates by international agencies.**

### ➤ Management of E-waste:

#### ○ Producers:

- The government has implemented the **E-waste (Management) Rules (2016)** which enforces the **Extended Producer Responsibility (EPR)**.
- Under EPR principle the producers have been made responsible to collect a certain percentage of E-waste generated from their goods once they have reached their **"end-of-life"**.

#### ○ State Governments:

- They have been entrusted with the responsibility for maintaining industrial space for e-waste dismantling and recycling facilities.
- They are also expected to establish measures for protecting the health and safety of workers engaged in the dismantling and recycling facilities for e-waste.

### ➤ Recycling of E-waste:

- Most of India's **e-waste is recycled by the informal sector and under hazardous conditions.**
- A report by the Union Environment Ministry in 2018 found that many of India's e-waste recyclers did not have the capacity to **handle a large quantity of waste.**

Note:

- **India's first e-waste clinic** for segregating, processing and disposal of waste from household and commercial units will soon be set-up in **Bhopal, Madhya Pradesh**.

#### E-Waste (Management) Rules, 2016

- The **Ministry of Environment, Forest and Climate Change** notified the E-Waste Management Rules, 2016 in supersession of the E-waste (Management & Handling) Rules, 2011.
- The new rules included **Compact Fluorescent Lamp (CFL)** and other mercury-containing lamps as well as other such equipment.
- For the first time, the rules brought the producers under **Extended Producer Responsibility (EPR)**, along with targets. Producers have been made responsible for the collection of E-waste and for its exchange.
- Various producers can have a separate **Producer Responsibility Organisation (PRO)** and ensure the collection of E-waste as well as its disposal in an environmentally sound manner.
- **Deposit Refund Scheme** has been introduced as an additional economic instrument wherein the producer charges an additional amount as a deposit at the time of sale of the electrical and electronic equipment and returns it to the consumer along with interest when the end-of-life electrical and electronic equipment is returned.
- The **role of State Governments** has been also introduced to ensure safety, health and skill development of the workers involved in dismantling and recycling operations.
- A **provision of penalty for violation of rules** has also been introduced.
- **Urban Local Bodies** (Municipal Committee/Council/ Corporation) has been assigned the duty to collect and channelize the **orphan products** to authorized dismantler or recycler.

## Solar Charkha Mission

### Why in News

Recently, the Minister for Micro, Small & Medium Enterprises gave information about the Solar Charkha Mission in Lok Sabha.

### Key Points

- The **Solar Charkha Mission** is an **enterprise driven scheme** and envisages setting up of '**Solar Charkha Clusters**' which will have 200 to 2042 beneficiaries (Spinners, Weavers, Stitchers and other skilled artisans).
- One cluster would involve a maximum subsidy of Rs. 9.60 crore provided in the form of Capital subsidy for individual and Special Purpose Vehicle (SPV), interest subvention for working capital and capacity building.
- These solar charkhas are to be operated using solar power which is a renewable energy source. It will help in the development of the Green Economy as it is an environment-friendly programme. It will also generate sustainable employment for the artisans.

### Background

- The Solar Charkha Mission is a **Ministry of Micro Small & Medium Enterprises (MSME)** initiative launched in June **2018**.
- A **pilot project** on Solar Charkha was implemented at **Khanwa village, Nawada District of Bihar** in 2016. Based on the success of the pilot project, the Government of India had accorded approval to set up 50 such clusters with a budget of Rs. 550 Crore for 2018-19 and 2019-20.
- The scheme is envisaged to **generate direct employment** nearly to **one lakh persons** in the approved clusters.

### Scheme Objectives

- To ensure inclusive growth by generation of employment, especially for women and youth, and sustainable development through solar charkha clusters in rural areas.
- To boost the rural economy and help in arresting migration from rural to urban areas.
- To leverage low-cost, innovative technologies and processes for sustenance.

## Concentration of Black Carbon on Gangotri Glacier

### Why in News

According to a research done by the **Wadia Institute of Himalayan Geology**, the **concentration of black carbon on Gangotri glacier has almost doubled in the past few years** primarily because of agricultural burning and forest fires.

Note:



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**Gangotri Glacier**

- It is the **largest glacier in Uttarakhand** and is one of the **sources of Ganges** (Bhagirathi).
- The Gangotri glacier originates at the northern slope of **Chaukhamba range** of peaks in **Garhwal Himalayas**.
- Gangotri is not a single valley glacier, but a **combination of several other glaciers**.

**Black Carbon**

- Black carbon is a kind of **aerosol**. An aerosol is a suspension of fine solid particles or liquid droplets in the air.
- Among aerosols (such as brown carbon, sulphates), Black Carbon (BC) has been recognized as the second most important anthropogenic agent for climate change and the primary marker to understand the adverse effects caused by air pollution.
- It gets emitted from gas and diesel engines, coal-fired power plants, and other sources that burn fossil fuel. It comprises a significant portion of **particulate matter or PM**, which is an air pollutant.
- Scientists have been monitoring black carbon through two weather stations on way to Gangotri glaciers - namely **Chirbasa station** at a height of 3,600 m, and **Bhojbasa** station at a height of 3,800 m - for the last few years.
- Wadia Institute of Himalayan Geology (WIHG) is an **autonomous institution under the Department of Science & Technology**. It is headquartered in Dehradun (Uttarakhand).

**Key Findings**

- **Seasonal Variation**
  - The concentration of black carbon increases in summer months due to varied factors. Scientists have found a range of black carbon up to 4.62 micrograms per cubic meter.
  - In the non-summer months, the concentration comes down to about 2 micrograms per cubic metre.
- **Reasons for Increase in Black Carbon Concentration in Summer Season**
  - The period from April to June shows a remarkable increase in black carbon concentration primarily due to direct and indirect activities related to **tourism**.
  - Also, forest fires contribute to increasing black carbon concentration. According to the Forest

Survey of India, the forest fire activity is generally reported in Uttarakhand from February to June, with a peak in fire incidences in May and June.

- Besides man-made, other reasons for forest fires in the state include lightning, the friction of falling rocks and monkeys accidentally throwing stones that create sparks leading to forest fires.
- Over 44,554 hectares of forest area has been damaged in forest fires in Uttarakhand since its formation in 2000.
- The lowest black carbon concentration has been recorded during August followed by December, likely due to the absence of tourist activities and forest fire incidences during these months.
- **Local Sources of Black Carbon**
  - Forest fires, domestic and commercial fuel wood burning, seasonal burning of crop residue and developmental activities.
  - Pollution from local, regional and global sources that accumulate over the Himalayan region and increase the concentration of black carbon.
- **Possible Impact**
  - Black materials absorb more light and emit infra-red radiation which increases the temperature. So, when there is an increase in black carbon in the higher Himalayas, it will contribute to faster melting of the Himalayan glaciers.
  - In the longer run, the changes in the atmospheric composition of the high Himalayan will affect the weather pattern (such as rain and snow precipitation patterns), and accordingly natural resources and socio-economic activities of Himalayan communities.

**Way Forward**

- The Black Carbon (BC) aerosols contribute significantly towards global warming due to its light-absorbing nature.
- Their presence in the eco-sensitive zone, such as the Himalayan glacier valleys, is a matter of serious concern and needs to be meticulously monitored.

## **Water Crisis in the Himalayan Region**

**Why in News**

Recently, several towns were surveyed in the **Himalayan region of Bangladesh, Nepal, India and**

Note:

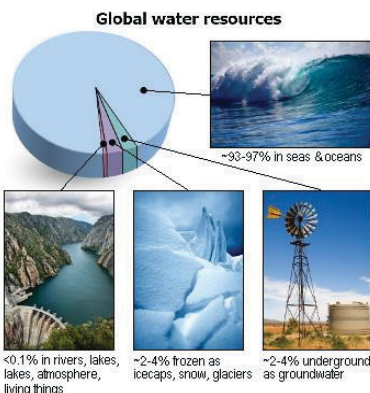
**Pakistan** to understand the challenges of the water crisis in urban areas of these regions.

### Key Points

- Eight towns in the Himalayan region of Bangladesh, Nepal, India, and Pakistan were **nearly deficient in their water supply**.
  - The **places surveyed are extremely dependent on springs** (ranging between 50% and 100%) for their water, and **three-fourths were in urban areas**.
  - Rural areas have typically garnered much of the attention in terms of development and **issues surrounding urban environments have been sidelined**.
- **Factors responsible:**
  - Unplanned urbanisation
  - Climate change
- Across the region, the **encroachment and degradation of natural water bodies** (springs, ponds, lakes, canals, and rivers) and the growing **disappearance of traditional water systems** (stone spouts, wells, and local water tanks) are evident.
- Although only 3% of the total Hindu Kush Himalayan population lives in larger cities and 8% in smaller towns, **projections show that over 50% of the population will be living in cities by 2050, placing stress on water availability**.
  - Under current trends, the demand-supply gap may double by 2050.

### Water Crisis in India

- **India tops the list of countries** with the most number of people living with **water scarcity**.
- As many as **one billion people in India live in areas with physical water scarcity**, of which 600 million are in areas of high to extreme water stress.
- Approximately **330 million people from 302 districts** were **affected by droughts in 2016**.
- **Over 21% of the country's diseases are water-related**.



In 2015, India lost over 1 lakh children under the age of five to diarrheal diseases.

- As per a report by NITI Aayog, **Bengaluru will soon be among one of the 11 cities in the world to run out of ground water**.
  - The report also states that the 'Day Zero' will hit Bengaluru and 20 other major cities (including Delhi) in India by the year 2020 affecting an estimated 100 million people.

### Day Zero Situation

- Day Zero is a situation **when taps in a region start running dry**. It is a situation when there will be no water in the taps and the use of water will become restricted for vital services only.
- Considering the present situation of water crisis in several cities of India, they are being termed as **soon to be India's Cape Towns**.
- The city of South Africa 'Cape Town', in 2018, launched a countdown to the day when tap water would be cut-off to millions of residents as a result of a three-year drought.
- **Brazil's Sao Paulo** faced its own Day Zero in 2015. The city turned off its water supply for 12 hours a day forcing many businesses and industries to shut down.
- In **2008, Barcelona in Spain** had to import tankers full of fresh-water from France.

### Way Forward

- Communities were coping through short-term strategies such as groundwater extraction, which is proving to be unsustainable.
- A **holistic water management approach** that includes **springshed management** and **planned adaptation** is therefore paramount.

## CPCB Notifies Contaminated Sites

### Why in News

According to the **Central Pollution Control Board (CPCB)**, there are 128 sites in India contaminated by **toxic and hazardous substances**.

- **West Bengal led the list with 27 sites followed by Odisha at 23.**

Note:



### Incidents of Contamination

- **Oil contamination** due to leakage of underground oil pipelines of Bharat Petroleum Corporation Limited in Tamil Nadu.
- **Pesticide and heavy metal contamination** in creeks at Eloor, Kerala.
- **Chromium contamination** at Rania, Ranipet, Tamil Nadu, and Lohianagar, Uttar Pradesh.
- Improperly disposed **electronic waste** lying on the banks of river Ramganga, Moradabad.
- **Mercury contamination** of the soil at Kodaikanal, Tamil Nadu, and Ganjam, Odisha.

### The Central Pollution Control Board

- CPCB is a **statutory organisation** which was constituted in September.
- 1974 under the **Water (Prevention and Control of Pollution) Act, 1974**.
- It is also entrusted with the powers and functions under the **Air (Prevention and Control of Pollution) Act, 1981**.
- It serves as a field formation and also provides technical services to the Ministry of Environment and Forests of the provisions of the **Environment (Protection) Act, 1986**.
- Principal Functions of the CPCB, as spelt-out in the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981:
  - to promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution.
  - to improve the quality of air and to prevent, control or abate air pollution in the country.

### India's Record

- Independent organisations have warned that **India has a poor track record** in dealing with chemical accidents.
- According to **ToxicsLink**, an organisation that deals with hazardous waste disposal, there have been four major chemical accidents recorded, on average, every month between 2016-2019 and several accidents are not duly recorded.
- A committee constituted by the **National Green Tribunal (NGT)** in a report on the state of the management of Hazardous Waste (HW) in India noted that the **inventory was not very comprehensive**.

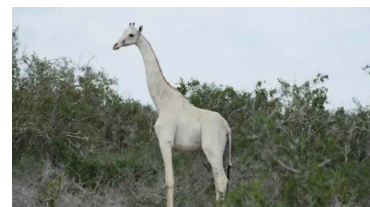
## White Giraffe

### Why in News

Poachers have killed two extremely rare white giraffes in northeast Kenya, leaving just one such animal in the world.

### Key Points

- The white giraffes were first spotted in 2016.
- The white appearance of the giraffe is **due to leucism**, a genetic condition that causes skin cells to have no pigmentation.
- **Leucism is different from albinism** where no melanin is produced at all.
- Melanin is a dark biological pigment found in skin, hair, feathers, scales, eyes, and some internal membranes.



### Giraffe

- Giraffes are most often found in savanna/woodland habitats and range widely throughout Africa.
- The **International Union for Conservation of Nature (IUCN)** had classified giraffes as **vulnerable** in the Red List in December 2016, when it noted that their population had dropped by over 40% since 1985.
- According to IUCN, the **four principal factors that have led to a population decline** among giraffes are **habitat loss, civil unrest, poaching** and **ecological issues**.
- Giraffes are listed under **Appendix II of the CITES**.

## Gir National Park

- The Gir National Park and Wildlife Sanctuary is located in the **Junagadh district of Gujarat**.
- The Gir Forests is the **only natural habitat of Asiatic lions**.
  - It was declared as a **sanctuary in 1965** and a **national park in 1975**.
- The Gir Forests is the largest compact tract of dry deciduous forests in the semi-arid western part of India.
- Gir is often linked with "**Maldharis**" who have survived through the ages by having a **symbiotic relationship with the lion**.

Note:

- Maldharis are religious **pastoral communities** living in Gir. Their settlements are called "**nesses**".
- Other National Parks in Gujarat
  - Blackbuck National Park
  - Vansda National Park
  - Marine National Park

#### Asiatic Lion

- **Habitat:** Gir National Park and Wildlife Sanctuary.
- **Threats:** They are vulnerable to disease, encroachment, forest fire, poaching, and accidental lion deaths due to human causes.
  - In 2018, the **Canine Distemper Virus (CDV)** was responsible for the death of more than 25 Lions in the Gir forest of Gujarat.
- **Protection Status**
  - **IUCN Red List: Endangered**
  - CITES: Appendix I
  - Wildlife (Protection) Act 1972: Schedule I

## Fishing Cat and Otters

### Why in News

Recently, the presence of a viable, breeding population of a **fishing cat** has been found in **Chilika Lake**.

- Further, the presence of a smooth-coated otter and a **Eurasian otter** has also been recorded in the lake.

### Fishing Cat

- **Habitat:** In India, fishing cats are mainly found in the **mangrove forests** of the **Sundarbans**, on the **foothills of the Himalayas** along the Ganga and Brahmaputra river valleys and in the **Western Ghats**.
- **Protection Status**
  - **IUCN Red List: Vulnerable**
  - CITES: Appendix II
  - Indian Wildlife Protection Act, 1972: Schedule I



### Smooth-Coated Otter

- **Habitat:** Smooth-coated otters are distributed throughout India from the Himalayas to the south.

### Protection Status

- **IUCN Red List: Vulnerable**
- CITES: Appendix II
- Indian Wildlife Protection Act, 1972: Schedule II



### Eurasian Otter

- **Habitat:** Throughout Europe and Asia from Ireland in the west as far as eastern **Russia and China**. They are also found in **North Africa (Morocco, Algeria, and Tunisia) and the Middle East (Israel, Jordan, Iraq, and Iran)**.
- **Protection Status**
  - **IUCN Red List: Near Threatened**
  - CITES: Appendix I
  - Indian Wildlife Protection Act, 1972: Schedule II



## BEE – Star Rating Programme

### Why in News

Recently, the **Bureau of Energy Efficiency (BEE)** celebrated its **19<sup>th</sup> foundation day**.

- It intended to develop a vision towards building an energy efficient India.

### Key Points

- On this occasion, BEE expanded the coverage of its star labelling programme by including energy efficient **Deep freezer and Light Commercial Air Conditioners (LCAC)**.
  - The inclusion of the above appliances will make a **total of 26 appliances** under the star rating programme of BEE.
  - The program will be initially launched in **voluntary mode from 2<sup>nd</sup> March, 2020 to 31<sup>st</sup> December, 2021**. Thereafter, it will be made mandatory after reviewing the degree of market transformation in this particular segment of appliances.
  - Through this initiative, it is expected to save around 2.8 Billion Units by FY2030, which is equivalent to Greenhouse Gas (GHG) reduction of 2.4-million-ton Carbon Dioxide.

Note:



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- **The Star Labeling Programme** has been formulated by the **Bureau of Energy Efficiency**, under the **Energy Conservation Act, 2001**.
- During the event, a **database on energy efficiency named Urja Dakshata Information Tool (UDIT)** was also launched. This initiative has been taken by the BEE with the **World Resources Institute (WRI)**.
  - It is a user-friendly platform that explains the energy efficiency landscape of India across industry, appliances, building, transport, municipal and agriculture sectors.
  - It will also showcase the capacity building and new initiatives taken up by the Government across the sectors in the increasing energy efficiency domain.

#### Bureau of Energy Efficiency

- The Government of India set up Bureau of Energy Efficiency (BEE). on 1<sup>st</sup> March 2002 under the provisions of the **Energy Conservation Act, 2001**.
- The mission of the Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act, 2001 with the **primary objective of reducing energy intensity of the Indian economy**.
- BEE coordinates with designated consumers, designated agencies and other organizations and recognize, identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

#### The Standards & Labeling Programme

- **The Standards & Labeling Programme** is one of the major thrust areas of BEE.
- A key objective of this scheme is to provide the consumer an informed choice about the energy-saving and thereby the cost-saving potential of the relevant marketed product.
- The scheme targets display of energy performance labels on high energy end use equipment & appliances and lays down minimum energy performance standards.

## Whale Shark

- **Scientific Name:** Rhincodon typus
- **Features:** Whale sharks are the largest shark and they feed on plankton and travel large distances to

find enough food to sustain their huge size, and to reproduce.

- **Habitat:** Whale sharks are found in all the tropical oceans of the world.
- **Threats:** Oil & gas drilling, shipping lanes etc.
- **Protection Status:**
  - **IUCN Red List:** Endangered
  - **CITES:** Appendix II
  - **Indian Wildlife Protection Act, 1972:** Schedule I



## Red-Crowned Roofed Turtle

- Red-Crowned Roofed Turtle is **one of the 24 species endemic to India**.
- It is also known as **Bengal roof turtle**.
- **Distribution:**
  - It is a freshwater turtle species found in deep flowing rivers with terrestrial nesting sites.
  - It is native to India, Bangladesh and Nepal.
    - Historically, the species was widespread in the Ganga River, both in India and Bangladesh. It also occurs in the Brahmaputra basin.
    - Currently in India, the **National Chambal River Gharial Sanctuary** is the only area with a substantial population of the species.
- **Major Threats:**
  - **Loss or degradation of habitat** due to pollution and large scale development activities.
  - **Sand mining and growing of seasonal crops** along Ganga River are majorly affecting the sandbars along the river that are used by the species for nesting.
  - Drowning by illegal fishing nets.
  - Poaching and illegal trade.
- **Conservation Status:**
  - **IUCN Red List:** Critically Endangered
  - **CITES:** Appendix II
  - **Indian Wildlife Protection Act, 1972:** Schedule I



Note:

## World Wildlife Day

- World Wildlife Day is **celebrated every year on the 3<sup>rd</sup> of March since 2013**. The date chosen **coincides with the day the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** was signed in 1973.
- The United Nations General Assembly (UNGA) resolution has designated the CITES Secretariat as the facilitator for the global observance of this special day for wildlife on the UN calendar.
- Theme: 'Sustaining all Life on Earth', highlights the unique place of wild fauna and flora as essential components of the world's biodiversity.
  - This **aligns with UN Sustainable Development Goals** 1, 12, 14 and 15.
    - Goal 1: No Poverty
    - Goal 12: Responsible Consumption And Production
    - Goal 14: Life Below Water
    - Goal 15: Life On Land
  - The **year 2020**, known as **"biodiversity super year,"** will host several major global events that place biodiversity at the forefront.

## Hubli-Ankola Railway Line Project

### Why in News

The **Hubballi-Ankola railway line project** saw stiff opposition from a majority of the board members of the **Karnataka State Wildlife Board**.

### Key Points

- The proposed 164.44-km railway line **passes through forests** between two major protected areas — **Kali Tiger Reserve and Bedthi Conservation Reserve**.
- More than 80% of the line has to pass through the dense forest lands of the Western Ghats, and this entails the diversion of 727 hectares of prime forests.



### Kali Tiger Reserve

- Kali Tiger Reserve is located in the central portion of **Uttara Kannada district of Karnataka state**.
- The Tiger Reserve comprises two important protected areas of the region viz., **Dandeli Wildlife Sanctuary and Anshi National Park**.
- These two protected areas are contiguous to each other and form a single tract of protected area located in the **biologically sensitive Western Ghats**.
- Forests of the Tiger Reserve are primarily **moist deciduous and semi-evergreen**, with excellent patches of evergreen forests in the westernmost parts as well as in deep valleys.
- **Animals found** in the Tiger Reserve include Tiger, Leopard, Elephant, Bison, Wild dog, Sambar, Spotted deer, Sloth bear, Wild boar, Hanuman langur, Bonnet macaque, varieties of reptiles and birds, etc.

### State Boards for Wildlife (SBWL)

- SBWL is constituted under **the Wildlife Protection Act, 1972**.
- The SBWL is **headed by the Chief Minister**, with the Forest Minister of the State as the Vice-Chair.
- State Boards for Wildlife advises the state governments in selection and management of protected areas and other matters connected with the protection of wildlife.



Note:



# Geography

## Highlights

- Greek Island of Lesbos
- Sukhna Lake
- Gairsain: Summer Capital of Uttarakhand
- Katchatheevu Island
- Sericulture in India
- Effects of Changing Groundwater Levels on Himalayas

## Greek Island of Lesbos

- **Lésbos**, also called **Mitilíni**, is a greek island.
- It is the largest island after Crete and Euboea in the **Aegean Sea**.
- The island is largely volcanic in the west, and numerous thermal springs indicate the unstable subterranean structure that has caused severe earthquakes throughout history.
- The irregular coast of Lésbos is penetrated by **two narrow-mouthed bays**, Géras (southeast) and the Gulf of Kallonís (southwest).
- The principal peak is **Mount Lepethymnus** (Áyios Ilías) which reaches 3,176 feet.



- The lake was **constructed in 1958** and is spread over 3 sq km.
  - An area of 2 km to 2.75 km around the lake has been declared as **an eco-sensitive zone** by the Chandigarh Administration.
  - All activities in this area fall under provisions of the **Environment Protection Act**.
- The court has completely banned new construction in the catchment areas falling in the states of Punjab, Haryana and Union Territory Chandigarh as well as in the **Sukhna Wetland** and **Sukhna Wildlife Sanctuary**.
- Earlier, the **Uttarakhand High Court** declared the rivers **Yamuna and Ganga as legal or juridical persons**, enjoying all the rights, duties and liabilities of a living person.

### Environment Protection Act, 1986

It empowers the government of India to lay down standards for emission or discharge of environmental pollutants from various sources whatsoever, provided that different standards for emission or discharge may be laid down under this clause from different sources having regard to the quality or composition of the emission or discharge of environmental pollutants from such sources.

## Sukhna Lake

The **Punjab and Haryana High Court** has declared **Sukhna lake (Chandigarh)** as a **living entity** recently.

- The court invoked its **parens patriae** jurisdiction to declare the lake as a **legal entity** for its **survival, preservation and conservation** having a distinct persona with corresponding rights, duties and liabilities of a living person.
- All the citizens of Union Territory, Chandigarh, are hereby declared as **loco parentis (in the place of a parent)** to save the lake from extinction.
- Sukhna Lake is a **rain-fed lake**, located within Chandigarh and its catchment area falls both in Punjab and Haryana.

## Gairsain: Summer Capital of Uttarakhand

### Why in News

Recently, the **Uttarakhand Government** named **Gairsain as the new summer capital** of the state.

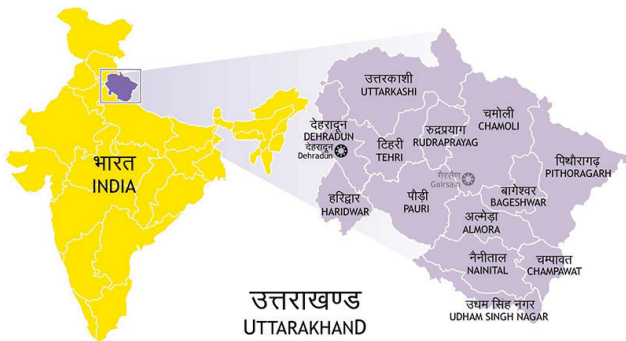
- A summer capital is a city used as an administrative capital during extended periods of, particularly hot weather.

Note:



### Key Points

- Uttarakhand (earlier known as Uttaranchal) was carved out as a separate state from Uttar Pradesh in 1998. Those who spearheaded the movement for statehood to **Uttarakhand** wanted **Gairsain** to be made its **permanent capital**.
- However, **Dehradun** has been the **temporary capital of the state** since it attained statehood and still houses the chief minister's residence, Raj Bhavan and MLA residences.
  - **The state Assembly is located in Dehradun but sessions are held in Gairsain as well.**
- Statehood activists had long contended that **Gairsain, a tehsil in Chamoli district**, was best suited to be the capital of the mountainous state as it was a hilly region falling on the border of Kumaon and Garhwal regions.
  - It covers a large area suitable for the construction of the capital and accommodating people.
  - It is emerging as a tourist place and it is also a part of the major route connecting Garhwal with the Kumaon region.
  - It is the site of the source of the **Ramganga River** which rises near the **Dudhatoli Parvat**.
  - The famous tourist attractions are the **Nanda Devi and Valley of Flowers National Parks (UNESCO World Heritage Site)**, **Badrinath, Vasundhara Falls** etc.
- With the fresh announcement, there is no clarity whether Dehradun's current status will remain the same or it will be considered the new winter capital.



### Katchatheevu Island

- It is an uninhabited off-shore island in the **Palk Strait** originally owned by a **king of Ramnad (present-day Ramanathapuram, Tamil Nadu)**.

- The island is used by fishermen to dry their nets.
- During the **British rule**, it was administered jointly by **India and Sri Lanka**.
- In the early 20<sup>th</sup> century, Sri Lanka claimed territorial ownership over the islet, so in **1974 India ceded the island to Sri Lanka, through a joint agreement**.
  - **Two years later through another accord, India further gave up its fishing rights in the region.**



## Sericulture in India

### Why in News

- Cocoon production in Karnataka has picked up to meet the growing demand for indigenous silk.
- Silk imports from China have been badly hit on account of **Coronavirus**.

### Key Points

- **Sericulture:**
  - It is an **agro-based** industry.
  - It involves **rearing of silkworms** for the production of raw silk, which is the yarn obtained out of cocoons spun by certain species of insects.
  - The major activities of sericulture comprise of food-plant cultivation to feed the silkworms which spin silk cocoons and reeling the cocoons for unwinding the silk filament for value-added benefits such as processing and weaving.
  - Domesticated silkworm (*Bombyx mori*) are raised for the purpose of sericulture.
- The Government of India has allocated ₹2161.68 crores for three years i.e. 2017-2020 to its **Central Sector Scheme 'Silk Samagra'** for the development of sericulture in the country.
- **Silk Production in India:**
  - There are five major types of silk of commercial importance, obtained from different species of silkworms. These are **Mulberry, Oak Tasar & Tropical Tasar, Muga and Eri**.
  - Except for mulberry, other non-mulberry varieties of silks are wild silks, known as Vanya silks.

Note:



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Sl no	State	Silk Centre
1	Andhra	Dharmavaram, Pochampalli, Venkatagiri, Narainpet
2	Assam	Sualkuchi
3	Bihar	Bhagalpur
4	Gujarat	Surat, Cambay
5	Jammu & Kashmir	Srinagar
6	Karnataka	Bangalore, Anekal, Ilkal, Molakalmuru, Melkote, Kollegal
7	Chattisgarh	Champa, Chanderi, Raigarh
8	Maharashtra	Palthan
9	Tamil Nadu	Kanchipuram, Arni, Salem, Kumbhakonam, Tanjavur
10	Uttar Pradesh	Varanasi
11	West Bengal	Bishnupur, Murshidabad, Birbhum

- India has the unique distinction of producing all these commercial varieties of silk.
- South India is the leading silk producing area of the country and is also known for its famous silk weaving enclaves like Kancheepuram, Dharmavaram, Arni, etc.

## Effects of Changing Groundwater Levels on Himalayas

### Why in News

Recently, researchers from the Indian Institute of Geomagnetism (IIG) have found that the Himalayan range **subsides and moves up depending on the seasonal changes** in groundwater, apart from the normal and common reasons.

- IIG is an autonomous institute under the Department of Science & Technology (DST).

### Key Points

- The **Global Positioning System (GPS)** and **Gravity Recovery And Climate Experiment (GRACE)** data were used to quantify the variations of hydrologic mass.
  - The GRACE satellites, launched by the US in **2002**, monitor changes in water and snow stores on the continents, enabling the researchers to study terrestrial hydrology.

- The combined GPS and GRACE data suggest a **12% reduction in the rate of the subsurface slip**.
  - The subsidence rate is associated with groundwater consumption.
  - Subsurface slip refers to how fast the fault is slipping relative to the foot and hanging wall.
  - The slip occurs at the Main Himalayan Thrust (MHT), due to hydrological variations and human activities, over which there is the periodic release of accumulated strain.
- Water acts as a lubricating agent and in the dry season, the rate of the slip of the fault in the region is **reduced**.
- There are normal and common reasons also affecting the Himalayas apart from the groundwater levels.
  - The Himalayan foothills and the Indo-Gangetic plain are sinking because its **contiguous areas are rising** due to tectonic activity associated with land mass movement or continental drift.
  - In the Himalaya, seasonal water from glaciers as well as monsoon precipitation plays a key role in the deformation of the crust and the seismicity associated with it.
- This is the first study to look at the rising Himalayas from a hydrological standpoint.
- Since the Himalayas play an important role in **influencing climate in the Indian subcontinent**, the study will help in understanding the effects of hydrology on climate.

### Fault

- It is a **planar or gently curved fracture** in the rocks of the Earth's crust, where compressional or tensional forces cause relative displacement of the rocks on the opposite sides of the fracture.
- When rocks slip past each other in faulting, the upper or overlying block along the fault plane is called the hanging wall or headwall; the block below is called the footwall.

### Main Himalayan Thrust

- The Indian plate under thrusts the Eurasian plate along a northerly dipping detachment surface known as Main Himalayan Thrust (MHT) that separates the downgoing Indian plate from the overriding Himalayan wedge.



Note:

# Art & Culture

## Highlights

- Lalit Kala Akademi Awards
- Bharatnatyam
- Attukal Pongala Festival
- Nominations for the World Heritage List 2020
- Warli Tribe

## Lalit Kala Akademi Awards

### Why in News

The President of India conferred the **61<sup>st</sup> annual Lalit Kala Akademi Awards** on 15 meritorious artists at a function held at Rashtrapati Bhavan on 4<sup>th</sup> March, 2020.

- The Lalit Kala Akademi nominated a seven-member Jury of eminent art practitioners, artists and, critics from all over the country to finalise list of artists to be awarded.
- Lalit Kala Akademi organizes exhibitions and award ceremonies **every year to promote art as well as to honor talents**.

### Lalit Kala Academy

- The Akademi was **inaugurated on August 5, 1954**, by the then Honourable Minister for Education, Maulana Abul Kalam Azad.
- The Akademi was given **statutory authority in 1957**, under the **Societies Registration Act 1860**.
- Since its establishment it has been serving the entire country by promoting the creative endeavours of Indian artists and bringing their arts to bear upon a large number of people, thereby playing an important role in defining and redefining the sensibility of an entire culture, falling under the **visual arts spectrum**.
- It is **headquartered in New Delhi**.

## Bharatnatyam

### Origin

- Bharatanatyam is **one of the oldest** (considered to be over 2000 years old) and most popular forms of

classical dance that **originated in Tanjore district in Tamil Nadu, India**.

- Bharatnatyam is **one among the eight classical dances of India**. Other classical dances of India are: Kathakali (Kerala), Kuchipudi (Andhra Pradesh), Kathak (North India), Mohiniyattam (Kerala), Manipuri (Manipur), Odissi (Odisha) and Sattriya (Assam).
- The origin of this dance can be traced to the sage **Bharata Muni's Natyashastra**.
- The **Abhinaya Darpana by Nandikesvara** is one of the main sources of textual material, for the study of the technique and grammar of body movement in Bharatnatyam Dance.
- The **style was kept alive by the devadasis**, the young girls 'gifted' by their parents to the temples and married to the gods.
- **E. Krishna Iyer and Rukmini Devi Arundale** had played a significant role in popularizing the dance form.

### Features

- Bharatnatyam dance is known to be **ekaharya**, where one dancer takes on many roles in a single performance.
- It **encompasses Bhav, Rag, Ras and Taal**.
- This form of dance is slow and moving, but at times fast and fluid and hence is also called **Fire Dance**.
- The **accompanying orchestra** consists of a vocalist, a mridangam player, violinist or veena player, a flutist and a cymbal player. The person who conducts the dance recitation is the **Nattuvanar**.



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## Attukal Pongala Festival

### Why in News

The annual "Attukal Pongala", one of the largest all-women religious congregations began recently amid the **COVID-19** virus threat.

### Key Points

- Pongala is a **ten-day- long festival of Attukal Bhagavathy Temple (Kerala)**.
- The festival commences with the musical rendering of the story of the **Goddess (Kannaki Charitam)** during the "**Kappu Kettu ceremony**".
- The story invokes the presence of Kodungallur Bhagavathy and the slaying of the Pandyan King. This festival commemorates the victory of Good over Evil, by the slaying of Pandyan King.

### Pongala

- Pongala, which **means 'to boil over'**, is the ritual in which women prepare sweet payasam (a pudding made from rice, jaggery, coconut and plantains cooked together) and offer it to the Goddess or 'Bhagavathy'.
- The pongala is cooked in pots – preferably earthen.

### Attukal Bhagavathy temple

- This temple is **dedicated to Goddess Bhagavathy**.
- Also known as "**the Sabarimala of Women**", this temple attracts the biggest set of women devotees for the annual Attukal Pongala festival.
- Attukal Devi temple and its main festival Attukal Pongala reached **Guinness Book of World Records of largest annual gathering of women**, when 1.5 million (15 Lakhs) women offered pongala on February 23, 1997 and on March 10, 2009, when over 2.5 million people took part in it.
- The temple is built with **elements of Kerala architectural style**.
- The main building also comprises Goddess Kali, Goddess Parvathy, Lord Shiva, Goddess Sri Rajarajeswari and several others.

### Kerala Architectural Style

- It displays certain **variations on plan and elevation from its counterparts on the eastern coast of south India**.

- These variations are mainly **owing to distinct climatic conditions and the employment of different building materials** along with the native systems of beliefs and culture.
- Kerala temples have a distinct style of their own by the lavish use of wood, stone and metals.
- Wood is used for making temples because of rich forest cover.
- The base structure of the temple is made using granite and laterite.
- The roof may have one, two or even three stories.
- The shape of the roof depends on the plan of the sanctum below.
- The **steep and needle-like roof** is made of wood and is covered with copper plates in order to protect the inner skeletal framework from the **vigorous monsoons**.

## Nominations for the World Heritage List 2020

### Why in News

Recently, the Minister of State of Culture and Tourism has informed Lok Sabha that India has submitted two nomination dossiers namely '**Dholavira: A Harappan City**' and '**Monuments and Forts of Deccan Sultanate**' for inclusion in the **World Heritage List for the year 2020**.

### Dholavira: A Harappan City

- The City of Dholavira located in **Khadir island of the Rann of Kutch (Gujarat)** belonged to the mature Harappan phase.
- It was excavated by **R.S Bisht in 1985**.
- It demonstrates a **highly organised system of town planning with perfected proportions, street-pattern and an efficient water conservation system** that supported life for **more than 1200 years (3000 BCE to 1800 BCE)** against harsh hot arid climate.
  - The water conservation methods of Dholavira are unique and measured as one of the most efficient systems of the ancient world.
- The presence of a **three-tier zonation** comprising of a distinct upper (citadel, bailey) and middle (having a distinct street-pattern, large scale enclosure and a ceremonial ground) towns enclosed by a lower town

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(with narrower streets, smaller enclosures and industrial area) – **distinguishes the city of Dholavira from other metropolises of the Indus Valley Civilisation.**

### **Monuments and Forts of Deccan Sultanate**

- The 'Monuments of the Deccan Sultanate' demonstrates the **convergence of national and international styles of Islamic architecture and their intersections with the prevalent Hindu architecture** of the period in present-day Karnataka and Andhra Pradesh.
- It comprises of **four components** namely,
  - **Bahmani Monuments at Gulbarga, Karnataka.**
    - It primarily comprises the **Gulbarga Fort with the Great Mosque** in the Fort, Jami Masjid and the **Haft Gumbad complex with seven tombs.**
    - Gulbarga was the **first capital of the Bahmani dynasty.**
  - **Bahmani and Barid Shahi Monuments at Bidar, Karnataka.**
    - It includes monuments at Bidar dating from **late 15<sup>th</sup> to the early 16<sup>th</sup> centuries** comprising the Bidar Fort, the Madrasa Mahmud Gawan, the Bahamani tombs at Ashtur and the Barid Shahi tombs.
    - The significant feature of Bidar is the **sophisticated system of gates and sluices** (a sluice is a water channel controlled at its head by a gate) that could be used when required to flood segments of the moat and thus preserve water.
  - **Adil Shahi Monuments at Bijapur, Karnataka.**
    - These monuments date from the late **15<sup>th</sup> to the late 17<sup>th</sup> centuries.**
    - These are an ensemble of 80 small and big monuments including the fortifications, gates, water systems and tanks, several mosques and tombs and palatial structures.
    - The most remarkable monuments within the fort include the **Gol Gumbaz** which is the **second largest dome in the world.**
  - **Qutb Shahi Monuments at Hyderabad Andhra Pradesh.**
    - It comprises Golconda Fort, Qutb Shahi Tombs and Charminar that symbolize the **Qutb Shahi Dynasty.**
    - Golconda is a fortified citadel and an early capital city of the Qutb Shahi dynasty.

- The tombs of Qutb Shahis are a mausoleum complex comprising the tombs of the Royal family and the officials who faithfully served them.
- Charminar is a ceremonial Gateway built to celebrate the foundation of Hyderabad, a new Millennial City, in 1591 A.D.

### **Indus Valley Civilisation**

- The Indus Valley Civilisation (IVC), which is now more popularly referred to as the Harappan civilisation after Harappa, the **first of its sites** to be excavated in the 1920s by British archaeologist **Sir Mortimer Wheeler.**
- Harappan civilisation emerged on the **banks of the river Indus** in the second half of the third millennium BCE and spread across large parts of western India.
- **Harappa and Mohenjo-Daro – the two major sites of this civilization** – are among the earliest and finest examples of urban civic planning.
- The planned network of roads, houses and drainage systems indicate the planning and engineering skills that developed during those times.
- The Harappan Civilisation was widespread as it **covered parts of India, Pakistan and Afghanistan.**
- Harappan civilization was a **trade based civilization** which had overseas trade links with Mesopotamia attested by the discovery of Harappan seals there and Mesopotamian carnelian beads here.

### **UNESCO's World Heritage Site List**

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity.
- This is embodied in an international treaty called the **Convention concerning the Protection of the World Cultural and Natural Heritage**, adopted by UNESCO in **1972.**
- A World Heritage Site is a place that is listed by UNESCO for its special cultural or physical significance. The list of World Heritage Sites is maintained by the international '**World Heritage Programme**', administered by the **UNESCO World Heritage Committee.**

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## Warli Tribe

- The Warli tribe is spread across **Thane, Nashik and Dhule districts of Maharashtra, Valsad district of Gujarat, Karnataka, Goa and the Union Territories of Dadra & Nagar Haveli and Daman & Diu.**
- They are small-scale cultivators and cultivate rice, pulses and vegetables. They also sell toddy, mahua and fuelwood to their tribesmen and neighbouring communities for a living.
  - The Warli revolt (1945) in Talasari taluka (Maharashtra) is noteworthy.



- Affected from the exploitation from the landlords and money-lenders, nearly 5,000 indentured tribals gathered and refused to work on landlords' fields until they received 12 annas a day in wages.
- Warli are **nature worshippers**. Warli art stems from their belief system shaped by their centuries-old subsistence on forest land.
- They did not have a written word until recent times and their art was a way of transmitting their belief systems from one generation to the next.
- Their drawings revolve around community traditions, the tools they use and their association with nature.



Note:

# Social Issues

## Highlights

- Gender Parity Index: UNESCO
- Establishment of Chairs in the Name of Eminent Women Scientists
- Seven Themes for International Women's Day 2020
- Ekam Fest
- Divya Kala Shakti

## Gender Parity Index: UNESCO

- **Gender Parity Index** in primary, secondary and tertiary education is the ratio of the number of female students enrolled at primary, secondary and tertiary levels of education to the number of male students in each level.
- In short, GPI at various levels **reflects equitable participation of girls** in the School system.
- GPI is **released by the United Nations Educational, Scientific and Cultural Organization (UNESCO)** as a part of its **Global Education Monitoring Report**.
- A **GPI of 1 indicates parity** between the sexes; a GPI that varies between 0 and 1 typically means a disparity in favour of males; whereas a GPI greater than 1 indicates a disparity in favour of females.
- **India's GPI for the year 2018-19** at different levels of School Education is as under:
  - Primary Education: 1.03
  - Upper Primary Education: 1.12
  - Secondary Education: 1.04
  - Higher Secondary Education: 1.04
- India's GPI indicates that the **number of girls is more than the number of boys** at all levels of school Education.
- In 2018-19, the Ministry of Human Resource Development launched the '**Samagra Shiksha**' scheme. It is a **Centrally Sponsored Scheme**.
  - It is an overarching programme for the school education sector extending from pre-school to class XII and aims to ensure inclusive and equitable quality education at all levels of school education.
  - One of its objectives is to bridge social and gender gaps in school education.

- To provide quality education to girls from disadvantaged groups, **Kasturba Gandhi Balika Vidyalayas (KGBVs)** have been sanctioned in Educationally Backward Blocks (EBBs) under SamagraShiksha.
- KGBVs are residential schools from class VI to XII for girls belonging to disadvantaged groups such as SC, ST, OBC, Minority and Below Poverty Line (BPL).

### Note:

- Educationally Backward Blocks are drawn on the basis of twin criteria of Female Literacy Rate and Gender Gap in Literacy. However, some blocks have been identified only on the basis of Female Literacy Rate also.

## Establishment of Chairs in the Name of Eminent Women Scientists

### Why in News

On the occasion of National Science Day (28th February), the Government has announced 11 chairs in the name of eminent Indian women scientists in various fields.

- The **theme** for National Science Day 2020 is '**Women In Science**'.

### Key Points

- The programme intends to **encourage, empower women and give due recognition to young women researchers excelling in various fields**.
- The 11 Chairs have been instituted in various areas of research including Agriculture, Biotechnology,

Note:



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Immunology, Phytomedicine, Biochemistry, Medicine, Social Sciences, Earth Science & Meteorology, Engineering, Mathematics, and Physics & Fundamental Research.

- Additionally, the University Grants Commission (UGC) and the Ministry of Women and Child Development (MWCD) have jointly established 10 chairs across different universities after eminent women to encourage women to pursue higher education and excel in their chosen fields.

## Seven Themes for International Women's Day 2020

### Why in News

The Ministries of Women and Child Development with other ministries have **launched a campaign from 1<sup>st</sup>-7<sup>th</sup> March to celebrate International Women's Day (IWD) 8th March 2020.**

### Key Points

- The campaign has a theme for all the days beginning from 1<sup>st</sup> March 2020.
- The themes that are being observed include
  - Education,
  - Health and nutrition,
  - Empowerment of women,
  - Skills & entrepreneurship,
  - Participation in sports,
  - Rural women agriculture,
  - Urban women.
- Doordarshan would also be organising **special programmes to commemorate the contribution of women members of the Indian Constituent Assembly to honour their contribution in the foundation of the Indian Republic.**

## Ekam Fest

### Why in News

A week-long exhibition-cum-fair "EKAM Fest" was organised by the **National Handicapped Finance Development Corporation (NHFDC)** in New Delhi from 2<sup>nd</sup> March, 2020.

### Key Points

- EKAM Fest is an **effort for promoting entrepreneurship and knowledge among the Divyangjan community.** EKAM stands for **Entrepreneurship, Knowledge, Awareness and Marketing.**
- Further, it will help in generating awareness among society about Persons with Disabilities (PwDs) entrepreneurs' potential.
- In the **first Ekam Fest, Divyang Entrepreneurs and Artisans from all over the country have been invited.** The fest will see vibrant products ranging from handicrafts, handloom, Embroidery work and dry fruits.

### National Handicapped

### Finance Development Corporation

- NHFDC is a corporation **under the aegis** of the Department of Empowerment of Persons with Disabilities (Divyangjan), **Ministry of Social Justice & Empowerment** and has been working since **1997.**
- It is registered as **a company not for profit** and provides financial assistance to the Divyangjan/Persons with Disabilities (Divyangjan/PwDs) for their economic rehabilitation and provides a number of skill development programmes to empower them to grow & sustain their enterprises.
- **Some of the initiatives of NHFDC**
  - **NHFDC Swavalamban Kendra (NSK):** NHFDC has taken an initiative to establish PwD owned micro skill training Centers throughout the country for skill training of PwDs.
  - **Safe Cabs in Delhi and Indore:** NHFDC has made arrangements with Sakha Cabs (Social enterprise) where the PwD owned commercial vehicles will be driven by the women drivers to provide safe taxi options for the women, children and senior citizen commuters.
  - **Safe Drinking Water E-Carts:** NHFDC has recently agreed to finance E-carts (owned by PwDs) fitted with RO water dispensing vending machines.

## Divya Kala Shakti

### Why in News

The first ever **regional event "Divya Kala Shakti: Witnessing the Abilities in Disabilities"** is being organized in Chennai (Tamil Nadu) on 12<sup>th</sup> March, 2020.

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**Key Points**

- Divya Kala Shakti is a **cultural event** that provides a wider and unique platform to **showcase the potential of Persons with Differently Abled** in the field of performing art, music, dance, acrobatics etc.
- The **Ministry of Social Justice and Empowerment** had organized the event at national level on 18<sup>th</sup> April and 23<sup>rd</sup> July 2019.
- In Chennai, the event is being organized by the National Institute for Empowerment of Persons with Multiple

Disabilities (Divyangjan), Chennai in collaboration with Department of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice and Empowerment, Government of India.

- National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD) was established in the year 2005 in Chennai under the Department of Empowerment of Persons with Disabilities.
- It serves as a national resource center for empowerment of persons with Multiple Disabilities.



Note:

# Security

## Highlights

- *RaIDer-X: Explosive Detection Device*
- *8<sup>th</sup> Foundation Day of LPAI*
- *Naval Exercise - MILAN 2020*

## RaIDer-X: Explosive Detection Device

### Why in News

An **explosive detection device**, **RaIDer-X**, was unveiled at the National Workshop on Explosive Detection (NWED-2020) in Pune (Maharashtra).

- The Workshop was organized by the **High Energy Materials Research Laboratory (HEMRL)**, Pune.

### Key Points

- RaIDer-X has the **capability to detect 20 explosives within a distance of about 2 metres**. Bulk explosive in concealed condition can also be detected by the device.
- The **data library** can be built in the system **to expand its capability to detect a number of explosives** in pure form as well as with the contaminants.
- The device has various **applications** including narcotics, for local police, for customs and other detection agencies who need to detect various elements that may be explosive or non-explosive in nature.
- RaIDer-X has been **co-developed** by HEMRL, Pune and the Indian Institute of Science, Bangalore.

### High Energy Materials Research Laboratory, Pune

- HEMRL Pune is a **premier laboratory of the Defence Research and Development Organisation (DRDO)**.
- It is **involved** in basic and applied research in the area of **high energy materials**.
  - High energy materials are **compounds which store chemical energy**. Such materials, on stimulation by mechanical, thermal or electrical devices, undergo rapid decomposition giving out heat, light, sound and large volumes of gases.

- The amount of energy released varies with the properties of the material such as composition, structure, density, heat of formation and decomposition, etc.
- **Examples:** Propellants used in rockets, pyrotechnics used in festivities, explosives used for military purposes, blasting chemicals used in construction activities, etc., are high energy materials.

## 8<sup>th</sup> Foundation Day of LPAI

### Why in News

Recently, the **8<sup>th</sup> Foundation Day of the Land Ports Authority of India (LPAI)** has been celebrated in New Delhi.

- **LPAI is involved in the development of land ports (also known as Integrated Check Posts (ICPs))** to maintain regional connectivity across the international borders of India.
- Currently, the LPAI is building the Passenger Terminal Building at Dera Baba Nanak, **Kartarpur Sahib Corridor**.

### Land Ports Authority of India

- The **Land Ports Authority of India** is a **statutory body** established under the **Land Ports Authority of India Act, 2010**.
  - The **Committee of Secretaries in 2003 recommended** setting up of Integrated Check Posts (ICPs) at major entry points on India's land borders.
  - These ICPs were planned to house all the regulatory agencies like Immigration, Customs, Border Security etc. together with support facilities in a single complex to serve as a single-window facility as is prevalent at Airports and Seaports.

Note:



- LPAI intends to provide safe, secure and systematic facilities for movement of cargo as well passengers at its ICPs along the **international borders of India**.
- **Functions:**
  - It plans, constructs and maintains roads, terminals and ancillary buildings other than national highways, State highways and railways, at an ICP.
  - It establishes and maintains warehouses, container depots and cargo complexes for the storage or processing of goods with the establishment of hotels, restaurants and restrooms at ICP.

The Integrated Check Posts (ICPs) along with the border areas, State / UT wise are given below:

S. No.	ICP Location	State	Borders with	Current Status
1	Attari (Amritsar)	Punjab	Pakistan	Operational
2	Agartala	Tripura	Bangladesh	
3	Petrapole	West Bengal	Bangladesh	
4	Raxaul	Bihar	Nepal	
5	Jogbani	Bihar	Nepal	
6	Moreh	Manipur	Myanmar	
7	Dawki	Meghalaya	Bangladesh	Under Construction
8	Rupaidiha	Uttar Pradesh (U.P.)	Nepal	Approved in December 2018

9	Sunauli	Uttar Pradesh (U.P.)	Nepal	
10	Sutarkandi	Assam	Bangladesh	

## Naval Exercise – MILAN 2020

### Why in News

The Indian Navy has postponed its multi-nation mega **naval exercise 'MILAN'** due to continuing spread of the coronavirus.

- **MILAN (11<sup>th</sup> edition)** was scheduled to be held in **Visakhapatnam from 18<sup>th</sup> – 28<sup>th</sup> March 2020**.

### Exercise MILAN

- It is a **biennial, multilateral naval exercise** which started in **1995**.
- The Navy has held 10 editions of the Milan exercise, with the theme of **"synergy across the seas"** to enhance professional interactions between friendly foreign navies and learn best practices from each other, since 1995.
- It was conducted at the **Andaman and Nicobar Command until 2018**.
- It is held under the aegis of Eastern Naval Command.
- **Over 40 countries** were expected to participate in the exercise in 2020.



Note:

# Miscellaneous

## Highlights

- National Sports Development Fund
- AYUSH Grid and NAMASTE Portal
- 35<sup>th</sup> Inception Day Of NCRB

## National Sports Development Fund

### Why in News

Security Printing & Minting Corporation of India Limited (SPMCIL) has contributed ₹1 crore to the National Sports Development Fund under the **corporate social responsibility** (CSR) initiatives.

- The contribution has been made in line with the **Target Olympic Podium Scheme (TOPS)** for the top athletes of India, selected for the Tokyo Olympics, 2020 and beyond.

### National Sports Development Fund

- It was established in 1998 under the **Charitable Endowments Act, 1890**.
- It is intended to impart **momentum and flexibility in assisting the cause of sports**.
- The Fund helps sportspersons excel by providing them opportunities to train under coaches of international repute with technical, scientific and psychological support and giving them exposure to international competitions.
- It also provides **financial assistance** for the development of infrastructure and other activities for the promotion of sports.
- The Fund is managed by a Council constituted by the Central Government.
  - **Chairperson:** Union Minister in charge of Youth Affairs and Sports.
  - **Members:** Senior Officers of the Department of Sports, Chairman & Managing Directors of Private and Public Sector Companies/Corporations, representatives of Sports Promotion Boards, etc.

### Security Printing & Minting Corporation of India Limited

- It is a wholly-owned Schedule 'A' **Miniratna Category-I company** of Government of India, incorporated on 13<sup>th</sup> January 2006.
- The Ministry of Finance exercises its administrative control over SPMCIL through the Board of Directors.
- SPMCIL is engaged in the manufacture/ production of Currency and Bank Notes, Security Paper, Non-Judicial Stamp Papers, Postal Stamps & Stationery, Travel Documents viz. Passport and Visa, Security certificates, Cheques, Bonds, Warrant, Special Certificates with security features, Security Inks, Circulation & Commemorative Coins, Medallions, Refining of Gold & Silver, and Assay of Precious Metals.

## 35<sup>th</sup> Inception Day Of NCRB

### Why in News

Recently, on the occasion of **35<sup>th</sup> Inception Day of National Crime Records Bureau (NCRB) Crime Multi Agency Centre** and **National Cybercrime Training Centre** has been launched.

### Key Points

- **Crime Multi Agency Centre (Cri-MAC)** has been launched for sharing the information on heinous crime and other issues related to inter-state coordination.
- **National Cybercrime Training Centre (NCTC)** has been launched for professional quality e-Learning services on cyber crime investigation on a large scale to police officers, judges, prosecutors and other stakeholders.
- **Few important initiatives/roles of NCRB:**
  - Coordination and networking among the police stations and police offices across India.

Note:

- **National Fingerprint Identification System (NAFIS)** provides a huge database of fingerprints helping in solving crimes faster. It is a network based pan India system for recording and sharing of fingerprints of criminals in various crimes
- Important publications including '**Crime in India**', '**Accidental Deaths & Suicides in India**', '**Prison Statistics India**' and '**FingerPrint in India**' have been released.
- It organised **CCTNS Hackathon & Cyber Challenge 2020** which helped in gathering innovative ideas for improving CCTNS.

#### National Crime Record Bureau

- NCRB was **set-up in 1986 under the Ministry of Home Affairs (MHA)** to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators.
- It is headquartered in **New Delhi**.
- It was set up based on the recommendations of the **National Police Commission (1977-1981) and the MHA's Taskforce (1985)**.
- It was constituted by merging the Directorate of Coordination and Police Computer (DCPC), Inter-State Criminals Data Branch of CBI, Central Finger Print Bureau of CBI and Statistical Branch of BPR&D.
- NCRB brings out the **annual comprehensive statistics of crime across the country** through the '**Crime in India**' report.
  - Being **published since 1953**, the report serves as a crucial tool in understanding the law and order situation across the country.
- It developed CCTNS in 2009 which interconnects approximately 15000 police stations and 6000 higher offices across the country.

- CCTNS digitises data related to FIR registration, investigation and charge sheets in all police stations leading to the development of a national database of crimes and criminals.

## AYUSH Grid and NAMASTE Portal

### AYUSH Grid

- **AYUSH Grid**, initiated by the **Ministry of AYUSH**, aims to **bring onboard all AYUSH** (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy) **facilities including hospitals and laboratories** and to promote traditional systems of healthcare.
- The Ministry of AYUSH and Ministry of Electronics and Information Technology have already inked a pact to **collaborate with each other for the digitisation of the AYUSH sector**.

### National AYUSH Morbidity and Standardized Terminologies Electronic Portal

- National AYUSH Morbidity and Standardized Terminologies Electronic Portal (**NAMASTE Portal**) was launched on **17<sup>th</sup> October, 2017 (2<sup>nd</sup> Ayurveda day)**.
  - The **National Ayurveda Day** is celebrated every year on the occasion of **Dhanwantari Jayanti (Dhanteras)**.
- The portal provides standardized terminologies & morbidity codes for Ayurveda, Siddha and Unani systems of medicines.
  - Morbidity codes provide a comprehensive classification of diseases described in the traditional medicines system.



Note:

Date	Time	Location	Description

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# Summary

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**Summary**