VISIONIAS
INSPIRING INNOVATION

PT 365

Extended Study Material

June - August 2020

DELHI   LUCKNOW   JAIPUR   HYDERABAD   PUNE   AHMEDABAD   CHANDIGARH

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EXTENDED

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1. POLITY AND CONSTITUTION

1.1. ISSUES RELATED TO CONSTITUTION

1.1.1. SUB-CLASSIFICATION OF SCHEDULED CASTES/SCHEDULED TRIBES

Why in news?

Supreme Court (SC) held that States can have sub-groups among Scheduled Castes (SCs) / Scheduled Tribes (STs) for the sake of reservation.

More on news

- SC (five judges bench) held that States can **sub-classify SCs and STs in 'Central List'** to provide **preferential treatment** to certain Scheduled Castes over others to ensure equal representation.
- Earlier in 2005, **in E V Chinnaiah v State of Andhra Pradesh and Others** (five judges bench), SC ruled that **only President has power to notify inclusion or exclusion of a caste as SC**, and states cannot tinker with the list.
  - **Central List' of SCs and STs** is notified by President under **Articles 341 and 342**.
- Court in the recent judgement said that, **sub-classifications within Central List does not amount to "tinkering" with it**. States only give preference to weakest in a pragmatic manner based on statistical data.
- Since a Bench of equal strength (five judges in this case) cannot overrule a previous decision, court referred it to a **larger Bench.**
- Court also said **reservation for weaker sections was not contemplated by Constitution makers in perpetuity** and constitutional goal of social transformation cannot be achieved without taking into account changing social realities.

1.1.2. SUB-CATEGORIZATION OF OTHER BACKWARD CLASSES (OBCS)

Why in News?

Recently, the Union Cabinet approved the term extension of the commission to examine the issue of sub-categorization of Other Backward Classes (OBCs).

Who are OBCs?
- OBC is a collective term used by the Government to classify castes which are **educationally or socially disadvantaged.**

- OBCs are a **vastly heterogeneous group**. There are various jaatis or sub-castes which vary significantly in the societal and economic status.
  - For instance, OBCs include land-owning communities in both north and south India alongside poorer sections of the society living on subsistence labour.

More on News

- The Union Government constituted a four-member commission **headed by Justice G. Rohini in 2017 under Article 340** with an aim to **improve the equitability of sharing of benefits among OBCs.**
  - The **article 340** of the Indian Constitution lays down conditions for the appointment of a Commission to investigate the conditions of backward classes.
- Mandate of the Commission:
  - Examining the **extent of inequitable distribution** of benefits of reservation (I.e. 27 percent reservation in jobs and education) among the castes or communities with reference to the central OBC list.
  - Work out the mechanism, criteria, norms and parameters in a **scientific approach for sub-categorization of OBCs.**

Background: The Mandal Commission
- In 1990, the then Union government announced that Other Backward Classes (OBCs) would get **27 percent reservation in jobs in central government services and public sector units (under Article 16(4) of the Constitution).**
- The decision was based on **Mandal Commission Report (1980),** which was set up in 1979 and chaired by B.P. Mandal. The mandate of the Mandal Commission was to identify **socially or educationally backward classes** to address caste discrimination.
- The recommendation for OBC reservations in central government institutions was implemented in 1992 while the **education quota came into force in 2006 (under Article 15(4) of the Constitution).**
- To ensure that benefits of the recommendations of the Mandal Commission percolated down to the most backward communities, the **creamy layer criteria** was invoked by Supreme Court in the ruling called the **'Indira Sawhney Judgment' (1992).**
  - A household with an **annual income of Rs 8 lakh or above** is classified as belonging to the 'creamy layer' among OBCs and hence is not eligible for reservations.

Idea of sub-categorization

- The First Backward Class Commission report of 1955 had proposed sub-categorization of OBCs into **backward and extremely backward communities.**
- In the Mandal Commission report of 1979, a **dissent note** by member L R Naik proposed sub-categorization in **intermediate and depressed backward classes.**
- In 2015, the **NCBC had proposed** that OBCs be divided into the following three categories:
  - **Extremely Backward Classes (EBC-Group A)** facing social, educational and economic backwardness even within the OBCs, consisting of aboriginal tribes, nomadic and semi-nomadic tribes who have been carrying on with their traditional occupations;
  - **More Backward Classes (MBC-Group B)** consisting of vocational groups carrying on with their traditional occupations; and
  - **Backward Classes (BC-Group C)** comprising of those comparatively more forward.
- According to the NCBC, **11 states (**Andhra Pradesh, Telangana, Puducherry, Karnataka, Haryana, Jharkhand, West Bengal, Bihar, Maharashtra, Rajasthan and Tamil Nadu) have **subcategorized OBC for reservations** in state-government-owned institutions.

National Commission for Backward Classes (NCBC)
- Until now, under **Article 338**, it was the National Commission of Scheduled Castes (NCSC) that addressed the grievances of the OBCs.
- The present NCBC (set up under the National Commission for Backward Classes Act, 1993 as Article 338b of the Constitution) can only **recommend inclusion and exclusion of castes** from the OBC list and the level of income that cuts off the "creamy layer" among these castes from the benefits of reservation.
- The **123rd Constitutional Amendment Bill (102nd Constitutional Amendment Act)** aims to provide constitutional status to NCBC that will give it the powers akin to the Commission of Socially and Economically Backward Classes (SCBCs). The functions performed by NCSC will now get transferred to the new panel.
- The amendment also brings about **changes in Article 342a and Article 366.**
  - Article 342a relates to the Central list of Socially and Educationally backward classes.
  - Article 366 contains the definitions used in the Constitution unless specifically stated otherwise.
- Under the Bill, the **NCBC will comprise of five members** appointed by the President. Their

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tenure and conditions of service will also be decided by the President.
- Key functions performed by the panel:
  - In the case of **grievances** related to non-implementation of reservations, economic grievances, violence, etc. people will be able to move the Commission.
  - Bill gives the proposed Commission the power to **inquire into complaints of deprivation of rights and safeguards.**
  - It also gives it the **powers of a civil court** trying a suit and allows it to summon anyone, require documents to be produced, and receive evidence on affidavit.

1.1.3. DISABLED ARE ENTITLED TO SAME BENEFITS OF SC/ST QUOTA

Why in news?

Supreme Court (SC) said that Disabled are entitled to same benefits of SC/ST quota.

More on news

- SC followed the principle laid down in **Delhi High Court's judgment in Anamol Bhandari case (2012)**. High Court has held that
  - **People suffering from disabilities are also socially backward**, and are therefore entitled to the same benefits as given to SC/ST candidates.
  - **Reservation for disabled is called horizontal reservation** which cuts across all vertical categories such as SC, ST, OBC & General.
    - ✓ **Vertical reservation** is provided in favour of **backward classes** like SC/ST, OBC under Article 16(4).
    - ✓ **Horizontal reservations** are **reservation within reservation** like reservation to female, physically challenged person, etc.
- **Rights of Persons with Disabilities (PwDs) Act, 2016** provides for reservation in higher education (not less than 5%), government jobs (not less than 4 %) for PwDs.

1.1.4. CUSTODIAL VIOLENCE

Why in news

Death of a father-son duo from Tamil Nadu, allegedly due to custodial violence, has sparked anger across India.

More on news

- Custodial violence is the **violence which takes place in the judicial and police custody** where an individual who has done a crime is tortured mentally as well as physically. It includes torture, rape and death.

- According to **National Campaign Against Torture**, a joint initiative by multiple NGOs, about 3/4th deaths in police custody occurred primarily as a result of torture in 2019.
- India had **signed the U.N. Convention against Torture in 1997 but it is yet to ratify it.**
  - It is an **international human rights instrument** aimed to prevent torture and other cruel, inhuman degrading treatment or punishment around the world. This convention is in force since 1987.

1.1.5. RIGHT TO PROTEST

Why in news?

UN Human Rights Committee (UNHRC), body of 18 independent experts that monitors implementation of International Covenant on Civil and Political Rights (ICCPR), reiterated right to protest as fundamental right.

Key Points raised by UNHRC

- It is a **fundamental human right for people to gather to celebrate or to air grievances,** in public and in private spaces, outdoors, indoors and online.
- Everyone, including **children, foreign nationals, women, migrant workers, asylum seekers and refugees, can exercise** the right of peaceful assembly.

Right to protest in India

- The **right to protest peacefully is fundamental right** in India under Article 19(1). It guarantees the freedom of speech and expression.
- In **Ramlila Maidan Incident vs Home Secretary, Union Of India & Ors.,** the Supreme Court had stated, "Citizens have a fundamental right to assembly and peaceful protest which cannot be taken away by an arbitrary executive or legislative action."

About ICCPR

- ICCPR is a **key international human rights treaty,** providing a range of protections for civil and political rights.
- ICCPR, together with the **Universal Declaration of Human Rights and the International Covenant on Economic Social and Cultural Rights**, are considered the **International Bill of Human Rights.**
- **ICCPR under Article 21** guarantees the right to peaceful assembly.
- It was adopted by the U.N. General Assembly in 1966 & **India has ratified** the Convention in 1979.

1.1.6. MODERN SLAVERY

Why in news?

A report released by Walk Free (Global anti-slavery organization) and CHRI (international NGO) highlighted the **need for renewed urgency to eradicate modern slavery and achieve SDG Target 8.7 by 2030.**

Key findings

- **71% of all victims** of modern slavery are women and girls.
- India accounted for one-third of all **child brides in the world.**
- India had **not ratified 2011 Domestic Workers Convention** & the **2014 Forced Labour Protocol**.
- **India has the weakest response on national coordination,** with no national coordinating body or National Action Plan in place.

- **Modern slavery** refers to situations of exploitation that a person cannot refuse or leave because of threats, violence, coercion, deception, or abuse of power.
- **Article 23** of the Indian constitution prohibits traffic in human beings, begar (forced labour) and other similar forms of forced labour.

2011 Domestic Workers Convention

- It was **adopted by International Labour Organization** (ILO) concerning decent work for domestic workers.
- It **lays down basic rights and principles,** and requires States to take a series of measures with a view to making decent work a reality for domestic workers.

2014 Protocol to Forced Labour convention

- Protocol to the **Forced Labour Convention, 1930**, adopted in 2014, is a new, **legally-binding instrument** that requires States to take measures **regarding prevention, protection and remedy in giving effect to the Convention's obligation to suppress forced labour.**
- India **signed and ratified Forced Labour Convention, 1930,** but not ratified the protocol.

1.1.7. HINDU SUCCESSION (AMENDMENT) ACT, 2005

- Supreme Court (SC) judgment came on a batch of appeals that **raised a legal issue whether the Hindu Succession (Amendment) Act, 2005:**
  - Has a retrospective effect and
  - If the claim of women depended on the living status of father as on amendment date (9.9.2005)?
- SC ruled that a Hindu **woman's right to be a joint heir to the ancestral property is by birth** and does not depend on whether her father

was alive or not when the law was enacted in 2005 i.e. **it has retrospective effect.**

Hindu Succession (Amendment) Act, 2005

- Hindu Succession (Amendment) Act, 2005 **granted equal rights to women and men in ancestral property** and to intestate succession in personal property where succession happens as per law and not through a will.
- Before the 2005 amendment, **daughters were entitled only to a share of their father's inheritance** and weren't independent coparceners (a person who has a birthright to parental property) like sons.
- Amendment had **laid down a cutoff date of September 9, 2005 for claims,** to avoid legal complications. Certain SC rulings had subsequently said that **law would not apply to cases where the father had died** before the law came into effect.

1.2. ISSUES RELATED TO FUNCTIONING OF PARLIAMENT/ STATE LEGISLATURE

1.2.1. REVISED SCHEDULE FOR MONSOON SESSION

Why in news?

Recently, Revised schedule for Monsoon session of the Parliament was released.

More on news

- As per revised schedule, there will be **no Question Hour. However, MPs can ask Unstarred questions.**
- Also, **Zero Hour will be restricted** in both Houses.

Question Hour and Zero Hour

- Generally, **first hour of a sitting of Parliament is devoted to Questions** and this hour is called Question Hour. During this MPs **ask questions of ministers and hold them accountable** for functioning of their ministries.
- **Questions are of four types**
  - **Starred:** Member desires an oral answer from Minister, distinguished with an asterisk, supplementary questions may be asked.
  - **Un-starred:** Member desires written answer, no supplementary question can be asked thereon.
  - **Short Notice Questions:** On a matter of public importance and of urgent character for oral answer at a notice of less than 10 days.

  - **Questions to private members:** If question relates to some Bill, Resolution or other matter for which that Member is responsible.
- **Zero Hour starts immediately following Question Hour** and lasts until the agenda for the day i.e. regular business of House is taken up. It allows member **to raise matters without any prior notice**.
- It is **not formally recognised** in parliamentary procedure. Zero Hour is an Indian parliamentary innovation.

Related information: Business Advisory Committee (BAC)

- BAC regulates the **programme and time table of the House.** It **allocates time** for the transaction of legislative and other business brought before the House by the government.
- BAC in Lok Sabha **consists of 15 members** including the **Speaker as its chairman**. In the Rajya Sabha, it has 11 members including the Chairman as its *ex-officio* chairman.
- Other committees with **Speaker as chairman**: Rules Committee and General-Purpose Committee.

1.2.2. QUORUM

Why in news?

Rajya Sabha secretariat has said that **quorum was essential only when the committees are taking decisions or adopting reports** and not during routine deliberations.

More on news

- **One third of the total number of members of the Committee is required for the quorum** to constitute a sitting of the Committee.
- In the absence of the required quorum, **Chairperson either suspends the sitting until there is a quorum or adjourns the sitting** to some future day.

Quorum in parliament

- Quorum is the **minimum number of members required to be present in the House** before it can transact any business.
- It is **one-tenth of the total number of members** in each House including the presiding officer as per Art 100(3).
- It means that there must be at least 55 members present in the Lok Sabha and 25 members present in the Rajya Sabha, if any business is to be conducted.

Related news: Fifth World Conference of Speakers of Parliament

- Conference was organized jointly by **Inter-Parliamentary Union** (IPU), and **Parliament of Austria** with support of United Nations (UN).

- IPU was **established in 1889 as international organisation of parliaments.** It aims to foster contacts, coordination, and exchange of experience among parliaments of all countries.
- It is being organized in virtual mode and second part of the conference will be held next year in **physical mode in Vienna, Austria.**

1.2.3. POWERS OF GOVERNOR

Why in news?

Recent controversy in Rajasthan around Governor's refusal to summon a session as desired by Council of Ministers has brought in light certain issues about Powers of Governor.

Some issues include

- **Governor's power to summon an Assembly session** - SC in 2016 ruled that **governor has no discretion in the matter of summoning the house under Article 174** if chief minister enjoys majority in the house and, therefore, is bound to act on the advice of the cabinet.
- **Governor's power to set an agenda for the session** - Cabinet is **not bound to state the agenda for the session** to governor. Agenda is decided by the Business Advisory Committee presided over by the Speaker.
- **Rajasthan Governor's insistence on 21-day notice for the session** - Rule of 21-day notice (later changed to 15 days) for session was first set by the Lok Sabha and adapted by State legislatures. This used to be notice period for questions. However, there have been instances where sessions have been convened at shorter notice.

Constitutional powers of Governor

- **Article 154**: The executive power of the state shall be vested in the governor and shall be exercised by him either directly or through officers subordinate to him in accordance with this Constitution.
- **Article 163 (1):** There shall be a council of ministers with the chief minister as the head to **aid and advise the governor in the exercise of his functions,** except in so far as he is **required to exercise his functions in his discretion.**
- **Article 163 (2):** If any question arises whether a matter falls within the governor's discretion or not, the **decision of the governor is final** and the validity of anything done by him cannot be called in question on the ground that he ought or ought not to have acted in his discretion**.**
- The governor **has constitutional discretion in the following cases:**
  - Reservation of a bill for the consideration of the President.

- Recommendation for the imposition of the President's Rule in the state.
  - While exercising his functions as the administrator of an adjoining union territory (in case of additional charge).
  - Determining the amount payable by the Government of Assam, Meghalaya, Tripura and Mizoram to an autonomous Tribal District Council as royalty accruing from licenses for mineral exploration.
  - Seeking information from the chief minister with regard to the administrative and legislative matters of the state.
- Also, governor has **situational discretion** (i.e., the hidden discretion derived from the exigencies of a prevailing political situation) in the following cases:
  - Appointment of chief minister **when no party has a clear-cut majority** in the state legislative assembly or when the chief minister in office dies suddenly and there is no obvious successor.
  - **Dismissal of the council of ministers** when it cannot prove the confidence of the state legislative assembly.
  - **Dissolution of the state legislative assembly** if the council of ministers has lost its majority.

1.2.4. POWERS OF LIEUTENANT GOVERNOR (LG)

Why in news?

Madras High Court has set aside judgment of Single Bench which had held that Puducherry Lieutenant Governor (LG) cannot interfere in the day-to-day affairs of the elected government in the Union Territory.

Union Territory of Delhi
- **Article 239AA** provides for legislative assembly and a council of ministers for Delhi.
- The assembly can make laws on all the matters of the State List and the Concurrent List **except the three matters of the State List- public order, police and land.**
- LG is bound by the aid and advice of the government in areas other than those exempted (**public order, police and land**).
- In case of a **difference of opinion between the council of ministers and LG,** LG has to refer to the President and would be bound by the President's decision.
- The LG of Delhi enjoys **greater powers than the LG of Puducherry.** The **LG of Delhi has "Executive Functions"** that allow him to exercise his powers in matters connected to public order, police and land "in consultation with the Chief Minister, if it is so provided under any order

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issued by the President under Article 239 of the Constitution".

More on news

- Earlier, Single Judge Bench of Madras High Court in 2019 had ruled that the **Lieutenant-Governor (LG) of Puducherry cannot interfere in the day-to-day administration** of the Union Territory when there is an elected government.
- Recent judgement, revising earlier judgement, ruled that the **Centre will take the final decision** in matters referred by the LG in case of difference of opinion between him and the Union Territory Government.

Powers of Lieutenant Governor of Puducherry

- **Article 239A** empowers Parliament to create Legislature having Council of Ministers for the UT of Puducherry.
- Under this, **Government of Union Territories Act, 1963** was enacted which provides for a Legislative Assembly in Puducherry, with a Council of Ministers to govern the "Union Territory of Pondicherry".
- Legislative assembly of Puducherry can **make laws on any subject of the State List and the Concurrent List.** But, the laws of Parliament prevail over those made by the Assembly.
- Section 44 of the Act says the Council of Ministers headed by a Chief Minister will "**aid and advise the LG in the exercise of his functions** in relation to matters with respect to which the Legislative Assembly of the Union Territory has power to make laws".
- However, it **allows the LG to "act in his discretion"** in the matter of law making if there is any difference in opinion.

> **Related news:** Jammu and Kashmir Transaction of Business Rules
> - Ministry of Home Affairs has notified **Transaction of Business of the Government of Union Territory of Jammu and Kashmir Rules,** 2019.
> - Rules were notified under **Jammu and Kashmir Reorganization Act, 2019.**
> - Under the rules, "**police, public order, All India Services and anti-corruption,**" will fall under the executive functions of the Lieutenant Governor (LG) of Union Territory of Jammu and Kashmir.
>   - Thus, Chief Minister or the Council of Ministers will have no say in their functioning.
> - In case of **difference of opinion between the LG and a Minister,** the decision of LG shall be deemed to have been accepted by the Council of Ministers.

1.3. JUDICIARY

1.3.1. CONTEMPT OF COURT

Why in news?

Recently, Supreme Court has held the lawyer-activist Prashant Bhushan as guilty of contempt of court in the context of the comment made on social media, targeting the current Chief Justice of India.

What is contempt of court?

- Contempt refers to the **offence of showing disrespect to the dignity or authority of a court.**
- The **rationale** for this provision is that **courts must be protected** from tendentious attacks that lower its authority, defame its public image, and make the public lose faith in its impartiality.
- **Constitutional Provisions in relation to contempt:**
  - Contempt of court is one of the **reasonable restrictions on freedom of speech and expression under Article 19(2).**
  - **Article 129 of the Constitution** conferred on the Supreme Court the power to punish contempt of itself. **Article 215 conferred a corresponding power on the High Courts**.
    - ✓ Every High Court shall have and exercise the same jurisdiction, powers and authority, in accordance with the same procedure and practice, in respect of contempt of courts subordinate to it as it has and exercises in respect of contempt of itself.
  - **Article 142(2)** says that when any law is made by the Parliament on the provisions mentioned in clause 1 of this Article, the **Supreme Court has all the power to make an order for securing any person's attendance, production of any documents or has the power to give punishment to anyone for its contempt.**
- The Contempt of Courts Act, 1971 defines contempt (the expression contempt of court is not defined in the constitution). It divides contempt into civil and criminal contempt.
  - **Civil contempt** refers to the wilful disobedience of an order of any court.
  - **Criminal contempt** means the publication (whether by words, spoken or written, or by signs, or by visible representations, or otherwise) of any matter or the doing of any other act whatsoever which
    - ✓ **scandalises or tends to scandalise,** or lowers or tends to lower the authority

of, any court and have the effect of undermining public confidence in the judiciary; or

✓ **prejudices, or interferes or tends to interfere** with, the due course of any judicial proceeding; or

✓ **interferes or tends to interfere with**, or obstructs or tends to obstruct, the administration of justice in any other manner.

- **Punishment:** As per Contempt of Courts Act of 1971, punishment is simple imprisonment for a term up to six months and/or a fine of up to ₹. 2,000. The accused may be discharged, or the punishment awarded may be remitted on apology being made to the satisfaction of the court.

- **Exceptions to contempt of Court:**
  o **Fair and accurate reporting** of judicial proceedings.
  o **Any fair criticism on the merits** of a judicial order after a case is heard and disposed of.
  o If the publication or other **act is merely a defamatory attack on the judge** and is not intended to interfere with the administration of justice, it will not be taken as contempt of court.
  o The Act was amended in 2006 and introduced truth as a valid defence, if it was in public interest and was invoked in a *bona fide* manner.

1.3.2. LOK ADALAT

Why in news?

Chhattisgarh became first state in the country to inaugurate State-level 'e-Lok Adalat'.

Lok Adalat

- Lok Adalat is one of the **alternative dispute redressal mechanisms**, where disputes/cases pending in the court of law or at pre-litigation stage are settled amicably.
- Lok Adalats have been given **statutory status under the Legal Services Authorities Act, 1987**.
- The award made by the Lok Adalats is **deemed to be a decree of a civil court** and is final and binding on all parties and **no appeal against such an award lies before any court of law**.
- There is **no court fee payable** when a matter is filed in a Lok Adalat. If a matter pending in the court of law is referred to the Lok Adalat and is settled subsequently, the court fee originally paid in the court on the complaints/petition is also refunded back to the parties.
- Lok Adalats **can be held by State Authority, District Authority**, Supreme Court Legal

Services Committee, High Court Local Services Committee, or Taluk Legal Services Committee.

- The Lok Adalats can deal with all Civil Cases, Matrimonial Disputes, Land Disputes, Partition/Property Disputes, Labour Disputes etc., and compoundable criminal Cases.

1.4. ASPECTS OF GOVERNANCE

1.4.1. CONSUMER PROTECTION ACT, 2019

Why in news?

The Consumer Protection Act, 2019 replacing the earlier 1986 Act came into force.

Six "consumer rights" provided in the new Act:
- **the right to be protected** against the marketing of goods, products or services which are hazardous to life and property.
- **the right to be informed** about the quality, quantity, potency, purity, standard and price of goods, products, or services to protect the consumer against unfair trade practices.
- **the right to be assured**, wherever possible, access to a variety of goods, products, or services at competitive prices.
- **the right to be heard** and to be assured that consumer's interests will receive due consideration at appropriate fora.
- **the right to seek redressal** against unfair trade practice or restrictive trade practices or unscrupulous exploitation of consumers; and
- **the right to consumer awareness**.

Major Provisions under the 2019 act:

- **Creation of Central Consumer Protection Authority (CCPA)**
  o Its primary objective is to promote, protect and enforce the rights of consumers and will be **assisted by a Director General of Investigation** which will look into cases and submit its report to the Authority.
  o It is **empowered to:**
    ▪ Conduct investigations into violations of consumer rights and institute complaints/ prosecution.
    ▪ Order recall of unsafe goods and services.
    ▪ Order discontinuance of unfair trade practices and misleading advertisements.
    ▪ Impose penalties on manufacturers/ endorsers/publishers of misleading advertisements.
    ▪ file Suo-motu cases on behalf of a class of customers, thereby initiating class action suits

- **Simplification of consumer dispute adjudication process**
  - **State and District Commissions** are now empowered to review their own orders
  - **Empowerment of Consumer Commissions** to enforce their orders.
  - **Deemed admissibility of complaints** if the question of admissibility is not decided within the specified period of 21 days.
  - **Ease of approaching Consumer Commissions** through filing from place of residence/work, e-filing, videoconferencing for hearing.
- **Alternate Dispute Resolution mechanism**
  - A complaint will be referred by a Consumer Commission for mediation, wherever scope for early settlement exists and parties agree for it.
  - **No appeal against settlement** through mediation.
- **Regarding E-commerce entities:**
  - They are **required to provide information** relating to return, refund, exchange, warranty and guarantee, etc. including **country of origin**.
  - E-commerce platforms **have to acknowledge the receipt of any consumer complaint within forty-eight hours** and redress the complaint within one month from the date of receipt under this Act. For this purpose, they **need to appoint a grievance redressal officer**.
  - **Sellers cannot refuse to take back goods or withdraw services or refuse refunds**, if such goods or services are defective, deficient, delivered late, or if they do not meet the description on the platform.
  - The rules also **prohibit the e-commerce companies from manipulating the price of the goods or services** to gain unreasonable profit through unjustified prices.
- **Introduction of the concept of product liability**: A manufacturer or product service provider or product seller to be responsible to compensate for injury or damage caused by defective product or deficiency in services.
- **Punishment**
  - The Act provides for punishment by a competent court **for manufacture or sale of adulterant/spurious goods.**
  - The court may, in case of first conviction, suspend any license issued to the person for a period of up to two years, and in case of second or subsequent conviction, cancel the license.

- **Other provisions:**
  - There will be **no fee for filing cases up to ₹5 lakh.**
  - The amount due to unidentifiable consumers will be credited to Consumer Welfare Fund (CWF).
  - The State Commissions will furnish information to Central Government on a quarterly basis on vacancies, disposal, pendency of cases and other matters.
  - It provides for **Central Consumer Protection Council** as an advisory body on consumer issues to be headed by the Union Minister of Consumer Affairs, Food and Public Distribution with the Minister of State as Vice Chairperson and 34 other members from different fields. It will also have Minister-in-charge of consumer affairs from two States from each region- North, South, East, West, and NER.

CONSUMER PROTECTION ACT 1986	PROVISIONS	CONSUMER PROTECTION ACT 2019
No separate regulator	Regulator	Central Consumer Protection Authority (CCPA) to be formed
Complaint could be filed in a consumer court where the seller's (defendant) office is located	Consumer court	Complaint can be filed In a consumer court where the complainant resides or works
No provision. Consumer could approach a civil court but not consumer court	Product liability	Consumer can seek compensation for harm caused by a product or service
District: up to ₹20 lakh State: ₹20 lakh to ₹1 cr National: above ₹1 cr	Pecuniary jurisdiction	District: up to ₹1 cr State: ₹1 cr to ₹10 cr National: Above ₹10 cr
No provision	E-commerce	All rules of direct selling extended to e-commerce
No legal provision	Mediation cells	Court can refer settlement through mediation

1.4.2. MISSION KARMAYOGI- NATIONAL PROGRAMME FOR CIVIL SERVICES CAPACITY BUILDING (NPCSCB)

Why in news?

Union Cabinet approved Mission Karmayogi.

About the Mission

- It aims **to make Indian Civil Servant more creative, constructive, imaginative, innovative,** proactive, professional, progressive, energetic, enabling, transparent and technology-enabled.
- **NPCSCB will be for capacity building for Civil Servants** so that they remain entrenched in Indian Culture and sensibilities and also learn from the best institutions and practices across the world.

- o It will **cover around 46 lakh Central employees**.
- o A sum of Rs.510.86 crore will be spent **over a period of 5 years (2020-21 to 2024-25).**
- **Core guiding principles of NPCSCB**
  - o Transition from **Rules based to Roles based Human Resource management.**
  - o Emphasize on 'on-site learning' to complement the **'off-site' learning**.
  - o Calibrate all Civil Service positions to a **Framework of Roles, Activities and Competencies** approach.
  - o **Partner with the best-in-class learning content creators** including public training institutions, universities etc.
  - o An opportunity for civil servants to continuously build and strengthen their **Behavioral, Functional and Domain Competencies.**
- Programme will be delivered by setting up an **Integrated Government Online Training-iGOT Karmayogi Platform.**

MISSION KARMAYOGI: THE INSTITUTIONAL STRUCTURE OF NPCSCB

Accountability and Transparency by Design

PM's HR Council - to provide strategic direction to civil services reforms and approve capacity

Cabinet Secretary Coordination Unit - will comprise of select Secretaries & Cadre Controlling Authorities

Capacity Building Commission for standardization & harmonization of the entire capacity building eco-system

SPV - 100% wholly-owned entity which will own manage and maintain iGOT Karmayogi digital platform

1.4.3. CRIMINAL LAW REFORM

Why in news?

A five-member committee (headed by Ranbir Singh) constituted by Ministry of Home Affairs is looking at a sweeping overhaul of criminal laws.

More on news

- It primarily seeks to revise Indian penal code (IPC), Code of Criminal Procedure (CrPC) and Indian Evidence Act (IEC).
- IPC (enacted in 1860) **enlists and defines offences** and specifies their respective punishments.
- CrPC (enacted in 1973) establishes the **machinery for implementation of the IPC** and lays down the procedure to be followed.
- IEA (enacted in 1872) elaborates on the **rules of taking evidence in order to prove the guilt or innocence** of an alleged offender.

Related information: Various expert Bodies on Police Reforms and Criminal Law Reform
- National Police Commission 1977-81
- Ribeiro Committee 1988
- Padmanabhaiah Committee 2000
- Malimath Committee 2002-03
- Supreme Court Decision on Prakash Singh vs Union of India 2006
- Second Administrative Reform Commission 2007
- Police Act Drafting Committee II 2015

1.4.4. AADHAAR AUTHENTICATION RULES

Why in news

Aadhaar authentication for good governance (social welfare, innovation, knowledge) rules, 2020 were notified.

More on news

- As per Rules, Central government may allow Aadhaar authentication by requesting entities for the following purposes-
  - o usage of digital platforms to **ensure good governance**,
  - o prevention of dissipation of **social welfare benefits**
  - o enablement of **innovation and spread of knowledge**
- Till now, the government has allowed seeding of Aadhaar number for delivery of social welfare benefits under some programmes such as Public Distribution System. However, new rules would **expand the scope of Aadhar** for agriculture, education and health schemes etc.
- For availing authentication services, individual government departments will have to **seek approval of Unique Identification Authority of India (UIDAI),**
  - o UIDAI is statutory body to manage Aadhaar and runs Aadhaar-based services.
- Also, **only the government agencies would be allowed to use Aadhaar authentication** services, not any private entity.
  - o This is in line with the 2016 Supreme Court judgment that Aadhaar could only be used to authenticate beneficiaries of government subsidy schemes.
  - o There are arguments that Aadhaar and Other Laws (Amendment) Act, 2019 **seeks to effectively allow private entities access** to Aadhaar-based authentication. That, however, is under constitutional challenge in the Supreme Court.

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1.5. MISCELLANEOUS

1.5.1. PMCARES FUND

Why in news?

Petition challenging the legality and the functioning of the Prime Minister's Citizen Assistance and Relief in Emergency Situations (PM-CARES) Fund, citing existence of Prime Minister's National Relief Fund (PMNRF) was dismissed by Supreme Court.

PM-CARES Fund and PMNRF

Parameter	PMNRF	PM-CARES Fund
Formation	formed by Jawaharlal Nehru in January 1948.	Formed in 2020 amidst CoVID-19 outbreak.
Objective	• created to assist displaced persons from Pakistan. • now provides assistance to persons affected by calamities such as floods, earthquakes and to the victims of riots and accidents. • Assistance also rendered to partially defray expenses for medical treatment like heart surgeries, kidney transplantation, acid attack etc. • The PMNRF also has a list of empanelled hospitals, that includes all central and state government hospitals, and a list of private hospitals that it offers support to.	• undertaking and supporting relief or assistance of any kind relating to a public health emergency or any other kind of emergency, calamity or distress either man-made or natural • creation or upgradation of healthcare or pharmaceutical facilities, other necessary infrastructure, funding relevant research or any other type of support. • will also render financial assistance, provide grants of payments of money or take any such other steps deemed necessary by the Board of Trustees to the affected population.
Administrative mechanism	• Recognized as a Trust under the Income Tax Act with **Prime Minister as the Chairman** and is assisted by Officers/ Staff on honorary basis.	• **Prime Minister is the ex-officio Chairman of the PM CARES Fund** and Minister of Defence, Minister of Home Affairs and Minister of Finance, Government of India are ex-officio Trustees of the Fund. • The Chairperson of the Board of Trustees (Prime Minister) shall have the power to nominate three trustees to the Board of Trustees who shall be eminent persons in the field of research, health, science, social work, law, public administration and philanthropy. • Any person appointed a Trustee shall act in a pro bono capacity.
Contributions to the fund:	• accepts **only voluntary donations** by individuals and institutions. • Contributions flowing out of budgetary sources of Government or from the balance sheets of the public sector undertakings are not accepted. • exemption under the FCRA so has also received **foreign contributions** as a public trust since 2011.	• consists **entirely of voluntary contributions** from individuals/organizations and does not get any budgetary support. • exemption under the FCRA so it can accept **donations and contributions from individuals and organizations based in foreign countries.**
Disbursement of the fund	• subject to the **discretion of the Prime Minister.**	• subject to the **criterion/rules laid down by the trustees**.
Donations to Fund	• qualify for 80G benefits for 100% exemption under the Income Tax Act, 1961. • also qualify to be counted as Corporate Social Responsibility (CSR) expenditure under the Companies Act, 2013	• qualify for 80G benefits for 100% exemption under the Income Tax Act, 1961. • will also qualify to be counted as Corporate Social Responsibility (CSR) expenditure under the Companies Act, 2013.
Audit	Audited by an independent auditor outside the Government. At present, Sarc & Associates, Chartered Accountants are the auditors.	Will be audited by independent auditors who will be appointed by the trustees.

1.5.2. NON-PERSONAL DATA

Why in news?

The draft report on **Non-Personal Data (NPD) Governance Framework** was released recently for inviting feedbacks by the committee **headed by Kris Gopalakrishnan.**

What is Non-Personal Data?

- The draft report defines non-personal data as any **set of data which does not contain personally identifiable information,** in essence means that no individual or living person can be identified by looking at such data.
  o It includes data sets aggregated and collected by **various mobile apps, websites and devices.**
- **Difference from personal data:**
  o Unlike personal data, which contains explicit information about a person's name, age, gender, sexual orientation, biometrics and other genetic details, **non-personal data is more likely to be in an anonymised form.**
  o Anonymous data is a data that is **initially personal data but is later made anonymous using certain data transformation techniques,** to the extent that individual specific events are no longer identifiable.
- **Classifications of non-personal data:** The draft report classifies NPD as:
  o **Public non-personal data:** All the **data collected by government and its agencies** such as census, data collected on the total tax receipts etc.
  o **Community non-personal data:** Any **data identifiers about a set of people** who have either the same geographic location, religion, job, or other common social interests etc.
  o **Private non-personal data:** Produced by individuals which can be derived from application of proprietary software or knowledge. Private non-personal data is further sub-classified into 'sensitive non-personal data' & 'critical non-personal data'.

Other recommendations of the report

- Create **Non-Personal Data Authority** with regulatory powers.
- Define **roles and stakeholders in the NPD ecosystem** like defining Data custodians, Data Principals, Data Trustees, etc.
- **Requirement of consent** for anonymisation and usage of NPD.
- **Localization of sensitive NPD** in line with Personal Data Protection Bill, 2019 (PDP Bill).
- The report **contemplates three broad purposes for data sharing:** sovereign, public interest and economic purpose.
- Creation of a **Non-Personal Data Policy Switch** as a single digital clearing house.
- Establishments of **data spaces, data trusts and cloud innovation labs and research centers** to promote data-based research.

2. INTERNATIONAL RELATIONS

2.1. INDIA AND ITS NEIGHBOURHOOD

2.1.1. INDIA BANGLADESH

Why in news?

Recently, India, Bangladesh operationalised new Inland Waterway Protocol route under Protocol for Inland Water Trade & Transit (PIWTT).

More on news

- Route was operationalized from **Daukandi (Bangladesh) – to Sonamura (Tripura)** along river Gumti.
- PIWTT was signed between India and Bangladesh in 1972 **to provide inland waterways connectivity between the two countries,** particularly with the North Eastern Region of India and also to enhance bilateral trade.
- In May 2020, **addendum to PIWTT was signed** with inclusion of new routes and declaration of new Ports of Call (intermediate stop for a ship).

> **Related news**
> - Recently, **first container ship from Kolkata Port to Agartala was reached via Chattogram port.**
> - This was **done under Agreement on use of Chattogram and Mongla Ports** for movement of India's transit cargo through Bangladesh.
> - It will **provide alternative and shorter route to connect North East Region** through Bangladesh.

2.1.2. TEESTA RIVER PROJECT

Why in news?

China has proposed $1 billion loan to Bangladesh for a **Comprehensive Management and Restoration Project on Teesta River.**

More on news

- The project is aimed at **managing the river basin efficiently,** controlling floods, and tackling the water crisis in summers.
- It is the **first time China is getting involved in a river management project** in Bangladesh.

India Bangladesh Teesta river issue

- Teesta River originates at TsoLamo (Himalayas), India, and **flows through Sikkim, West Bengal and Bangladesh** before pouring into Brahmaputra River in Bangladesh.
- It is **one of the 54 rivers that enter Bangladesh** from India and is fourth-largest trans-boundary

river in Bangladesh (after Ganga, Brahmputra & Meghna).
- Teesta has been a **source of discord between India & Bangladesh with negotiations** on water sharing dating back to 1951 when Bangladesh was East Pakistan.
- In 1984, a Joint Rivers' Commission recommended **allotting 42.5 per cent to India and 37.5 per cent to Bangladesh.**
- A **2011 attempt to ink an agreement on the basis of the 1984 recommendations** could not be implemented due to objections from West Bengal.

2.1.3. INDIA- BHUTAN HYDROPOWER PROJECT

Why in news?

India, Bhutan signed a pact for first joint venture hydropower project.

> **Other hydropower projects with neighbouring countries**
> - **Dorjilung** hydropower project (1,125 MW) (**trilateral cooperation** between Bhutan, India and Bangladesh).
> - **India-Nepal:** Mahakali Treaty was signed in 1996 for development of **Pancheshwar Multipurpose Project.**

More on news

- It is the first time an India-Bhutan hydropower project will be **constructed as a 50:50 Joint Venture,** not as a government-to-government agreement.
- **600 MW Kholongchhu project** will be constructed in Bhutan's less developed eastern region of Trashiyangtse.
- It is expected to be **completed in the second half of 2025.**
- **Joint Venture Partners:** Sutlej Jal Vidyut Nigam, a Himachal Pradesh PSU, and Bhutanese Druk Green Power Corporation.
- Kholongchhu project is **one of four additional projects agreed to in 2014,** for development of Hydroelectric Projects of capacity 2120 MW under Joint Venture Model.
  - **Other 3 joint venture to be are:** 180 MW Bunakha, 570 MW Wangchhu and 770 MW Chamkharchhu.
- So far, **India has constructed 4 HEPs in Bhutan totaling 2100MW** (336 MW Chukha, 60 MW Kurichhu and 1020 MW Tala, 720MW Mangdechhu).
- India is committed to help Bhutan to **create a total 10,000 MW of installed capacity by 2020.**

Related news: Jaigaon-Ahllay trade route
- It is the **new trade route** commenced between India and Bhutan.
- It **will operate between Jaigaon in West Bengal and Ahllay in Bhutan**, enabling smoother trade of goods and strengthening of sub-regional cooperation.

2.1.4. CHINA BHUTAN BORDER DISPUTE

Why in news?

For the **first time China included Bhutan's eastern sectors to the boundary dispute** between the two countries.

Bhutan and India formally demarcated their 699 km boundary in 2006
Map not to scale

More on news

- China has attempted to **stop UNDP's Global Environment Facility (GEF) funding for Sakteng Wildlife Sanctuary** (in eastern Bhutan), claiming it was disputed territory but was overruled.
- So far, dispute was on Jakarlung, Pasamlung and Doklam plateau.
- Bhutan has always maintained silence on its boundary negotiations with China, and it **does not have any formal diplomatic relations with China.**
- So far both countries have held 24 rounds of boundary talks between 1984 and 2016, concentrated mainly on north and west Bhutan regions.
- **India-Bhutan Friendship Treaty of 2007** enjoins both sides to "cooperate closely with each other on **issues relating to their national interests.**

Related news: Inter-Parliamentary Alliance on China
- It is an international cross-party group of legislators working towards reform on how democratic countries approach China.
- Alliance seeks to help **counter risks to global trade, security and human rights** due to China's growing influence.

- **Participating nations** include US, Germany, UK, Japan, Australia, Canada, Sweden, Norway, and members of European parliament.

2.1.5. CHINESE PROJECTS IN POK

Why in news?

Recently, Pakistan and China signed an agreement for the 700 MW Azad Pattan hydel power project on the Jhelum river in Pakistan Occupied Kashmir (PoK).

More on news

- It is the **second power project under the China Pakistan Economic Corridor** (CPEC).
- First agreement was for **Kohala project, also on Jhelum river**.

Other Chinese Projects in PoK

- China has signed a contract with Pakistan to construct **Diamer-Bhasha Dam**, a concreted-filled gravity dam on the **River Indus in Gilgit-Baltistan Region**.
- **Expansion of the Karakoram highway (KKH) in Gilgit-Baltistan(G-B) by** China Roads and Bridges Corporation.
- **Railway line** between Kashgar in China to Gwadar in Pakistan via Gilgit.

2.1.6. MISCELLANEOUS

China Study Group (CSG)	• CSG is the **central and sole advisor** to the government on policies related to China. • CSG is a **secretary-level grouping** which includes the foreign secretary, home secretary, defence secretary, and the vice-chiefs of the three services, along with the chiefs of the Intelligence Bureau and R&AW. • The CSG was **set up in 1975** on the instructions of then-PM Indira Gandhi. • Its **first head was K.R. Narayanan**, who later became President of India. • The **primary task of the CSG** was to monitor the India-China border,

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	assess its management, and help in preparations for negotiations with China on the border question. • It is **headed by National Security Advisor.**
"6+2+1" group on Afghanistan	• United Nations Secretariat held **"6+2+1" meeting** on regional efforts to support peace in Afghanistan. • **It includes: 6 neighbouring countries** of Afghanistan: China, Iran, Pakistan, Tajikistan, Turkmenistan and Uzbekistan; **global players** -United States and Russia, and Afghanistan itself. • India was not invited to the meet.
Afghanistan-Pakistan Transit Trade Agreement (APTTA)	• Pakistan announced resumption of **Afghan exports to India through the Wagah border crossing** under APTTA. • It is a bilateral trade agreement between Afghanistan-Pakistan signed in 2010. • It **provides Afghan traders access to eastern Wagah border with India**, where Afghan goods are offloaded onto Indian trucks. • However, **APTTA does not allow India's exports to Afghanistan.**
High Impact Community Development Projects (HICDP) Programme	• Under this, **India and Afghanistan signed five agreements for developing educational infrastructure** in four Afghan provinces. • HICDP is being implemented by India to further **strengthen the bilateral development partnership.** • Since 2005, India has committed **USD 200 Million to support over 550 projects** throughout Afghanistan under HICDP.

2.2. INDIA AND THE WORLD

2.2.1. INDIA-E.U.

Why in news?

Recently, the **15th India- European Union (EU) Summit** was held through a virtual medium.

Key Outcomes of the Summit

- **'India-EU Strategic Partnership: A Roadmap to 2025'** was adopted to guide cooperation between India and the EU over the next five years.
- Agreed to establish regular **High-Level Dialogue** to guide negotiations on **Broad-based Trade and Investment Agreement (BTIA)** and to address multilateral issues of mutual interest.

- Agreement between **India-EURATOM (European Atomic Energy Community)** on research and development cooperation in the **peaceful uses of nuclear energy** was signed.
- Adopted declarations on **Resource Efficiency and Circular Economy,** decided to **launch a dialogue on maritime security**, renewed Agreement on Scientific cooperation.

India EU BTIA
- **Stalled EU-India BTIA:** It is being negotiated since 2007 and both sides have major differences on crucial issues such as-
  - **EU's demands:** significant duty cuts in automobiles, tax reduction on wines, spirits etc, a strong intellectual property regime, relaxation in India's data localisation norms, protection to all its items with Geographical Indication etc.
  - **India's demands:** 'Data secure' status (important for India's IT sector); Ease norms on temporary movement of skilled workers, relaxation of Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) norms etc.
- India accounts for only 1.9% of EU total trade in goods in 2019, well behind China (13.8%).
- EU as a block is **India's largest trading partner**, accounting for €80 billion worth of trade in goods in 2019 (11.1% of total Indian trade).
- EU is **the biggest foreign investor in India**, with €67.7 billion worth of investments made in 2018 (22% of total FDI inflows).

Related news: European Union (EU) Recovery Fund
- It is a **$825bn recovery fund** proposed by EU's executive Commission to help EU tackle COVID-19 crisis. It will provide **grants and loans for every EU member state**.
- Money would be raised on the capital markets and would be paid back over a 30-year period starting in 2028.
- Commission has dubbed the plan as **Next Generation EU.**

2.2.2. INDIA-AUSTRALIA

Why in news?

First ever virtual bilateral summit was held between Prime Ministers of India and Australia.

Key Outcomes of the Summit

- Elevated the bilateral Strategic Partnership to **Comprehensive Strategic Partnership.**
- **Elevated the "2+2" engagement** to the **level of Foreign and Defence Ministers (from secretary level)**, where **strategic discussions** will be taking place **every two years.** India already has such mechanism with USA and Japan.
- MOU on cooperation in the field of **mining and processing of Critical and Strategic minerals.**

- Mutual **Logistics Support Agreement** was signed.
- **Joint declaration** on shared vision for **Maritime Cooperation** in the **Indo- Pacific region.**

Background of India Australia relations

- India Australia are '**Strategic Partners'**, and signed Joint Declaration on Security Cooperation in 2009.
- Both signed **Civil Nuclear Cooperation** Agreement was **in 2014**, enabling India to secure uranium from Australia**.**
- Both conduct **joint exercises like AUSINDEX 2019, AUSTRAHIND, Exercise Pitch Black and Kakadu** biennial exercise (Hosted by the Australian Navy).
- Other key agreements signed by two: **Mutual Legal Assistance Treaty**, Extradition Treaty and the Social Security Agreement, Agreement on **Cyber and Cyber-Enabled Critical Technology**.
- Both are yet to sign a **Comprehensive Economic Cooperation Agreement** (Talks started in 2011, last being in 2015).

An India Economic Strategy to 2035
- It is a **three-pillar strategy by Australia** with focus on building a sustainable long-term economic strategy.
- It **identifies 10 sectors and 10 states** in Indian market where Australia has competitive advantages, and where it should focus its efforts.
- These are divided into a flagship sector (education), three lead sectors (agribusiness, resources, and tourism) and six promising sectors (energy, health, financial services, infrastructure, sport, science and innovation).
- **Three pillars include**: Economic ties, Geostrategic Engagement and Rethinking Culture-thrust on soft power diplomacy.

2.2.3. INDIA-VIETNAM

Why in news?

17th India-Vietnam Joint Commission on Trade, Economic, Scientific and Technological Cooperation was held.

Key outcomes

- **Decided to enhance their bilateral cooperation** in line with **India's Indo-Pacific Oceans Initiative (IPOI) and ASEAN's Outlook on Indo-Pacific.**
  - **IPOI was launched by India in 2019** and its pillars include enhancing maritime security, promoting free, fair and mutually beneficial trade and maritime transport and enhancing science and technology cooperation.

- ○ **ASEAN Outlook on the Indo-Pacific** envisages ASEAN Centrality as the underlying principle for promoting cooperation in the Indo-Pacific region.
- India is one of only three countries with which **Vietnam has a comprehensive strategic partnership** and ONGC Videsh is engaged in energy production in SCS.

Background of India Vietnam relations

- India was **one of the first countries to recognise a united Vietnam** in 1975 after the war with the US.
- Both signed Joint Declaration on Comprehensive Cooperation in 2003 in which they envisaged creating an "**Arc of Advantage and Prosperity**" in Southeast Asia.
- Relations between the two countries were elevated to the level of **'Strategic Partnership' in 2007** and further to a "**Comprehensive Strategic Partnership" in 2016.**
- Both are **members of the Mekong–Ganga Cooperation.**
- Vietnam is a large recipient of training programmes under **Indian Technical and Economic Cooperation (ITEC) programme and also e-ITEC programme.**
- India is one of only three countries with which **Vietnam has a comprehensive strategic partnership** and ONGC Videsh is engaged in energy production in SCS.

Related News
European Union Vietnam Free Trade Agreement (EVFTA)
- Recently, Vietnam's National Assembly ratified the European Union Vietnam Free Trade Agreement (EVFTA) and the EU-Vietnam Investment Protection Agreement (EVIPA).
- EVFTA is the second FTA between the EU and an ASEAN country, after Singapore.
- EVIPA, a part of a free trade agreement (FTA), is an agreement between EU and Vietnam, which aims to protect investors and investments in a host country.
- This is the first FTA that has been signed after the outbreak of the global COVID-19 pandemic

2.2.4. INDIA USA

Why in news?

Recently, US has suspended work visa like H-1B, H-2B, and certain categories of H- 4, J and L visas until December 31 **to protect domestic workers** who were impacted due the COVID-19 pandemic.

Visa categories affected includes

- **H-1B visas** which allow US companies to employ foreign workers temporarily in **specialised occupations** for three years, extendable to six years.
- **H-4 visa**- issued to immediate family members like spouse & children of H-1B workers.
- **L1 visas** allows companies to transfer highly skilled workers to US for a period of up to seven years.
- **H-2B visas** allow food and agricultural workers to seek employment in the US.
- **J 1 visas** are for those involved in cultural and academic activities.

> **Related news: India Ideas Summit 2020**
> - It was hosted by the **US-India Business Council (USIBC)** marking the 45th anniversary of the formation of the Council.
> - USIBC is a **business advocacy group**, focused on strengthening bilateral trade and commerce between India and USA.
> - Theme: **'Building a Better Future'.**
>
> **Gandhi-King Scholarly Exchange Initiative Bill**
> - This bill was recently passed by US House panel.
> - It **seeks to establish an exchange program between India and U.S.** to study the work and legacies of Mahatma Gandhi and civil rights leader Martin Luther King Jr.
> - It also seeks **to establish Gandhi-King Global Academy**, a conflict resolution initiative based on the principles of nonviolence.
>
> **Passage Exercise (PASSEX)**
> - Indian Naval ships conducted a PASSEX with **U.S. Navy's USS Nimitz carrier strike group near the Andaman and Nicobar Islands.**

2.2.5. RUSSIA INDIA CHINA TRILATERAL

Why in news?

Virtual meeting of Russia India China (RIC) Trilateral Foreign Ministers held **to commemorate the 75th anniversary of the conclusion of World War II**, as well as foundation of UN.

RIC

- RIC was proposed by Russia in 1998, initially as counterbalance to the Western alliance.
- It emphasises on global issues like- reforms in UN, Global Counter-Terrorism Strategy, Prevention of arms race in outer space etc.

- It occupies **over 19% of global landmass and contributes to over 33% of global GDP**.

> **Related news: Kavkaz 2020 (Caucasus-2020)**
> - India decided **not to take part** in this citing COVID-19 pandemic.
> - It is the **Russian strategic command and staff exercise**.
> - The **invitees for the exercise include China and Pakistan** apart from other member-states of the Shanghai Cooperation Organisation.

2.2.6. MISCELLANEOUS

India-Canada Centre for Innovative Multidisciplinary Partnership to Accelerate Community Transformation and Sustainability (IC-IMPACTS)	• It is a Canada-India Research Centre of Excellence and **aims to solve challenges facing both nations related to water, health, and infrastructure.** • Department of Science & Technology has been working with IC-IMPACTS for research partnerships since 2013. • **Major focus areas of research cooperation under IC-IMPACT -** green buildings and smart cities, occupant's survivability in buildings during fires, integrated water management & safe and sustainable infrastructure; and water-borne and infectious diseases.
UK launches £3 million innovation challenge fund in India	• The fund aims to **support scientists in academia and industry to tackle the COVID-19 pandemic** and climate change. • Grants under the Fund are part of initiative under the Tech Partnership known as **Tech Clusters.** • Tech Clusters **will support the development of Indian Tech Clusters** by breaking down barriers to growth, including building international links.

2.3. INTERNATIONAL ORGANIZATION/INSTITUTIONS

2.3.1. INDIA ELECTED NON-PERMANENT MEMBER OF UN SECURITY COUNCIL (UNSC)

Why in news?

India has been elected as a non-permanent member of the UN Security Council for a two-year term.

More on news

- India, the only endorsed **candidate from the Asia-Pacific States,** won 184 votes out of the

192 ballots cast in the elections. India's two-year term as the non-permanent member of the UNSC would **begin from January 1, 2021**.

- It will be **India's 8th term** as non-permanent member at the UNSC. Previously, India was elected for 1950-1951, 1967-1968, 1972-1973, 1977-1978, 1984-1985, 1991-1992 and most recently in 2011-2012.
- Along with India, Ireland, Mexico and Norway also won the Security Council elections for the non-permanent membership.

UN Security Council members
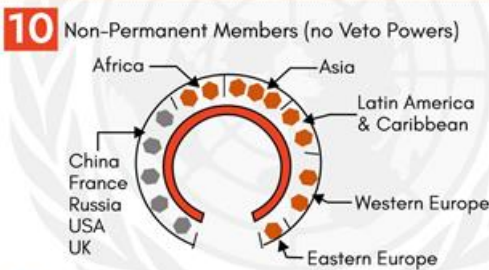
India's Priorities at UNSC

- During the election campaign at UNSC, Ministry of External Affairs launched a brochure outlining India's priorities. According to it, **India will be guided by the five priorities** under the overarching theme of **NORMS: New Orientation for a Reformed Multilateral System**. These priorities include
  - New Opportunities for progress
  - An Effective response to international terrorism
  - Reforming the multilateral system
  - A comprehensive approach to international peace and security
  - Promoting technology with a human touch as a driver of solutions
- India will pursue these priorities through a **Five-S approach:** Samman (Respect), Samvad (Dialogue), Sahyog (Cooperation), Shanti (Peace) and Samriddhi (Prosperity).

2.3.2. ARMS TRADE TREATY

Why in news?

China said it will join UN arms trade treaty.

Arms Trade Treaty

- It is the **first legally binding international agreement** to regulate the global trade in conventional arms by establishing common international standards for member countries.
- It has 102 states parties (Lebanon joined last month) and an additional 34 signatories, including the United States, which had signed but did not formally ratify the treaty.
- Countries who **neither signed nor ratified included** Russia, China, **India**, Iran, North Korea, Saudi Arabia and Syria.
- It was endorsed by the UN General Assembly in April 2013, and **entered into force on December 23, 2014.**
- It **regulates ammunition or munitions** fired, launched, or delivered by the conventional arms covered under the treaty.
- It requires **states to monitor their arms exports,** and to ensure their weapons sales do not break existing arms embargoes.
- Nations also **need to ensure the weapons they export do not end up being used for genocide**, crimes against humanity, war crimes or terrorist acts. If they do find out the arms will be used for any of these, they need to stop the transfer.

Conventional Arms which ATT covers
• Battle tanks
• Armoured combat vehicles
• Large-calibre artillery systems
• Combat aircraft
• Attack Helicopters
• Warships
• Missiles and missile launchers
• Small arms and light weapons

2.4. INTERNATIONAL EVENTS

2.4.1. ISRAEL AND UNITED ARAB EMIRATES DIPLOMATIC AGREEMENT

Arab, Palestinian in Gaza/West Bank
People Group Location from IMB. Other Map Data/Geography from GMMS (GMI). Map by Joshua Project

- Israel and United Arab Emirates (UAE) signed major diplomatic agreement **(Abraham**

Accord) agreeing for full normalization of relations in **exchange for Israel suspending annexation of occupied West Bank territory**.
- Israel pledged to **suspend its ambitions to annex parts of the West Bank.**
  - **In 1967 Middle East war Israel occupied West Bank**. In 2019, Israeli Prime Minister stated that he had plans to annex the Israeli settlements in the West Bank.
- With this, **UAE became the first Gulf country** to establish diplomatic and economic relations with Israel.
- **Jordan and Egypt are the only two other Arab states** to have diplomatic ties with Israel.

2.4.2. MISCELLANEOUS

NAFTA is now the USMCA	- In 2018, the **United States, Mexico, and Canada renegotiated** the North American Free Trade Agreement (NAFTA). The new deal is now called the United States-Mexico-Canada Agreement (USMCA). - NAFTA was **created in 1994** to generate economic growth and helping to raise the standard of living for the people of all three member countries. - USMCA enters into force on 1 July 2020.

Southern African Customs Union (SACU)	- India and SACU revived discussion for Preferential Trade Agreement between two.
	  - In 2019-20, trade between India and Africa as a whole stood at $ 66.7 billion, of which the India-SACU trade was $ 10.9 billion.
	- SACU is a customs union comprising **Botswana, Lesotho, Namibia, South Africa & Eswatini (Swaziland).**
	  - **Customs union** is an agreement between two or more neighboring countries to remove trade barriers, reduce or abolish customs duty.
	- It is **world`s oldest custom union,** whose formation dates back to 1910.

Universal Periodic Review (UPR) process	- As part of **third round of UPR process**, National Human Rights Commission has given certain recommendations related to -universal basic income,child rights etc.
	- UPR involves a **review of human rights records of all UN Member States**.
	  - UPR process is under auspices of **Human Rights Council (HRC).**
	  - HRC is an inter-governmental body within UN system responsible for promotion and protection of all human rights.
	- UPR **aims to improve human rights situation** in all countries and **address human rights violations** wherever they occur.

Demilitarised zone (DMZ)	- Recently, North Korea threatened to send troops to DMZ. - DMZ is a **region on the Korean peninsula that demarcates North Korea from South Korea**. - DMZ is a **2 km-wide buffer**, stretching coast to coast across the peninsula. - It **roughly follows latitude 38° N** (the 38th parallel), the original demarcation line between North Korea and South Korea at the end of World War II. - DMZ was established as part of ceasefire negotiated between UN and communist forces.
75th anniversary of world's first atomic bombing	- During the World War-II, the US dropped its **first atomic bomb named "Little Boy"** on Hiroshima (Japan) on August 6, 1945, destroying the city and killing 140,000 people. - It was estimated to have the explosive force of 20,000 tonnes of TNT. - The US dropped a second atom bomb named **"Fat Man"** on Nagasaki (Japan) on August 9, 1945.
Tsar Bomba nuke test	- Recently, Russia released previously classified documentary video of this test. - The bomb, officially named RDS-220 and later nick-named Tsar Bomba, **was the largest nuclear weapon ever constructed.** - With a yield of 50 megatons (50 million tons), **equal to around 3,800 Hiroshima bombs**, the weapon was set off over Novaya Zemlya (island in Arctic Ocean) on October 30, 1961.
Trinity Test	- On July 16, 1945, **scientists tested Gadget-world's first atomic bomb. This test was called as the Trinity Test.** Bomb was developed as part of the US-led **Manhattan Project.** - After this, within a month, an **identical nuclear bomb** called '**Fat Man**' was dropped on the Japanese city of Nagasaki. - An **atomic bomb uses either uranium or plutonium and relies on fission,** a nuclear reaction in which a nucleus or an atom breaks apart into two pieces.
Global Vaccine Summit 2020	- Hosted by UK, the Summit aims to raise funds for **Gavi, a global Vaccine Alliance.** - **Gavi** is international organisation, bringing together public and private sectors with s**hared goal of creating equal access to new and underused vaccines** for children living in world's poorest countries. - It has **helped vaccinate more than 760 million children,** preventing more than 13 million deaths.

	• India committed **$15 million** to Gavi over next five years at this summit.
Toman	• Recently, Iran's Parliament has passed a bill to change the **monetary unit from 'Rial' to the popularly used 'Toman'**. • Each 'Toman' will be worth 10,000 Rials under the new system. • **Significance**: Iran has reportedly decided to change its currency to offset the fallout from **inflation triggered by US sanctions**.
Cairns Group	• It is a **coalition of 19 agricultural exporting nations** lobbying for agricultural trade liberalization. o It accounts for **more than 25% of the world's agricultural exports**. • It was formed in 1986 in Cairns, Australia. • India is not a member. • Recently, Cairns Group Members **launched an initiative to support global agricultural and food system during COVID-19 pandemic**, and limit impact of emergency measures on global food security and fair trade.

2.5. ISSUES RELATED TO SECURITY

2.5.1. MILITARIZATION OF ANDAMAN AND NICOBAR ISLANDS

Why in news?

The Ladakh stand-off with China has catalysed India's efforts to strengthen its military presence at the Andaman and Nicobar Islands (ANI).

About Andaman & Nicobar Islands group

- It is a group of 572 islands, out of which only 38 are inhabited.
- The islands extend from 6° to 14° North latitudes and from 92° to 94° East longitudes.
- The **highest point** is **Saddle Peak** (732 m) located in **North Andaman Island**.
- The **only active volcano in India, Barren Island**, is located in A&N and had last erupted in 2017.
- It also has mud volcanoes at Diglipur and Baratang. Mud volcanoes in Baratang island have erupted sporadically.
- It has often been referred to as India's **'unsinkable aircraft carrier'** to the East.

India's presence in Indian ocean:
- **Military Exercises**: MILAN, MALABAR (US-Japan-India)
- **Logistics-sharing agreements**: with the US and Australia, as well as with France, Singapore, and South Korea. A similar logistics-sharing agreement with Japan is in an advance stage of negotiations. Examples include: Logistics exchange at ports Sabang, Changi, Duqm, Agalega, Chabahar etc.
- **A&N Command**: It is the first and only Tri-Service theatre command of the Indian Armed Forces. It patrols India's EEZ to suppress gun running, narcotics smuggling, piracy, and poaching, and conducts maritime surveillance and Humanitarian Assistance and Disaster Relief (HADR) operations.
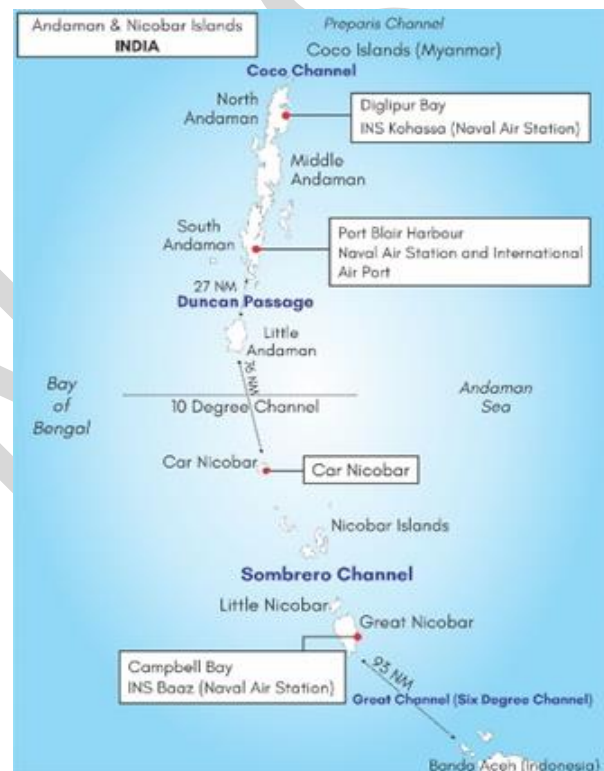
2.5.2. SPACE WARFARE

Why in news?
The U.S. and the U.K. recently accused Russia of test-firing an anti-satellite weapon in space raising concerns of space warfare.

About space warfare
- Space warfare is combat that takes place in outer space. The scope of space warfare includes:
  - **ground-to-space warfare**, such as attacking satellites from the Earth;
  - **space-to-space warfare**, such as satellites attacking satellites; and
  - **space-to-ground warfare**, such as satellites attacking Earth-based targets.
- Advent of Space Warfare **began in 1962** when the US exploded a ground-based nuclear

weapon in space, which eventually led to the **Outer Space Treaty of 1967**.

Outer Space Treaty (OST), 1967
- It is a **multilateral treaty** that provides the basic framework on **international space law**.
- It is administered by the **United Nations Committee on the Peaceful Uses of Outer Space**.
- **India** is a signatory to this treaty, and ratified it in 1982.
- **Key principles of the OST**
  - **Freedom of exploration and use of space** for the benefit and interest of all countries
  - **Non-appropriation of outer space**, including the Moon and other celestial bodies, by any nation
  - **Prohibition of the deployment of nuclear weapons** or other kinds of weapons of mass destruction in outer space.

Other international treaties for regulation of outer space
- **Moon Agreement, 1979:** It ensures that the Moon and other celestial bodies are used exclusively for peaceful purposes and that their environments are not be disrupted.
- **Liability Convention of 1972** establishes the standards of liability for damage caused by space objects
- **Registration Convention, 1975** requires States to register all objects launched into outer space with the United Nations.
- **Partial Test Ban Treaty** (**PTBT**) prohibits all testing nuclear weapons in the outer space.

Global developments that may impact peace in Space
- **USA's Space Force**: US transformed its Air Force Space Command into the U.S. Space Force, dedicated military branch to help protect the interests of the USA in space, deter aggression etc.
- **France released its first French Space Defense Strategy** in 2019, which elevated French military space organization and reassigned control of French military satellites from the French space agency to the military.
- **Iran** recently announced that it has successfully launched a **military reconnaissance satellite**, called **Noor** (Light).
- **Rendezvous and proximity operations (RPOs)** conducted by **U.S.A., China and Russia.**
  - RPOs are generally **conducted for civil/ commercial purposes such as servicing, repair and refueling** and inspection of satellites. But countries with satellites near such operations grow highly suspicious, due to potential use of satellites as surveillance devices or weapons.

India's Counter space capabilities
- **Mission Shakti**: In 2019, India became the fourth country, after **United States**, **Russia** and **China,**

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to successfully test a direct-ascent anti-satellite (ASAT) missile that targeted a satellite in Low Earth Orbit.
  - It demonstrated its **capability to interdict and intercept a satellite in outer space** based on complete indigenous technology.
- **Defence Space Agency** (DSA) was established to command the space assets of the Army, Navy and Air Force, including the military's anti-satellite capability.
  - It is also to formulate a strategy to protect India's interests in space, including addressing space-based threats.
- **Defence Space Research Organisation (DSRO)** was also created to provide technical and research support to DSA.
- **IndSpaceEx** (simulated space warfare exercise) was conducted in 2019 to identify key challenges and shortfalls if a conflict escalates in space dimension.

2.5.3. NATIONAL INTELLIGENCE GRID (NATGRID)

Why in news?

NATGRID has signed **MoU with National Crime Records Bureau (NCRB)** to access the centralised online database on FIRs and stolen vehicles.

About NATGRID
- NATGRID, an attached office of Ministry of Home Affairs (MHA), is the integrated intelligence grid which connects databases of core security agencies.
- It will **assist intelligence and law enforcement agencies** in ensuring national and internal security, **with the ultimate aim to counter terror.**
- NATGRID **will link 10 user agencies with certain databases** that would be procured from 21 organisations.
  - **Database involves data related to** credit and debit cards, tax, telecom, immigration, airlines and railway tickets, passports, driving licenses.
  - **It will be available for various central agencies,** on a case-to-case-basis, including Intelligence Bureau, Research and Analysis Wing, Department of Revenue Intelligence etc.
- It was **proposed after the 2008 Mumbai terror attacks**.
- MHA announced that physical infrastructure of NATGRID Project will go live by 31st December 2020.

2.5.4. MISCELLANEOUS

Eurasian Group on Combating Money Laundering and Financing of Terrorism (EAG)	• Recently, virtual meeting of EAG was held.
	• EAG is a **regional body comprising nine countries**: **India**, Russia, China, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Belarus.
	• **Objectives**:
	  o **Reducing threat of international terrorism**
	  o Ensure **transparency, reliability and security of financial systems** of states
	  o **Integration of members** into international infrastructure for combating money laundering and terrorism financing
	• It is an **associate member of Financial Action Task Force,** an inter-governmental body to combat money laundering and terrorist financing.

Project Cheetah	• Under this project, around **90 Heron drones of the three defence services would be upgraded** to be armed with laser-guided bombs, air to ground and air-launched anti-tank guided missiles. • Heron is **a medium-altitude long-endurance unmanned air vehicle** (UAV) system primarily designed to perform strategic reconnaissance and surveillance operations. o It is designed and **manufactured by Israel Aerospace Industries.**

Money Laundering and the Illegal Wildlife Trade (IWT) report by Financial Action Task Force (FATF)	• **Key highlights:**
	  o Described **IWT** as a "global threat", which **has links with other organised crimes** like modern slavery, drug trafficking and arms trade.
	  o Proceeds of IWT are around $23 billion per year globally.
	  o **Suggested** that **money laundering laws should be applied to wildlife trade**
	• FATF is an **inter-governmental body established in 1989** to **combat money laundering, terrorist financing and other related threats** to the integrity of the international financial system.

Bureau of Police Research and Development (BPR&D)	• BPR&D, under the Ministry of Home Affairs, **is celebrating its Golden Jubilee Anniversary** on 28th August, 2020. • It was raised with a mandate **to promote excellence in policing, promote speedy and systematic study of police problems**, apply science and technology in the method and techniques by the Police.
Assam Rifles (AR)	• Delhi High Court has granted 12 weeks to the Union government to **decide on whether to scrap or retain dual control structure** for AR. • AR, at present, is **controlled by Defence Ministry as well as Ministry of Home Affairs (MHA)** • AR **(founded in 1835)** primary role is to protect North-eastern border. • **Other 6 Central Armed Police Forces are:** Border Security Force, Central Industrial Security Force, Central Reserve Police Force, Indo Tibetan Border Police, National Security Guard, Sashastra Seema Bal.

Special Frontier Force (SFF)	• According to some reports SFF, referred to as Vikas Battalion, **has been instrumental in occupying some key heights on Line of Actual Control** (LAC) with China in Ladakh.
	• SFF was **raised in the immediate aftermath of the 1962 Sino-India war**. It was a covert outfit which recruited Tibetans (now it has a mixture of Tibetans and Gorkhas).
	  o It falls **under the purview of the Cabinet Secretariat.**
	  o It is **nicknamed Establishment 22.**
	• SFF units are **not part of the Army** but they function under operational control of the Army

2.6. PLACES IN NEWS

Galwan Valley	• It is the **land between steep mountains that buffet Galwan River**. • Galwan river has its source in Aksai Chin, on China's side of Line of Actual Control (LAC), and it flows east to Ladakh, where it meets the Shyok river on India's side of LAC. • Valley is **strategically located between Ladakh in the west and Aksai Chin in the east.** • At its western end are Shyok river and the Darbuk-Shyok-Daulet Beg Oldie (DSDBO) road. • Traditionally, **Galwan Valley area has been part of the winter trade route** that linked Leh with Yarkand and Kashgar across the Karakoram Pass.
Yangtze river, China	• NASA images have shown flood water spilling from **Three Gorges Dam** built over Yangtze river. • Yangtze is **Asia's longest river**. Three Gorges dam is **World's largest hydroelectric dam**.
Amami Islands, japan	• This archipelago is **part of Japan.** Japan has reported sighting an unidentified submarine around Amami Islands.

Senkaku islands	• These a **group of uninhabited islands** in the East China Sea, claimed by Japan, China and Taiwan. • Recently, Japan changed the **name of the southern Japan area** containing Senkaku Islands from "Tonoshiro" to "**Tonoshiro Senkaku**," seen as an attempt to cement its claim
Bandar Abbas port, Iran	• INS Jalashwa **departed from this port bringing back stranded citizens from Iran** under operation Samudra Setu. o **Operation Samudra Setu** was launched by Indian Navy as a part of national effort to repatriate Indian citizens from overseas. • This port is strategically **located at Strait of Hormuz** (connecting Persian Gulf and Gulf of Oman).
Natanz, Iran	• Natanz is where **Iran's main nuclear facility is located**. • Recently, a **series of unexplained fires and explosions** at several places was reported in Iran including at Natanz.
Beirut	• A huge blast at Beirut port has killed more than 100 people and injured over 4,000. • **Beirut is the capital and largest city of Lebanon**. It is located on the Mediterranean coast at the foot of the Lebanon Mountains.
Black Sea	• **Turkey discovered 320 billion cubic metres natural gas reserve** in Black Sea which can alter the geopolitics of energy trade in its region. • **Black Sea**, also known as Euxine Sea, is located between Eastern Europe and Western Asia. • It **connects with the Mediterranean Sea** through the Bosporus Strait, and then through the Sea of Marmara and the Dardanelles Strait. • Countries sharing a border with Black Sea: **Romania, Turkey, Bulgaria, Ukraine, Russia, and Georgia.**
Nagorno-Karabakh region	• It is a disputed region between **Armenia and Azerbaijan.** • It lies in **South Caucasus region,** in the area between the Black Sea and the Caspian Sea.
Mali	• Recently, Mali President had resigned amid a military coup. • Mali is **landlocked country of western Africa**, mostly in the Saharan and Sahelian regions. • **Niger River** flows through its interior, functioning as the main trading and transport artery in the country.
Belarus	• There is a huge opposition movement, demanding new, democratic leadership and economic reform in Belarus. • It is **landlocked country in Eastern Europe** which has Russia to the east, Ukraine to the south and to the north and west lie EU and NATO members Latvia, Lithuania and Poland.

3. ECONOMY

3.1. FISCAL POLICY AND TAXATION

3.1.1. MONETIZATION OF DEFICIT

Why in News?

Some economists including former RBI governor C Rangarajan have suggested that the government should **monetize the deficit.**

What is Monetization of Deficit?

- If the expenditure of the government exceeds its income, the government is said to have **incurred a Fiscal Deficit (FD)**. This **deficit financing** has to be done either by **borrowing from the market** or **monetization of deficit through RBI.**

- In simple words, **monetization of fiscal deficits** involves the financing of such extra expenses **with money, instead of debt** to be repaid at some future dates. So, it is a form of **"non-debt financing"**. As a result, under monetization, there is no increase in net (not gross) public debt.

- It can occur only through one of two modalities:
  - o **Direct Monetization (DM):** Under this method, RBI prints new currency and purchases government bonds directly from the primary market (from the government) using this currency.
  - o **Indirect monetization (IM):** In this method, deficits are monetized as the **government issues bonds in the primary market** and the **RBI purchases an equivalent amount** of government bonds from the secondary market in the form of **Open Market Operations (OMOs).**

Primary vs. Secondary Market
- The primary market is where securities are created, while the secondary market is where those securities are traded by investors.
- In the primary market, companies sell new stocks and bonds to the public for the first time, such as with an initial public offering (IPO).
- The secondary market is basically the stock market and refers to the BSE, NSE, New York Stock Exchange, the Nasdaq, etc.

Background on Monetization of deficit

- Monetization of deficit **was in practice in India till 1997,** whereby the central bank automatically monetized government deficit through the **issuance of ad-hoc treasury bills.**

  - o Treasury bills are money market instruments, are **short term debt instruments** issued by the Government of India and are presently issued in three tenors (91, 182 and 364 days).

- In 1994 and 1997, two agreements were signed between the government and RBI to **completely phase out funding through ad-hoc treasury bills.** Later on, with the enactment of Fiscal Responsibility and Budget Management (FRBM) Act, 2003, RBI was completely barred from subscribing to the primary issuances of the government. The **FRBM Act (amended in 2017)** contained an **escape clause which permits monetization** under special circumstances.

Fiscal Responsibility and Budget Management Act (FRBM Act), 2003
- It establishes financial discipline to reduce FD and requires government to limit FD to 3% of the GDP by 31 March 2021.
- **States have their own FRBM Acts,** which sets 3% of Gross State Domestic Product cap on their annual budget deficits.

Pros and Cons of Monetization of deficit

Arguments in favour	Concerns raised
Monetization of deficit would not raise public debt keeping the sovereign rating intact. Also, it prevents crowding out effect on domestic borrowing and maintains adequate **money supply.**	**Monetization of deficit** could lead to rising inflation in the long term and devaluation of rupee if monetization is pursued aggressively.

Measures of Money Supply
- **Reserve Money (M0):** also called High Powered money, monetary base, base money etc. M0= Currency in Circulation+ Bankers' Deposits with RBI + Other Deposits with RBI.
- **Narrow Money (M1)** = Currency with public + Demand deposits with the Banking system (current account, saving account) + other deposits with RBI.
- **M2** = M1 + Savings deposits of post office savings banks.
- **Broad Money (M3)** = M1 + Time deposits with the banking system.
- **M4** = M3 + All deposits with post office savings banks.

Related Information

Discretionary Fiscal Stimulus

It refers to an increase in the fiscal deficit **caused by government policy**. It is distinct from an increase in fiscal deficit caused by slowing growth, which is called an **automatic stabiliser.**

Current account may turn surplus in the June quarter after a gap of 12 years

- Reasons quoted for this trend to happen are **lower trade deficit and lesser imports** alongside **rise in net service receipts**.
- **Current Account** represents a country's **current transactions** including exports, imports, interest payments, private remittances and transfers.
  - Current Account is component of Country's **Balance of Payments (BoP),** other component being Capital Account. (BoP is **record of transactions in goods, services and assets** between residents of a country with rest of the world for a specified time period.)
  - Current Account = Trade gap + Net current transfers + Net income abroad.

World Bank Releases its biannual 'India Development Update' report

- Report finds that fiscal deficit will increase to 6.6% of GDP in FY20/21 and Debt-to-GDP ratio is projected to peak at around 89% in FY22/23.
- However, it suggests that India needs to **maintain reform momentum** to reverse current economic slowdown.

RBI transfers Rs 57,128 crore surplus to government for 2019-20

- RBI **transfers surplus (the excess of income over expenditure) to government,** in accordance with **Section 47 (Allocation of Surplus Profits) of RBI Act, 1934.**
  - This is done in early August every year, after **July-June accounting year of RBI** is over.

	for more than 30 days with any bank as on March 1, 2020. • **Details of the scheme will be worked out** by a committee headed by KV Kamath.
To boost digital payments	• **Scheme of Offline Retail Payments Using Cards and Mobile Devices** ○ RBI proposes a pilot scheme for offline payments using mobile devices and cards to address challenge of internet connectivity and low speed. • **Positive Pay mechanism** to prevent frauds with high value cheques. The mechanism will be for all cheques of values of ₹50,000 and above. • System of **on online dispute resolution (ODR)** mechanism for digital payments will be introduced. • Creation of **Reserve Bank Innovation Hub** which will act as a centre for ideation and incubation of new capabilities to help achieve the wider objectives of deepening financial inclusion, efficient banking services, business continuity in times of emergency, strengthening consumer protection,

3.1.2. LIQUIDITY MEASURES ANNOUNCED BY RBI FOR MICRO-ENTERPRISES

Why in News?

Recently, RBI announced several measures in Monetary Policy Committee Meeting which were aimed to i**mprove liquidity for micro enterprises** and alleviating the stress on the balance sheet of companies due to the pandemic

Key decisions

One-time restructuring of loans without classifying them as NPA	• Restructuring is a practice that **allows banks to modify the terms of the loan** when the borrower is facing financial stress. • **Banks do that to avoid the borrower being declared a defaulter** and the loan having to be classified as a non-performing asset. • **Eligibility:** only those borrowers that were classified as 'standard', and not in default

3.1.3. EQUALIZATION LEVY (EL) ON E-COMMERCE COMPANIES

Why in news?

Recently, India defended its equalization levy (EL) on e-commerce companies against US.

More on news

- India's stand came in response to the **probe launched by US against India's Equalization Levy** on e-commerce firms under Section 301 of US Trade Act.
  - Section 301 of Trade Act, 1974 allows the US **to unilaterally impose tariffs or other trade restrictions on foreign countries.**

About Equalization Levy

- EL is a **direct tax applied to all non-resident e-commerce companies** in India. **6% EL is applicable on payments for digital advertisement services** received by non-resident companies without a permanent establishment (PE) in India, if this exceeded Rs 1 lakh a year.

- **2% EL on-e-commerce operators** also came into effect from April 2020.
  India's Stand:
- **Threshold application for EL is low** and is aimed at exempting very small e-commerce operators globally.

3.1.4. OTHER TAXATION RELATED DEVELOPMENTS

'Transparent Taxation - Honouring the Honest' platform	• It is aimed at **easing the tax compliance and also rewarding honest taxpayers.** • It aims to resolve the problems of a taxpayer and **ensure that there is no direct contact in all matters of scrutiny, notice, survey or assessment.** • Main features of Platform are **Faceless Assessment, Faceless Appeal** and **Taxpayer Charter.** • At present there are **only 1.5 crore taxpayers in the country.** That is just a little over 1% of India's population and only 1.6% of the country's adult population.

Sovereign wealth funds (SWFs) to get tax relief on infrastructure debts	• Central Board of Direct Taxes (CBDT) notified tax exemptions on **investments by SWFs and pension funds in 34 key infrastructure sectors** including hotels, cold chains, educational institutions, hospitals, gas pipelines.
	   o SWF is an **investment pool of foreign currency reserves owned by a government.** E.g. **National Investment and Infrastructure Fund (NIIF)** is India's first SWF.
	• This step **aims to incentivise investment in these sectors** either directly or through vehicles such as Alternate investment funds (AIFs) or Infrastructure Investment Trusts.
	   o AIF **is a privately pooled investment vehicle** which collects funds from sophisticated investors, whether Indian or foreign, for investing it in accordance with a defined investment policy for the benefit of its investors. E.g. venture capital fund, hedge fund, etc.

India's tax-to-GDP ratio (TGR) plunges lowest in 10 years	• This was **driven by a decline in** collections from customs duties and corporation tax. o **Direct tax to GDP ratio fel**l to its lowest in 14 years, while

	indirect tax to GDP ratio was at a 5-year low in FY20 **About TGR** • Ratio determines the extent to which **government is able to finance its expenditure from tax collections**, it is also an indicator of tax compliance. o **Higher TGR means that an economy's tax buoyancy is strong** as the share of tax revenue rises in sync with rise in country's GDP. **THE TRAJECTORY** GDP ratio (%) — Centre's Tax — Direct Tax — Indirect Tax 10.08 9.88 5.49 5.18 4.55 4.69 2005-06 2019-20 Source: CBDT, CGA
Form 26AS	• **Form 26AS is a consolidated annual tax statement** that includes information on tax deducted/collected at source, advance tax, etc. • Income Tax Department has launched a **revised Form 26AS from this assessment year**, which will reflect details of all high-value transactions. • This will **enhance the flow of information** between taxpayers and tax authorities.
Central Board of Indirect Taxes and Customs roll outs faceless assessment of consignments	• Under this, **consignments will be assessed electronically,** irrespective of the port where the goods arrive. • It is part of **next generation reforms called 'Turant Customs',** aimed at speedy clearance of goods at air and sea ports, which in turn will benefit ease of doing business in India. • First phase will commence in Chennai and Bengaluru. It will cover a specific set of items and will be expanded across India by December 31.
Directorate of Revenue Intelligence (DRI)	• DRI has busted a syndicate smuggling exotic macaws (parrot family) from Bangladesh. • DRI is **the apex anti-smuggling agency of India,** working under the **Central Board of Indirect Taxes & Customs.**

	• It is tasked with **detecting and curbing smuggling of contraband,** including drug trafficking and illicit international trade in wildlife and environmentally sensitive items. • It also works for **combating commercial frauds related to international trade** and evasion of Customs duty.

3.1.5. TREASURY SINGLE ACCOUNT (TSA) FOR MINISTRIES, DEPARTMENTS

Why in news?

Recently, the Government proposed to create a TSA in order **to minimize cost of borrowing** and **to enhance efficiency in fund flows.**

More on News

- **Under existing process,** after approval, funds are allocated and disbursed to various ministries, departments, autonomous bodies and States.
  - o It has been observed that **funds are not being utilized** and **kept idle in other bank accounts.**
  - o Budget makes a provision for borrowing and **given the borrowing cost** such a system **puts further strain on exchequer.**
- TSA is a bank account or set of linked accounts through which government transacts all its receipts and payments.

Need for TSA

- While it is necessary to **distinguish individual cash transactions** for control and reporting purposes, this purpose is achieved **through the accounting system and not by holding/depositing** cash in transaction specific bank accounts.
- This enables treasury to **delink management of cash from control** at a transaction level
- This ensures **effective aggregate control** over government cash balances and minimizing borrowing costs.

3.1.6. OTHER IMPORTANT NEWS

Estimates of Gross Domestic Product (GDP) for the First Quarter (April-June) of 2020-21	• **National Statistical Office, Ministry of Statistics and Programme Implementation** released these estimates. • **Key findings:** o **GDP growth contracted** 23.9% in first quarter of 2020-21 as compared to 5.2% growth in Q1 2019-20. In economics, two successive quarters contraction is a recession.

	o **Gross Value Added (GVA)** declined 22.8% in Q1 of 2020-21 as against 4.8% growth in Q1 2019-20.
	    ✓ **GVA= GDP + Subsidies on products - Taxes on products.**
	  o **Private consumption** expenditure contracted by 26.7% and **investment** by 47.1%. **Government expenditure** grew by 16.4%.
	    ✓ Private consumption accounted for 56.4% and Investment for 32% of all GDP before this quarter.

Financial Management Index (FMI)	• States to be ranked on financial management index (FMI) for rural development. (**Developed by Ministry of Rural Development.**)
	• FMI **ranks the performance of the States on the basis** of certain parameters:
	  o Preparation of annual plan, expeditious release of State's share, timely utilization of the funds and submission of the Utilization Certificates etc.
	  o Optimum implementation of **Public Financial Management System** (PFMS) & Direct Benefit Transfer. (PFMS is a web-based platform that helps in tracking and monitoring of flow of funds to the implementing agencies.)
	  o Internal Audit and Social Audit.
	• On similar lines, recently **Ministry of Panchayati Raj has also decided to conduct an online audit** of 20% of the estimated 2.5 lakh gram panchayats across the country.
	  o It is to be conducted through **AuditOnline, an open-source application** under e-panchayat, a Mission Mode Project by the Ministry of Panchayati Raj.

Tied Grant to Rural Local Bodies (RLBs)	• Recently, Ministry of Finance released about Rs. 15,000 crore Grants-in-aid to Rural Local Bodies (RLBs). (as part of Tied Grant recommended by 15th Finance Commission) • FFC recommended **Grants-in-aid to all tiers of Panchayati Raj** including the Traditional Bodies

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	of Fifth and Sixth Schedule areas, in two parts: ○ **50% as Basic Grant** that are untied and **can be used by RLBs for location-specific felt needs,** except for salary or other establishment expenditure. ○ **50% as Tied Grant** to be used for basic services of sanitation and maintenance of open-defecation free status, and supply of drinking water, rainwater harvesting and water recycling. • Grants will be **distributed to all the tiers of panchayats** in following bands recommended by FFC: ○ 70-85 % for village/gram panchayats ○ 10-25 % for block/intermediate panchayats ○ 5-15 % for district/zilla panchayats • In states having two-tier system, distribution will be: 70-85 % for village/gram panchayats and 15-30% for district/zilla panchayats.
Cesses and Surcharges	• In FY20, the share of states from divisible pool of central taxes **fell sharply from 36.6% in FY19 to 32.4%.** (In contrast to 42% recommended by 14th FC.) • Article 270 allows the **Centre to levy cess and surcharge** which the Centre **need not share with state governments.** ○ While **cesses are imposed for specific purposes, surcharges are a tax on taxes,** both meant to be temporary in nature. Example: ✓ Swachh Bharat cess to finance Swachh Bharat initiatives. ✓ Surcharge of 10% is levied if income is more than Rs. 50 Lakhs. • **States oppose their permanent nature** and there are apprehensions that **Centre uses cesses as a tool to enter administrative domain of the states.**
Wholesale Price Index (WPI) and Consumer	• Recently, the WPI entered deflation zone after 4.5 years. • **Reasons** for this were cited as sharp dip in demand due to

Price Index (CPI)	COVID-19 lockdown, falling crude oil prices and companies losing pricing power amid a fall in demand. • WPI food inflation rate continued to fall but however, the **CPI-food inflation rose** due to disruption in supply chain between mandis during COVID-19 lockdown. • **WPI vs. CPI** ○ WPI measures **changes in the prices of goods sold and traded in bulk** by wholesale businesses to other businesses while CPI **tracks prices of goods and services purchased by consumers.** ○ Weightage of food in CPI is far higher than in WPI. Also, WPI does not capture changes in the prices of services, which CPI does. ○ WPI is published by Office of Economic Advisor (Ministry of Commerce & Industry) and CPI by Central Statistics Office.
National Institute of Public Finance and Policy (NIPFP)	• Recently, Former RBI Governor **Urjit Patel is named Chairman of NIPFP.** • It is **autonomous research institute** under **Ministry of Finance**, registered under **Societies Registration Act, 1860,** founded in 1976. • Its mandate includes **assisting Central, State and Local governments** in formulating and reforming public policies by providing an analytical base.

3.2. BANKING AND FINANCIAL SECTOR

3.2.1. SPECIAL LIQUIDITY SCHEME FOR NBFCS AND HFCS

Why in News?

As a part of Aatma Nirbhar Bharat Abhiyaan, **Special Liquidity Scheme for NBFCs/HFCs** was approved and RBI has now laid down the eligibility criteria for these lenders to avail the facility.

Types of NBFCs: NBFCs can be categorised under two broad heads:
• **On the nature of their activity:** includes **Housing Finance Company**, Investment Company, Micro Finance Company/Institutions (MFIs) etc.
• **On the basis of deposits:** Deposit accepting NBFCs and Non-deposit accepting NBFCs (these

are further categorised into systemically important and other non-deposit holding companies (NBFC-NDSI and NBFC-ND)).

Housing Finance Company (HFC)

- A HFC is a company registered under Companies Act, 1956 which primarily transacts or has as one of its principal objects, **transacting of the business of providing finance for housing, whether directly or indirectly**.
- **HFC is considered a NBFC** under the RBI's regulations.
- In 2019, regulation of HFCs was handed over to RBI from National Housing Bank.

About the Scheme

- RBI has announced a **special liquidity scheme for non-banking finance companies (NBFCs)/HFCs** through a Special Purpose Vehicle (SPV).
- Scheme aims to help NBFCs and HFCs to **improve their liquidity position and avoid any potential systemic risks to the financial sector.**
- The SPV will **purchase short-term papers from eligible NBFCs/ HFCs of debt up to ₹30,000 crore,** who will utilise the proceeds under this scheme solely for the purpose of extinguishing existing liabilities.
- **Eligibility**: NBFCs and HFCs should have- net non-performing assets (NPAs) less than 6%; net profit in at least one of the last two preceding financial years; not reported under **SMA-1 or SMA-2 category** during last one year prior to 1 August 2018.

Banks classify borrowers into **special mention accounts** based on their delay in repayment.
- Special mention account-0 (SMA- 0) loans are where the repayment overdue is between one and 30 days,
- SMA-1 between 31 and 60 days
- SMA-2 from 61 to 90 days
- The asset turns NPA after 90 days of being overdue.

3.2.2. PAYMENTS INFRASTRUCTURE DEVELOPMENT FUND

Why in news?

Reserve Bank of India (RBI) announced creation of a Payments Infrastructure Development Fund (PIDF).

Points of Sale (PoS) machines
- Under the facility of cash withdrawal at PoS terminals, cardholders can withdraw cash using their **debit cards and open system prepaid cards issued by banks in India.**
- However, **credit cards cannot be used under this facility.**

- Cash can also be withdrawn at PoS terminals through **Unified Payments Interface (UPI) as well as through use of electronic cards** that are linked with overdraft facility provided along with Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts.

About PIDF

- The **500 crores** PIDF seeks to **encourage acquirers to deploy Points of Sale (PoS) infrastructure** for both physical and digital modes. (Especially in tier-3 to tier-6 centres and north eastern states.)
- RBI will make an **initial contribution of ₹250 crore to the PIDF,** covering half of the fund.
- The remaining contribution will be from card-issuing banks and card networks operating in the country.
- It will also receive **recurring contributions** to cover operational expenses from card-issuing banks and card networks. **RBI will also contribute** to yearly shortfalls, if necessary.
- The PIDF will be **governed through an Advisory Council** and **managed and administered by RBI.**
- The setting up of this fund is in line with the **recommendations of the report of the committee on deepening of digital payments, chaired by Nandan Nilekani.**
- In 2019, RBI announced setting up of **Acceptance Development Fund (ADF)** to improve the last- mile payments network in rural India to transact digitally.
  - ADF aims to increase acceptance of debit and credit cards in tier III and VI cities.

Classification of centres (tier-wise)	Population (as per 2011 Census)
Tier 1	1, 00,000 and above
Tier 2	50,000 to 99,999
Tier 3	20,000 to 49,999
Tier 4	10,000 to 19,999
Tier 5	5,000 to 9,999
Tier 6	Less than 5000

Other recommendations of Committee on Deepening of Digital Payments chaired by Nandan Nilekani
- **Removal of import duties** from point-of-sale (POS) devices and **waiving GST** on Immediate Payment Service (for transaction charges upto Rs 5000).
- **Government payments** must be done through **digital means.**
- **Use of validation services such as Public Financial Management System and National Payments Corporation of India** to reduce the incidence of transaction failure because of wrong account / Aadhaar details.

- **Dedicated grievance redressal mechanism,** particularly in vernacular language to process connectivity and authentication errors in DBT.
- **Digital payment subcommittee** should be setup at state level to map financial institutions and identify gaps and RBI should develop a **Financial Inclusion Index** to compare different areas.

Related News

RBI unveils framework for umbrella entity to manage payment systems

- The umbrella entity (UE) will **set-up, manage and operate new payment system(s)** in the retail space comprising, but not limited to ATMs, white label PoS, Aadhaar-based payments and remittance services, among others.
  - Currently, NPCI is the **sole umbrella organization** for operating retail payments and settlement systems in India.
- **Key guidelines**
  - Entity will be **authorized under the Payment and Settlement Systems Act, 2007** and shall be a company incorporated in India under the **Companies Act, 2013.**
  - Entities eligible to apply shall be **owned and controlled by resident Indian citizens.** UE shall have a minimum paid-up capital of ₹500 crore.
  - It will **operate clearing and settlement systems** for participating banks and non-banks, **identify and manage relevant risks,** monitor retail payments system developments and related issues in the country and internationally.

RBI relaxes norms for deployment of ATMs by white-label players

- As a result, White Label ATMs (WLATM) players will have **manageable annual targets** rather than stiff run-rates set under licence terms in 2012.
- **WLATM** are set up, **owned and operated by non-banks entities.**
  - **Cash in ATMs is provided by sponsored bank** while ATM machine does not have any branding of Bank.
  - Companies have to **get license from RBI** to run business under **Payment & Settlement Systems Act, 2007.**
  - Tata Communications Payment Solutions Limited (**Indicash**) is **first company** authorized by RBI to open WLAs in country.
  - National Payments Corporation of India (NPCI) links all the ATMs in India.

These **differ from brown-label ATMs,** which are owned and branded by banks, but operated and maintained by third party operators.

3.2.3. BANKING REGULATION (AMENDMENT) ORDINANCE 2020

Why in news?

President recently promulgated the **Banking Regulation (Amendment) Ordinance 2020.**

About the Ordinance

- The Ordinance **amends the Banking Regulation Act, 1949** as applicable to Cooperative Banks.
- It brings all the **urban cooperative banks (UCBs) and Multi state cooperative banks** under the direct supervision of Reserve Bank of India (RBI).
- It seeks to **improve governance and oversight** of these cooperative banks **by extending powers already available with RBI in respect of other banks to Co-operative Banks.**
- The **Ordinance also** gives powers to RBI to make a **scheme of reconstruction or amalgamation of a banking company** without imposing **moratorium.**
- The amendments **do not affect existing powers of the State Registrars of Co-operative Societies** under state co-operative laws.
- The amendments **do not apply to Primary Agricultural Credit Societies (PACS)** or co-operative societies whose primary object and principal business is long-term finance for agricultural development.

Related News

RBI has asked UCBs to implement system-based asset classification (SBAC)

- **SBAC means asset classification (downgrading as well as upgrading)** carried out by the computerized systems of the bank in an automated manner on an ongoing basis.
  - It is aimed at **improving efficiency, transparency and integrity** of the asset classification process.
- UCBs having total assets of ₹1,000 crore or above and meeting specified criteria have to **implement SBAC from 2021.**

3.2.4. REVISED PRIORITY SECTOR LENDING GUIDELINES

Why in news?

Recently, Reserve Bank of India (RBI) released Revised Priority Sector Lending (PSL) Guidelines.

More on news

- Revised guidelines are aimed at aligning them with emerging national priorities and bring sharper focus on inclusive development.
- Under PSL, **RBI mandates banks to lend a certain portion of their funds to specified sectors**-- agriculture, MSMEs, export credit, social infrastructure etc.

Features of revised PSL guidelines:

- **To address regional disparities**, higher weightage assigned to incremental priority sector credit in identified districts where priority sector credit flow is comparatively low (per capita PSL less than ₹6,000).
- **New categories added:** Loans up to **₹50 crores to start-ups**, loans to **farmers for installation of solar power plants** for solarisation of grid-connected agriculture pumps; loans for setting up Compressed BioGas plants
- **Credit limit for health infrastructure** (including those under Ayushman Bharat) has been doubled to ₹10 crore in Tier II to Tier VI centres.
- Loans for **small and marginal farmers and weaker sections are being increased** in a phased manner.
- **Higher credit limit has been specified** for Farmers Producers Organisations /Farmers Producers Companies.
- **Loan limits for renewable energy projects have been doubled** to ₹30 crore. For individual households, limit will be ₹10 lakh per borrower.

3.2.5. SUSPENSION OF INSOLVENCY AND BANKRUPTCY CODE (IBC)

Why in News?

Recently, **an ordinance was approved to amend the IBC** so as to provide relief for corporates as the pandemic and subsequent lockdown had significantly impacted economic activities.

About the ordinance

- **Section 10A** has been introduced thereby suspending Sections 7, 9 and 10 of the IBC.
  - It states that no application shall ever be filed for initiation of corporate insolvency resolution process of a corporate debtor for any default arising on or after 25th March, 2020 for a period of six months which could be extended up to a year.
  - While sections 7 and 9 provide for initiation of insolvency proceedings by **financial creditors and operational creditors**, respectively, section 10 is for initiation of insolvency resolution proceedings by a corporate applicant.

Some important features of IBC

- **Covers:** all individuals, companies, Limited Liability Partnerships (LLPs) and partnership firms.
- **Adjudicating authority:** National Company Law Tribunal (NCLT) for companies and LLPs

and Debt Recovery Tribunal (DRT) for individuals and partnership firms.
- The insolvency resolution **process can be initiated by** any of the stakeholders of the firm: firm/ debtors/ creditors/ employees.
- If the adjudicating authority accepts, an Insolvency resolution professional or IP is appointed.
- The **power of the management and the board of the firm is transferred to the committee of creditors (CoC)** which comprises of all financial creditors of the corporate debtor.
- The IP has to decide **whether to revive the company (insolvency resolution) or liquidate** it. If they decide to revive, they have to find someone willing to buy the firm.
- They choose the party with the best resolution plan, that is acceptable to the majority of the creditors (66% for critical decision and 51 % for routine decisions), to take over the management of the firm.
- The law prescribes that this insolvency resolution process has to be completed within **180 days**. It can be **extended by 90 days** if the case is complex. If a decision is not reached within the time frame, the firm will be liquidated.
- **Critical terms:**
  - **Insolvency** is a situation where individuals or companies are unable to repay their outstanding debt.
  - **Bankruptcy filing** is a legal course undertaken by the company to free itself from debt obligations.

Related Information

Waterfall mechanism under Insolvency and Bankruptcy Code (IBC)

- This mechanism under IBC gives **priority to secured financial creditors over unsecured financial creditors.**
- It says that if a **company is being liquidated, these secured financial creditors must be first paid** the full extent of their admitted claim, before any sale proceedings are distributed to any other unsecured creditor.

Alternative methods of debt recovery

- Creditors can take possession and sell immovable properties under **Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI 2002)** or file a criminal complaint for dishonoured cheques for recovery of outstanding money.
- **Corporate restructuring scheme under Section 230-232 of the Companies Act:** scheme process is premised on 'debtor-in-possession' and scheme is binding on the company and all its creditors and shareholders.

- **Moving against directors or promoters** who have provided personal guarantees to lenders.

3.2.6. FINANCIAL MARKET RELATED DEVELOPMENTS AND TERMINOLOGIES

Securities and Exchange Board of India amends insider trading norms	• According to amended norms, **listed entities will have to maintain a structured digital database** containing nature of unpublished price-sensitive information. • **Insider trading is a malpractice** wherein trade of a company's securities is **undertaken by people who by virtue of their work have access to the otherwise non-public information** which can be crucial for making investment decisions. o It is **prohibited under Companies Act,1956.**
Financial Stability Report (FSR)	• Recently, **RBI released** its Financial Stability Report (FSR) in July 2020. • FSR is a bi-annual report that **reflects risks to financial stability and the resilience of the financial system**.

AR Dave Committee	• It made recommendations **to make Securities and Exchange Board of India enforcement mechanism more robust and efficient.**
	• It identified **four main areas:**
	  o Reduce timeline for passing final orders
	  o Quantifying alleged gains while levying penalties
	  o Interplay between SEBI norms and provisions of Insolvency and Bankruptcy Code (IBC).
	  o Improving recovery processes

Qualified institutional placements (QIPs)	• Recently, SEBI has **allowed companies to raise funds at shorter intervals,** by changing qualified institutional placements (QIPs) rules • QIP is a **capital raising tool wherein a listed company can issue equity shares**, fully and partly convertible debentures, or any security other than warrants that are convertible into equity shares. • Unlike in an Initial public offering (IPO) or an Follow on Public Offer (FPO), **only institutions or**

	qualified institutional buyers (QIBs) can participate in a QIP.
Indian Depository Receipt (IDR)	• An IDR is an instrument **denominated in Indian Rupees in the form of a depository receipt** created by a Domestic Depository (DD) against the underlying equity of issuing company. o DD is a custodian of securities registered with the Securities and Exchange Board of India. • It **enables foreign companies to raise funds from the Indian** securities Markets**.** • First **IDR was introduced in 2010.** • Recently, Standard Chartered Bank (the only Domestic Depository) decided to delist its IDRs from Indian bourses.

3.2.7. OTHER IMPORTANT NEWS

Household Financial savings (HFS)	• RBI has highlighted that **HFS improved in FY20.**
	• **Reasons:** Slowdown in economy in 2019 leading to a **slowdown in lending growth of banks** and also due to **slowdown in consumption**.
	• Net HFS rose from 7.2% of GDP in 2018-19 to 7.7% in 2019-20.
	  o **Net HFS** = Gross HFS - financial liabilities
	  o **Gross HFS refer to** currency, bank deposits, debt securities, mutual funds, pension funds, insurance, and investments in small savings schemes.
	  o **Financial liabilities include** loans from banks, non-banking financial companies (NBFCs), and housing finance companies.
	  o **As of March 2020,** 13% of HFS was in form of cash and over 50% lie in commercial bank deposit.
	• Indian households **contribute to about 60% of the country's savings.**

Risk provision accounts of RBI	• Recently, RBI transferred Rs 73,615 crore to its Contingency Fund. With this, **main risk provision accounts of RBI** together now amount to Rs 13.88 lakh crore. • **Main risk provision accounts of RBI** o **Contingency Fund (CF):** A specific **provision meant for meeting unexpected and unforeseen contingencies,** including depreciation in the value of securities, risks arising

		Bad Bank (ARC)	

out of exchange rate policy operations, systemic risks and any risk arising on account of the special responsibilities enjoined upon the Reserve Bank.

- o **Currency and Gold Revaluation Account (CGRA):** Maintained to take care of currency risk, interest rate risk and movement in gold prices.
- o **Investment Revaluation Account Foreign Securities (IRA-FS):** Unrealised gains or losses on revaluation in foreign dated securities.
- o **Investment Revaluation Account-Rupee Securities (IRA-RS):** Unrealised gains or losses on revaluation in Rupee Securities.
- This transfer has **led to 67.5 % fall in RBI's surplus (dividend)** to Central government in 2019-20, as compared to last year.
  - o **As per Section 47 of the RBI Act**, profits or surplus of the RBI are to be transferred to government, after making various contingency provisions, public policy mandate of the RBI, including financial stability considerations.

Recapitalization of PSBs

- Centre plans to recapitalize Public Sector Banks **after assessment of impact of moratorium on balance sheet** of lenders.
- **Bank recapitalizations, means infusing more capital in PSBs** so that they **meet the capital adequacy norms**, improve their balance sheets etc.
  - o Since fiscal 2018, the **Centre has been re-funding them via recapitalisation bonds**
    - ✓ **Recapitalisation bonds** are classified as an investment which earns them an interest and is not counted under fiscal deficit calculation.
- It is also reported that **Comptroller and Auditor General of India (CAG) wanted to look into the issue of recapitalization of PSU banks**.
  - o Earlier, CAG was unsure of its locus standi as banks come under the purview of RBI. Now it says it can do this scrutiny when auditing the accounts of Finance Ministry.

Bad Bank

- Indian Banks Association submitted proposal for setting up a bad bank.
- Bad bank is an **Asset Reconstruction Company (ARC)** that **buys bad loans** (NPAs) and other risky liabilities from banks which **clears their balance sheet.**
  - o ARCs are **specialised entities to facilitate securitisation and asset reconstruction** of NPAs for earliest resolution and bringing the liquidity in the system.
- **Bad bank or PARA** (Public Sector Asset Rehabilitation Agency) was also **proposed in Economic Survey 2016-17.**
- **Benefits:** It will **solve coordination problem** among creditors, **maximizing recoveries in a definite timeframe** and will **improve balance sheets of banks** allowing them to focus on core banking activities.

National Strategy for Financial Education (NSFE) 2020-2025 released by RBI

- NSFE intends **to empower various sections of the population** to develop knowledge, skills, attitude and behavior which are needed **to manage their money better and to plan for their future.**
- NSFE **recommends multi-stakeholder-led approach** for creating a financially aware and empowered India.
- **Document recommends adoption of a '5 C' approach** for dissemination of financial education
  - o **Content,** including Curriculum in schools, colleges and training establishments.
  - o **Capacity** among the intermediaries involved in providing financial services.
  - o **Community** led approaches for disseminating financial literacy in a sustainable manner.
  - o **Communication** for dissemination of financial education messages.
  - o **Collaboration** among various stakeholders.
- Technical Group on Financial Inclusion and Financial Literacy would be responsible for **periodic monitoring and implementation of NSFE.**

Open Credit Enablement Network (OCEN)

- It is the **new credit protocol infrastructure** which would democratize lending and enable small borrowers to avail funds easily.

	• It will act as a common language, **connecting lenders and marketplaces** to utilise and create innovative, financial credit products at scale. • It has been developed by **technology think tank iSPIRT**.

P.K. Mohanty committee	• It is setup by RBI **to review the existing guidelines on ownership and corporate structure of private sector banks**.
	• **Mandate:**
	  o Suggest appropriate norms to address excessive concentration of ownership and control
	  o **Examine and review eligibility criteria** for individuals or entities to apply for a banking license, and
	  o **Review promoter shareholding norms** at initial licensing stage.

3.3. FOREIGN TRADE AND INVESTMENT

India's Trading Profile (Updates)
- Although, India posted a **trade surplus of $790 million in June, its first in over 18 years.** Overall, data shows that India continues to import more from 9 out of top 10 major trade partners than it exports. (The exception being US.)
- US remains India's top trading partner for 2nd consecutive year in 2019-20, with a **trade surplus** of $17.42 billion. **Goods dominate the bilateral trade**-approximately 62% while 38% in services.
  - **Top exports from India:** precious metal and stone, pharmaceuticals, machinery, mineral fuels, and vehicles.
  - **Top imports to India:** precious metal and stone, mineral fuels, aircraft, machinery, and organic chemicals.
- Remittances to India are estimated to decline by 25% in FY2021.
  - Remittances refer to the **value of monetary transfers that is sent from the workers residing abroad** for more than 1 year to the home country
    - ✓ In FY20, **India as the largest recipient of remittances** (in value terms) in the World, with remittances amounting to 2.7% of GDP.
    - ✓ Gulf region accounted for **more than half of this.**
- Country's foreign exchange (Forex) reserves **crossed the $500 billion mark for the first time.**
  - Forex reserves include **gold, SDRs (special drawing rights of the IMF) and foreign currency assets** (capital inflows to the capital markets, FDI and external commercial borrowings).

- **RBI functions as the custodian and manager of forex reserves** and operates within the overall policy framework agreed upon with the government.

3.3.1. REVAMPING FREE TRADE AGREEMENTS (FTA)

Why in News?

Recently, the Government has been planning to revamp FTA strategy with an aim **to ensure that FTAs provide economic and strategic benefits.**

More about FTAs

- FTA is a pact between two or more nations **to reduce barriers to imports and exports.**
- Focus is on alliances with "peaceful" countries, especially those with which India does not have a significant trade deficit.
- India has viewed FTAs as an **important tool to enhance its trade and investment** and has signed maximum number of FTAs in Asia.

Related Information
Govt frames norms for enforcement of 'rules of origin' (ROO) for imports under FTA
- It aims to **check inbound shipments of low-quality products** and dumping of goods by a third country routed through FTAs partner country.
- **New framework**
  - Norms shall **apply to import of goods into India** where the importer makes a claim of preferential rate of duty in terms of a trade agreement.
  - Prescribes for **minimal processing or value addition that should happen in FTA country** so that final manufactured product may be called originating goods in that country.
  - At the time of filing bill of entry, **importer has to make a declaration in the bill that imported products qualify as originating goods** for preferential rate of duty under that agreement; and produce certificate of origin.
- **About ROO**
  - They are criteria needed to determine national origin of a product.
  - They are used to **implement measures and instruments of commercial policy** such as anti-dumping duties and safeguard measures and determine whether imported products **shall receive most-favoured-nation (MFN) treatment or preferential treatment.**

- WTO has no specific rules governing the determination of country of origin of goods in international commerce.
- Recently, Centre informed the Delhi High Court that **e-commerce sites have to display the country of origin on imported products sold** on their platforms.

Different types of tariffs:

- **Most-Favored Nation (MFN) Tariffs** are what countries promise to impose on imports from other members of the WTO, unless the country is part of a preferential trade agreement.
- **Preferential Tariffs** are those under which countries promise to give another country's products **lower tariffs than their MFN rate.**
- **Bound tariffs** are specific commitments made by individual WTO members. Bound tariff is the **maximum MFN tariff level for a given commodity line**. Applicable tariff can be lower than bound tariff.

3.3.2. WORLD TRADE ORGANISATION (WTO) DISPUTE PANELS

Why in News?

Recently, WTO set up dispute panel at the request of Japan and Taiwan targeting the import duties imposed by India on mobile phones and some other ICT products.

More on News

- India increased its import duties to 20%, which countries consider violative of **WTO's Information Technology Agreement (ITA) signed by India.**
- India has stated that these ICT products are part of **WTO's Information Technology Products (ITA-2) agreement**, and **India is not part of this pact.**
  - ITA (or ITA-1) was concluded in 1996, where **participants were committed to completely eliminating tariffs on IT products covered by the Agreement.** India is a part of ITA-1.
  - Later, in 2015, **over 50 members concluded the expansion of ITA,** adding an additional 201 products valued at over $1.3 trillion per year. This is referred as ITA-2.
- A WTO member country **can file a dispute** if it perceives that **another country's trade policies or actions are violating global trade norms** and impacting their local industry.
- **Complainant can request WTO to set up a dispute panel** to get a satisfactory solution.

3.3.3. BILATERAL INVESTMENT TREATY (BIT)

Why in news?

As India attempts to attract investments, there have been calls to review India's model Bilateral Investment Treaty (BIT) 2016.

About Bilateral Investment Treaty (BIT)

- Bilateral investment treaties (BITs) are **treaties between two countries aimed at protecting investments** made by investors of both countries.
- These treaties **impose conditions on the regulatory behavior of the host state** and limit interference with the rights of the foreign investor.
- Some of these conditions include,
  - **Restricting host state from expropriating investments,** barring for public interest with adequate compensation;
  - Imposing obligations on host states to accord **Fair and Equitable Treatment (FET) to foreign investment.**
  - Allowing for **transfer of funds** subject to conditions given in the treaty.
  - Allowing individual investors to **bring cases against host states** if the latter's sovereign regulatory measures are not consistent with the BIT.
- There is **International Centre for Settlement of Disputes (ICSID)** under investor-state dispute settlement (ISDS) mechanism.

International Centre for Settlement of Disputes (ICSID)

- ICSID is the world's leading institution devoted to international investment dispute settlement.
- ICSID was established in 1966 by the **Convention on the Settlement of Investment Disputes** for legal dispute resolution and conciliation between international investors.
- ICSID convention is **ratified by 155 countries**.
- **India is not a party to the ICSID convention.**

Key features and concerns in India model BIT 2016

- **Definition of Investment** in the Model BIT has moved **away from a broad asset-based definition of investment to an enterprise-based definition** where an enterprise is taken together with its assets.
- **India's model BIT completely excludes the MFN clause** to prevent foreign investors from taking advantage of provisions in other BITs by 'borrowing' them through the MFN clause.
  - **Most Favoured Nation (MFN):** MFN provision in BIT aims to create a level-

playing field for all foreign investors by prohibiting the host state from discriminating against investors from different countries.

- The **2016 Model BIT does not contain an FET provision** instead it contains a provision entitled '**Treatment of Investments'** that **prohibits country from subjecting foreign investments to measures that constitute a violation of customary international law**.
  - o **Fair and Equitable Treatment (FET)** means that the **foreign investor is protected against unacceptable measures of the host state by rules of international law** which are independent of those of the host state.
- **ISDS Mechanism:** In 2016 Model BIT, India has qualified its consent to ISDS by requiring that a foreign investor should **first exhaust local remedies at least for a period of five years** before commencing international arbitration.

Related News
Recently, Government approved setting up of an EGoS and PDCs in Ministries/Departments for attracting investments in India.
A. **Empowered Group of Secretaries (EGoS)**
- **Composition:** Cabinet Secretary is Chairperson, CEO of NITI Aayog is member.
  - o **Other members:** Secretaries of various departments including Department for Promotion of Industry and Internal Trade, Department of Commerce, Revenue, Economic Affairs etc.
- **Objectives of EGoS**
  - o To **bring synergies between Ministries/Departments** and among the Central and State Governments in investment related policies.
  - o **Attract investment and facilitation to global investors** through fast track Investment Clearance.
  - o **Facilitate investment in targeted manner** and maintain **policy stability and consistency** in investment environment.
  - o **Evaluate investments** put forward by departments and further provide completion targets to respective departments.
B. **Project Development Cell (PDC)**
- PDC is approved for **development of investible projects in India** in coordination with central and state governments.
- It will **create projects with all approvals,** land available for allocation and with the complete Detailed Project Reports for adoption/investment by investors.
- It will **identify issues that need to be resolved** in order to attract and finalize the investments and put forth these before the Empowered Group.

- PDC will **conceptualize, strategize, implement and disseminate details** of investible project.

3.3.4. WORLD INVESTMENT REPORT 2020 RELEASED BY UNCTAD

Why in news?

The World Investment Report focuses on trends in foreign direct investment (FDI) worldwide, at the regional and country levels and emerging measures to improve its contribution to development.

United Nations Conference on Trade and Development (UNCTAD)
- Established **in 1964 as a permanent intergovernmental body.**
- It is the principal organ of the United Nations General Assembly **dealing with trade, investment and development issues.**
- Its headquarters is in Geneva.

Key Findings

- **FDI flows to South Asia increased by 10%.**
- **India jumped from 12th position in 2018 to 9th in 2019** on the list of the World's top FDI recipients.
  - o Most of the investments were in the information and communication technology (ICT) and the construction industry.
  - o **Singapore was the largest source of FDI in India** during the last fiscal followed by Mauritius, the Netherlands, the US, Cayman Islands, Japan and France.
  - o **US has the largest inflow of FDI** followed by China and Singapore.
- **Global FDI flows will decrease by up to 40% in 2020, from their 2019** value due to COVID-19 lockdown, supply chain disruptions and economic slowdown.

3.3.5. INTERNATIONAL COMPARISON PROGRAM OF WORLD BANK

Why in News?

Recently, World Bank released new PPPs for reference year 2017 under its International Comparison Program (ICP).

About ICP

- ICP is **worldwide data-collection initiative** that is managed by World Bank under auspices of UN Statistical Commission.
- The **main objective** of the ICP is to **produce comparable volume measures of GDP** and its

expenditure components based on **Purchasing Power Parities (PPPs).**

- India has **participated in ICP rounds since its inception in 1970**. Ministry of Statistics and Programme Implementation is National Implementing Agency for ICP in India.
- India was **co-Chair of the ICP Governing Board** along with Austria for the ICP 2017 cycle.
- Next ICP comparison will be conducted for reference year 2021.

Related terms

- **Actual individual consumption** refers to all goods and services **actually consumed** by households.
- **Gross fixed capital formation** is defined as the acqui**sition of produced assets, including the production of such assets** by producers for their own use, **minus disposals of fixed assets.**
- Price Level Indices (PLI) is **ratio of a PPP to its corresponding market exchange rate.** It is used to compare price levels of economies.

Data with respect to India

- In 2017, **India was third largest economy and accounted for 6.7% of global GDP** in terms of PPPs as against China (16.4%) and United States (16.3%), respectively.
- **PPP of Indian Rupee per US$** at GDP level was 20.65 in 2017 (15.55 in 2011).
- India is also **third largest economy** in terms of its PPP-based share in **global Actual Individual Consumption and Global Gross Capital Formation.**
- India is **second largest economy in Asia-Pacific, accounting for 20.83% of regional GDP** in terms of PPPs with China first and Indonesia third.

Purchasing Power Parities (PPPs).

- PPP is the **rate at which currency of one country would have to be converted** into that of another country to buy **same amount of goods and services** in each country.
  - E.g. if a pair of shoes costs Rs 2500 in India and $250 in USA when then the PPP is 10 between the India and USA.
- PPP exchange rates are **relatively stable than market exchange rates.**
- However, PPP is **harder to measure than market-based rates** as ICP is a huge statistical undertaking, and new price comparisons are available only at infrequent intervals.
- Also, **ICP does not cover all countries,** which means that data for missing countries must be estimated.

3.3.6. OTHER IMPORTANT NEWS

Export Preparedness Index (EPI) 2020	• NITI Aayog recently released its report on Export Preparedness Index (EPI) 2020. • EPI aims to assess the readiness of the states, in terms of their export potential and their performance. • EPI includes **4 pillars** –Policy; Business Ecosystem; Export Ecosystem; Export Performance and 11 sub-pillars. • States were classified **geographically** – coastal, landlocked, Himalayan, and UTs/city states. • Currently, 70 % of India's export has been dominated by five states – Maharashtra, Gujarat, Karnataka, Tamil Nadu and Telangana.
Country of Origin mandatory for Government e Marketplace (GeM) Platform	• Government has made it **mandatory for sellers** to enter the **Country of Origin** while registering **all new products** on GeM platform. • The **sellers, who had already uploaded their products** before the introduction of this new feature **also, need to update** the Country of Origin. • GeM has also enabled a provision for indication of the **percentage of local content in products**. • The '**Make in India' filter** has been enabled on the portal. Buyers can choose to buy only those products that meet the **minimum 50% local content criteria.** • **In case of Bids**, Buyers can now reserve any bid for **Class I Local suppliers (Local Content > 50%).** • For those Bids below INR 200 crore, only **Class I and Class II Local Suppliers (Local content > 50% and > 20% respectively)** are eligible to bid, with Class I supplier getting purchase preference.
Round tripping	• Round tripping refers to **money that leaves the country though various channels and makes its way**

	back into the country often as foreign investment. ○ It is often done through a series of transactions that don't have any substantial commercial purposes, ○ It also **involves black money** and is allegedly often **used for stock price manipulation**. • **RBI and the Enforcement Directorate are investigating several companies** that have received investments from their foreign subsidiaries or affiliates on the ground that such fund flows could indicate possible round-tripping	**Asian Development Outlook (ADO)**	• **Asian Development Bank** released its supplement to ADO. • **Key highlights:** ○ India's **economy is forecast to contract** by 4% in Fy 2020-21, while grow 5% in 2021-22. ○ **Developing Asia's** forecasted growth is 0.1% in 2020, slowest since 1961. ('Developing Asia' refers to a group of over 40 countries that are members of ADB.) • ADB is a **regional development bank established in 1966 headquartered in Manila, Philippines.** • **Top 5 shareholders:** Japan (15.6%), USA (15.6%), China (6.4%), India (6.3%) and Australia (5.8%).
Border Adjustment Tax	• **Border Adjustment Tax (BAT)** is a duty imposed on imported goods in addition to the customs levy that gets charged at port of entry. This creates a level playing field for domestic producers. • **WTO rules allow for the adjustment of certain types of internal taxes** at border under certain conditions like ○ Tax must be applied equally to imports and "like" domestic products. ○ Tax must be borne by a product and not be direct. ○ Tax must not subsidize exports	**World Competitiveness Index**	• It was released by Institute for Management Development (independent academic institution). • India ranked 43rd out of 63 nations (same as last year). ○ It highlighted traditional weaknesses like **poor infrastructure, low investment in education and health system.** ○ India has recorded improvements in areas like long-term employment growth, high-tech exports, foreign currency reserves, political stability. • **Singapore has retained its top position.** • **Note:** This is **different from Global Competitiveness Index** released by World Economic Forum.
Tariff Rate Quota (TRQ) Scheme	• Recently, Centre has notified norms for **import of 5 lakh tonnes of maize at a concessional customs duty of 15** %, under TRQ scheme. ○ TRQs are established under trade agreements between countries. • TRQ Scheme allows a set quantity of **specific products to be imported at a low or zero rate of duty.** ○ Under this scheme, **Government allows import of four products:** maize (corn); "milk and cream in powder, granules"; crude sunflower seed or safflower oil and refined rape, colza or mustard oil.	**Global Economic Prospects (GEP) Report**	• **World Bank** releases WEP, June 2020 report. • GEP examines **global economic** developments and **prospects**, with a **special focus on emerging market and developing economies.** • It is issued **twice a year**, in January and June. • It projects **India's economy to contract** 3.2% in the 2020-21 citing stringent lockdown and spill overs from weaker global growth.

3.4. AGRICULTURE AND ALLIED ACTIVITIES

3.4.1. ANIMAL HUSBANDRY INFRASTRUCTURE DEVELOPMENT FUND (AHIDF)

Why in news?

Cabinet Committee on Economic Affairs has recently approved the establishment of **Animal Husbandry infrastructure Development Fund** worth **Rs. 15000 crores.**

About Animal Husbandry Infrastructure Development Fund (AHIDF)

- AHIDF would facilitate **investments in establishment of infrastructure** for **dairy and meat processing** and establishment of **animal feed plant** in the private sector.
- **Implementing agency**: Department of Animal husbandry, dairy and fisheries.
- **Eligible beneficiaries:** Farmer Producer Organizations (FPOs), MSMEs, not-for-profit companies, Private Companies and individual entrepreneurs.
- **Eligible activities:** Dairy processing, value added dairy product manufacturing, meat processing etc.
- **Funding**: Minimum **10% margin money** to be contributed **by beneficiary**. The **balance 90%** would be the **loan component** to be made available by scheduled banks.
- **Interest subvention:** Government of India will provide **3% interest subvention** to eligible beneficiaries.
- **Credit Guarantee Fund:** Government of India would also set up Credit Guarantee Fund of **Rs. 750 crores** to be **managed by NABARD.** Credit guarantee would be provided to those **sanctioned projects** which are covered under **MSME defined ceilings.**

3.4.2. AGRICULTURE INFRASTRUCTURE FUND SCHEME (AIF)

Why in News?

Recently, Centre issued guidelines for financing under ₹1-lakh crore AIF.

More about AIF

- AIF seeks to mobilize a **medium - long term debt financing facility** for investment in projects relating to **post harvest management Infrastructure and community farming assets.**

- It is a Central Sector Scheme under Ministry of Agriculture & Farmers Welfare.
- **Key highlights of guidelines**
  - Scheme will be **operational from FY2020 to FY2029.**
  - **Loans will be provided** to Primary Agricultural Credit Societies, Marketing Cooperative Societies, Farmer Producers Organizations, Self Help Group, Farmers etc.
    - ✓ Credit guarantee coverage and **interest subvention of 3% per annum** will be available for eligible projects.
    - ✓ All assets created under this financing facility shall be **geo tagged.**
  - **Eligible lenders:** All scheduled commercial banks, scheduled cooperative banks, Regional Rural Banks, Small Finance Banks, NBFCs and National Cooperative Development Corporation.
  - **National, State and District Level Monitoring Committees will be set up** to ensure real-time monitoring and effective feed-back.
    - ✓ Also, **online platform** will be made available in collaboration with participating lending institutions to provide information and loan sanctioning facility.
  - **24% of total grants** in aid under the scheme should **be utilized for SC/ST entrepreneurs.**
  - Lending institutions will ensure adequate coverage of entrepreneurs belonging to women and other weaker segments of society.

Related News

Zoram Mega Food Park (MFP) in Mizoram
- It has been recently set up by **Ministry of Food Processing Industries.** This is the first MFP operationalized in Mizoram.
- **MFP** aims at providing a **mechanism to link agricultural production to the market** by bringing together farmers, processors and retailers.

3.4.3. PM FORMALIZATION OF MICRO FOOD PROCESSING ENTERPRISES SCHEME

Why in news?

Ministry of Food Processing Industries (MoFPI) launched Centrally Sponsored **'PM Formalisation of Micro food processing Enterprises (PM FME) scheme'** as part of Atmanirbhar Bharat Abhiyan.

Objective	Features

• To provide financial, technical and business support for upgradation of existing micro food processing enterprises.
• Generate total investment of Rs 35,000 crore
• 9 lakh skilled and semi-skilled employment
• Benefit 8 lakh units through access to information, training, better exposure and formalization.
	• Scheme adopts One District One Product (ODOP) approach to reap benefit of scale.
	  o States would identify food product for a district that could be a perishable produce or cereal based product.
	  o It would also focus on waste to wealth products, minor forest products and Aspirational Districts.
	  o Support will be provided for common infrastructure and branding marketing for ODOP products.
	• Micro enterprises will get 35% subsidy on project cost, with a ceiling of Rs 10 lakh, for capital investment along the value chain.
	• Seed capital @ Rs. 40,000/- per SHG member would be provided for working capital and purchase of small tools.
	• National Institute of Food Technology, Entrepreneurship and Management (Sonipat, Haryana) and Indian Institute of Food Processing Technology (Thanjavur, Tamil Nadu) (both are under MoFPI) would be provided support for training of units, product development etc. with special focus on capacity building and research.
	• Funding pattern: Outlay of Rs 10,000 crore with sharing mechanism as 90:10 for North Eastern and Himalayan States, 60:40 for other states, 60:40 ratio with UTs with legislature and 100% by Centre for other UTs.
	• Scheme is to be implemented over a period of five years from 2020-21 to 2024-25.

3.4.4. FARMER PRODUCER ORGANIZATIONS (FPOS)

Why in News?

Recently, Operational guidelines for formation and promotion of FPOs were released.

Key guidelines:

- **Eligibility:** FPO with a **minimum farmer-members' size of 300** in plains, while **100 in North-Eastern** and Hilly areas (including such other areas of UTs).
- Formation and promotion of FPO is based on **Produce Cluster Area (PCA).** PCA is a geographical area where produce of almost similar nature is grown.
- **National Project Management Agency** will be set up for providing overall project guidance, monitoring etc.
- **Implementing Agencies: Small Farmers Agri-business Consortium**, National Cooperative Development Corporation and NABARD. Also, State/UT can have its own implementing agency.
- **Cluster- Based Business Organizations (CBBOs)** at the State/Cluster level to form and promote FPOs.
- **Provision for Equity Grant from government** to strengthen financial base of FPOs.

> **Related News**
> **Ministry of Agriculture releases new guidelines on contract farming**
> - Guidelines were issued under **Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020.**
>   - o Ordinance was brought last month to provide a **national framework on farming agreements that protects and empowers farmers** to engage with wholesalers, exporters or large retailers etc.
> - It aims at **facilitating contract farming,** where a private buyer contracts to purchase a crop at a certain price at the beginning of a season, transferring risk of market unpredictability from farmer to corporate sponsor.
> - **Key guidelines:**
>   - o **Verbal agreements are not recognized** and it should be written in local language.
>   - o Farming agreement **should be for a minimum of one cropping season to a maximum of five years.**
>   - o Agreement **should clearly indicate the nature of farming,** size of land area, address of the farmer etc.
>   - o Agreement can be with **farmers (having land title), farmer producer organisation and also sharecropper.**
>   - o **Sponsor would be responsible for any loss or damage** due to inputs supplied to farmers.
>   - ✓ **Farmers cannot use the inputs** provided by the sponsor **for anything other than growing the produce agreed upon.**
>   - o Sponsor is **not permitted to gain or enjoy ownership rights.**

3.4.5. OTHER IMPORTANT NEWS

Ordinance announced to benefit farmers and transform agriculture sector	Farming Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020 • It aims at **creating additional trading opportunities outside APMC market yards** to help farmers get remunerative prices due to additional competition. This will pave the way for **Creating One India, One Agriculture Market.** o It will also promote barrier-free inter-state and intra-state trade and commerce. • It also **proposes an electronic trading in transaction platform** for ensuring a seamless trade electronically.

Innovation and Agri-entrepreneurship Development programme	• Ministry of Agriculture & Farmers Welfare launched this programme **under Rashtriya Krishi Vikas Yojana (RKVY).**
	• It aims to **promote innovation and agripreneurship** by providing financial support and nurturing the incubation ecosystem through startups.
	• These start-ups are in various categories such **as agro-processing, artificial intelligence, digital agriculture, farm mechanisation,** waste to wealth, dairy, fisheries etc.
	• **Components:**
	   o **Agripreneurship Orientation** - Mentorship is provided on financial, technical, IP issues etc.
	   o **Seed Stage Funding** of RKVY-RAFTAAR Agribusiness Incubators (R-ABI).
	   o **Idea/Pre-Seed Stage Funding** of Agripreneurs

Krishi Megh	• Krishi Megh **(National Agricultural Research & Education System -Cloud Infrastructure and Services)** is aimed at **protecting the precious data of the government's premier research body** Indian Council

	of Agricultural Research (ICAR). o Krishi Megh has been set up under the **National Agricultural Higher Education Project,** funded by both the government and World Bank. • It has been **set up at National Academy of Agricultural Research Management** in Hyderabad.
Fish Cryobanks	• **Ministry for Fisheries, Animal Husbandry and Dairying** has announced setting up of fish cryobanks. This would be the **first time in the world** when "Fish Cryobank" will be established. • It will facilitate all time **availability of fish sperms of desired species** to fish farmers. • **National Fisheries Development Board in collaboration with National Bureau of Fish Genetic Resources** will take up the work to establish Fish Cryobanks.

3.5. INDUSTRY AND INFRASTRUCTURE

3.5.1. FINANCING OF MSME SECTOR

Why in news?

World Bank and Government of India recently signed a $750 million **Agreement for Emergency Response Programme** for Micro, Small, and Medium Enterprises (MSMEs).

More about the programme

• Under this, WB aims to **address the immediate liquidity and credit needs of some 1.5 million viable MSMEs** impacted by COVID-19.
• It will help MSME sector by **unlocking liquidity, strengthening non-banking financial companies and small finance banks** and enable inclusive access to financing.
• The loan has a **maturity of 19 years**, including a 5-year grace period.
• WB has till now **committed $2.75 billion to support India's emergency COVID-19 response**, including the new MSME project.

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Related Information

MSMEs will now be known as Udyam

- As per the Ministry of MSME notification, **MSME will now be known as Udyam**, as this is closer to the word Enterprise. Accordingly, the registration process will be known Udyam Registration.
- Also**, Udyam Registration can be filed online based on self-declaration** with no requirement to upload documents, papers, certificates or proof.

Gramodyog Vikas Yojana

- It was recently approved by Ministry of Micro Small and Medium Enterprises (MSME).
- It aims to the **benefit of artisans involved in manufacturing of Agarbatti** and to develop village industry under the scheme.
- Scheme is **designed by Khadi and Village Industries Commission (KVIC) on PPP mode.**
- **KVIC** will provide training, and assist artisans working in this area, with Agarbatti manufacturing machines.
- KVIC will provide **25% subsidy on the cost of the machines** and recover remaining 75% of the cost from artisans in monthly installments.
- Recently, Government had placed the 'Agarbatti' item under Restricted trade in the import policy and enhanced the import duty from 10% to 25% on 'round bamboo sticks'.
  o Putting an item under a restricted category of imports means the importer of that commodity will have to seek licence from the commerce ministry's **Directorate General of Foreign Trade(DGFT)** for imports.

3.5.2. PHARMACEUTICAL SECTOR

Why in News?

Recently, Ministry of Chemicals and Fertilizers launched some schemes to promote domestic manufacturing of bulk drugs and medical devices

About Pharmaceutical Sector

- API or bulk drug is biologically active component of a drug product which is required to make medicines.
- Presently, **Pharmaceutical industry in India is third largest in the world by volume** and **exports to more than 200 countries** in world.
- However, domestic pharmaceutical companies are **heavily dependent on imports for APIs.** Imports from China account for 68% of total imports of API.
  o **Reasons for import dependency** include low-profit margins, Cheaper imports from China, Lack of incentives to boost domestic production, Time consuming environmental clearance norms etc.
- Similarly in medical devices sector, India is dependent on imports for 86% of its requirements of medical devices.

Schemes announced by the Ministry of Chemicals and Fertilizers

For Medical Devices	For Bulk Drugs
Scheme for Promotion of Medical Device Parks	**Scheme for Promotion of Bulk Drug Parks**
• **Objective:** Create **world class infrastructure facilities** in order to make Indian medical device industry a global leader. • **4 Medical Device Parks** to be setup with maximum grant-in-aid of Rs 100 crore to each. • **One-time grant-in-aid** will be provided which will be 90% of the project cost in case of North-East and hilly States and 70% in case of other States. • **Implementation:** Through State Implementing Agency, a legal entity, set up by concerned State Government.	• **Objective:** Promote **setting up of bulk drug parks in the country** for providing easy access to world class Common Infrastructure Facilities. • Envisages **creation of 3 bulk drug parks** with total outlay of Rs 3000 crore and Maximum grant-in-aid for one bulk drug park to Rs.1000 crore. • **One-time grant-in-aid** will be provided which will be 90% of the project cost in case of North-East and hilly States and 70% in case of other States. • **Implementation:** Through State Implementing Agency.
Production Linked Incentive (PLI) Scheme for Promoting Domestic Manufacturing of Medical Devices	**PLI Scheme for promotion of domestic manufacturing of critical KSMs/ DIs /APIs in India**
• **Objective:** Boost **domestic manufacturing of medical devices** in four target segments, like Cancer care / Radiotherapy medical devices, Radiology & Imaging medical devices etc. • **Financial incentives** will be given for a period of five years, to boost domestic manufacturing and attract large investments. • **Eligibility:** Companies registered in India	• **Objective:** Attain self-reliance and reduce import dependence in critical Key Starting Materials (KSMs)/ Drug Intermediates (DIs)/Active Pharmaceutical Ingredients (APIs). • **Financial incentives will be provided** on sales of 41 identified products (around 53 APIs) for six years. • **Implementation:** Through Project Management Agency.

with Net worth more than 18 crore.
- **Implementation:** Through a **Project Management Agency** responsible for providing secretarial, managerial and implementation support.

3.5.3. OTHER INDUSTRY SPECIFIC DEVELOPMENTS

3.5.3.1. ELECTRONICS SECTOR

- 3 Electronics incentive schemes launched have been notified by MEiTY with an outlay of about Rs 50,000 crore in order to **position India as a global hub for Electronics System Design and Manufacturing.**
- **Production Linked Incentive Scheme (PLI) for Large Scale Electronics Manufacturing**
  - To boost **domestic manufacturing and attract large investments** in mobile phone manufacturing and specified electronic components, including Assembly, Testing, Marking and Packaging (ATMP) units.
  - It extends **incentive of 4% to 6% on incremental sales** of goods manufactured in India for a period of five years.
  - Government will initially **plan to incentivise 10 firms,** five global and five local.
- **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS):** It will provide financial incentive of 25% on capital expenditure for manufacture of downstream value chain of electronic products.
- **Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme:** Providing support for creation of world class infrastructure with common facilities and amenities for attracting major global electronics manufacturers along with their supply chain to set up units in country.

3.5.4. MODEL CONCESSION AGREEMENT FOR BOT MODEL

Why in news?

Recently, an **inter-ministerial group (IMG)** had approved changes to the model concession agreement (MCA) used for building privately funded highways on the **Build-Operate and Transfer (BOT) toll model.**

Background

- BOT toll model accounted for almost **96% of NHAI's all project awards in 2011-12,** which came down almost to zero in the last two fiscals, due to various issues in existing MCA for BOT (Toll) projects.
- This has forced NHAI to shift to **Engineering Procurement and Construction (EPC) and Hybrid Annuity Model (HAM).**
- However, overdependence on EPC and HAM is **adversely impacting the finances of** NHAI. Thus, new changes in BOT model were proposed to attract private investors.

Key features and expected benefits of modified MCA

- **Revised revenue assessment:** Under the clause, in **every five years during the concession period,** the revenue potential of a project will be re-assessed as against every 10 years now.
- **Land acquisition:** The work order for building highway projects will be issued only when **90 per cent of the land is acquired.**
- **Dispute resolution board (DRB):** It provides for setting up a dispute resolution board which will act as a continuous dispute resolution mechanism and provides for **timely redressal within 90 days.**

Types of investment models
- **Build Operate and Transfer (BOT) Toll model:** Under this model, a road developer constructs the road and he is allowed to recover his investment through toll collection. There is no government payment to the developer as he earns his money invested from tolls.
- **BOT Annuity Model:**
  - A developer builds a highway, operates it for a specified duration and transfers it back to the government.
  - The government starts payment to the developer after the launch of commercial operation of the project.
- **Engineering, Procurement and Construction (EPC) Model:**
  - Under this model, th**e cost is completely borne by the government.** Government invites bids for engineering knowledge from the private players.
  - Procurement of raw material and construction costs are met by the government.
  - The **private sector's** participation is minimum and **is limited to the provision of engineering expertise**
- **Hybrid Annuity Model (HAM)**
  - HAM is a mix of BOT Annuity and EPC models.

- o As per the design, the government will contribute to 40% of the project cost in the first five years through annual payments (annuity).
- o The remaining payment will be made on the basis of the assets created and the performance of the developer.

3.5.5. OTHER IMPORTANT NEWS

National GIS-enabled Land Bank System launched by Ministry of Commerce and Industry	• National **GIS (Geographic Information System)**-enabled Land Bank system, is being developed by integration of Industrial Information System (IIS) with State GIS Systems. o **Department for promotion of Industry & Internal Trade** has developed IIS portal, a GIS -enabled database of industrial areas/clusters across the country **to adopt a committed approach towards resource optimization, industrial upgradation and sustainability.** o GIS is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface. • IIS aims **to provide details of logistics, land, rail & air connectivity, tax incentives, drainage system, power supply and raw material availability** from portal on various industrial belts. • Currently information about industrial belts in six states is available on the portal
Technology Information, Forecasting and Assessment Council (TIFAC)	• TIFAC released a white paper on "Focused Interventions for 'Make in India': Post COVID 19". • Paper captures **sector-specific strengths, market trends, and opportunities in five sectors,** critical for economic recovery in post COVID-19 period to make India atmanirbhar. • **About TIFAC:** Technology Information, Forecasting and Assessment Council (TIFAC) is an autonomous organization under Department of Science & Technology to look ahead in technology domain, assess the technology trajectories, and support innovation.
(CHUNAUTI – Challenge Hunt Under NGIS for Advanced Uninhibited Technology Intervention)	• It is a **NextGen Startup Challenge Contest** under Next Generation Incubation Scheme (NGIS) to find products & solutions to address challenges faced during and post pandemic situation **with special focus on Tier-II towns of India.** o NGIS is **Software Technology Parks of India's comprehensive incubation scheme** which has a vision to drive the rise of India as a Software Product Nation. • It **aims to identify around 300 startups working in identified areas** and provide them seed fund of upto Rs. 25 Lakh and other facilities (incubation facilities, mentorship, security testing facilities etc)
Emerging Technologies Initiative (ETI)	• Aim of ETI is to **assist in recommending appropriate policy choices** and help inform negotiating capacities vis-a-vis global technology governance rules, and standards, keeping in mind India's development and national security priorities. o Emerging technologies have the **potential to disrupt many existing industries** and significantly **impact employment, security, social equity, and global relations.** For ex: AI, Blockchain, Quantum Technology etc. • **Partners of ETI:** Office of the Principal Scientific Adviser, New Emerging & Strategic Technologies Division in the Ministry of External Affairs, Science Policy Forum.
National Productivity Council (NPC)	• NPC is **autonomous organization** under administrative control of **Department for Promotion of Industry and Internal Trade** to promote productivity culture in India. • It is **tri-partite non-profit organization** with equal representation from government, employers and workers' organizations. • NPC is a **constituent of Tokyo-based Asian Productivity**

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	Organisation, an Intergovernmental Body, of which India is a founding member.
National Initiative for Developing and Harnessing Innovations (NIDHI)	• Recently, **NIDHI-EIR Brochure featuring Entrepreneurs in Residence (EIR) was launched.** ○ EIR Programme under NIDHI **supports aspiring or budding entrepreneur of considerable potential** for pursuing a promising technology business idea. • NIDHI is an umbrella program, **pioneered by the Department of Science & Technology, for nurturing ideas and innovations** (knowledge-based and technology-driven) into successful startups.
Ease of Doing Business (EODB) Report	• It is an **index published by the World Bank (WB)**. Recently, WB **reported irregularities in the data used** to prepare EODB ranking. • It provides objective measures of business regulations and their enforcement across 190 economies and selected cities at the subnational and regional level. • It encourages **economies to compete towards more efficient regulation;** offers measurable benchmarks for reform; and **serves as a resource for academics, journalists, private sector researchers** and others interested in the business climate of each economy. • **India has moved 14 places to be 63rd among 190 nations** in the World Bank's EODB ranking 2020
Amendments in Corporate Social Responsibility (CSR) rules	• Ministry of corporate affairs (MCA) has notified Amendments in Corporate Social Responsibility (CSR) rules. • It would allow companies **to spend their CSR funds in R&D activities related to new vaccine, drugs and medical devices** in three financial years starting from 2020-21. ○ It will boost India's efforts to find effective medicines and vaccines against COVID-19.

	• Companies Act, 2013 requires firms with a **net worth of Rs 500 crore or more, or turnover of Rs 1,000 crore or more, or net profit of Rs 5 crore or more** in the immediately preceding financial year, to mandatorily **spend 2% of average net profit of the preceding three years on CSR.**
Automotive Solutions Portal for Industry, Research and Education (ASPIRE)	• Developed by **International Centre of Automotive Technology (ICAT).** ○ ICAT is an automotive testing, certification and R&D service provider under the aegis of **NATRiP (National Automotive Testing and R&D Infrastructure Project).** • **Key objective** of this portal is to **facilitate the Indian Automotive Industry to become self-reliant** by assisting in innovation and adoption of global technological advancements by bringing together the stakeholders from various associated avenues.
SATYABHAMA (Science and Technology Yojana for Aatmanirbhar Bharat in Mining Advancement) Portal	• It is a **portal for Research & Development in Mining Advancement.** Portal is integrated with NGO Darpan Portal of NITI Aayog. ○ **NGO-Darpan** is a platform that provides space for interface between Voluntary Organizations (VOs)/NGOs and key Government Ministries / Departments / Government Bodies. • It aims **to promote research and development in the mining and minerals sector**. • It allows **online submission of project proposals,** monitoring of projects and utilization of funds / grants. • It is designed, developed and implemented by **National Informatics Centre (NIC).**

3.6. ENERGY SECTOR

3.6.1. REAL TIME MARKET IN ELECTRICITY

Why in news?

Recently, pan-India Real Time Market in electricity was launched.

About Real Time Market in electricity

- Real time market is **organised market platform** enabling buyers and sellers to meet their energy requirement closer to real time operation.
- Under this, auction**s will be held 48 times a day**, once every half an hour.
- It became operational on two platforms: **Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL)**.
  - o **Power Exchange India Limited (PXIL)** is India's first institutionally promoted power exchange providing electronic platform for transactions in power and allied products.
- **Power System Operation Corporation Limited (POSOCO) will route electricity** from supply sources to consumption point with help of Regional Load Despatch Centres.
- To implement the **Real Time Market as amendments were made to**: Power Market regulations, Indian Electricity Grid Code (IEGC) Regulations, and Open Access in inter-state transmission regulations.

Power System Operation Corporation Limited (POSOCO)
- It is a wholly owned Government of India enterprise under the **Ministry of Power.**
- It facilitates competitive and efficient wholesale electricity markets and administer settlement systems.
- It **consists of 5 Regional Load Despatch Centres and a National Load Despatch Centre (NLDC)** to ensure integrated operation of the national power system with Reliability, Economy and Sustainability.

Related News
CERC gives nod for third power exchange in the country
- Central Electricity Regulatory Commission (CERC) has approved the application of Pranurja Solutions Ltd, a company promoted by BSE, PTC Ltd and ICICI Bank, to set up a power exchange.
- **Currently, India has two power exchanges** — Indian Energy Exchange (IEX) and Power Exchange India (PXIL).

Green Term Ahead Market (GTAM) in electricity
- Recently, the Union Power Minister launched GTAM in electricity.
- GTAM will provide an **exclusive platform for short-term trading of renewables** and it would be the first physical trading of renewable energy (RE).
- **Key features of GTAM:**
  - o Energy scheduled through GTAM contract shall be **considered as deemed Renewable Purchase Obligations (RPO)** compliance of the buyer.
    - ✓ Earlier, buyer of power from wind or a solar company **could not claim that he had met RPO.**
    - ✓ RPO mechanism is an obligation to **purchase certain percentage of electricity from RE sources.**
  - o There will be **separate contracts for Solar and Non-Solar energy** to facilitate Solar and Non-Solar RPO fulfillment.
  - o It will have **Green Intraday, Day Ahead Contingency, Daily and Weekly Contracts.**
  - o Price discovery will take place on a continuous basis i.e. price time priority basis.

3.6.2. BUNDLING SCHEME FOR ROUND-THE-CLOCK (RTC) POWER SUPPLY

Why in news?

Recently, Ministry of power issued guidelines **for supply of RTC power to distributors** through a Bundling Scheme, **which is first of its kind scheme in world.**

National Solar Mission
- It is **one of the eight key National Mission's** which comprise India's National Action Plan on Climate Change (NAPCC).
- Objective of is **to establish India as a global leader in solar energy** by creating the policy conditions for its deployment across the country.
- Mission has set target of deploying 20,000 MW of grid connected **solar power by 2022, which was revised to 1,00,000 MW** in 2015.
- **Mission adopted a 3 - phase approach,** Phase 1 (2012 - 13), Phase 2 (2013 - 17) and Phase 3 (2017 - 22).

About Bundling scheme

- It is a plan to **sell renewable energy (RE) and thermal power in a bundle** so that end users can get uninterrupted supply of power.
  - o First phase of National Solar Mission provided for such a scheme to facilitate grid connected solar power.
- Scheme will facilitate renewable capacity addition and **fulfillment of Renewable Purchase Obligation (RPO)** requirement of DISCOMs.

- It will enable **procurement of power at competitive prices** in consumer interest, improve bankability of projects and ensure reasonable returns to the investors.
- As per the guidelines:
  - **Power generators have to ensure at least 85% availability** both annually and during peak hours.
  - Bidders will have **to supply at least 51% of the power from renewable sources**. Bidders can club smaller thermal projects to tie-up with their renewable projects.
    - ✓ RE component can **include solar and non-solar sources** such as wind, hydro, or any combination of the same.
  - Bidder will have to pay **a penalty equivalent to 25% of the shortfall** in energy terms.

About Renewable purchase obligation (RPO)
- RPO is a mechanism by which the obligated entities are obliged **to purchase certain percentage of electricity from Renewable Energy sources,** as a percentage of the total consumption of electricity.
  - Obligated Entities include Discoms, Open Access Consumers and Captive power producers.
- RPOs are **categorized as Solar and Non-Solar RPO.**
- RPOs are provided under Electricity Act 2003 and the National Tariff Policy 2006.

Related Information
Prime Minister calls for One Sun, One World, One Grid (OSOWOG) initiative
- OSOWOG **aims to connect 140 countries through a common grid** that will be used to transfer solar power.
- Idea was first presented in 2018 during the first assembly of International Solar Alliance (ISA).
- The underlying logic is that a **grid spread across multiple time zones could balance intermittent renewables with other renewables.**
- **OSOWOG is divided into 3 phases:**
- **Phase 1:** Indian Grid interconnection with Middle East, South Asia and South East Asian (MESASEA) grids.
- **Phase 2:** MESASEA grid interconnection with African power pools and other countries located in solar and renewable energy rich areas.
- **Phase 3:** Global inter-connection.
Recently, membership of the International Solar Alliance (ISA) was universalized.
- A recent amendment made in **ISA agreement has now allowed all 192 member countries of the United Nations to join the Alliance**.
  - Earlier, the alliance was only open to the solar resource-rich countries situated between the tropic of Cancer and tropic of Capricorn.

3.6.3. OTHER IMPORTANT NEWS

Germany to become first major economy to phase out coal, nuclear power	• German parliament approved **a bill that envision shutting down the last coal-fired power plant by 2038** and spending some $45 billion to help affected regions cope with the transition. • The plan is part of Germany's 'energy transition' - an effort **to wean Europe's biggest economy off planet-warming fossil fuels** and **generate all of the country's considerable energy needs from renewable sources.** • Presently, Germany burns the greatest amount of lignite coal worldwide.
Himachal Pradesh: First State with 100% LPG connections	• Earlier, state launched **Himachal Grihini Suvidha Yojana** to cover the families left-out under **Pradhan Mantri Ujjwala Yojana (PMUY).** • PMUY is a **scheme of the Ministry of Petroleum & Natural Gas** for providing free LPG connections to women from Below Poverty Line (BPL) households.

India Energy Modeling Forum (IEMF)	• It was launched during the joint working group meeting of Sustainable Growth Pillar (SGP).
	• SGP is an important pillar of **India–US Strategic Energy Partnership** co-chaired by NITI Aayog and USAID.
	• IEMF will aim to:
	  ○ Provide a platform to examine important energy and environmental related issues;
	  ○ **Inform decision-making process** to the Indian government;
	  ○ **Improve cooperation** between modelling teams, government, and knowledge partners, funders;
	  ○ **Identify knowledge gaps** at different levels and across different areas;
	  ○ **Build capacity** of Indian institutions.

Solar Risk Mitigation Initiative (SRMI)	• **World Bank** has operationalised SRMI with $333 million for 22 African countries. • SRMI aims to **support countries in developing sustainable solar programs** that will attract

	private investments and so **reduce reliance on public finances**. • It is developed by World Bank-Energy Sector Management Assistance Program (WB-ESMAP) in partnership with, Agence Française de Développement (AFD), International Renewable Energy Agency (IRENA) and International Solar Alliance (ISA).		monoxide (CO) and carbon dioxide (CO2). o Syngas can be **used to produce a wide range of fertilizers, fuels, solvent and synthetic materials.** • **Benefits:** It will boost production of energy fuel, urea for fertilisers and production of other chemicals; transporting gas is cheaper than transporting coal, reducing energy imports etc.
SEZ-based solar manufacturers oppose basic customs duty (BCD)	• Solar equipment makers have pointed out that local solar factories in **SEZs will have to shut down if the government levies a BCD on the import of solar cells and modules** without providing a level-playing field to these manufacturing units. • If the BCD is imposed, those in the domestic tariff area who buy cells and modules from the SEZ units will have to pay the duty under the 2005 SEZ Act. • **BCD** is a type of duty or tax imposed under the Customs Act, 1962. o It varies for different items and the Central government has the power to reduce or exempt any goods from the charges.	**Foreign Direct Investment (FDI) in Commercial Coal Mining**	• Centre has clarified that any FDI in **commercial coal mining from an entity of a country that shares land border** with India will be allowed only after government approval. • Presently, 100% FDI is permitted under automatic route in coal mining activities including associated processing infrastructure. • It was permitted to allow opening up commercial coal mining for the private sector and to attract global miners to invest in India.
World's Largest Solar Tree	• **Solar tree** is made of metal structure and have solar panels at the top instead of branches of real tree. o One solar tree **can reduce ten to twelve tonnes of carbon dioxide emissions.** • Developed by CSIR-Central Mechanical Engineering Research Institute (CSIR-CMERI), it is **installed in Durgapur, West Bengal.** • Its installed capacity is above 11.5 kWp.		
India targets 100 MT coal gasification by 2030	• Coal gasification **will happen in three phases and entails investments worth over Rs. 4 lakh crores.** From 2020-2024, 4 million tonnes (MT), from 2020-2026, 6 MT and from 2022-2030, 90 MT of coal will be gasified. • Coal gasification process **chemically transforms fossil fuel into synthetic natural gas (SNG),** instead of burning it. o SNG produced in the process is a mixture of hydrogen (H2), carbon		

3.7. LOGISTICS SECTOR

3.7.1. PRIVATE PARTICIPATION IN RAILWAYS

Why in News?

Ministry of Railways has invited **private participation** for operation of **passenger train services** over 109 Origin Destination (OD) pairs of routes using 151 modern trains on existing rail infrastructure.

About the recent step

• It would be **the first initiative of private investment for running passenger trains over Indian Railways network** attracting investments of an estimated ₹30,000 crore which is expected to begin in 2023.

• The invitation (officially termed as Request for Qualification (RFQ)) had been issued under the **Make in India policy.** So, the coaches would have to be manufactured in India and the local component would be as specified in the policy.

• **Responsibility of Private Entity:**
  o It shall be responsible for **financing, procuring, operation** and maintenance of the trains.
  o The operation of the trains by the private entity shall conform to the **key**

performance indicators like **punctuality, reliability, upkeep of trains** etc.
  o **Private firms will have the freedom to decide fares and stoppages,** and also the basket of services on offer in these trains.
- **Responsibility of IR:**
  o The **driver and guard of the trains** will be Railway officials who will operate these trains, maintain track infrastructure etc.
  o The **safety clearance of trains** will be done by Railways only.
- Private sector will be allowed to **run these trains for a 35-year period** in return for a share in the revenues they earn, apart from payments in the form of fixed haulage charges and energy charges for using public infrastructure.

3.7.2. NATIONAL WATERWAYS

Why in News?

Recently, Ministry of Shipping waived waterways usage charges (WUC) for the next three years.

Inland Waterways in India

- WUC has been waived off considering the **Centre's vision to promote inland waterways as a supplementary, eco-friendly and cheaper mode of transport.**
  o Presently, Inland Waterways Authority (IWAI) of India levies **WUC for plying of Inland cargo vessels on national waterways** which acted as a **hindrance in administration of traffic movement and collection of traffic data.**
  o IWAI is the **statutory authority** in charge of the waterways in India.
- India has about **14,500 km of navigable waterways** which comprise of rivers, canals, backwaters, creeks, etc.
  o **National Waterways Act 2016** declared 111 rivers or river stretches, creeks, estuaries in India as **National Waterways.**
  o Inland Water Transport in India has **only 0.5% modal share;** compared to 42% in Netherlands, China 8.7%; USA 8.3% and Europe 7%.

Related News (Shipping)
Under 'Atmanirbhar Bharat', Ministry of Shipping is planning to develop a port as a transshipment hub to cut India's dependence on overseas hubs.
- India has two trans-shipment ports, **Vallarpadam port in Cochin and under-construction Vizhinjam port in Trivandrum.** Proposed Enayam port is third major trans-shipment port.
- A transshipment terminal act like a hub, **into which smaller feeder vessels bring cargo that**

then **gets loaded onto larger ships** for transportation to final destinations.
  o It is a port that has **connections to origin and destination.**
  o Larger vessels bring about **economies of scale and lower the cost of operations** like lower freight rates for exporters and importers.
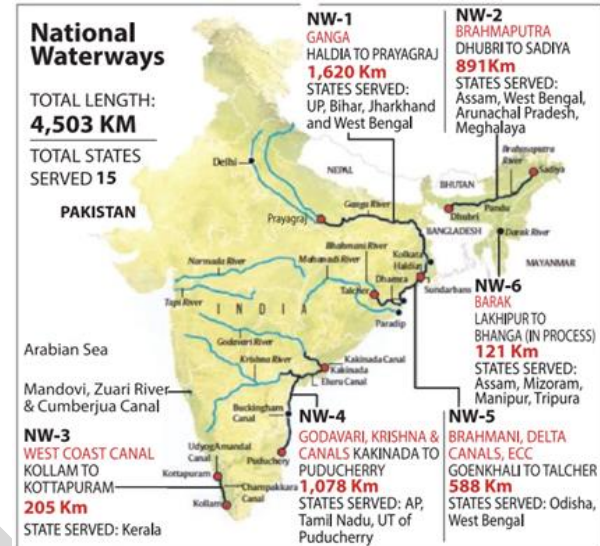
3.7.3. INVESTMENT CLEARANCE CELL (ICC) FOR AVIATION SECTOR

Why in News?

Recently, Ministry of Civil Aviation (MoCA) set up an Investment Clearance Cell (ICC) for Aviation Sector.

More on News

- MoCA has setup ICC to **serve as a single-window system for attracting investment &** expedite various investment proposals in the domestic aviation industry.
  o 10-member ICC will be headed by joint secretary MoCA.
  o Earlier, ICC was announced in 2020-2021 Union Budget.
- **Terms of reference of ICC**
  o **Accelerating investments, expeditious clearances,** bringing projects to the Empowered Group of Secretaries which require special incentive etc.
    ✓ Currently, a new investor has to apply at different central departments for getting permissions like GST registration, industrial entrepreneur memorandum, import-export codes, environment clearance etc.
  o **Engage potential investors** and work with the states.
  o Adopting **ways to make states part of institutional** set-up.

o **Identify policy and regulatory issues** that come in the way of investments.

3.7.4. RECENT ROADWAYS RELATED DEVELOPMENTS

National Electronic Toll Collection (NETC) integration with VAHAN portal achieved	• This **will enable VAHAN system to get all information on FASTags**. o VAHAN provides access to vehicles details such as registration number, chassis/engine number, body/fuel type, manufacturer and model and provides various online services to citizens. • This will ensure capturing of FASTag details while registering or issuing fitness certificate to vehicles all over the country.
National Highways Authority of India (NHAI)	**NHAI to Rank Roads for Quality Service** • NHAI has decided to **undertake performance assessment and ranking of highways** in the country. • It will **bring out operational efficiency and ensure high quality maintenance of roads.**
	• It is aimed to take **corrective recourse to improve the quality and provide higher level of service** to highway commuters. • Assessment criteria have been broadly categorized in three main heads: **Highway Efficiency (45%), Highway Safety (35%) and User Services (20%).**

Harit Path
• It is a mobile app that will **facilitate creation of Green Highways** across the country.
   o It will monitor location, growth, maintenance activities, targets etc. **of every plant under all Highway plantation projects.**
• It is **developed by National Highways Authority of India (NHAI)** under Ministry of Road Transport and Highways.
• Recently, NHAI had also undertaken a **nation-wide plantation drive, Harit Bharat Sankalp**, under which it planted over 25 lakh plants in 25 days along the stretches of National Highways.

3.8. EMPLOYMENT AND SKILL DEVELOPMENT

3.8.1. PM STREET VENDOR'S ATMANIRBHAR NIDHI (PM SVANIDHI)

Why in news?

Ministry of Housing and Urban Affairs has launched PM SVANidhi - PM Street Vendor's AtmaNirbhar Nidhi.

Objectives	Beneficiaries	Features

• It is **Special Micro-Credit Facility Scheme** for providing **affordable loans to street vendors**.
• This scheme will **enable street vendors to resume work** and earn livelihoods in the wake of the COVID-19 crisis.
	• Over 50 lakh people, including vendors, hawkers, thelewalas etc. who supply vegetables, fruits, ready-to-eat street foods etc.
	• Also **includes service providers** like barber shops, cobblers, pan shops, laundry services etc.
	• Scheme is available for beneficiaries belonging to only those States/UTs which have notified Rules and Scheme under **Street Vendors (Protection of Livelihood and**
		• The vendors can avail a working **capital loan of up to Rs. 10,000**, without collateral repayable in monthly instalments with **tenure of one year**.
		• On **timely/ early repayment** of the loan, **credit limit will be raised and interest subsidy @ 7% per annum** will be credited through Direct Benefit Transfer on a quarterly basis.
		• The scheme **incentivizes digital transactions** by the street vendors through monthly cash back up to Rs. 100 per month.
		• In 1st phase 108 cities have been selected, and disbursement of loan is planned to commence in July 2020.
		• **Technology**
		   o **SIDBI has developed Integrated PM SVANidhi portal** to administer the scheme with end-to-end solution.
		   o Portal/ mobile app will integrate **UdyamiMitra portal of SIDBI** for credit management and **PAiSA portal of MoHUA** to administer interest subsidy automatically.
		• **Credit lending and implementation**
		   o Small Industries Development Bank of India **(SIDBI) is the implementation agency.**

	Regulation of Street Vending) Act, 2014.	o SIDBI will manage the credit guarantee to the lending institutions through **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE).** o **Eligible lenders:** Scheduled Commercial Banks, Regional Rural Banks, Small Finance Banks, Cooperative Banks, Non-Banking Finance Companies, Micro Finance Institutions & SHG Banks established in some States/UT etc.

3.8.2. OTHER IMPORTANT NEWS

AIM iCREST	• Recently, NITI Aayog's Atal Innovation Mission (AIM), has launched AIM iCREST. • It is an **incubator capabilities enhancement program** for a robust ecosystem focused on creating high performing Startups. It is a first of its kind initiative for advancing innovation at scale in India. • Under the initiative, the **AIM's incubators are set to be upscaled and provided requisite support to foster the incubation enterprise economy,** by providing training to entrepreneurs, through technology driven processes and platforms. • AIM is a **flagship initiative set up by the NITI Aayog** to promote innovation and entrepreneurship across the country o Its objective is to **develop new programmes and policies for fostering innovation** in different sectors of the economy, provide platform and collaboration opportunities etc. o **Major Initiatives under AIM:** Atal Tinkering Labs, Atal Incubation Centres, Mentor India Campaign, Atal Research and Innovation for Small Enterprises (ARISE) etc.
Aatamanirbhar Skilled Employee-Employer Mapping (ASEEM) portal	• Ministry of Skill Development and Entrepreneurship launched ASEEM portal and App **to help skilled people find sustainable livelihood opportunities.**

	• It is **Artificial Intelligence-based platform** which will map details of workers based on regions and local industry demands and will **bridge demand-supply gap of skilled workforce across sectors.** • It is developed and managed by **National Skill Development Corporation (NSDC)** in collaboration with Bengaluru-based company Betterplace.
Cane and Bamboo Technology Centre (CBTC)	• CBTC has been asked to **explore setting up of Vocational Training and Skill Development Centres for Bamboo sector.** • CBTC was incorporated with the **objective of organizing the hitherto untapped bamboo sector of North East India.** • It is the **field implementation agency** and forms a **part of the Technology Management Program** which is a joint effort of **India and UNDP.** • CBTC is a registered as Society under North Eastern Council, Ministry of Development of North Eastern Region.
Sahakar Mitra	• It is an **internship programme to provide paid internship** to youth and ensure availability of assured project loans to young cooperators. o **Professional graduates** in disciplines such as Agriculture and allied areas, IT etc. will also be eligible. • It is an initiative by **National Cooperative Development Corporation (NCDC),** a statutory body under the Ministry of Agriculture & Farmers Welfare.

	Functions of NCDC: Planning, promoting and financing programmes for production, processing, marketing, storage, export and import of agricultural produce etc.

First Silk Training cum Production Center	• **Khadi and Village Industries Commission (KVIC)** will open this centre in tribal village of **Chullyu in Arunachal Pradesh.**
	  ○ It will **create local employment and sustainable development** in the region.
	• Centre will help in training of artisans and **supporting the production of Eri Silk.**
	  ○ Eri Silk is indigenous to the North Eastern states and is traditionally worn by locals.
	• KVIC **aims to connect the center with Ziro tourist spot** and thus providing an assured market to the local artisans for their products.

3.9. MISCELLANEOUS

3.9.1. SURETY BONDS

Why in News?

IRDAI has formed a **panel under G Srinivasan** to assess the suitability of the Indian insurance industry or any other sector to offer **Surety Bonds for road contracts** in the country.

Insurance Regulatory and Development Authority of India (IRDAI)
• It is an **autonomous, statutory body** tasked with regulating and promoting the insurance and re-insurance industries in India.
• It was constituted by the **Insurance Regulatory and Development Authority Act**, 1999 following recommendation by **Malhotra committee.**
• **Objectives of the IRDAI include** promoting competition to enhance customer satisfaction with increased consumer choice and lower premiums while ensuring the financial security of the insurance market.

About Surety Bonds

• A surety is often used in contracts where one party's financial holdings (or financial position to fulfil the contract) are in question and the

other party wants a guarantor in order to reduce risk.
• It is **3 party agreement that legally binds** together:
  ○ **Principal**- purchases the bond to guarantee the quality of work to be done in the future. This is usually a **business owner or general contractor** or other professional.
  ○ **Obligee**- usually a government entity, requires the principal to obtain a surety bond as a guarantee against future work performance.
  ○ **Surety company**- issues the bond and financially guarantees the principal's capacity to perform a specific task.
• Surety bonds **provide financial guarantee of satisfactory completion of work** according to pre-defined and mutual terms by a contractor.
  ○ If bond terms are broken by principal, the **obligee can make a claim on the bond** to recover losses.
  ○ If the claim is valid, the surety company will pay reparation that cannot exceed the bond amount.

3.9.2. DOUGHNUT ECONOMY

Why in news?

Amsterdam has become the **first city** in the world to adopt the '**doughnut' model of economics** in its post-corona virus **recovery plan**.

Doughnut model of economics

• The model is **developed by** U.K. economist **Kate Raworth.**
• **Doughnut of social and planetary boundaries** envisions a world in which people and planet can **thrive in balance**.
• **The Inner ring** - The **Doughnut's social foundation** is derived from the social priorities in the **UN Sustainable Development Goals.**
  ○ It sets out **the minimum standard of living** to which every human being has a claim.
  ○ The **hole at the Doughnut's center** reveals the proportion of people worldwide falling short on life's essentials, such as food, water, healthcare and political freedom of expression.
• **The Outer ring** - The **Doughnut's ecological ceiling** comprises **nine planetary boundaries.**
• **The Doughnut** - Between the social foundation and the ecological ceiling lays a doughnut-shaped space in which it is possible to **meet the needs of all people within the means of the living planet.**

Planetary boundaries
- These are **quantitative boundaries** within which humanity can continue to develop and thrive for generations.
- **Crossing these boundaries** increases the risk of generating large-scale **abrupt or irreversible environmental changes**.
- There are nine planetary boundaries -
  - Biogeochemical flows (the cycles of chemical elements, such as carbon and nitrogen in earth's biological systems)
  - Biodiversity loss
  - Land use change
  - Chemical pollution
  - Freshwater use
  - Ocean acidification
  - Atmospheric aerosols
  - Ozone depletion
  - Climate change
- According to researchers, **4 planetary boundaries are already exceeded**- climate change, Biodiversity loss, Land use change and Biogeochemical flows.

3.9.3. AFFORDABLE RENTAL HOUSING COMPLEXES

Why in news?

Recently, the Cabinet approved the development of **affordable rental housing complexes (ARHCs)** for urban migrants and poor as a sub-scheme under the **Pradhan Mantri Awas Yojana (Urban).**

Key Features of the ARHCs Scheme

- Under the scheme, ARHCs shall be developed for exclusive use as rental housing for a **minimum period of 25 years**, using **two models:**
  - **Converting existing vacant government funded housing complexes** through Concession Agreements.
  - **Special incentives for private/ public entities** to develop ARHCs on their own available vacant land.
- **Target beneficiaries**: Workforce involved in manufacturing industries, service providers in hospitality, health, domestic/commercial establishments, and construction or other sectors, laborers, long term tourists/ visitors, students etc.
- Central government will provide concessional project finance under **Affordable Housing Fund (AHF), Priority Sector Lending (PSL),** and **Exemption in Income Tax and GST.**
- **A Technology Innovation Grant** of Rs 600 Crore will be released for projects using identified innovative technologies for construction.

- This scheme will be **implemented in all Statutory towns,** Notified Planning Areas, and areas of Development/ Special Area Development/ Industrial Development Authorities.
- **Intended Benefits** of the scheme:
  - Economically productive use of Government funded vacant housing stock.
  - Conducive environment for Entities to develop AHRCs on their own vacant land.
  - New investment opportunities and promotion of entrepreneurship in rental housing sector.
  - Investment under ARHCs is expected to create new job opportunities.

Related News
Special Window for Affordable and Mid Income Housing (SWAMIH) fund
- Recently, **81 stressed housing projects were approved under SWAMIH** which will enable the completion of almost 60,000 homes.
- SWAMIH fund was established to **provide priority debt financing for the completion of stalled housing projects** that are in the Affordable and Middle-Income Housing sector.
- **Government acts as the Sponsor** with the total commitment up to INR 10,000 crore.
- Fund is set up as **Alternate Investment Fund** registered with SEBI.

CITIIS (City Investments to Innovate, Integrate and Sustain) program
- It aims to **assist Indian cities in implementing urban infrastructure projects** that are integrated, innovation driven and sustainable.
  - Program combines **financial assistance through loans and technical assistance through grants** to selected cities.
- Project is being coordinated and managed by Program Management Unit at National Institute of Urban Affairs.
- CITIIS is supported by **Ministry of Housing and Urban Affairs, French Development Agency (AFD) and European Union (EU).**

3.9.4. SHAPES OF ECONOMIC RECOVERY

Why in news?

Recently, the Chief Economic Advisor had said that economic growth this year will depend on when recovery begins. Earlier, it was estimated that **growth to be at 1.5-2% this year**, and that was conditioned on a **V-shaped recovery** in the second half of the year.
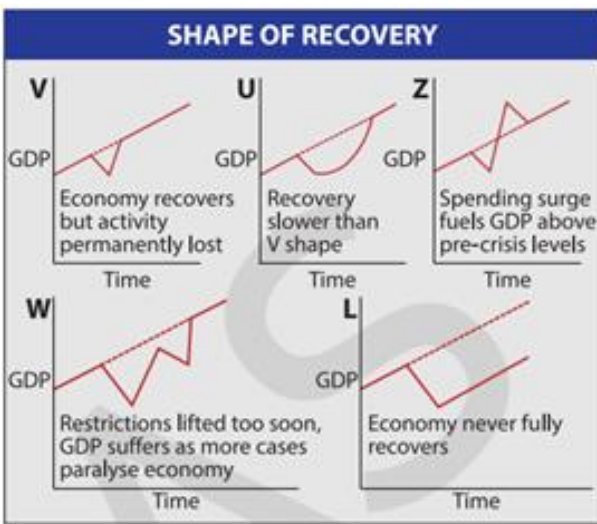
Different shapes of recovery

- **Z-shaped recovery** is the most-optimistic scenario in which the economy quickly rises.
- **V-shaped recovery** is next-best scenario in which the economy quickly recoups lost ground and gets back to the normal growth trend-line.
- **U-shaped recovery** is a scenario in which the economy, after falling, struggles and muddles around a low growth rate for some time, before rising gradually to usual levels.
- **W-shaped recovery:** In this growth falls and rises, but falls again before recovering yet again, thus forming a W-like chart. It is predicted if a second wave of COVID-19 comes along.
- **L-shaped recovery** is the worst-case scenario, in which growth after falling, stagnates at low levels and does not recover for a long, long time.
- **K-shaped recovery -** Bifurcation of recovery where those at the top are seeing things go up, and those at the middle and below are seeing things go down and get worse. An example in India is the stock market being healthy while many have lost their jobs.
- **J-shaped recovery**, a somewhat unrealistic scenario, in which growth rises sharply from the lows much higher than the trend-line and stays there.

3.9.5. OTHER IMPORTANT NEWS

Strategic Sector	• Under Aatmanirbhar Bharat package, a new Public Sector Enterprise (PSE) policy has been announced with plans to privatise PSEs, except the ones functioning in certain strategic sectors. • Under the proposed policy government will come up with list

	of strategic sectors. Each strategic sector will consist, **at least one and no more than four Public Sector Enterprises (PSEs).**
	• **Other PSEs of sector will be privatised, merged** or brought under a holding company.
	Strategic sector
	• Government, in 1999 classified the PSEs into strategic and non-strategic areas **for the purpose of disinvestment.**
	• The industrial activities or industries **belonging to sectors of national importance** are categorized as Strategic sectors.
	• Currently, **following areas are categorized as strategic PSEs:**
	  o Arms & Ammunition and the allied items of defense equipment, defense aircrafts and warships.
	  o Atomic Energy (except areas related to operation of nuclear power and applications of radiation and radioisotopes to agriculture, medicine and non-strategic industries).
	  o Railways transport.

India stays lower-middle-income nation for 2020-2021	• World Bank assigns the world's economies to four income groups—low, lower-middle, upper-middle, and high-income countries (see infographics). o Classifications are **updated each year on July 1 and are based on gross national income (GNI) per capita** (current US$) calculated using Atlas method. ✓ **Atlas method:** A country's GNI in local (national) currency is **converted into U.S. dollars** using the **Atlas conversion factor**, which uses a three-year average of exchange rates to smooth effects of transitory exchange rate fluctuations, adjusted for the difference between the rate of inflation in the country and that in a number of developed countries. The resulting GNI in U.S. dollars is

		Andaman & Nicobar Islands	provide connectivity to Andaman & Nicobar Islands.
	divided by the country's **midyear population** to obtain the GNI per capita. ○ **GNI per capita** is obtained by dividing GNI with countries population. ○ India **ranked 145th** (GNI per capita: 2130 $), Switzerland 1st. • GNI is a **measurement of a country's income** that includes all the income earned by a country's residents, businesses, and earnings from foreign sources.		○ It will enable **delivery of faster and more reliable mobile and landline telecom services to Andaman & Nicobar Islands.** ○ It **will boost tourism and employment generation** in the Islands and also facilitate delivery of e-Governance services. • The project is funded through the **Universal Service Obligation Fund (USOF)** under the Department of Telecommunications. • Bharat Sanchar Nigam Limited (BSNL) is executing this project.
High-speed Broadband connectivity for	• **A Submarine Optical Fibre Cable (OFC) connecting Chennai and Port Blair** is being laid down to		

4. ENVIRONMENT

4.1. POLLUTION

4.1.1. MARINE PLASTIC POLLUTION

Why in news?

A report titled "Breaking the Plastic Wave"- 'A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution' was released.

The issue of plastic in oceans

- **Gravity of the situation:**
  o Waste plastic makes up **80% of all marine debris.**
  o Plastic has been detected on **shorelines of all the continents.**
  o **Microplastics (particles smaller than 5 mm) or nanoplastics (particles smaller than 100 nm)** disperse even farther and deeper into the ocean, where it becomes effectively impossible to retrieve.
- **Impacts:**
  o **Marine environment**: Ingestion, suffocation and entanglement of hundreds of marine species.
  o **On food and health:**
    ✓ Toxic contaminants accumulate on the surface of plastic materials.
    ✓ Carcinogenic chemicals present in the plastic materials interfere with the body's endocrine system.
  o **On climate change**: Incineration of plastic waste releases carbon dioxide into the atmosphere thereby contributing to global warming.
- **International treaties vis-à-vis marine pollution:** 1972 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (or the London Convention), the 1996 Protocol to the London Convention (the London Protocol), and the 1978 Protocol to the **International Convention for the Prevention of Pollution from Ships (MARPOL).**

National efforts taken to combat this issue:
- India is a **signatory to MARPOL**. In addition, Prevention of Marine Pollution is also dealt with by Merchant Shipping Rules, 2009 under the Merchant Shipping Act, 1958.
- **Periodic surveys of Indian flag vessels** to ensure compliance to the above rules. Foreign vessels are likewise inspected under Port State Inspection regime and heavy penalty is levied in case of non-compliance.
- The government has announced a **number of steps to phase out single-use plastics** with the

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eventual goal of stopping all usage to reduce the country's plastic footprint **under the Plastic Waste Management (Amendment) Rules 2018.**
- **BIS has come out with an Indian standard** according to which plastic microbeads of diameter 5 mm or less, that are insoluble in water, and solid plastic particles used to exfoliate or cleanse in personal care products are banned.

Global Initiatives to tackle Marine Plastic Pollution
- **The UN Regional Seas Programme:** It is the key regional framework for protecting the ocean. It was set up in 1974 under the auspices of the UN Environment Programme (UNEP). Currently, the Regional Seas Programme includes a total of 18 Regional Seas, several of which have "adopted actions plans specifically addressing marine litter/plastics debris and microplastics.
- **The GPA and the Global Partnership on Marine Litter (GPML):** The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), set up in 1995, aims at fostering collaboration and coordination among states on the prevention of marine pollution from land-based sources. It is "currently the only global intergovernmental mechanism entirely dedicated to addressing this issue."
- **The Honolulu Strategy:** It aims to connect marine litter programs and to foster collaboration among them by sharing lessons learned and best practices.
- **Global Plastic Action Partnership (GPAP):** The partnership is co-founded by partners across the public and private sectors with an aim to harness the convening power of the **World Economic Forum** to bring together governments, businesses and civil society to translate commitments into meaningful action – at both the global and national levels.
- **Closing the Loop' project:** The **United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)**, in partnership with the Government of Japan, today launched a new project which aims to reduce the environmental impact of cities in South East Asia by addressing plastic waste pollution in rivers and oceans.
- **IUCN "Close the Plastic Tap" Programme:** It aims to better understand the extent of plastic pollution and generate regional and local solutions that are tailored to the different sources.
- **Global Tourism Plastics Initiative of One Planet Network:** The Global Tourism Plastics Initiative aims to stop plastic ending up as pollution while also reducing the amount of new plastic that needs to be produced.

4.1.2. COVID-19 BIOMEDICAL WASTE MANAGEMENT

Why in news?

Central Pollution Control Board (CPCB) has released revised guidelines for Biomedical waste management generated from COVID-19.

More on news

- Guidelines were issued under the title **'Guidelines for Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients.'**
- These were issued under, and in addition to **Biomedical Waste Management Rules, 2016.**
- These guidelines are **applicable to all stakeholders** including isolation wards, quarantine centres, sample collection centres, laboratories, Urban Local Bodies (ULBs) and **common biomedical waste treatment and disposal facilities (CBWTFs).**

Key guidelines for COVID-19 Biomedical waste management

- **Collection of waste**
  - **Use dedicated trolleys and collection bins** in COVID-19 isolation wards and label "COVID-19 Waste" to be pasted on these items.
  - **Depute dedicated sanitation workers** separately for biomedical waste and general solid waste so that waste can be collected and transferred timely to temporary waste storage area.
- **Segregation of waste -** Use a **dedicated collection bin labelled as 'COVID-19'** to store COVID-19 waste and keep separately in temporary storage room prior to handing over to authorized staff of CBWTF.
- **Transportation and disposal of waste**
  - COVID-19 garbage is collected and taken in a **separate vehicle for proper disposal** as biomedical waste either to a CBWTF or a waste-to-energy plant, where it is then either **incinerated, autoclaved (sterilized for shredding and recycling) or burnt to produce energy**.
  - **Quantification and tracking** the movement of COVID-19 waste needed to be carried out by all quarantine centres though the CPCB's biomedical waste-tracking mobile application called **COVID19BWM.**
- **Role of nodal authorities - Designated trained nodal officers** for biomedical waste management in hospitals must be made **responsible for training waste handlers** about infection prevention measures.
- **Record and reporting:** Maintain separate record of waste generated from COVID-19 isolation wards. Report opening or operation of COVID-19 ward to SPCBs and respective CBWTF located in the area.

4.1.3. OIL SPILL

Why in News?

Recently, there have been several serious cases of oil spills- **Russia's arctic region** and **Mauritius** oil spill.

More on news

Oil spill in Russia's Arctic region

• Permafrost thawing is recognized as principal reason that led to **recent 20,000-tonne oil leak at an Arctic region power plant in Russia.**
  o **Plant is built entirely on permafrost,** whose weakening over the years due to climate change caused the pillars supporting a fuel tank to sink.
  o Oil leaked into the local **Ambarnaya river in the Arctic region** turning the surface crimson red. The Ambarnaya river flows through Russia which connects it to the Kara sea, a part of the Arctic Ocean.

About Permafrost
• Permafrost is a **ground that remains completely frozen at 0°C or below for at least two years.**
• It is **composed of rock, soil and sediments held together by ice** and are believed to have formed during glacial periods dating several millennia.
 Permafrost Status Isolated   Sporadic   Discontinuous   Continuous ▶ Permafrost are known to be **below 22% of land surface on Earth,** mostly in polar zones and regions with high mountains. ▶ They are spread across 55% of the landmass in Russia and Canada, 85% in US state of Alaska, and possibly the entirety of Antarctica.
Massive oil spill from damaged ship in Mauritius
• Mauritius has **declared a state of environmental emergency** after a grounded ship off its coast is said to be leaking tonnes of crude oil.   o Oil is **one of the most abundant pollutants in the oceans.** About 3 million metric tons of oil contaminates the oceans annually.
• **Impact on Mauritius**   o Leak is threatening for wildlife as the site of the leak is **Pointe d'Esny region**, home to a wealth of sanctuaries for rare and endemic wildlife.
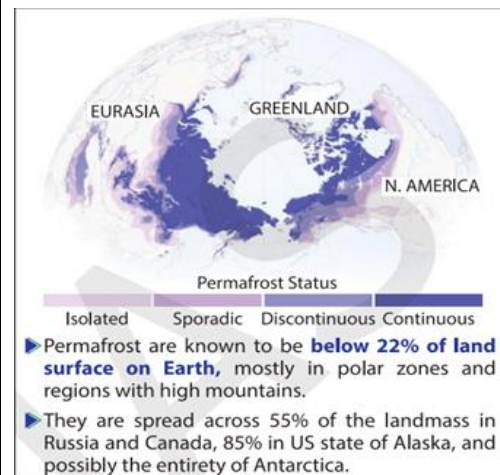
Potential Causes for oil spills

- **Intensified petroleum exploration** and production on continental shelves.
- **Use of supertankers** capable of transporting more than 500,000 metric tons of oil.
- **Natural disasters** such as hurricanes, cyclones and underwater Earthquakes.
- Other reasons include equipment breaking down or deliberate destructive acts by terrorists, countries at war, vandals, or illegal dumpers.

Nature and impact of spilled Oil

- Oil usually spreads out rapidly across the water surface to form a thin layer that is generally referred as **oil slick**. As the oil continues spreading, the layer becomes thinner and thinner, finally becoming a very thin layer called **a sheen.**
- **Impact of Oil Spills:**
  - Oil spills can be very **harmful to marine birds and mammals** and also can harm fish and shellfish.
  - Oil **destroys the insulating ability of fur-bearing mammals**, such as sea otters, and the water-repelling abilities of a bird's feathers, thus exposing these creatures to the harsh elements.
  - **Many birds and animals also ingest (swallow) oil** when they try to clean themselves, which can poison them.

Techniques generally used for cleaning Oil spills

- **Booms**: These are floating barriers to oil (for example, a big boom may be placed around a tanker that is leaking oil, to collect the oil).
- **Skimmers**: These are boats that skim (scoop) spilled oil from the water surface.
- **Sorbents**: These are big sponges used to absorb oil.
  - Indian Coast Guard has used this technique in the form of **Graphene oil absorbent pads called 'Sorbene Pads'** for its clean-up operation of the Maldives Oil Spill. (This operation was taken under **National Oil Spill-Disaster Contingency Plan (NOS-DCP).**)
- **Chemical dispersants and Biological agents**: These break down the oil into its chemical constituents. (This includes techniques like bioremediation.)
- **In situ burning**: This is a method of burning freshly spilled oil, usually while it's floating on the water.
- **Bioremediation**: Oil zapper (bacteria that feeds on hydrocarbon compounds present in crude oil).

National Oil Spill-Disaster Contingency Plan (NOS-DCP)

- The NOS-DCP has **been in operation since July 1996.**
- It **brings together the combined resources** of the Government of India, the State Governments and the shipping, ports, and oil industries.

- NOS-DCP comes under the purview of the **National Disaster Management Authority, Ministry of Home Affairs.**
- Its functional responsibilities include enactment and administration of legislation, prevention and control, monitoring and surveillance and combating of marine pollution.

4.1.4. OTHER IMPORTANT NEWS

Indigenous Air Unique Quality Monitoring (AUM) Photonic System	- It is an indigenous photonic system for **real-time remote monitoring of air quality** parameters. - It is an innovative application of the **principles of laser backscattering, statistical mechanics,** optoelectronics, artificial intelligence, machine/deep learning, and Internet of Things. - It can **identify, classify, and quantify various pollutants simultaneously** (of orders of less than one part per billion) and meteorological parameters, with very high precision, sensitivity and accuracy.
Global e waste Monitor 2020 Report	- Global E-waste Monitor 2020 is a collaborative product of Global E-waste Statistics Partnership, International Telecommunication Union and International Solid Waste Association in close collaboration with UN Environment Programme (UNEP). - According to the report, **India is the third largest electronic waste generator in the world after China and the USA.**
UNICEF report on Lead poisoning	**Key highlights** - A **third of the world's children**, around 800 million, are affected by lead poisoning. **India accounts for around 275 million** of these cases. **Informal and substandard recycling of lead-acid batteries** is a leading contributor to lead poisoning in low and middle-income countries. **Lead poisoning can lead to:** - lifelong neurological, cognitive and physical impairment. - mental health and behavioural problems, and to an increase of crime and violence.
India's first online waste exchange platform	**Andhra Pradesh** launched the country's first online waste exchange for **safe disposal of toxic wastes and promoting recycling and reuse**. - It will **track, scrutinise and audit the waste** besides **encouraging proper utilisation of waste and promoting**

	6Rs -- reduce, reuse, recycle, refurbish, redesign and re-manufacturing of waste items.

4.2. CLIMATE CHANGE

4.2.1. AGRICULTURAL EMISSIONS IN INDIA

Why in news?

Recently Union Government launched Green-Ag Project to **reduce emissions from agriculture.**

Agricultural emissions in India

- In India agriculture and livestock accounts **for 18% of gross national emissions,** the third-highest sector after energy and industry.
- Most of the GHG emission from Indian agriculture takes places from states like **Punjab, Haryana, UP, Bihar, West Bengal etc.**
- **Major sources of emissions:** Enteric fermentation, rice cultivation, methane from manure, synthetic fertilizers, crop residues and inefficient irrigation.
- **Enteric fermentation**: is a natural part of the digestive process in ruminant animals such as cattle, sheep, goats, and buffalo. Microbes in the digestive tract, or rumen, decompose and ferment food, producing **methane as a by-product.**

Pie chart legend: Rice 36.9%, Cereals 3.2%, Fruit 1.1%, Pulses 2.1%, Potato 0.4%, Other 4.8%, Livestock product 38.9%, Ruminant meat 12.5%
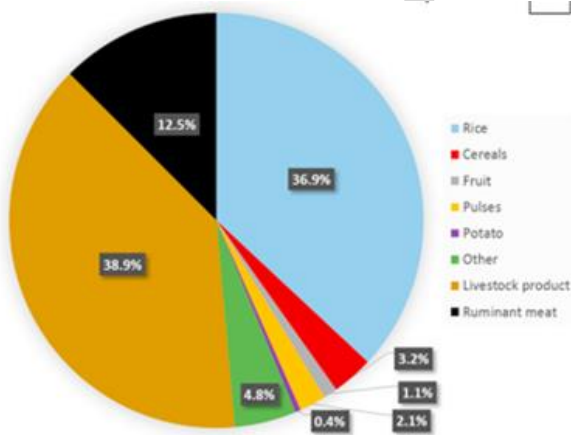
Related information
Global Methane Initiative (GMI)

- It is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a clean energy source.
- India joined GMI in 2004.

Clearing methane using hydroxyl radicals

- **Hydroxyl radical, OH is the main oxidant of CH_4, responsible of about 90% of methane removal** in the atmosphere.
  - Hydroxyl radicals are a form of "sink" because they "scrub" the atmosphere clean of pollutant molecules and break them down. For this reason, OH is known as the **'cleanser of the atmosphere'.**

4.2.2. COOLING EMISSIONS AND POLICY SYNTHESIS REPORT

Why in News?

Recently, United Nations Environment Programme (UNEP) and International Energy Agency (IEA) jointly released this report.

Phase-out of ozone-depleting substances (ODSs), such as chlorofluorocarbons (CFCs), under the Montreal Protocol led to the **introduction of replacement compounds,** including HCFCs and later hydrofluorocarbons (HFCs).

- While HFCs do not deplete stratospheric ozone, many of these replacements are powerful GHGs.

About the report

- It is based on assessment of development and climate benefits of **efficient and climate friendly cooling.**
- It also **lays out actions that can be taken** to deliver efficient and climate friendly cooling for all.

Key findings from the report

- Increasing **demand for cooling is contributing to emissions** of hydrofluorocarbons (HFCs), CO_2, and black carbon.
- Without policy intervention, **direct and indirect emissions from air conditioning and refrigeration are projected to rise 90% above 2017 levels** by the year 2050.
- Coordinated international **action on energy-efficient, climate-friendly cooling** could avoid as much as 460 billion tonnes of greenhouse gas emissions.

Key suggestions from the report

- International cooperation through **universal ratification and implementation of the Kigali Amendment.**
  - **Kigali Amendment to Montreal protocol** aims the phase-down of HFCs (used as refrigerants) by cutting their production and consumption.
- Adoption of **National Cooling Action Plans** that accelerate the transition to climate friendly cooling.
  - **India Cooling Action Plan** was launched in 2019 to provide for sustainable cooling.
- Promotion of **building codes and integration of district and community cooling** into urban planning.

4.2.3. AEROSOL RADIATIVE FORCING

Why in News?

Recently, researchers at **Aryabhatta Research Institute of Observational Sciences** (ARIES),

Nainital have found that **Aerosol Radiative Forcing (ARF)** over trans-Himalayas is larger than the global averages.

More on News

- Atmospheric aerosols are **tiny solid/liquid/mixed particles suspended in the air.**
- **Effect of aerosols on climate** is normally quantified in terms of ARF.
  - **ARF is the net change in energy balance of the earth system** due to some **forced perturbation** by anthropogenic aerosols.

Physical drivers of climate change
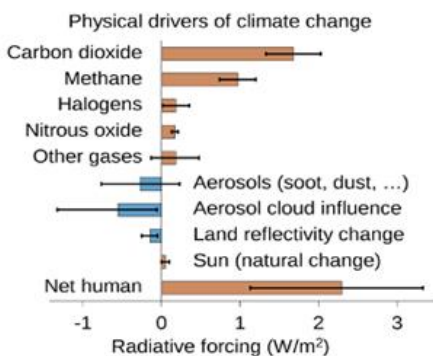
Effect of aerosols on regional climate

- **Atmospheric cooling/heating patterns:** They absorb and scatter incoming solar radiation creating uneven atmospheric heating and surface cooling patterns.
- **Surface snow:** Absorbing aerosols lowers surface albedo, leading to increased absorption of shortwave radiation affecting the surface snowmelt.
- **Earth's surface temperatures:** Aerosol particles act as cloud condensation nuclei (CCN) and ice nuclei (IN) producing more, but smaller, cloud droplets reflecting more solar radiation to space leading to a cooling of the Earth's surface, known as the first indirect effect (cloud-albedo effect).
- **Cloud formation:** Absorbing aerosols cause an increase in lower level static stability inhibiting convection leading to a decrease in cloud cover, known as the semi-direct effect.
- **Monsoon:** Local and remote aerosols alter the land–sea temperature contrast as well as the tropospheric temperature structure, both of which have a profound influence on the onset and sustenance of south Asian monsoon.

4.2.4. OTHER IMPORTANT NEWS

Loss of Ice Cover in The Arctic Sea	• Recently, the **National Centre of Polar and Ocean Research (NCPOR)** found the largest decline in the Arctic Sea ice in the last 41 years due to global warming in July 2019. **Related News** **Milne ice shelf in Canada** has lost more than 40% of its ice in last 2 days. • Ice shelves are **permanent floating sheets of ice** that connect to a landmass. However, they can also form wherever ice flows from land into cold ocean waters. • It has increased fears of the Arctic region being under severe stress due to global warming.

Ministry of Earth Sciences (MoES) launches two initiatives	• **Knowledge Resource Centre Network (KRCNet)**
	   o It aims to **develop an integrated information system for providing one-point 24x7 access** to the Knowledge products like books, reports, journals etc.
	   o It is done under **Digital India initiative**.
	   o The traditional libraries of the MoES system will be upgraded into KRC.
	 • **Mobile App "Mausam" for India Meteorological Department**
	   o It will **communicate weather information and forecasts in a lucid manner** without technical jargons.
	   o It **has 5 services**: Current Weather, Nowcast (localized hourly warnings), City Forecast, Warnings and Radar products.

Carbon Capture, Utilisation & Storage (CCUS)	• Department of Science & Technology (DST) has invited **proposals from Indian researchers under Accelerating CCUS Technologies** (ACT).
	   o ACT is an international initiative, of 16 members including India, **to establish CCUS as a tool to combat global warming.**
	   o It will be in **action from 2016-2021**. It will **facilitate the emergence of CCUS** via transnational funding.

Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change Report	• The report was collectively published by the UN Environment Programme (UNEP), UN Women, the UN Development Programme (UNDP), and the UN Department of Political and Peacebuilding Affairs (UNDPPA). **About UN Department of Political and Peacebuilding Affairs (DPPA)** • The DPPA was **established in 2019** following the reform of the United

	Nations peace and security infrastructure, which brought together the former Department of Political Affairs (DPA) and the United Nations Peacebuilding Support Office. • It plays a central role in United Nations efforts to prevent deadly conflict and build sustainable peace around the world. • The Department provides support to the **UN Secretary-General and his envoys in their peace initiatives**, as well as to **UN political missions** around the world.	

Enhancing Nationally Determined Contributions (NDCs) for Food Systems Report	• Report titled **'Enhancing Nationally Determined Contributions (NDCs) for Food Systems'** seeks to guide policymakers **to increase ambition in NDCs,** which they revise or resubmit under Paris Agreement.
	   o It was published by WWF, UN Environment Programme, EAT (a global, non-profit startup) and Climate Focus (international advisory company and think tank).
	• Under Paris Agreement, **countries will engage in Global Stocktake every five years** to assess collective progress toward the Agreement's long-term goals.
	• **Key findings:**
	   o Food systems account for up to **37% of all greenhouse gas emissions**.
	   o Over **90% of NDCs fail to take food systems approaches** to reduce these emissions.	

Warning System for Mumbai called **'IFLOWS-Mumbai'.**

Forecasts /Warnings relating to major Natural hazards are being provided by-
- India Meteorological Department (Cyclones, heavy rainfall/Floods, Deficiency in rainfall, earthquakes etc).
- Indian National Centre for Ocean Information Services (Tsunami).
- Central Water Commission of the Ministry of Jal Shakti (Floods).
- Geological Survey of India (Landslides).
- National Centre for Seismology, MOES: Earthquake
- Defense Research and Development Organization : Snow and Avalanches

More on the news

- IFLOWS-Mumbai is a state of art Integrated Flood Warning system for Mumbai to enhance the resilience of the city of Mumbai by making it possible to have an **estimate of the flood inundation three days in advance**, along with immediate weather updates.
- It will provide **early warning** for flooding specially during **high rainfall events and cyclones** which would include alerts on **rainfall information, tide levels, storm surge for low-lying areas** anticipated to be affected
- It is built on a modular structure comprised of seven modules, namely **Data Assimilation, Flood, Inundation, Vulnerability, Risk, Dissemination Module and GIS based Decision Support System**.
- The system incorporates-
  - **weather models** from National Centre for medium Range Weather Forecasting (NCMRWF), India Meteorological Department (IMD),
  - **field data** from the rain gauge network stations setup by Indian Institute of Tropical Meteorology (IITM), Municipal Corporation of Greater Mumbai (MCGM) and IMD,
  - **thematic layers on land use, infrastructure** etc. provided by MCGM.
- **Mumbai is the second city** after Chennai to get this system. Similar systems are being developed for Bengaluru and Kolkata.

4.3. DISASTER MANAGEMENT

4.3.1. URBAN FLOODING

Why in news?

Recently, **Ministry of Earth Sciences (MoES) in coordination with Municipal Corporation of Greater Mumbai** developed an Integrated Flood

Factors Contributing to Urban Flooding

Meteorological Factors	Hydrological Factors	Human Factors
• **Heavy Rainfall** • **Cyclonic storms**	• **Synchronization of runoffs** from various parts of **watershed** • **High tide** impeding drainage	• **Land use changes** (e.g. surface sealing due to urbanization, deforestation) increase runoff and sedimentation • **Encroachment** of the flood plain and thereby obstructing flows • Inefficiency or non-maintenance of **flood management infrastructure**

• Small-scale storms • Cloudburst • Bursting of glacial lakes	• Presence of impervious/impermeable cover • High Soil moisture levels • Low Natural surface infiltration rate • Absence of over bank flow, channel network	• Climate change affects magnitude and frequency of precipitation and floods, and also causes extreme weather events • Changing Urban micro-climate due to urban heat island effect may enforce precipitation events • Sudden release of water from dams located upstream of cities/towns • Indiscriminate disposal of solid waste leading to blocked drainage systems.

Important features of NDMA guidelines on urban flooding

- Creation of a **National Hydro-meteorological Network** for providing **early warning** in all urban centres, particularly those located on riverbanks, upstream and downstream of major and medium dams and island cities.
- Developing **local networks for real-time rainfall data collection** with a '**Local Network Cell**' in the IMD headquarters.
- Use of **Doppler Weather Radars** to be expanded to cover all urban areas in the country.
- Establishing **Technical Umbrella for Urban Flood Forecasting and Warning** at the National and state levels.
- An **inventory of the existing storm water drainage system** to be prepared. The inventory will be both watersheds based and ward based.
- **Catchment to be the basis for planning and designing** the storm water drainage systems in all ULBs
- Urban Flooding has to be dealt as a separate disaster, **de-linking it from riverine floods**, which affect the rural areas.
- Suitable **interventions in the drainage system** like traps, trash racks can be provided to reduce the amount of solid waste going into the storm sewers.
- **Flood hazard assessments** should be done on the basis of projected future scenarios of intensities and duration of rainfall and land use changes.

Related News
Centre has been urging states to firm up their own laws to curb flood damage

- Centre has asked state governments for enactment of suitable legislation on lines of **Model Flood Plain Zoning Bill, 1975**, to mitigate damage due to floods.
  o **Subject of floodplains and protection of riverbeds** come under state government domain. Thus, a **law on this can be made only by states.**
- In 1975, Central Water Commission **drafted the model flood plain zoning Bill** and circulated it to states and UTs. Only Manipur, Rajasthan and Uttarakhand have so far enacted this legislation.
- Flood plain zoning means **dividing the entire flood area into different zones** and to restrict occupancy of different zones of the flood plain to uses which will suffer little or no damage during floods.

o It is **non – structural (use knowledge, practice or agreement to reduce disaster risks and impacts)** flood mitigation measure.

Role of floods in Kaziranga's Ecosystem (Assam)

- Kaziranga is currently facing a severe flood situation. However, floods are necessary as
  o entire area of Kaziranga — formed by **alluvial deposits** from Brahmaputra and its tributaries — is centred around the river.
  o regenerative nature of floods **helps replenish Kaziranga's water bodies and maintain its landscape,** a mix of wetlands, grasslands and semi-evergreen deciduous forests.
  o It helps to **get rid of unwanted plants** such as water hyacinth.
  o Floods are a **way of natural selection to survive.**

4.3.2. LANDSLIDES

Why in News?

Recently, Landslide were seen in Pettimudi hills Idukki district, Kerala.

LANDSLIDE ZONES
- Very high hazard
- High hazard
- Moderate/Moderately high hazard
- Low hazard
- Very low hazard
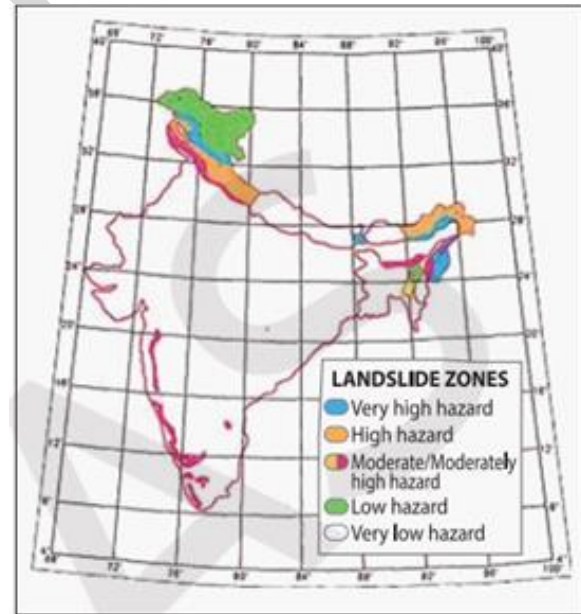
About Landslides

- Landslides are defined as the **mass movement of rock, debris or earth** down a slope.
- **Factors:**
  o **Natural:** Prolonged spell of rainfall, Steep slopes, Highly weathered rock layers, Seismic activity etc.

- **Man-made:** Deforestation leading to soil erosion, Mining and quarrying, Land use pattern etc.
- According to Geological Survey of India, over **12% of India's land area** is susceptible to landslides.
  - It affects especially Himalayas (tectonically active), North Eastern hill ranges, Western Ghats, Nilgiris, Eastern Ghats and Vindhyas, in that order.
- **Impact:** It causes havoc to the settlements downstream, economy, life, property etc.

4.3.3. FLASH DROUGHTS

Why in News?

A recent study identified **39 flash droughts during 1951-2018 and found that 82% of those occurred during monsoon** season in India.

About Flash Droughts

- Unlike conventional drought that propagates slowly, **flash drought is characterized by rapid onset and intensification** caused by high evapotranspiration rates due to abnormally high temperatures, winds, and high incoming solar radiation.
  - It **can be classified as agricultural droughts** due to their direct association with soil moisture and crop stress.
  - Flash droughts can be **driven by lack of precipitation** (precipitation deficit flash drought) or **by anomalously high temperature** (heatwave flash drought).
- **Impact of flash drought:** reduced yields of rice and maize (monsoon season crops), increase in irrigation water demands, can indirectly influence groundwater storage etc.

Related News
New Human fingerprint on global drought patterns
- According to a new study, **Human-caused climate change has intensified patterns of extreme rainfall and drought** across the globe.
About Human Fingerprint research
- Climate that human experiences at any point in time is influenced by many factors including natural and human. A **fingerprinting research** separates these influences.
- **Human Fingerprints** means human influence on global climate. Important human influence includes greenhouse gas (GHGs) emissions and polluting aerosols.
- **This new study found that Human Fingerprints have influenced changes** in temperature, precipitation and regional aridity.
  - Rainfall is decreasing over US, central Asia and southern Africa.

- Rainfall is increasing in the Sahel region of Africa, India and the Caribbean.
- **Also, there are natural influences such as** swings in the Earth's climate and large volcanic eruptions (causing aerosols to be released).

4.3.4. LIGHTENING

Why in News?

Recently, Lightning killed 83 people in Bihar, 24 in Uttar Pradesh in a single day.

About Lightening

- Lightning is a **weather-related Natural Disaster of very rapid and massive discharge of electricity** in the atmosphere, some of which is directed towards the Earth's surface.
  - These discharges are **generated in giant moisture-bearing clouds** that are 10-12 km tall.
- Lightning is formed by collisions between **ice crystals moving up and coming down** in large clouds which **trigger the release of electrons** and a chain reaction.
  - This results in top layer of cloud getting positively charged, and middle layer getting negatively charged with **huge electrical potential difference (PD)** between two layers.
  - Due to this PD, a electric current is formed. **(refer infographics)**
  - As Earth is a **good conductor of electricity, about 15%-20% of the current gets directed towards Earth** causing damage to life and property on Earth.
- In 2018, **National Disaster Management Authority** (NDMA) has issued **guidelines on lightning,** asking states to prepare action plan.
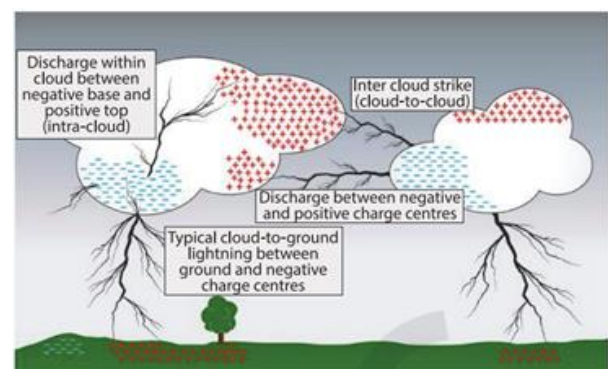
4.3.5. NATIONAL DISASTER RESPONSE FUND (NDRF)

Why in News?

Recently, Government announced modalities for National Disaster Response Fund (NDRF) financial contributions. Payment to NDRF can be made

through **physical instruments, RTGS/NEFT/UPI and Bharatkosh portal.**

About NDRF

- Section 46 and 48 of Disaster Management Act, 2005 stipulates constitution of **NDRF at National level and State Disaster Response Fund (SDRF) at State level** respectively to help people in distress during disasters.
- NDRF **supplements SDRF of the states**.
  - In 2018, **Central Government enhanced its contribution to 90%** and all States will contribute 10 % to SDRF.
- **Disasters covered:** Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.
  - Also, **state government may use up to 10% of funds for local disasters** i.e. not included in notified list.
- NDRF fund was also used to provide food and accommodation to **migrant workers during the coronavirus-induced lockdown.**
  - Centre has also **recently revised ceiling for utilization of SDRF** from 25 to 35% to contain the COVID-19 pandemic.
  - Home ministry had decided to treat **COVID-19 as a notified disaster** for purpose of providing assistance under SDRF.

Related Information

National Executive Committee (NEC)

- NEC is constituted under section 8 of the Disaster Management Act, 2005 **to act as the coordinating and monitoring body for disaster management.**
- It is **chaired by Union Home Secretary.**
- Chief of Integrated Defence Staff of the Chiefs of Staff Committee, ex-officio, is also its member.

Other institutional disaster management measures

Subhash Chandra Bose Aapda Prabandhan Puraskar

- This annual award is instituted to recognize the excellent work done by individuals and institutions in India in **the field of Disaster Management.**
- **Only Indian nationals and Indian institutions can apply** for the award.
- It is given by **Ministry of Home Affairs.**

Workplace Readiness Indicator

- It is an **online assessment tool** developed by Indian Institute of Science, IISc in collaboration with the Karnataka State Disaster Management Authority for ensuring safe workplaces.
- It will **help plan and establish pandemic-specific policies, procedures and necessary management practices.**
- An organization can enter relevant information about their workplace and **it will calculate readiness using ten specific indices** like infrastructure, precautions, outreach, employees interaction level, transport among others.

4.3.6. OTHER IMPORTANT NEWS

India Meteorological Department (IMD)	• Recently, it was observed that IMD's response to extreme weather events has improved in last few years. • IMD's **forecasting of recent cyclones Amphan and Nisarga** on the East and West coast of India were quite accurate vis-à-vis earlier forecasts. **Steps taken by IMD** • **Improvements in observatory data collection:** Two high-powered advanced weather satellites, INSAT-3D and INSAT 3D-R, in 2013 and 2016 were launched. • **Better Weather prediction models:** Data collected from various observatories is simultaneously digitised, processed and is fed into these models. ○ In 2018, IMD launched a **new Ensemble Prediction Systems (EPS)** to provide probabilistic weather forecasts up to the next 10 days. • **IMD's computing power** increased to 8.6 teraflops from 1 teraflop earlier. • **New specialized products and forecasts:** Meghdoot App, UMANG App (giving out weather forecast-based agro advisories to farmers) etc.
Natural Barriers to Disasters (Bio-Shields)	• West Bengal launched a project to plant **5 crore mangrove trees** in cyclone-hit **Sundarbans as a natural barrier to disasters.** • This is in response to **cyclone Amphan that struck India and Bangladesh.** **Concept: Natural Barriers to Disasters (Bio-Shields)** • There are indirect and direct linkages between ecosystems and disasters. • Ecosystem-based approaches can be effective tools in reducing disaster and climate risks and one of the few approaches to **reduce all three components of the risk equation:** ○ buffering and mitigating hazard impacts ○ reducing vulnerability by providing ecosystem services ○ reducing exposure when natural infrastructure is established in highly exposed areas.

PT 365 – Extended Study Material

4.4. SUSTAINABLE DEVELOPMENT

4.4.1. DRAFT ENVIRONMENT IMPACT ASSESSMENT (EIA), 2020

Why in news?

Ministry of Environment, Forest and Climate Change (MoEF&CC) has published the draft Environment Impact Assessment (EIA) Notification 2020, which replaces the existing EIA Notification, 2006 brought under the Environment (Protection) Act (EPA), 1986.

What is EIA?

- Environmental Impact Assessment or EIA is the process or study which
  - **predicts** the effect of a proposed industrial/infrastructural project on the environment.
  - **prevents** the proposed activity/project from being approved without proper oversight or taking adverse consequences into account
  - **compares** various alternatives for a project and seeks to identify the one which represents the best combination of economic and environmental costs and benefits.

- Any project requiring environmental clearance, first needs to undergo a **thorough screening and scoping process by the regulatory authorities** and thereafter a draft EIA report is sent for public consultation.
- Under the existing 2006 law, **projects are categorised into category A and B** where all projects in the **category A need to undergo the process of EIA.** Category B projects are further classified into category B1 and B2, on the basis of their scope and potential impact and only the projects under **B2 are exempted** from the cumbersome process.

Related News

National Green Tribunal (NGT) sets stringent conditions for commercial use of Groundwater

- There must be **no general permission for withdrawal of groundwater**, particularly to any commercial entity, **without environmental impact assessment (EIA)** of such activity.
- Permission to extract groundwater must be **for specified times and quantity of water**, not for perpetuity.
- **Annual review of permissions** given to be conducted by independent and expert evaluation.
- **Groundwater levels must be audited** and recorded in compliance with conditions given for the permission. Such **audits must be published online**.

Comparative Analysis of the EIA Acts

S No.	PARTICULARS	EIA, 1994	EIA, 2006	EIA, 2020
1.	Period for public consultation	30 days	45 days	40 days
2.	Monitoring period	The Project Authorities to monitor projects for compliance with environmental norms every 6 months.	Authorities to monitor projects for compliance with environmental norms every 6 months.	The monitoring frequency has been relaxed to once a year.
3.	Environmental clearance	i) Onus of providing environmental clearance for projects lay entirely on the Central Government ii) There was no division of category for projects mentioned in Schedule 1.	i) Power was decentralised wherein under the new notification the onus of providing environmental clearance for projects was shared between the Central and the State Government. ii) Projects in Schedule 1 were divided into two categories, i.e., Category A projects (national level appraisal) and Category B projects (state level appraisal). National and State Level Environment Impact Assessment Authority were responsible for it respectively.	i) The Onus of providing environmental clearance for projects was divided between the Central and the State Government as before. ii) Projects are divided into three categories- 'A', 'B1' and 'B2', based on the potential social and environmental impacts and the spatial extent of these impacts.
4.	Environmental clearance process	i) Screening ii) Public hearing iii) Obtaining No Objection Certificate ("NOC") from State Pollution Control Board iv) Evaluation of application v) Recommendations This process has to be completed within 90 days	i) Screening ii) Scoping iii) Public hearing iv) Appraisal Category A projects would have to mandatorily undergo environmental clearance and there is no screening process for it. Category B projects would have to undergo screening, to determine whether they belong to Category B1 or Category B2 Category B2 is exempted from EIA.	For Category A and B1 projects: i) Scoping ii) Preparing the draft environmental impact assessment ("EIA") report. iii) Public consultation. iv) Preparation of final EIA report. v) Appraisal Category B2 projects which require appraisal have to be placed before the appraisal committee which are: i) Preparation and appraisal of Environment Management Plan. ii) Verification of its completeness by the Authority appointed. iii) Grant/rejection of clearance. Category B2 which don't require appraisal would only have to follow last two steps.
5.	Provision for appeal against prior environment clearance	Not applicable	Not applicable	An appeal can be made to National Green Tribunal against prior environment clearance

4.4.2. DECARBONIZING TRANSPORT

Why in news?

NITI Aayog in collaboration with International Transport Forum (ITF) have jointly launched the Decarbonizing Transport in India project.

More on news

- The project is carried out in the wider context of the International Transport Forums's Decarbonising Transport Initiative and is a **part of Decarbonising Transport in Emerging Economies**.
  - o Decarbonization means reducing greenhouse gas (GHG) emissions produced as a result of transport.
- **Purpose**
  - o Develop a pathway towards a **low-carbon transport system** for India.
  - o Design a tailor-made **transport emissions assessment framework for India**
  - o Facilitate the government with a **comprehensive understanding of present as well as future transport activities** along with the related CO2 emissions.

About Decarbonizing Transport initiative (DTI) and Decarbonizing Transport in Emerging Economies (DTEE)

- The **DTI was launched in 2016 with funding from the ITF and other funding partners** including World Bank, European Commission etc.
- The initiative **promotes carbon-neutral mobility to help stop climate change.** It provides decision makers with tools to select CO2 mitigation measures that deliver on their climate commitment.
- Under it, The **DTEE project** helps national governments and other stakeholders to identify transport measures and establish pathways to reduce transport CO2 emissions and meet their climate goals and NDCs.
- The **DTEE is a collaboration between the ITF and the Wuppertal Institute**, supported by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.
- **India**, Argentina, Azerbaijan, and Morocco are current participants.

About International Transport Forum (ITF)
- The ITF is an **inter-governmental organization within the OECD** (Organization for Economic Co-operation and Development) system.

- It is the **only global body with a mandate for all modes of transport.**
- It acts as a **think tank for transport policy issues** and organises the annual global summit of transport ministers.
- **India has been a member** of ITF since 2008.

Related News
Nationally Determined Contributions- Transport Initiative for Asia (NDC- TIA)
- NDC-TIA project **aims at promoting a coherent strategy of effective policies for decarbonising transport** that are co-ordinated among various sector ministries, civil society and the private sector.
- Project **engages in China, India and Vietnam over the period 2020-24.**
- It is a **joint project of seven organisations** including World Resources Institute, International Transport Forum, International Council on Clean Transportation etc.
- The **implementing partner in India for the project is NITI Aayog.**

4.4.3. OTHER IMPORTANT NEWS

Sustainable Development Report	• **Sustainable Development Solutions Network** released 2020 edition of Sustainable Development Report.
	• Annual report **tracks the performance of all UN Member States on the 17 SDGs,** measuring the distance remaining to achieve each target.
	o **2020 report** is focusing on SDG & Covid-19 and includes **SDG Index** that presents progress towards each SDG since 2015.
	• **Key highlights:**
	o World had seen **most rapid progress towards** SDG 1 (No Poverty), SDG 9 (Industry, Innovation and Infrastructure), and SDG 11 (Sustainable Cities and Communities)
	o **SDG index**
	✓ **India ranked at 117 (of 166)** ranking below Pakistan and Afghanistan. Sweden topped the ranking.
	✓ India faces **major challenges in 10 of the 17 SDGs** which include — SDG 2, SDG 3, SDG 5 (gender inequality) etc.
World Energy Outlook Special Report: Sustainable Recovery	• Recently**, International Energy Agency (IEA)** released a World Energy Outlook special report to quantify the economic and job-creation potential of building a more resilient and cleaner energy sector post coronavirus pandemic.

	More on the news
	• It proposes a **Sustainable Recovery Plan (SRP)** that provides an integrated approach to support economic recovery and jobs while improving the resiliency & sustainability of the energy system.
	• The IEA will hold a Ministerial-level **Clean Energy Transition Summit** in July and the SRP will be a key element informing discussions.
Sustainable Ocean Economy for 2050 Report	• A High-Level Panel for a sustainable Ocean Economy commissioned this report to examine the global net benefit of implementing sustainable, ocean-based interventions over a 30-year period (2020-2050).
	About High Level panel for Sustainable Economy (Ocean Panel)
	• **It is a unique initiative of 14 serving world leaders** building momentum towards a sustainable ocean economy, where effective protection, sustainable production and equitable prosperity go hand-in-hand.
	○ **India is not a member.**
	• It is supported by the UN Secretary-General's Special Envoy for the Ocean.
	• It was established in 2018 and **has been working with government, business, financial institutions,** the science community and civil society.
	• It aims to provide **pragmatic solutions across policy, governance, technology and finance,** and ultimately develop an action agenda for transitioning to a sustainable ocean economy.
Virtual Water	• Recently, some experts have suggested virtual water trade as one of the alternatives to ensure sustainable water consumption.
	About Virtual Water
	• Virtual water (VW) is the water 'embodied' in a product, not in real sense, but in virtual sense. It refers to the water needed to produce a product.
	• **Virtual water trade (VWT) refers to the import and export of hidden water in the form of products** such as crop products, textiles, machinery and livestock — all of which require water for their production.
Healthy and Energy Efficient	• **Launched by:** Energy Efficiency Services Limited in partnership with U.S. Agency for International

Buildings Initiative	Development's (USAID) Market Integration and Transformation Program for Energy Efficiency (MAITREE) program.
	○ **MAITREE is** a part **US-India bilateral Partnership** between **Ministry of Power and USAID** aimed at accelerating the adoption of cost-effective energy efficiency within buildings etc.
	• Initiative will pioneer **ways to make workplaces healthier and greener**.
	• It will address challenges of **retrofitting existing buildings and air conditioning systems** so that they are both healthy and energy efficient.
'#iCommit' initiative	• **Ministry of Power** initiated the '#iCommit' campaign, on the occasion of World Environment Day.
	• It calls upon all stakeholders and individuals to continue moving towards energy efficiency, renewable energy, and sustainability to create a robust and resilient energy system in the future.
	• It will be **led by Energy Efficiency Services Limited (EESL).**
	• The '#iCommit' initiative is centred around the idea of **building an energy resilient future**.

4.5. CONSERVATION AND BIODIVERSITY

4.5.1. CONSERVATION INITIATIVES

4.5.1.1. CENTRAL ZOO AUTHORITY (RECONSTITUTED)

- Recently, the Ministry of Environment, Forest and Climate Change has reconstituted the Central Zoo Authority (CZA) to include an expert from the School of Planning and Architecture, Delhi, and a molecular biologist.
  - ○ Now, it consists Union Minister of Environment, Forest and Climate Change as **Chairperson,** 10 members and a Member Secretary
- The CZA is a statutory body under the Ministry of Environment, Forest and Climate Change. It was **constituted in 1992 under the Wildlife (Protection) Act, 1972.**
- **Functions Of CZA**
  - ○ **Evaluate and assess** the functioning of the zoos;

- o To **recognize or derecognize zoos;**
- o To **identify endangered species of wild animals** for purposes of captive breeding and assigning responsibility in this regard to a zoo;
- o To **coordinate the acquisition, exchange and loaning of animals** for breeding purpose;
- o To **provide technical and other assistance to zoos** for their proper management and development on scientific lines.

4.5.1.2. NEW RULES TO REGULATE EXOTIC ANIMAL TRADE

- MoEFCC has issued an advisory to streamline the process of importing and possessing exotic live species in India.
  - o Exotic live species are both **plants and animals that are moved from their source (original) habitat to a new one** mainly due to human intervention.
- **New rules**
  - o Owners and possessors of such animals and birds must also **register their stock with Chief Wildlife Warden** of their States.
    - ✓ Currently, **Directorate-General of Foreign Trade** oversees its trade.
  - o Wildlife Department will prepare an **inventory of such species** and have right to inspect facilities of such traders.
  - o Exotic live species will mean **animals named under Appendices I, II and III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**. It will not include species from Schedules of the Wildlife (Protection) Act,1972.
    - ✓ CITES is a **legally binding international agreement** to protect plants and animals.

4.5.1.3. HUMAN ELEPHANT CONFLICT (HEC) MANAGEMENT BEST PRACTICES

- HEC are driven by various factors such as **elephant density, human density, natural resource availability, extent of forest cover**, crop-raiding and habitat disturbance etc.
  - o India has more than **60 % of Asian elephants (IUCN status: Endangered) population** with Karnataka having the highest number of wild elephants.
- **Initiatives launched by MoEF& CC**
  - o **Surakhsya, a National portal for collection of real time information** & also for managing HEC on a real time basis.

- ✓ It will help to set the data collection protocols, data transmission pipelines and data visualization tools.
- ✓ It will enable **preparation of Action Plans for mitigation of conflicts.**

4.5.1.4. SUKHNA LAKE DECLARED AS WETLAND

- Chandigarh Wetlands Authority issued a notification for the **declaration of Sukhna Lake as a wetland under Wetland (Conservation and Management) Rule 2017** (Wetland Rules).
  - o Sukhna Lake is a **man-made lake in Chandigarh** built-in 1958. It is situated at foothills of Shivalik Hills and was designed to collect runoff water from the Hills.
  - o Earlier, the lake **was also declared a living entity/legal person**.
- List of wetlands in India is developed based on **wetlands definition of the Ramsar Convention (ratified by India)**.
- **Wetland Rules, 2017 were notified under provisions of Environment (Protection) Act, 1986** to protect wetlands across the country.
  - o Wetlands can be **notified by Centre, State and UT Administration.**
  - o It **gives states/UTs powers** to keep a watch on prohibited activities.

4.5.1.5. MAHARASHTRA BECOMES THE FIRST INDIAN STATE TO DECLARE STATE MANGROVE TREE AS SYMBOL OF CONSERVATION

- Recently, **Sonneratia alba or mangrove apple,** an evergreen mangrove species found along the Maharashtra's coastline, was **approved as state mangrove tree.**
  - o It grows on newly formed mudflats and play an **important role in combating land erosion.**
  - o Distribution of this mangrove species is **confined to west coast and some parts of Orissa**.
- A mangrove ecosystem is the **interface between terrestrial forests and aquatic marine ecosystems.** They are salt-tolerant vegetation that **grows in intertidal regions of rivers and estuaries.**
- Recently, **United Nations Environment Programme's Nairobi Convention** has developed **Guidelines on Mangrove Ecosystem Restoration for the Western Indian Ocean Region.**
  - o Guidelines aim to **support the restoration of its degraded mangrove** ecosystems and

support recovery from the economic impacts of COVID-19.

- o **Nairobi Convention** aims to promote a prosperous Western Indian Ocean region with healthy rivers, coasts, and oceans. **India is not part of this convention.**

4.5.2. FORESTS AND CONSERVATION SITES IN NEWS

India's first lichen park	• It has been setup in **Kumaon's Munsiyari area, Uttarakhand.**
	 • It has been developed with an **aim to conserve, protect, and cultivate lichens** and to create awareness among locals regarding their importance.
	 • Lichen is **a composite organism that emerges from algae or cyanobacteria** living among the filaments of fungi.
	   o They are in **symbiotic relationship between algae and fungi**.
	   o They need **clean air to grow** as they perish when the air is polluted.

Gangotri National Park	• It is situated in **Uttarkashi district, Uttarakhand** in the upper catchment of Bhagirathi River • **Gangotri glacier, the origin of river Ganga**, is located inside Gangotri National Park. • It is **typical of high-altitude ecosystems,** with decisive influence from Trans Himalayan elements in both physical and biological characteristics. • Recently, **Uttarakhand allowed forest land transfer in Gangotri National Park** for development of roads to make movement of ITBP personnel near China border.
Zonal Master Plan (ZMP) for Bhagirathi Eco-Sensitive Zone (Uttarakhand) approved	• Bhagirathi Eco-Sensitive Zone (ESZ) from Gaumukh to Uttarakashi was notified in 2012. It mandated the Uttarakhand government to prepare ZMP. • ZMP is based on watershed approach and includes governance in the area of forest and wildlife, watershed management, irrigation, energy, tourism etc. • **ESZs are declared around protected areas** through Notification under the provisions of **Environment**

	(Protection) Act, 1986 and Rules made thereunder.
First Snow leopard conservation Centre	• It will be **opened in Uttarkashi forest division** in Uttarakhand. • Conservation centre will be built by Uttarakhand **forest department along with United Nations Development Programme** as part of its project, SECURE Himalayas. • IUCN status of snow leopard: **Vulnerable.**
Shivalik forest	• Uttar Pradesh is considering the proposal to turn **Shivalik forest into tiger reserve.** • **Shivalik forest constitutes** the northern tip of UP and located at the **foothills of the Shivalik range.** o It **connects four States,** Himachal Pradesh, Uttarakhand, Haryana and Uttar Pradesh. • Currently, UP has 3 tiger reserves: **Amangarh, Pilibhit and Dudhwa tiger reserves.**

Papum Reserve Forest	• Satellite data pointed to **alarming deforestation rates in Papum Reserve** Forest (PRF).
	   o PRF is a **nesting habitat of three hornbills species**: Great, Wreathed and Oriental Pied.
	   o PRF is located between Itanagar Wildlife Sanctuary (east) and Pakke Wildlife Sanctuary (west) in Arunanchal Pradesh.
	 • Hornbills are referred to as **'forest engineers' or 'farmers of forest'** for playing a key role in dispersing seeds of tropical trees.
	   o India has nine **hornbill** species, of which four are found in Western Ghats.

Dibru-Saikhowa National Park	• Committee formed by the National Green Tribunal (NGT) has faulted Oil India Limited for fire breakout in May 2020 in Assam. • It also found that fire breakout has led to **extensive damage to both Maguri-Motapung wetland and Dibru-Saikhowa National Park.** o **Maguri-Motapung wetland,** a spot known for avian and aquatic species is located towards the south of the Oil well.

	• **Dibru-Saikhowa National Park**, a biodiversity hotspot and biosphere reserve, is also located around two kilometres in the north.
Nagarahole National Park (NNP)	• Forest department will place a traffic monitoring mechanism for roads adjacent to NNP (also known as Rajiv Gandhi National Park) to ensure better **compliance of forest laws by motorists and minimise road kills.** • NNP is **located in Kodagu and Mysore District of Karnataka.** • **Nagarahole River** flows through the park and gradually joins the **Kabini River** which also is a **boundary between Nagarahole and Bandipur** • Bandipur, Mudumalai & Wayanad Wildlife Sanctuary are adjacent to NNP.
Periyar Tiger Reserve	• It falls in Idukki, Kottayam and Pathanamthitta districts of **Kerala.** • It is **situated in the Cardamom Hills and Pandalam Hills** of the Southern Western Ghats. • Major portion of the Reserve forms **catchment of the river Periyar and the rest that of river Pamba.** • **Species found here includes** the Asian Elephant, Bengal Tiger, Indian Bison, Sambar Deer, Indian Wild Dog, Barking Deer, Smooth-Coated Otter etc.

4.5.3. SIXTH MASS EXTINCTION

Why in news?

A recent research has suggested that Sixth mass extinction could be the most serious environmental problem that we encounter.

More on news

- Mass extinction refers to a **substantial increase in degree of extinction** or when Earth loses more than three-quarters of its species in a geologically short period of time.
- So far **there have been five mass extinctions (refer infographics),** in last 450 million years, **that have led to destruction of 70-95% of species of plants, animals and microorganisms** that existed earlier.
  - o These were caused by events such as massive volcanic eruptions, depletion of oceanic oxygen or collision with an asteroid.

- o After each of these extinctions, it took millions of years to regain species.
- According to a new research, **ongoing sixth mass extinction may be one of the most serious environmental threats** to persistence of civilization as loss of species will be permanent.
  - o It is referred to as **Anthropocene extinction.**
  - o This **extinction is human-caused** and is more immediate than climate destruction.
  - o **400 vertebrate species went extinct in last century**, extinctions that would have taken over 10,000 years in normal course of evolution.
  - o There will be **more pandemics** if we continue destroying habitats and trading wildlife.
  - o Suggested **complete ban on wildlife trade.**

Related information
Hangenberg crisis
- Earth suffered an intense **loss of species diversity (around 359 million years ago)** that lasted for at least 300,000 years.
- The event is thought to have been **caused by long-lasting ozone depletion,** which would have allowed much more of the Sun's ultraviolet (UV) radiation to reach and harm life on Earth.

The "Big Five" mass extinctions

Late Ordovician (440 million years ago)
First mass extinction
85% of all species, including marine invertebrates like:
- graptolites
- brachiopods
- conodonts.

Late Devonian (374 million years ago)
Second mass extinction
75% of all species including:
- brachiopods
- bivalves
- sarcopterygians.

Permian (250 million years ago)
Third mass extinction (the largest)
95% of all species, including marine animals like:
- Dimetrodon
- Estemmenosuchus
- Orthacanthus
- trilobites
- Moschops.

Jurassic (200 million years ago)
Fourth mass extinction
80% of all species, including:
- icthyosaurs
- paddle-finned plesiosaurs
- phytoplankton
- many species of frogs, salamanders, turtles, snakes, spiders and grasshoppers.

Cretaceous (145 million years ago)
Fifth mass extinction
76% of all species including:
- non-avian dinosaurs
- bivalves (Exogyra and Gryphaea)
- inoceramids
- flying reptiles (pterosaurs).

4.5.4. FLORA AND FAUNA IN NEWS

4.5.4.1. KAZI 106F (GOLDEN TIGER)

- It is **India's only Golden Tiger** found in **Kaziranga National Park of Assam.**

- **A golden tiger**, also called tabby tiger or strawberry tiger, is a tiger with a **color variation** caused by a **recessive gene**.
  - **The yellow skin** of tigers is controlled by a set of **'agouti genes'** while the **black stripes** are controlled by **'tabby genes'** and their alleles. **Suppression** of any of these genes may lead to **color variation** in a tiger.
- Golden tigers are characterized by **blonde or pale-golden color and reddish stripes** in place of black like in normal tigers.
- **Concerns**: Their rare skin tone is a result of **excessive inbreeding**.
  - **Inbreeding is defined as** the probability of two alleles in an individual being identical by descent and is normally the result of mating related individuals.
  - It can increase the chances of offspring being affected by deleterious or recessive traits.
- Tigers resort to inbreeding when their population is almost islanded without connectivity to other landscapes, which is mainly caused by habitat loss and destruction of corridors.

Other Tiger Reserves in Assam are Manas National Park, Orang National Park & Nameri National Park.

4.5.4.2. PIED CUCKOO

- Wildlife Institute of India, Indian Institute of Remote Sensing and Department of Biotechnology have begun a **study of the migration of pied cuckoo from Africa to India and back.**
  - It is done by **tagging two of the birds with satellite transmitters**.
- This is for the first time that a bird species is being tagged to **understand its relationship with climate patterns** like change in monsoon winds, erratic rainfall, seasonal fluctuations, etc
  - Arrival of the pied cuckoos has traditionally been **seen as onset of the monsoon.**
- Study is part of a larger project -**Indian Bioresource Information Network (IBIN)**, funded by Department of Biotechnology.
  - IBIN is proposed to be **a single portal data provider on India's bioresource** - plant, animal, marine, spatial distribution and microbial resources.
- **About Pied Cuckoo (Clamator jacobinus or Jacobin Cuckoo)**
  - There are **two populations of Pied Cuckoo found in India**- southern part (resident) and North and Central India (migratory).

- It is one of the few species that **come to India in the summer.**
- **IUCN status: Least Concern**

4.5.4.3. OTHER FLORA AND FAUNA IN NEWS

Asiatic Lion	• According to 2020 census, there are an estimated 674 Asiatic lions (increased by 29% in last 5 years) in Gir forest region, Gujarat and other revenue areas of coastal Saurashtra.
	• Asiatic Lions are found in **Gir forest** of Gujarat.
	• **IUCN status:** Endangered
	• **Threats**: poaching, large forest fires etc.
	• Asiatic lions and African lions are subspecies of the same species. Asiatic lions are slightly smaller than African lions (IUCN status: Vulnerable).
Polar bears	• A new study has found that **polar bears could become extinct by 2100** unless greenhouse gas emissions are reduced.
	o Rising global temperatures, due to carbon emissions, have caused large amounts of Arctic sea ice to melt, **leaving polar bears with smaller habitats to sustain themselves on.**
	• Polar bears **rely on Arctic sea ice to hunt for seals** and have long been a symbol of the impacts of the climate crisis.
	• IUCN Status: **Vulnerable**
Gaur or Indian Bison	• First population estimation exercise of the Indian gaur was carried out in the Nilgiris Forest Division in recent years.
	o It has revealed that more than an estimated 2,000 Indian gaurs inhabit the entire division.
	• Gaur is the **world's largest and tallest bovine.** It is native to Indian Subcontinent.
	• IUCN status: **Vulnerable**
Dhole (Asiatic Wild Dog)	• Karnataka, Maharashtra and Madhya Pradesh rank high in the conservation of the endangered dhole, according to a study.
	• Dholes play an important role as **apex predators** in forest ecosystems. Besides the tiger, dhole is the only large carnivore

	in India that is under the **IUCN's 'endangered' category.** • Dhole is found in a wide variety of habitat types, including deciduous and evergreen forests and alpine steppe. India perhaps supports the highest number of dholes in the world.
Band-tail scorpionfish (Scorpaenospsis neglecta) found in Gulf of Mannar	• Fish is called 'scorpionfish' because its spines contain neurotoxic venom. • It can change colour and blend with its surrounding environment to escape from predators and while preying. • It is **distributed in Indian and South Pacific Oceans**. • This was the first time this particular species was found live in the Indian waters.
Narcondam hornbill (Rhyticeros narcondami)	• This bird is **endemic to the Narcondam Island (volcanic island)** in Andamans. o Narcondam Island has been identified as an Important Bird Area by BirdLife International and the Bombay Natural History Society. • These are **frugivores** that primarily eat fruits and berries. • IUCN status: **Endangered**
Gynandromorphs	• Gynandromorphs are individual animals that **have both genetically male and female tissues** and often have observable male and female characteristics. • They may be **bilateral, appearing to divide down the middle into male and female sides,** or they may be **mosaic, with patches characteristic of both the sexes.** • Gynandromorphs occur in insects, spiders, crustaceans, and other arthropods as well as in birds, but they are extremely rare. • It is recently **documented in a dragonfly in Kerala.**
Golden Birdwing (Troides aeacus)	• It is a **Himalayan butterfly and India's largest butterfly**. Before this Southern Birdwing was the largest for past 88 years. • While the female Golden Birdwing was recorded from Didihat in **Uttarakhand,** the largest male was from the Wankhar Butterfly Museum in Shillong (**Meghalaya**).

	• It has a **wingspan of 194 mm.**
Woolly whitefly	• It is an **invasive exotic pest of Caribbean-origin** that feeds on various kinds of food (**polyphagous**). • It spread from the Caribbean Island through **transportation of infested seedlings**. • In 2019, it was recorded from guava plantations in Kozhikode district of Kerala, Ramanagara, Mandya and Bengaluru Rural districts of Karnataka and Coimbatore district of Tamil Nadu. • Recently, two types of **ladybird beetles** are found to be the **biological weapons** against this pest.

Coccolithophores	• These are **single-celled algae** living in the upper layers of the world's oceans.
	  o They **calcify marine phytoplankton** that produces up to 40% of open ocean calcium carbonate and responsible for 20% of the global net marine primary productivity.
	  o In the process they help in **removing carbon dioxide from atmosphere and ocean**.
	• A recent study has found that increase in **algae known as diatoms** has decreased in calcium carbonate concentration in Southern Indian Ocean which will **affect the growth of coccolithophores.**

Ophiocordyceps sinensis	• It is a fungus (also known as Himalayan Viagra) that is now categorized **as vulnerable species in IUCN's red list.** It faces threats like – **Overharvesting**, Habitat loss and climate change.
	• It is a **caterpillar fungus endemic to the Himalayan** and Tibetan plateau.
	  o In India, it is primarily found in Pithoragarh and Chamoli districts of **Uttarakhand**
	  o Locally known **as Kira Jari (in India).**
	• It is used widely as **tonic, therapeutic medicine for lung, liver and kidney and as aphrodisiac.**

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4.5.5. OTHER IMPORTANT NEWS

National Transit Pass System	• It was launched by Ministry of Environment for **issuing transit permits for timber, bamboo** and other forest produce**. • It generates **Pan India Transit Passes facilitating seamless movement of forest produce** across India and improving ease of doing business. o Earlier transit passes issued by one state were not honored in other states. • It will replace manual paper-based transit system by **online transit system.**

Okavango Delta, Botswana	• Recently, a **high number of elephant carcasses were found in the Okavango Delta area.** Now government has declared that cause of death is not known.
	   o Botswana has the **world's largest elephant population**, estimated at 130,000.
	 • Delta is **in north-west Botswana comprises permanent marshlands** and seasonally flooded plains.
	   o It is an **interior delta system that do not flow into a sea or ocean**.
	   o It is declared as **UNESCO World Heritage as well as a Ramsar site.**

Coral Triangle	• It is a **marine area located in the western Pacific Ocean** described as world's epicentre of marine diversity. • It includes waters of **Indonesia, Malaysia, the Philippines, Papua New Guinea, Timor Leste and Solomon Islands.** • It houses **nearly 600 different species** of reef-building corals. • It is **one of 3 mega ecological complexes** on Earth, together with **Congo Basin and Amazon Rainforest.**
Global Forest Resources Assessment 2020	• The report is released by the Food and Agriculture Organization (FAO) • **Assessment is done every five years since 1990.** This report assesses the state of forests, their conditions and management for all member countries. • FAO is a **specialized agency of the United Nations.**
Tillari Conservation Reserve	• Tillari conservation reserve is **located near the border of Maharashtra, Goa and Karnataka,** connecting Mhadei Wildlife Sanctuary in Goa and Bhimgad Wildlife Sanctuary in Karnataka.

	• It is an integral part of **Sahyadri-Konkan wildlife corridor.**

4.6. MISCELLANEOUS

4.6.1. AERIAL SEEDING

Why in news?

Recently, Haryana had started aerial seeding across the state on a pilot basis.

More on news

• The technique was employed **to improve green cover in Aravalli** area of Faridabad.

• Recently, **Ecological degradation in the Aravalli region** has become an alarming situation due to issues like increasing urbanization, illegal mining activities, uncontrolled grazing and felling of trees, unfavorable climatic conditions etc.

About Aerial seeding

• Aerial seeding is a **plantation technique wherein seed balls** are sprayed on the pre-determined location **using aerial devices,** including planes, helicopters or drones.
  o These pellets **sprout when there is enough rain,** with nutrients present within them helping in initial growth.
  o **Seed balls** are seeds covered with a mixture of clay, compost, char and other components.

• Species selected have to be **native to the area and hardy**, with seeds that are of an appropriate size for preparing seedballs and have to have a higher survival percentage.

What are the advantages of aerial seeding?

• The technique proves to be beneficial in **areas that have slopes and are inaccessible,** fragmented or have no routes.

• It **requires no attention after seed balls are dispersed** on the ground as they are already sown and surrounded by nutrients.

• The clay shell of these pellets in the mixture also **protects them from birds, ants and rats.**

4.6.2. NATIONAL COMMODITY & DERIVATIVES EXCHANGE (NCDEX)

Why in news?

Recently, NCDEX has highlighted that it will publish two weather-sensitive indices.

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More on news

- Two indices are — the **Indian Monsoon Index (Cumulative Monsoon Index)** and **Indian Rain Index (Monthly Cumulative Rainfall Index).**
  - For this, NCDEX has tied up with **private weather forecasting company Skyspacemet.**
  - Two indices would track systematic rainfall movement in the country using rainfall data collection centres.
  - NCDEX will **use India Meteorological Department definitions on various predictions** such as normal, above normal and deficit, and compare them with actual rain on a daily basis to arrive at the value of the index.
- **These indices will be useful for**
  - Economic sectors such as energy, agriculture, insurance, banking, construction, retail, etc.
  - Farmers, businesses, government institutions, etc.
- **NCDEX is also seeking SEBI approval** for launching derivatives trading on the index.

About NCDEX

- NCDEX is a **leading agricultural commodity exchange** having a broad-based bouquet of permitted commodities, including commodities such as pulses, spices and guar which are not traded on any platforms in the global scenario.
- Since 2015, the Exchange is deemed as a **recognized stock exchange** under the Securities Contracts (Regulation) Act, 1956.
- NCDEX is **regulated by Securities and Exchange Board of India (SEBI).**

4.6.3. SEABED 2030 PROJECT

Why in news?

Recently, researchers under Seabed 2030 project had finished mapping nearly one-fifth of the world's ocean floor.

About Seabed 2030 Project

- It is a collaborative project **between the Nippon Foundation of Japan and the General Bathymetric Chart of the Oceans (GEBCO).**
- It aims to bring together all available bathymetric data to **produce the definitive map of the world ocean floor by 2030** and make it available to all.
- Bathymetry is the **measurement of the shape and depth of the ocean floor**.

- It was launched at **United Nations Ocean Conference in 2017**.
- It is **aligned with the UN's Sustainable Development Goal (SDG) 14** to conserve and sustainably use the oceans, seas and marine resources.
- Seabed 2030 project comprises four **Regional Centers and a Global Center** (in UK).

Benefits of Sea floor mapping

- Shape of the seabed is critical to **understanding ocean circulation patterns** which affect climate and weather patterns, tides, sediment transport and resource exploration (oil, gas and minerals).
- Strengthen **understanding of marine ecosystems** and marine life.
- **Understanding of climate change**, as floor features including canyons and underwater volcanoes influence vertical mixing of ocean water, ocean currents, sea-level rise.
- **Disaster management** by understanding tsunami wave propagation, earthquakes, underwater geo-hazards etc.
- **Routing of submarine cables,** between land-based stations to carry telecommunication signals across stretches of ocean, is highly dependent on detailed knowledge of bathymetry.

> **About GEBCO**
> - GEBCO is an **international group of geoscientists and hydrographers,** working on the development of a range of bathymetric data sets and data products.
> - GEBCO operates under the joint auspices of the **Intergovernmental Oceanographic Commission** (IOC) (of UNESCO) and the **International Hydrographic Organization** (IHO).

4.6.4. HYDROPOWER PROJECTS IN THE NORTHEAST

Why in news?

The Forest Advisory Committee (FAC) has recently deferred its decision on the controversial **Etalin Hydropower project** located in Arunachal Pradesh.

More on the news

- A 3097 MW Etalin Hydropower Project is proposed to be constructed over **Dri and Tangon Rivers,** situated inside the **Dibang catchment zone in Arunachal Pradesh.**
- The project has been awaiting forest clearance since 2014 and Close to 3 lakh trees are expected to be felled to make way for the dam.
- The dam will divert 5,349 ha of land and affect 2,000 **Idu Mishmi individuals.**

- Dibang valley falls in one of India's **most active seismic zones.**

Other major Hydro Electric (H.E.) plants in N.E. India

- **Mizoram**: Tuirial H.E. Project on Tuirial river
- **Nagaland**: Doyang H.E. Project on river Doyang (a tributary of the River Brahmaputra)
- **Assam: Kopili** H.E. Project on Kopili River
- **Arunachal Pradesh:**
  o **Ranganadi** H.E. Project on Ranganadi river
  o **Pare** H.E. Project on river Dikrong (tributary of river Brahmaputra)
  o **Kameng** H.E. Project utilizes the flows from Bichom and Tenga Rivers (both tributaries of the River Kameng).

4.6.5. SHALE GAS

Why in News?

Recently, it was highlighted that lack of uniformity in clearance of proposals is hurting shale explorers.

More on News

- A shale gas exploration plan, by Great Eastern Energy Corporation Limited (GEECL), has been rejected by Environment Ministry citing **that production of** Coal Bed Methane (CBM) **and shale gas drilling are technologically different activities.**
- In 2018, government approved **Policy Framework for exploration and exploitation of Unconventional Hydrocarbons** such as Shale gas, CBM etc.

- This policy made a **shift from 'One hydrocarbon Resource Type' to 'Uniform Licensing Policy'** which is presently applicable in Hydrocarbon Exploration & Licensing Policy (HELP) and Discovered Small Field (DSF) Policy.

About Shale gas

- Shale gas refers to **natural gas that is trapped within shale formations** i.e. fine-grained sedimentary rocks that can be rich sources of petroleum and natural gas.
- While CBM is a form of **natural gas that is trapped in the carbon structure of coal seams.**
- Over the past decade, a combination of **horizontal drilling** and **hydraulic fracturing has allowed access to large volumes of shale gas** that were previously uneconomical to produce.
  o Hydraulic fracturing (HF) is a process used by drilling companies to extract oil and natural gas trapped in subsurface rock units. It includes pumping fluids down a well under pressures to fracture the subsurface rock units.
  o **Guar gum**, made from guar beans grown in arid to semiarid climates in India, is often used in HF to make the process more efficient.
  o **Reserves of it are identified** in Cambay, Krishna – Godavari basin, Cauvery, Gondwana basin, Upper Assam, Indo-Gangetic basin.

4.6.6. GEOGRAPHIC CONCEPTS IN NEWS

Seismic noise	• Recently**, change in the Earth's seismic noise and vibrations** amid COVID-19 lockdown was reported. • **Seismic noise** refers to the relatively persistent vibration of the ground due to a multitude of causes like transport and manufacturing etc. o It is the **unwanted component of signals** recorded by a seismometer**.** • This noise makes it **difficult for scientists to study seismic data that is more valuable**.
Khazan ecosystems	• It is an **estuarine agricultural system practiced in** low-lying floodplains of Goa. • These ecosystems are **reclaimed wetlands and mangrove areas,** predominantly in Goa, where tidal influence is regulated by the construction of embankments and sluice gates. • They are predominantly **rice and fish fields.** • It **protects agricultural fields and villages** from salinity intrusion, inundation and floods.
Interdecadal Pacific Oscillation (IPO)	• It is a **large-scale, long period oscillation of sea-surface temperatures** that influences climate variability over the Pacific Basin on decadal timescales. • IPO affects the decadal-to-multidecadal rainfall variations over many places around the globe, including South Asia. o A positive phase of IPO often leads to **decreased South Asian summer monsoon rainfall.** • Recently, scientists found that the differing phases of the IPO played subtle, but **crucial supplementary roles in the recent interdecadal variations of Indian summer monsoon rainfall.**
Salinity ingress/ Seawater incrusion	• It is the **movement of seawater into freshwater aquifers** due to natural processes or human activities. • It is **caused by decrease in groundwater levels or by rise in seawater levels**. • Some of the coastal states like Gujarat and Kerala are facing issue of salinity ingress.

Boreal Summer Intra Seasonal Oscillation (BSISO)	• It is the **movement of convection (heat)** from Indian Ocean to western Pacific Ocean roughly every 10-50 days during the monsoon (June-September).
	• Researchers found that BSISO induces **high wave activity in north Indian Ocean and Arabian Sea.**
	   o Studying BSISO **will help improve wave forecasts** along India's coasts and mitigate adverse impacts of high waves (coastal flooding, erosion, etc).
	   o It also helps in better **planning Sea-navigation routes.**

Fujiwhara effect	• Two **tropical storms**, Marco and Laura, are likely to impact the Gulf of Mexico, sparking concerns of the Fujiwhara effect. • When two hurricanes (a tropical cyclone of the Atlantic Ocean) collide, the phenomenon is called the **Fujiwhara effect**. • If **two cyclones pass within 900 miles of each other**, they can they can start to orbit. What happens next depends on size of each storm. • Often, **the effect is additive**, and usually **end up with one massive storm** instead of two smaller ones.

4.6.7. INTERNATIONAL GEOGRAPHICAL FEATURES IN NEWS

Yangtze river, China	• NASA images have shown flood water spilling from **Three Gorges Dam** built over Yangtze river. • Yangtze is **Asia's longest river**. Three Gorges dam is **World's largest hydroelectric dam**.
Senkaku islands	• These a **group of uninhabited islands** in the East China Sea, claimed by Japan, China and Taiwan. • Recently, Japan changed the **name of the southern Japan area** containing Senkaku Islands from "Tonoshiro" to "**Tonoshiro Senkaku**," seen as an attempt to cement its claim.

Challenger Deep	• Challenger Deep in the Mariana Trench is the **deepest known spot in world's oceans**, which is 11 kms below the surface of the Pacific Ocean.
	   o **Mariana trench** is trough that cuts across Pacific Ocean floor and is 2,550 kms long and 69 kms wide on average.
	• Information from deep ocean areas can potentially **reveal new sources for medical drugs, food, energy resources and other products.**
	   o It can also help **to predict earthquakes and tsunamis**.

Mount Sinabung Volcano	• This volcano erupted recently. It is located on **Indonesia's Sumatra island**. • Indonesia is home to **about 130 active volcanoes** due to its position on the "Ring of Fire". o **Ring of fire** is a belt of tectonic plate boundaries circling the Pacific Ocean where frequent seismic and volcanic activity occurs.
Zealandia	• It is a long, narrow microcontinent that is mostly **submerged in the South Pacific Ocean**. • Microcontinent is a **landmass that has broken off from a main continent.** o Zealandia broke off from Antarctica about 100 million years ago, and then from Australia about 80 million years ago. • **Only 7% of Zealandia** is above sea level, most of that is what makes New Zealand.
Pantanal, Brazil	• It is **World's Largest Wetland and sprawls over more than 150,000 sq km in Brazil** and also extends into Bolivia and Paraguay. • It is burning as **vegetation compacted under the marshy flood** water during the wet season dries out as ponds and lagoons evaporate, **leaving flammable deposits underground**.

4.6.8. OTHER IMPORTANT NEWS

Lonar lake	• Recently, **color of Lonar lake turned pink due** to a large presence of the salt loving 'Haloarchaea' microbes. o Haloarchaea or halophilic archaea is a **bacteria culture which produces pink pigment** and is found in water saturated with salt. • Lonar lake is the **world's largest basaltic impact crater**, formed when a meteorite hit Earth around 56,000 years ago. • It is located in Buldhana district, in **Maharastra**.
Ministry of Environment, Forest and Climate Change Annual Report 2019-20: Key Observations	• **Diversion of forest land:** 114.68 square kilometres of forest lands were diverted for other purposes in India in 2019. India continues to lose forest land to non-forestry projects. • **Mangrove cover:** Increase of 181 sq. km of mangrove cover in the country in 2017 compared to 2015. • **Biosphere Reserves:** Out of 18 Biosphere Reserves designated nationally, so far 11 have been included in the World Network of Biosphere Reserves of UNESCO. • **Number of Protected Areas (PA):** It has increased from a total of 771 in 2018 to 870 in 2019. Total area under PA is now 1,65,088.36 Sq.kms.

	• **Tigers in India**: India has **achieved the target set by the St Petersburg declaration on tiger conservation** (to double the number of wild tigers). • **100 days Action Plan** (launched in 2019) was initiated for the Restoration & Rejuvenation of 100 Wetlands across the country.

Environmental Performance Index (EPI)	• Recently, **EPI 2020 was released by Yale University.**
	• It is a biennial index which ranks 180 countries on 32 performance indicators across 11 categories **covering environmental health and ecosystem vitality.**
	• **India ranked 168 in 2020** while it was 177 in 2018. Denmark Ranked 1.
	    ○ India scored below the regional average score on all key parameters on environmental health.
	    ○ All South Asian countries, except Afghanistan, were ahead of India in the ranking.

World Environment Day 2020	• It is **celebrated every year on 5th June** to mark **first day of United Nations Conference on Human Environment** which was held in Stockholm, Sweden in 1972. • **2020 Theme:** Biodiversity- a concern that is both urgent and existential. • This year's host is **Colombia in partnership with Germany.**

*Errata – Regarding the member countries of **ESCAP WMO** - The previously used list dated back to 2004 and contained names proposed by then eight member countries of the Panel (Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand.). The new list of names includes representation from five new member countries of the Panel, namely Iran, Qatar, Saudi Arabia, United Arab Emirates and Yemen.*

5. SOCIAL ISSUES

5.1. NEW EDUCATION POLICY 2020

Why in news?

Union Cabinet has approved the New Education Policy (NEP) 2020. The new policy aims to pave way for transformational reforms in school and higher education systems in the country. **This policy will replace the 34-year-old National Policy on Education (NPE),1986.**

Vision of the New Education Policy 2020

- An **education system that contributes to an equitable and vibrant knowledge society**, by providing high-quality education to all.
- Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- Instils skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

Evolution of Education Policy
- University Education Commission (1948-49)
- Secondary Education Commission (1952-53)
- Education Commission (1964-66) under Dr. D.S. Kothari
- National Policy on Education, 1968
- 42nd Constitutional Amendment, 1976- **Education in Concurrent List.**
- National Policy on Education (NPE), 1986
- NPE, 1986 Modified in 1992 (Program of Action, 1992)
- T.S.R. Subramaniam Committee Report (2016)
- Dr. K. Kasturirangan Committee Report (2019)

5.1.1. SCHOOL EDUCATION

Dimensions	Key Provisions under NEP 2020
Early Childhood Care and Education (ECCE)	- **Universal Access for children of 3-6 years:** bring the hitherto uncovered age group of 3-6 years (crucial stage for development of mental faculties of a child) under school curriculum. - **ECCE will be delivered through Anganwadis and pre-schools** that will have teachers and Anganwadi workers trained in the ECCE pedagogy and curriculum.
	- **Pre-school sections** covering at least one year of early childhood care and education will be added to Kendriya Vidyalayas and other primary schools, **particularly in disadvantaged areas.** - NCERT will develop a **National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE)** for children up to the age of 8. - **Implementation to be jointly carried** out by Ministries of HRD, Women and Child Development (WCD), Health and Family Welfare (HFW), and Tribal Affairs.
Attainment of Foundational Literacy and Numeracy	- **National Mission on Foundational Literacy and Numeracy** by Ministry of Education: Under it, States/UTs will prepare an implementation plan for **attaining universal foundational literacy and numeracy** in all primary schools for all learners by grade 3 by 2025. - **National Book Promotion Policy** is to be formulated to ensure the availability, accessibility, quality, and readership of books across geographies, languages, levels, and genres. - **National Repository of high-quality resources** on foundational literacy and numeracy will be made available on the **Digital Infrastructure for Knowledge Sharing (DIKSHA).**
Curtailing Dropout Rates and Ensuring Universal Access to Education at All Level	Policy aims to achieve **100% GER in preschool to secondary level by 2030.** Following are the initiatives to achieve this: - **Providing effective and sufficient infrastructure** so that all students have access to safe and engaging school education. - **Open and Distance Learning (ODL) Programmes** offered by the National Institute of Open Schooling (NIOS) and State Open Schools will be expanded and strengthened with **special**

	emphasis on Socio-Economically Disadvantaged Groups (SEDGs). • **Tracking students** as well as their learning levels through counsellors or well-trained social workers.	**Student Assessment**	• **School examinations in Grades 3, 5, and 8** which will be conducted by the appropriate authority. • **Board exams for Grades 10 and 12** will be continued but redesigned. • **National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development),** will be set up as a standard-setting body under Ministry of Education. • **Holistic Progress Card with** 360-degree, multidimensional report that reflects the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains. It will also include self-assessment, peer assessment, and teacher assessment • **National Testing Agency (NTA)** to serve as a autonomous testing organization to conduct entrance examinations for undergraduate and graduate admissions and fellowships in higher education institutions.
Curriculum and Pedagogy	• Restructuring school curriculum and pedagogy in a **new 5+3+3+4 design** ○ 5 years of the **Foundational Stage** (covering ages 3-8): 3 years of Anganwadi/pre-school + 2 years in primary school in Grades 1-2 ○ 3 years of the **Preparatory Stage** (covering ages 8-11): Grades 3, 4, 5. ○ 3 years of the **Middle Stage** (covering ages 11-14): Grades 6, 7, 8. ○ 4 years of the **High Stage** (covering ages 14-18): Grades 9, 10, 11, 12. • **Reduced curriculum content** to its core essentials to enhance essential learning and critical thinking. • **Experiential learning** will be adopted in all stages, including hands-on learning, arts-integrated and sports-integrated education. • **Freedom of choosing a variety of subject combination:** no rigid separation among 'curricular', 'extracurricular', or 'co-curricular', among 'arts', 'humanities', and 'sciences', or between 'vocational' or 'academic' streams. • **Introduction of contemporary subjects** such as Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, Global Citizenship Education (GCED), etc.. • **Vocational education** through 10-day bagless period sometime during Grades 6-8 where students will **intern with local vocational experts** such as carpenters, gardeners, potters, artists, etc. • **National Curricular Framework for School Education** will be developed by the NCERT.	**Multilingualism and the power of language**	• **Medium of instruction** up till grade 5, and preferably till Grade 8 and beyond, will be **home language/ mother-tongue/ local language.** • '**The Languages of India**' a fun project/ activity on to be taken by every student under the '*Ek Bharat Shrestha Bharat*' initiative. • **Three languages formula with greater flexibility.** • **All classical languages** (Sanskrit, Tamil, Telugu, Kannada, Malayalam, Odia) will be widely available in schools as options. In addition, Pali, Persian, and Prakrit will also be widely available as options. • **Indian Sign Language (ISL) will be standardized** across the country.
		Equitable and Inclusive Education- Provisions for Socio-Economically	• Setting up of ○ **Gender Inclusion Fund** for female and transgender students ○ **Special Education Zones** (SEZs)- Large

Disadvantaged groups -SEDGs	populations from SEDGs to be declared SEZs. • **Children with disabilities** will be enabled to fully participate in the regular schooling process from the foundational stage to higher education. • Every state/district will be encouraged to establish **"Bal Bhavans"** as a **special daytime boarding school,** to participate in art-related, career-related, and play-related activities. • Free school infrastructure can be used as **Samajik Chetna Kendras** to promote social, intellectual, and voluntary activities. • **Special mechanisms for children belonging to tribal groups** to receive quality education • **Fee waivers and scholarships** will be offered to meritorious students from all SEDGs • **Additional Schools-** Setting-up of additional JNVs and KVs in aspirational districts/SEZs
Robust Teacher Education and Recruitment	• New and comprehensive **National Curriculum Framework for Teacher Education (by 2021)** • By 2030, the **minimum degree qualification** for teaching will be a **4-year integrated B.Ed. degree.** • NTA testing for admission to B.Ed. • Setting-up of **National Mission for Mentoring** with a large pool of outstanding senior/retired faculty • **Teacher Eligibility Tests (TETs) for all teachers** across Foundational, Preparatory, Middle and Secondary stage in both public and private schools. • More **autonomy to teachers** in choosing aspects of pedagogy in classroom teaching • **National Professional Standards for Teachers (NPST)** will be developed by the National Council for Teacher Education by 2022. • **Restructuring of NCTE-** National Council for Teacher Education (NCTE) to be restructured as a Professional Standard Setting Body (PSSB)

	under General Education Council (GEC).
School Governance	• Schools can be organized into complexes or clusters which will be the basic unit of governance and ensure availability of all resources including a strong professional teacher community. • Schools will develop School Development Plans (SDPs). These plans will then become the basis for the creation of School Complex/Cluster Development Plans (SCDPs) • The **twinning/pairing of one public school with one private school** will be adopted across the country, so that such paired schools may learn from each other, and also share resources, if possible.
Standard-setting and Accreditation for School Education	Clear, separate systems for policy making, regulation, operations and academic matters. • Independent **State School Standards Authority (SSSA) to be set up by States/UTs.** • **School Quality Assessment and Accreditation Framework (SQAAF)** to be developed by SCERT. • **Public and private schools** (except the schools that are managed/aided/controlled by the Central government) will **be assessed and accredited on the same criteria.** • For a **periodic 'health check-up' of the overall system**, a sample-based **National Achievement Survey (NAS) of student learning levels will be carried out** by the proposed new National Assessment Centre, PARAKH.

5.1.2. HIGHER EDUCATION

Institutional Restructuring & Consolidation	• All higher education institutions to be consolidated into three types of institutions:
	  ○ **Research Universities** - equal focus on research and teaching
	  ○ **Teaching Universities** - primary focus on teaching with significant focus on research
	  ○ **Autonomous degree-granting colleges** - almost

	• exclusive focus on teaching • Affiliation of colleges is to be phased out in 15 years and a stage-wise mechanism is to be established for granting **graded autonomy** to colleges. • Over a period of time, it is envisaged that every college would develop into either an Autonomous degree-granting College, or a constituent college of a university. • By 2040, all higher education institutions (HEIs) shall aim to become multidisciplinary institutions. • There shall, by 2030, be **at least one large multidisciplinary HEI** in or near every district. • The aim will be to **increase the Gross Enrolment Ratio** in higher education including vocational education from **26.3% (2018) to 50% by 2035**.
Holistic Multidisciplinary Education	• The policy envisages undergraduate education with **flexible curricula, creative combinations of subjects, integration of vocational education** and **multiple entry and exit points with appropriate certification**. • An **Academic Bank of Credit** is to be established for **digitally storing academic credits** earned from different HEIs so that these can be transferred and counted towards final degree earned. • **Multidisciplinary Education and Research Universities** (MERUs), at par with IITs, IIMs, to be set up as models of best multidisciplinary education of global standards. • **The National Research Foundation** will be created as an **apex body** for fostering a strong research culture and building research capacity across higher education.
Regulation	• **Higher Education Commission of India (HECI)** will be set up as a **single overarching umbrella body** for entire higher education, excluding medical and legal education. HECI **to have four independent verticals** -

	o National Higher Education Regulatory Council (NHERC) for regulation, o General Education Council (GEC) for standard setting, o Higher Education Grants Council (HEGC) for funding, o National Accreditation Council (NAC) for accreditation. • **Public and private higher education institutions will be governed by the same set of norms** for regulation, accreditation and academic standards.
Internationalization of HEIs	• **Internationally relevant curricula**, meaningful opportunities for social engagement, quality residential facilities and on-campus support, etc. • An **International Students Office at each HEI** hosting foreign students will be set up to coordinate all matters relating to welcoming and supporting students arriving from abroad. • **High performing Indian universities will be encouraged to set up campuses in other countries**, and similarly, selected universities e.g., those from among the top 100 universities in the world will be facilitated to operate in India. • A **legislative framework facilitating such entry** will be put in place, and such universities will be given **special dispensation** regarding regulatory, governance, and content norms on par with other autonomous institutions of India. • **Research collaboration and student exchanges** between Indian institutions and global institutions will be promoted. • **Credits acquired in foreign universities** will be permitted, where appropriate as per the requirements of each HEI, to be counted for the award of a degree.
Equity and Inclusion	**Steps to be taken by Governments** • Earmark **suitable Government funds** for the education of SEDGs • Set clear targets for higher GER for SEDGs

	• Enhance gender balance in admissions to HEIs
	• Enhance access by establishing more high-quality HEIs in aspirational districts and Special Education Zones containing larger numbers of SEDGs
	Steps to be taken by all HEIs
	• Mitigate opportunity costs and fees for pursuing higher education
	• Provide more financial assistance and scholarships to SEDGs
	• Make curriculum more inclusive
	• Ensure sensitization of faculty, counsellor, and students on gender-identity issue
	• Strictly enforce all no-discrimination and anti-harassment rules

5.1.3. OTHER MAJOR PROVISIONS

Financing Education	• The Centre and the States will work together to **increase the public investment in Education sector to reach 6% of GDP.**
	• Policy calls for **promotion and support for private philanthropic activity** in education sector
Technology in education	• An autonomous body, **National Educational Technology Forum (NETF),** will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration.
	• **Appropriate integration of technology into all levels** of education will be done to improve classroom processes, support teacher professional development, enhance educational access for disadvantaged groups.
Adult Education	• Policy aims to achieve **100% youth and adult literacy.**
	• **Use of schools/ school complexes beyond school hours** and public library spaces for adult education courses.
	• **Quality technology-based options for adult learning** such as online courses, satellite-based TV channels and ICT-equipped libraries and Adult Education Centres, etc. will be developed.
Online Education	• A **comprehensive set of recommendations** for promoting online education in order to

and Digital Education	ensure preparedness with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible, has been covered.
	• A **dedicated unit for the purpose of coordinating building of digital infrastructure,** content and capacity building will be created in the Ministry of Education for both school and higher education.
Professional Education	• All professional education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities etc will aim to become multi-disciplinary institutions.
Promotion of Indian Languages, Arts, and Culture	• Strong departments and programmes in Indian languages, comparative literature, creative writing, arts, music, philosophy, etc. will be launched and developed across the country, and degrees including 4- year B.Ed. dual degrees will be developed in these subjects.
	• **Outstanding local artists and craftsperson** will be hired as **guest faculty** to promote local music, art, languages, and handicraft, and to ensure that students are aware of the culture and local knowledge where they study.
	• Every higher education institution and even every school or school complex will aim to have **Artist(s)-in-Residence** to expose students to art, creativity, and the rich treasures of the region/country.
	• **High-quality programmes and degrees** in Translation and Interpretation, Art and Museum Administration, Archaeology etc will also be created.
	• For each of the **languages mentioned in the Eighth Schedule of the Constitution of India**, Academies will be established consisting of scholars and native speakers to determine simple yet accurate vocabulary for the latest concepts, and to release dictionaries on regular basis.

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5.2. NATIONAL RECRUITMENT AGENCY (NRA)

Why in News?

Union Cabinet approved creation of a National Recruitment Agency (NRA) to conduct an online Common Eligibility Test (CET) for selecting candidates for majority of central government jobs.

Salient features

- CET will be **held twice a year**.
- There will be **different CETs for graduate level, 12th Pass level and 10th pass level** to facilitate recruitment to vacancies at various levels.
- The CET will be **conducted in 12 major Indian languages**.
- To **begin with CET will cover recruitments made by three agencies**: viz. Staff Selection Commission, Railway Recruitment Board and the Institute of Banking Personnel Selection. This will be expanded in a phased manner.
- CET will be **held in 1,000 centres across India** in a to bid remove the currently prevalent urban bias. There will be an **examination centre in every district** of the country. There will be a special thrust on creating examination infrastructure in the 117 aspirational districts.
- CET will be a first level test to shortlist candidates and the **score will be valid for three years**.
- There shall be **no restriction on the number of attempts** to be taken by a candidate to appear in the CET subject to the upper age limit. **Age relaxation for SC/ST and OBC candidates** as per existing rules will apply.
- Government plans to provide outreach and awareness facility to assist candidates in rural and far flung areas to familiarize them with the online examination system. **24x7 helpline will be set up** for answering queries, complaints and queries.

Benefits

- **Replace multiple examinations** conducted by different recruiting agencies for selection to government jobs advertised each year, with single online test.
- **Increase access to examination centres** especially for women candidates from rural areas & poor candidates as it will be **conducted in each district.**
- **Ease of selection, ease of job placement, ease of living and** speedy recruitment.

5.3. NATIONAL INSTITUTIONAL RANKING FRAMEWORK (NIRF)

Why in news?

Recently, "**India Rankings 2020**" under National Institutional Ranking Framework (NIRF) was released by the Ministry of Education.

Related News
QS World University rankings
• Recently, QS World University rankings for the year 2021 were published.
• It ranks universities on **six metrics**:
○ Academic Reputation
○ Employer Reputation
○ Faculty/Student Ratio
○ Citations per faculty
○ International Faculty Ratio
○ International Student Ratio
• **IIT Bombay, Indian Institute of Science Bengaluru**, and IIT Delhi featured in the top 200 list.
• The top five Indian Institutes of Technology and the Indian Institute of Science have all dropped and the total number of Indian institutions in the top 1,000 global list has also fallen from 24 to 21.
• Reasons for drop in rankings include **low ratio of international faculty and students** and **poor faculty-student ratio**.
ARIIA-2020 (Atal Ranking of Institutions on Innovation Achievements)
• Rankings released by Ministry of Education, aims **to promote innovation among Indian educational institutions.**
• It assesses colleges and varsities on criteria ranging from **support for entrepreneurship development, intellectual property generation,** technology transfer and commercialisation among other aspects.
• ARIIA announcement included **classification of the institutes into two broad categories** and six subcategories.
○ IIT Madras bagged the first place followed by IIT Mumbai and IIT Delhi in this year under the 'Best Centrally Funded Institution' category.

About NIRF "India Rankings 2020"

- The NIRF was launched by the Ministry of Education in 2015.
- This framework outlines a methodology to rank institutions across the country on a yearly basis under 10 categories- **Overall, University, Engineering, Management, Pharmacy, College, Medical, Law, Architecture** and **Dental** (newly added in 2020).
- **Objective of these rankings:**
  - To act as a **guide to students for selection of universities** based on a set of criteria.

- o Helps universities to improve their performance on various ranking parameters and identify gaps in research and areas of improvement.
  - o Ranking of Institutions at national level instill a **competitive spirit amongst institutions** to perform better and secure higher rank in international ranking.
- NIRF is a **voluntary exercise** where only institutions that submit required data are ranked.
  - o A total number of 3771 unique institutions offered themselves for ranking under "Overall", category-specific and / or domain-specific rankings for India Rankings 2020.
- **Parameters:** The ranking framework evaluates institutions on five broad generic groups of parameters-
  - o **Teaching, Learning & Resources:** It includes sub-parameters such as Student Strength (including Doctoral Students), Faculty-student ratio, Financial Resources and their Utilisation etc.
  - o **Research and Professional Practice:** It reflects quality and quantity of Publications, IPR and Patents Published and Granted by the institution etc.
  - o **Graduation Outcomes:** of University Examinations and Number of Ph.D. Students Graduating.
  - o **Outreach and Inclusivity:** It measures regional diversity, gender equity, accessibility for Physically Challenged Students, enrollment of economically and socially challenged students, perception ranking etc.
  - o **Peer Perception:** among Academic Peers and Employers.

Category	Institute	2019 Rank	2020 Rank
Overall	▪ IIT Madras	1	1
	▪ IISc	2	2
University	▪ IISc	1	1
	▪ Jawaharlal Nehru University	2	2
Engineering	▪ IIT Madras	1	1
	▪ IIT Delhi	2	2
Management	▪ IIM Ahmedabad	2	1
	▪ IIM Bangalore	1	2
Colleges	▪ Miranda House, Delhi	1	1
	▪ Lady Shri Ram College for Women, New Delhi	5	2
Pharmacy	▪ Jamia Hamdard, New Delhi	1	1
	▪ Panjab University, Chandigarh	2	2
Medical	▪ AIIMS, New Delhi	1	1
	▪ PGIMER, Chandigarh	2	2
Architecture	▪ IIT Kharagpur	1	1
	▪ IIT Roorkee	2	2
Law	▪ NLSIU, Bangalore	1	1
	▪ NLU, New Delhi	2	2
Dental	▪ Maulana Azad Institute of Dental Sciences, Delhi	NR	1
	▪ Manipal College of Dental Sciences, Udupi	NR	2

5.4. GLOBAL EDUCATION MONITORING REPORT 2020

Why in news?

UNESCO recently published Global Education Monitoring Report 2020 titled **Inclusion and education: All means all**.

Key Highlights

- An estimated **258 million children, adolescents and youth, or 17% of the global total,** are not in school.
- Globally, 1 in 12 primary school-age children, 1 in 6 lower secondary school-age adolescents and 1 in 3 upper secondary school-age youth are out of school.
- In low- and middle-income countries, adolescents from **the richest 20% households** are three times more likely to complete lower secondary school than those from the poorest families.
- In 10 low- and middle-income countries, **children with disabilities were 19% less likely to achieve minimum proficiency** in reading than those without disabilities.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

- It is a **specialized agency of UN** that seeks to build peace through international cooperation in Education, the Sciences and Culture.
- Its headquarters are located in **Paris, France**.
- It has 193 Members, including **India**, and 11 Associate Members.

5.5. EDUCATIONAL INITIATIVE TAKEN DURING COVID19

Ministry of Education released eight-step digital education guidelines PRAGYATA	• This will help in **mitigating COVID-19 impact that has led to closure of schools and has impacted learning** of over 240 million children.
	• Guidelines are prepared by NCERT and are only **advisory in nature**, and **State governments have to build on them and formulate their own rules**, based on local needs.
	  o It will be relevant for **school heads, teachers, parents, teacher educators and students**
	  o It will help in planning and **implementation of digital education with examples**.

	• **Guidelines outlines suggestions on**- Physical, mental health and wellbeing during digital education, Cyber safety and ethical practices, Concerns while planning online and digital education like duration, screen time, inclusiveness etc.
National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA)	• Recently, **on-line NISHTHA programme** was launched due to COVID-19 pandemic. • NISHTHA, launched under Samagra Shiksha is a **capacity building programme** for "Improving Quality of School Education through Integrated Teacher Training". • It aims to **build competencies among all the teachers and school principals** at the elementary stage. • It aims to **train 42 lakhs teachers.**
YUKTI (Young India combating COVID with Knowledge, Technology and Innovation) 2.0 web portal	• It has been **launched by Minister of Human Resource Development** • It will help to systematically assimilate technologies having commercial potential and information **related to incubated startups in our higher education institutions.** • Portal endeavours to ensure that **students, teachers and researchers in higher educational institutions are getting appropriate support** to meet the requirements needed to advance their technologies and innovations. • YUKTI 2.0 is logical extension of earlier version of YUKTI, **to identify ideas relevant in COVID pandemic.**
Manodarpan initiative	• It was launched by Ministry of Education under Atma Nirbhar Bharat Abhiyan. • It will **provide psycho-social support to students**, teachers and parents and address their issues related to mental health and emotional wellbeing. • Under this, a **helpline number** was launched to **provide the consultation.**
ATL App Development Module	• It is launched under the Atal Tinkering Lab (ATL) initiative of NITI Aayog's Atal Innovation Mission (AIM). • It aims to **hone the skills of school students** and

	transforming them **from App users to App makers.** • **About AIM:** AIM is an initiative to promote a culture of innovation and entrepreneurship in the country. o AIM is establishing ATLs in schools across India with a vision to **Cultivate one Million children in India as Neoteric Innovators.**
Vidyarthi Vigyan Manthan 2020-21 launched	• It is a national programme for **popularizing science among school students of Class 6th to 11th.** • It was designed **to identify the bright minds with a scientific aptitude** among the student community. • a**Initiative by:** Vijnana Bharati (VIBHA), Vigyan Prasar, an autonomous organization under Department of Science and Technology and National Council of Educational Research and Training (NCERT).

5.6. NATIONAL DIGITAL HEALTH MISSION (NDHM)

Why in news?

Recently, the **National Digital Health Mission (NDHM)** was launched by Ministry of Health & Family Welfare (MoHFW), in a pilot mode in six Union territories.

About National Digital Health Mission (NDHM)

• NDHM is **a voluntary healthcare programme** that aims to reduce the gap among stakeholders such as doctors, hospitals, citizens etc by connecting them in an integrated digital health infrastructure.

- **Vision:** To create a national digital health ecosystem that supports **universal health coverage** in an **efficient, accessible, inclusive, affordable, timely and safe** manner.
- The scheme will be initially rolled out in six Union Territories. They are Chandigarh, Ladakh, Dadra and Nagar Haveli and Daman and Diu, Puducherry, Andaman & Nicobar Islands and Lakshadweep.
- **Features of NDHM**
  - **Building blocks or digital systems:**
    - ✓ **HealthID** - a repository of all health-related information of a person, such as medical tests, previous prescriptions, diagnosis, treatments etc. It can be created **voluntarily** by every Indian citizen.
    - ✓ **DigiDoctor** – a single, updated repository of all doctors enrolled in nation with relevant details such as name, qualifications, specializations, registration number, years of experience, etc
    - ✓ **Health Facility Registry (HFR)** - a single repository of all the health facilities (both public and private) in the country.
    - ✓ **Personal Health Records (PHR)** - an electronic record of health-related information on an individual that can be drawn from multiple sources while being managed, shared, and controlled by the individual.
    - ✓ **Electronic Medical Records (EMR)** - a digital version of a patient's chart which contains the patient's medical and treatment history from a single health facility.
    - ✓ **Consent Manager and Gateway** - The exchange of health information is enabled by the consent manager and gateway where Health records can only be issued / viewed with patient consent.
  - **National Health Authority,** attached office of MoHFW, will **design, build, roll-out and implement** the NDHM.
  - **Federated Architecture:**
    - ✓ **Government of India will own, operate and maintain the core building blocks** of NDHM such as Health ID, Digi-Doctor and HFR only.
    - ✓ All other building blocks will be designed to be operated in a federated model that factors **regional, state-level and institution-level**

platforms and systems to function independently but in an interoperable manner.
    - ✓ Components, like **PHR and EMR** solutions can be developed by **private players**, in line with the official guidelines issued by the government.
  - NDHM will be an **Open application program interface (API) -based ecosystem** - All the building Blocks will be architected adopting the Open API Policy notified by MeitY, GoI and will share data as per standards as defined in National Digital Health Blueprint (NDHB).
    - ✓ NDHB was prepared by a health ministry panel with an objective to create a framework for the national health stack proposed in 2018 by the NITI Aayog
  - **NDHM sandbox** has been setup to enable any **software to integrate** with the digital building blocks and **test their compliance** to the guidelines and digital health standards.
  - NDHM will be developed by adopting **India Enterprise Architecture Framework (IndEA)** notified by MeitY.
    - ✓ IndEA is a set of citizen-centric, efficiency-focused and event-driven architectural patterns, reference models and standards for designing Enterprise Architectures.

MoHFW's Initiatives related to digital health
- **E-Sanjeevani platform:** It enables two types of telemedicine services viz. Doctor-to-Doctor (eSanjeevani) and Patient-to-Doctor (eSanjeevani OPD) Tele-consultations.
  - More than 1,50,000 tele-consultations have been completed till date, enabling patient to doctor consultations from the confines of their home.
- **e-Hospital:** It is an ICT based Hospital Management System specifically meant for the hospitals in Government Sector.
- **Mera Aspatal:** It is a patient feedback system.
- **e-Shushrut:** It is a hospital Management Information System developed by C-DAC.
- **Electronic Vaccine Intelligence Network (eVIN):** It is an indigenously developed technology system in India that digitizes vaccine stocks and monitors the temperature of the cold chain through a Smartphone application.
- **National Health Portal (NHP):** It aims to establish a single point access for authenticated health information for citizens, students, healthcare professionals and researchers. Users can access detailed information pertaining to health-related issues.

5.7. DRUG ABUSE IN INDIA

Why in news?

- The **World Drug Report 2020 was released by United Nations Office on Drugs and Crime (UNODC)** that has outlined the possible consequences of the COVID-19 pandemic on Illegal Drug Production, Supply and Consumption.
- In India, **'Nasha Mukt Bharat: Annual Action Plan (2020-21) for 272 Most Affected Districts' was e-launched** by Ministry of Social Justice and Empowerment (MoSJE) **on the occasion of "International Day Against Drug Abuse and Illicit Trafficking" (June 26).**
  - o MoSJE is **nodal agency for Drug Demand Reduction** in India.

What is Drug Abuse?

- Drug abuse or substance abuse r**efers to the use of certain chemicals for the purpose of creating pleasurable effects on the brain.**
- Substances of abuse include alcohol, opiates, cocaine, amphetamines, hallucinogens, prescription and over-the-counter drug abuse.

Nasha Mukt Bharat: Annual Action Plan (2020-21)

- It **focuses on 272 most affected districts**
- **Three-pronged attack will be launched** combining efforts of Narcotics Bureau, Outreach/Awareness by Social Justice and Treatment through Health Department
- **Components of Action Plan:**
  - o Awareness generation;
  - o Focus on Higher Educational institutions;
  - o Community outreach and identification of dependent population;
  - o Focus on Treatment facilities in Hospital;
  - o Capacity Building for Service Provider.

India is the link country between the two major opium producing regions of the world,
- **Golden Crescent** - Afghanistan, Iran, and Pakistan.
- **Golden Triangle -** Thailand, Laos and Myanmar
International collaboration:
- **India is a signatory to the three UN Conventions** namely,
  - o Single Convention on Narcotic Drugs, 1961,
  - o Convention on Psychotropic Substances, 1971 and
  - o Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988.

5.8. STATE FOOD SAFETY INDEX FOR 2019-20

Why in news?

Recently Food Safety and Standards Authority of India (FSSAI) released the results of **second State Food Safety Index on World Food Safety Day (June 7).**

More on news

- The Index is a dynamic quantitative and qualitative benchmarking model that **provides an objective framework for evaluating food safety across all States/UTs**. It is an incentive to create a sense of competition among states to improve food safety.
- This **index is based on performance of State/UT on five significant parameters,** namely,
  - o **Human Resources and Institutional Data (20% weightage)**
  - o **Compliance (30% weightage)**
  - o **Food Testing – Infrastructure and Surveillance (20% weightage)**
  - o **Training & Capacity Building (10% weightage)**
  - o **Consumer Empowerment (20% weightage)**
- To ensure comparison among similar entities, index is divided in **3 categories**.
- State/UTs topped in 2019-20 Index
  - o **Large state: Gujarat** followed by Tamil Nadu and Maharashtra.
  - o **Small state: Goa** followed by Manipur and Meghalaya.
  - o **UT: Chandigarh** followed by Delhi and Andaman Islands.

5.9. SWACHH SURVEKSHAN 2020

Why in news?

Swachh Survekshan 2020 is the **5th edition** and covered 4,242 cities, 62 cantonment boards and 92 Ganga towns

Highlights of survey

- **Indore emerged as the cleanest Indian city** fourth time in a row followed by Surat.
- **Cleanest capital city -** New Delhi (Union Territory of New Delhi) and the NDMC.
- **Cleanest state with more than 100 cities –** Chhattisgarh.
- **Cleanest state with less than 100 cities –** Jharkhand.
- **Cleanest Ganga town** – Varanasi.

- **Cleanest megacity with more than 40 lac population** – Ahmedabad.
- **About Swachh Survekshan**
  - It is an **annual ranking** conducted annually by **Quality council of India** under the aegis of Ministry of Housing and urban affairs to assess urban areas of country on their **levels of cleanliness and active implementation of Swachh Bharat Abhiyan** in a timely & innovative manner.
    - ✓ It was **launched in 2016** which is the world's largest urban sanitation and cleanliness survey.
    - ✓ It aims to **encourage large scale citizen participation and create awareness** amongst all sections of society about the importance of working together towards making towns & cities a better place to live in.

Focus Area of Swachh Survekshan 2020

Collect segregated waste and maintain till processing site | Treat and re-use wastewater | Curtail solid waste based air pollution | Promote procurement through GeM | Engage technology driven monitoring

Utilize capacity of wet waste processing facilities | Follow 3R Principles: Reduce, Reuse and Recycle | Uplift social condition of informal waste pickers | Assess Ganga Towns separately to accelerate action

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Related news

Swachh Bharat Mission Academy (SBMA) launched by Ministry of Jal Shakti

- It is an **Interactive Voice Response (IVR)-based training course** with modules on Open Defecation Free (ODF) Plus programme.
  - ODF Plus is an extension of the ODF programme under the Swachch Bharat Mission.
  - Its objective is to sustain the ODF programme and to take up Solid and Liquid Waste Management.
- SBMA will boost the capacity building efforts in training of Swachhagrahis, community-based organizations, NGOs, SHGs and others who are associated with phase 2 of SBM(G).

5.10. NATIONAL COUNCIL FOR TRANSGENDER PERSONS

Why in news?

The Centre has recently constituted the National Council for Transgender Persons under Transgender Persons (Protection of Rights) Act, 2019.

About the council

- **Composition and structure:**
  - It will be **headed by the Union Minister for Social Justice and Empowerment.**
  - The council **will have joint secretary-level members** from the ministries of health, home, minority affairs, education, rural development, labour and law. In addition, there will be a member from the department of pensions, NITI Aayog, National Human Rights Commission and National Commission for Women.
  - **Representatives from five states or Union Territories**, on a rotational basis, will be members of the commission. The first such clutch comprises Jammu and Kashmir, Andhra Pradesh, Odisha, Tripura and Gujarat.
  - **Five members of the community and five experts**, from non-governmental organisations having tenure of three years.
- **Functions:**
  - **Advising** the central government on the formulation of policies, programmes, legislation and projects with respect to transgender persons.
  - **Monitoring and evaluating** the impact of policies and programmes designed for achieving equality and full participation of transgender persons.
  - **Reviewing and coordinating** the activities of all the departments
  - **Redressing grievances** of transgender persons
  - **Performing such other functions** as prescribed by the Centre.

5.11. OTHER IMPORTANT NEWS

YuWaah	• YuWaah is a multi-stakeholder platform that aims to **prepare young people to transition from education and learning to productive work** and active citizenship. • Recently, Ministry of Youth Affairs and Sports and YuWaah (Generation Unlimited India) together signed on a partnership **to empower young people.** • It is being done in **collaboration with UN in India** (UNICEF, UNDP, UNFPA, UNODC, UNEP, UNHCR and ILO), aims to develop the potential of young people through meaningful engagement and participation in social, civic and community initiatives.

2nd edition of student entrepreneurship programme (SEP)	• It was **launched by NITI Aayog's Atal Innovation Mission** in collaboration with Dell Technologies for young innovators of Atal Tinkering Labs (ATLs). ○ They will receive mentor support; prototyping and testing support; intellectual property registration and patenting of ideas etc. from Dell volunteers. • SEP is a 360-degree development program for **future technology leaders and entrepreneurs**. • It is **dedicated to encourage innovation spirit of students** and nurturing their leadership and entrepreneurial skills.		to a financially sustainable enterprise.
		Trifood Project	• **Ministry of Tribal Affairs (MoTA)** launched the tertiary processing centres of Trifood Project, in Raigad (Maharashtra) and Jagdalpur (Chhattisgarh). • TRIFOOD is a joint initiative of **Ministry of Food Processing Industry, MoTA and Tribal Cooperative Marketing Development Federation of India (TRIFED).** ○ It aims to **enhance the income of tribals through better utilization** of and value addition to the Minor Forest Produce (MFP) collected by the tribal forest gatherers.
Unnat Bharat Abhiyan (UBA)	• Tribal Cooperative Marketing Development Federation of India (TRIFED) has entered into a partnership with IIT Delhi under UBA **to boost livelihood opportunities and income generation for tribal communities.** **About Unnat Bharat Abhiyan** • UBA is a Ministry of Education **initiative** which connects higher education institutions with villages for the economic and social betterment of rural communities. ○ It aims to **create a virtuous cycle between society and an inclusive academic system** by providing knowledge and practices for emerging professions • **IIT Delhi** is the National Coordinating Institute for the UBA.	**Tribal Health and Nutrition Portal 'Swasthya'**	• It is e-portal on tribal health and nutrition which will be providing all health and nutrition related information of the tribal population of India in a single platform. • It will **curate innovative practices, research briefs** etc. collected from different parts of India to facilitate the exchange of evidence, expertise and experiences.
Women Entrepreneurship and Empowerment (WEE)	• It is **India's First of its kind social, national initiative by IIT Delhi** and supported by **Department of Science and Technology.** • It aims to **strengthen women entrepreneurship in the country** and promote an ecosystem that enables creation and sustenance of such enterprises by women. • It helps women ranging from college going students to middle-aged housewives to take up entrepreneurship as a viable, fulfilling career option. • It **connects women entrepreneurs from all across India** to potential investors and buyers for their products so that they can take their business idea	**State of Food Security and Nutrition in the World 2020**	• The joint report is **issued annually** by Food and Agriculture Organization, International Fund for Agricultural Development, UNICEF, World Food Programme and WHO. • **Key highlights** ○ Almost **690 million people in world (8.9% of world population)** are estimated to have been undernourished in 2019. ✓ **COVID-19 pandemic may add between 83 to 132 million people to total number of undernourished** in 2020. ○ Since 2014, **the number of people affected by hunger in the world continues to increase slowly.** ✓ **Key reasons for this trend:** greater number of conflicts, climate-related shocks, economic slowdowns. ○ **World is not on track to achieve the SDG 2.1:** Zero Hunger target by 2030. ○ **Healthy diets are unaffordable to more than 3 billion people** and have hidden costs related to health (SDG 2) and climate (SDG 13).

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	✓ Unaffordable healthy diets are associated with **increasing food insecurity and all forms of malnutrition**. ✓ **Diet quality** is a critical link between food security and nutrition outcomes.

Errata: In "Article 1.5.2. SURROGACY (REGULATION) BILL" of earlier PT 365 document the provision of the bill did not include the amended provisions after the recommendations of the Rajya Sabha Select Committee. The updated provisions are given below.

	Provisions of the Bill
Who can be a surrogate mother	**Any willing woman** can act as a surrogate mother as per the provisions of this Act.

Definition of the term infertility	The **definition of infertility has been deleted.** Now, any couple that are married and are between the ages of 23 to 50 years in case of female and between 26 to 55 years in case of male can opt for surrogacy bound to other provisions of the bill.
Period of Insurance coverage	Insurance cover for surrogate mother has been increased to **36 months** (from 16 months).
Permission to PIO, OCI and foreigners to commission Surrogacy and Issue of single women, widows and divorcees	**Single woman (divorcee or widow)** and **persons of Indian origin** (couples or single women) have been made eligible for commissioning surrogacy.

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6. SCIENCE AND TECHNOLOGY

6.1. NANOTECHNOLOGY

6.1.1. NANO TECHNOLOGY IN AGRICULTURE

Why in news?

Recently, centre has released **'Guidelines for Evaluation of Nano-based Agri-input and food products'** in India.

Nanotechnology in Agriculture

- Nanotechnology refers to a **field of applied science and technology** whose unifying theme is the control of matter on the molecular level in **scales smaller than 1 micrometre, normally 1 to 100 nanometres,** and the fabrication of devices within that size range.
- **Benefits of Nanotechnology in agriculture**
  - **Reduce nutrient run off**: Compared to bulk form of chemical inputs in crops, use of nano-nutrients can reduce nutrient run-off into ground water and thus can reduce environmental pollution.
  - **Increase productivity**: It helps to increase plant productivity and better crop protection for meeting requirements of providing food to growing population.
  - **Increase soil fertility**: In the agri-food areas pertinent applications of nanotubes, fullerenes, biosensors, controlled delivery systems, nanofiltration, etc. proved to be as good in resources management of agricultural field, drug delivery mechanisms in plants and helps to maintain the soils fertility.
  - **Sustainable agriculture:** Nano-based Agri-input and food products in India' will pave the way for significant benefits for our mission on Doubling Farming Income by 2022 and National Mission on Sustainable Agriculture.
- Nano-biotechnology has been an important area for the government of India which had launched a **National Nano Mission in 2007**.
  - The mission looks at the uses of nanotechnology for safe drinking water, materials development, sensors development, drug delivery, etc.
  - **Department of Science and Technology (DST)** is the nodal agency for implementing the nano mission.

Highlights of the guidelines

- **Objectives:**
  - To help researchers in **development of products for agriculture** and human consumption.
  - To help regulators to **assess quality and safety of nano based agriculture** and food products.
  - To **encourage Indian innovators and industries to develop new nano-based formulations** and products in these sectors.
- **Key features of the Guidelines:**
  - They **apply to Nano-Agri-Input Products (NAIPs), Nano-Agri Products (NAPs) and nano composites,** sensors made from Nanomaterials that require direct contact with crops, food and feed for data acquisitions.
  - They **do not apply to the conventional products or formulations** with incidental presence of natural nanomaterials.
  - provides for **regulation of NAIPs and NAPs under which Safety, efficacy, functionality, toxicity and other quality data** should be conducted under:
    - ✓ Fertiliser (Control) Order, 1985, the Essential Commodities Act, 1955, Insecticides Act 1968,
    - ✓ Food and Drug Administration guidelines, Food Safety and Standards Act, 2006,
    - ✓ Cattle Feed (Regulation of Manufacture and Sale) Order, 2009
    - ✓ Food Safety and Standards Authority of India (FSSAI).
  - It **provides forsafeguards** to ensure Human health safety, Environmental safety, Occupational health safety and waste disposal etc.
  - **Implementation of standards** should be conducted as per Bureau of Indian Standards (BIS).
    - ✓ **BIS** is a national standards body working under the aegis of Ministry of Consumer Affairs, Food & Public Distribution.
  - They **do not apply to the conventional products or formulations** with incidental presence of natural NMs.

Definitions given in Guidelines
- **Nanomaterial (NM):** These are material that ranges in size from 1 to 100 nm at least in one

dimension or any materials that possess improved properties or phenomena because of the effect of dimension(s), even if these dimension(s) fall outside the nanoscale range, up to 1000 nm.

- **Nano-Agri-Input Products (NAIPs):** They are agricultural input preparation containing NMs in any of the three dimensions i.e. zero, one or two on the nanoscale or with an internal or surface structure, intended for applications on crop for the purpose of farming through soil, seed, foliar and drip and other means.
- **Nano-Agri Products (NAPs):** They are agricultural preparation containing NMs in any of the three dimensions i.e. zero, one or two on the nanoscale or with an internal or surface structure, intended for consumption or application in food/feed and their supplements as well as nutraceutical delivery.

Concerns regarding Nanotechnology in Agriculture

- **Phytotoxicity and reactivity** of nanomaterials in **environment**
- **Cytotoxic and genotoxic effects** of cellular nanomaterials on Nano Agri Products.
- Concerns regarding **high aspect ratio**(ratio of length to width)**, stiffness and bio durability** of nano cellulose.
- **Insufficient economic interest, regulatory issues and public opinion**
- **Lack of knowledge and developmental methods** for risk and life-cycle assessment of nanotechnology.
- It **reduces important bacterial diversity** with declining taxa of Rhizobiales, Bradyrhizobiaceae, and Bradyrhizobium (related to nitrogen fixation) in response to these nanoparticles treatment.

6.1.2. OTHER IMPORTANT NEWS

Gold Nanoparticles (GNPs)	• National Centre for Polar and Ocean Research and the Goa University has successfully **synthesized GNPs using psychrotolerant Antarctic bacteria.** • Nanoparticles (NP) are defined as **particles that range in size from 1 to 100 nm at least in one dimension**. • **NPs have a high surface-to-volume ratio** that enables them to possess unexpected optical, physical and chemical properties. • GNP's **biocompatibility, high surface area, stability, and non-toxicity** make them suitable for various applications in therapeutic use including detection and diagnosis of

	diseases, bio-labelling, and targeted drug delivery. • GNPs are also found to be **useful in the electronics industry.**
ANANYA	• It is a **Nano-technology based disinfectant spray** to combat COVID-19 by disinfecting all types of surfaces. • It adheres very effectively **to fabric, plastic and metallic objects**, and its toxicity to humans is negligible. • It is a **water based spray** and will be effective for more than 24 hours after spray. • **Developed by:** Defence Institute of Advanced Technology, a Deemed University, Pune
Nanozymes	• Recently, **scientists from Indian Institute of Science,** Bengaluru have developed nanozymes. • Nanozymes are nanomaterials **that display enzyme-like characteristics**. • They can **disintegrate the cell membranes** of a range of diseases causing bacteria. • It is believed to act in **battle against antibiotic resistance**
Nanoparticle to reduce severity of rheumatoid arthritis	• Rheumatoid arthritis **is an autoimmune disorder** that primarily affects joints in feet and hands. **Zinc levels** are reported to **get reduced** in such patients. • Scientists have formulated a **nanoparticles with chitosan** and loaded these with zinc gluconate for reducing the severity of rheumatoid arthritis. ○ **Chitosan is a natural polysaccharide** obtained from the exoskeleton of crustaceans and is biodegradable, biocompatible, non-toxic, and mucoadhesive in nature. • **Developed by: Institute of Nano Science & Technology, Mohali,** an autonomous institute of Department of Science and Technology.
Molybdenum dioxide (MoO₂)	• It is a low cost and efficient catalyst to **generate hydrogen from water**. • **MoO$_2$ nanomaterials** annealed in hydrogen atmosphere **can reduce energy input** to **bring about water splitting with great efficiency.**

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- **Electrolytic splitting** of water is a promising method to generate hydrogen but requires energy input that can be brought down in presence of a catalyst.
- Hydrogen is considered as the future of clean and sustainable energy as it can be generated from water and produces water on energy generation without any carbon footprint.

6.2. SPACE RELATED TECHNOLOGICAL DEVELOPMENTS

6.2.1. JOINT LUNAR POLAR EXPLORATION MISSION

Why in News?

Recently, details of Joint Lunar Polar Exploration (LPE) mission were released by Japan Aerospace Exploration Agency (JAXA).

Details of the mission	
Launch Year	After 2023
Launch Vehicle	H3 Rocket
Launch Mass	6 tonne+
Payload Mass	350kg+ (including rover)
Operating Period	More than 3 months
Landing Point	Southpole region of the Moon
Major Missions Equipments	Water Detector
	Science instrument
	Environment Measuring Instrument

Details of the Mission

- It was conceptualized as joint mission **between JAXA and Indian Space Research Organisation** (ISRO) in 2017 which aims **to put a lander and a rover on the Moon's surface.**
- As per details shared by JAXA (see infographic), it will be launched after 2023.
- The mission would last for about six months and will target a constantly sunlit region near the **Moon's South Pole.**
- JAXA would be building the overall **landing module and rover** and ISRO would develop **lander system.**
- Rover will conduct an observation of the areas where **water may be presently distributed.** If it detects hydrogen, the rover will then mine the surface to collect samples.
- **Objectives of LPE mission**

- Obtain actual data regarding quantity of **water** of areas where water is anticipated to exist.
- Understand **distribution, conditions, form and other parameters of lunar water** resources at the moon's South Pole.
- Improve technology needed to **explore surface of low-gravity celestial bodies** in order to support future lunar activities.
  - ✓ These advancements include technology for mobility, lunar night survival and mining excavation.
- Determine **feasibility of utilizing such resources** for sustainable space exploration activities in future.

Why Moon's South Pole is special?
- Its craters have been untouched by sunlight for billions of years — **offering an undisturbed record of the solar system's origins.**
- Its permanently shadowed craters are **estimated to hold nearly 100 million tons of water**.
- Its elemental and positional advantages make it a **suitable pit stop for future space exploration.**
- It has traces of hydrogen, ammonia, methane, sodium, mercury, and silver — making it an **untapped source of essential resources.**

6.2.2. MARS MISSIONS OF INDIA AND OTHER COUNTRIES

Mars Orbiter Mission (MOM), INDIA	Recently, MOM sends images of Mars' biggest moon Phobos and its craters
	• Mars Colour Camera (MCC) onboard MOM (also known as Mangalyan) has captured the image of **Phobos, the closest and biggest moon of Mars**.
	o Mars has two moons, the other being **Deimos**.
	o Images highlighted craters on Phobos named- **Stickney, Shklovsky, Roche & Grildrig.**
	• MOM, launched in 2013, is a **Mars exploration spacecraft** by ISRO.
	o Core objectives of MOM include exploring the **Martian surface features, morphology, mineralogy and Martian atmosphere by indigenous scientific instruments**.
	o Mangalyaan' mission made **India the first country in the world** to successfully launch its mission to Mars on the very first try.
	• **Importance of MOM:**
	o It aims to **search for methane**, an important chemical in life processes.

	✓ Mars has **evidence for water and habitable environment.** o Mars study will help to address **fundamental questions about history of our solar system.** • **Key achievements of MOM** o Discovered that **dust storms on Mars can rise up to hundreds of kilometers.** o Took **full disc image of the planet**, showing Elysium - **large volcanic province** on Mars.	**Heavenly Truth 1**	landing and roving in a single mission. • It will be orbiting Mars for **comprehensive observation, landing on Martian soil and sending a rover** to roam the landing site.

PAYLOADS The five instruments will send home information about Mars

1. MARS COLOUR CAMERA — It will take pictures of Mars' surface. The photos will put the information provided by other instruments on the orbiter into context. It will also give information on the dynamic events on the planet such as weather

2. LYMAN ALPHA PHOTOMETER — It will study the ratio of deuterium and hydrogen. Isotope deuterium is heavier and does not escape from the atmosphere as easily as hydrogen. The data will answer the question if water is present in the planet, or was present in the past

3. THERMAL INFRARED IMAGING SPECTROMETER — It was readied at Space Applications Centre (SAC), Ahmedabad. It will map the surface composition and mineralogy of the planet by measuring thermal emissions

4. MARS EXOSPHERIC NEUTRAL COMPOSITION ANALYSER — It will study Martian atmosphere. This will be the first in situ mapping of the atmosphere there. It will measure radial, diurnal and seasonal variations in the Martian exosphere

5. METHANE SENSOR — It will scan the entire Martian disc within six minutes and measure very low levels of methane—in parts per billion quantities. This is the first time that methane in the atmosphere of the planet will be measured by use of a satellite

Mars 2020, US	• Under this, **NASA's Perseverance rover will seek signs of ancient life and collect rock and soil samples** for possible return to Earth. It will land in **Jezero Crater on Mars.** • The rover is equipped with specialised **equipment to collect data, analyse weather conditions** that can help plan for future human missions. • It will **carry a unique instrument, MOXIE or Mars Oxygen ISRU Experiment,** which for the first time will manufacture molecular oxygen on Mars. • The mission also includes the **Ingenuity Mars Helicopter**. Ingenuity will be the **first aircraft to attempt controlled flight** on another planet. • Ingenuity is intended to **demonstrate technologies needed for flying in the Martian atmosphere**. If successful, these technologies could enable other advanced robotic flying vehicles that might be included in future robotic and human missions to Mars. • **NASA's other mission to Mars:** Mars Pathfinder Mission (1997); Spirit and Opportunity (2003); Curiosity (2012).
Tianwen 1 or Quest for	• It is **China's first Mars probe** aiming to complete orbiting,

6.2.3. LIGHT DETECTION AND RANGING (LIDAR)

Why in news?

• Recently, UK based scientists **identified prehistoric sites using LiDAR** during lockdown period.

About LiDAR

• LiDAR is a **remote sensing technology** that uses light in the form of a pulsed laser to measure ranges (distances) to a target.
  o These light pulses—combined with other data recorded by the airborne system—**generate precise, three-dimensional information about the shape of the Earth** and its surface characteristics.
  o It is similar to **radar and sonar** (that use radio and sound waves, respectively).
• A lidar instrument principally consists of a **laser, a scanner, and a specialized GPS receiver**.
  o Airplanes and helicopters are the most commonly used platforms for acquiring lidar data over broad areas.
• Lidar systems allow **scientists and mapping professionals to examine both natural and manmade environments** with accuracy, precision, and flexibility.
  o **Applications**: Land management and planning efforts, including hazard assessment, forestry, agriculture, geologic mapping, and watershed and river surveys etc.
  o India uses **LiDAR for road construction projects, in Indian railways, agriculture etc.**

The IMU (Inertial measurement unit) gives the precise orientation of the scanner

The laser scanner emits infrared pulses which reflect off the surface of the earth and objects on it. The returned pulses are captured and recorded.

The GPS gives the precise location of the scanner

GPS Base Station
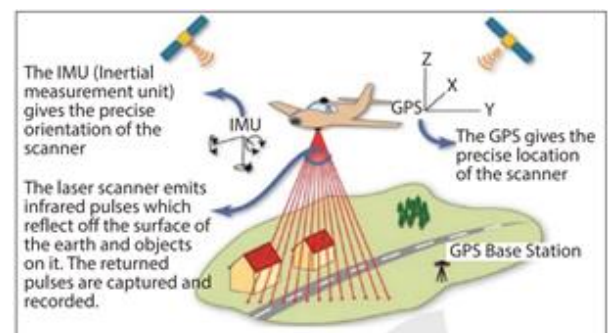
6.2.4. QUANTUM SATELLITE

Why in news?

Recently, China's quantum satellite, Micius enables first totally secure long-range messages

About Micius

- Micius is **world's first quantum-enabled satellite,** launched by China in 2016.
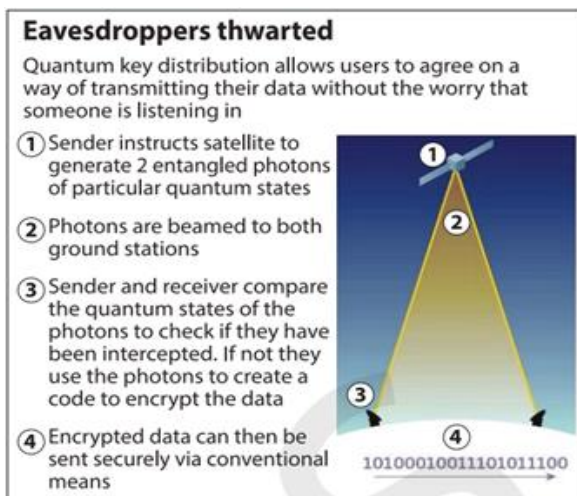 - o It is also known as the **Quantum Experiments at Space Scale (QUESS)** which is Chinese research project in the field of quantum physics.
- This breakthrough was achieved by Micius using **Quantum Key Distribution (QKD).**

Eavesdroppers thwarted

Quantum key distribution allows users to agree on a way of transmitting their data without the worry that someone is listening in

1. Sender instructs satellite to generate 2 entangled photons of particular quantum states
2. Photons are beamed to both ground stations
3. Sender and receiver compare the quantum states of the photons to check if they have been intercepted. If not they use the photons to create a code to encrypt the data
4. Encrypted data can then be sent securely via conventional means

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About Quantum Key Distribution (QKD)

- QKD is a technique that allows for secure distribution of keys to be **used for encrypting and decrypting messages.**
- **In traditional cryptography,** where the security is usually based on the fact that an adversary is unable to solve a certain mathematical problem
- Whereas in QKD achieves security through the **laws of quantum physics i.e. superposition and entanglement.**
  - o **Superposition** means that each qubit can represent both a 1 and a 0 at the same time.
  - o **In quantum entanglement**, subatomic particles become inextricably linked or "entangled" in such a way that any change in one disturbs the other even if both are at opposite ends of the universe.
- Quantum Satellite serves **as source of pairs of entangled photons, twinned light particles** whose properties remain intertwined no matter how far apart they are.
- This means any attempt at hacking entangled particles would be impossible.

About Quantum Technology

- Quantum technology seeks to **harness laws of quantum physics**, which describe the behaviour of matter and energy at the atomic and subatomic level.
- **This is unlike classical physics**, in which an object can exist in one place at one time. E.g. classical computers operate using binary physical state, meaning its operations are based on one of two positions (1 or 0).
- Quantum principles will be used for **engineering solutions to extremely complex problems** in computing, communications, sensing, chemistry, cryptography, imaging and mechanics.
- **Some applications of Quantum Technology are:**
  - o **Quantum Computing** with potential applications in precise navigation for defence and civilian applications, accelerated drug development by accurate chemical simulations etc.
  - o **Quantum metrology** to provide more capable means of detecting stealth aircraft, submarines and also mineral exploration and water resource management etc.

Related term: Quantum Supremacy
- It's the point at which a quantum computer can **complete a mathematical calculation that is beyond the reach of even the most powerful supercomputer.**
- Recently, **Sycamore (Google's quantum computer)** took 200 seconds to perform a calculation that the world's fastest supercomputer, **Summit**, would have taken 10,000 years to accomplish.

6.2.5. LITHIUM IN STARS

Why in news?

Recently, a puzzle regarding production of lithium in stars has been solved by the Indian scientists.

More on news

- Stars, as per known mechanisms of evolution, **destroy lithium as they evolve into red giants.** Planets were known to have more lithium than their stars — as is the case with the Earth-Sun pair.
  - o In fact, while the abundance of other elements grew millions of times, the present abundance of lithium in the universe is only four times the original Big Bang value.

- However, **some stars were found that were lithium-rich** leading to a contradiction in the earlier understanding.
- According to recent research, when stars grow beyond their Red Giant stage into the Red Clump stage, **they produce lithium in what is known as a Helium Flash** and this is what enriches them with lithium.
  - Helium flash **occurs at the late stage of a star's evolution**, as helium accumulates at its core and causes its temperature and pressure to rise. This stage is known as **Red Clump stage.**

The Star Life Cycle
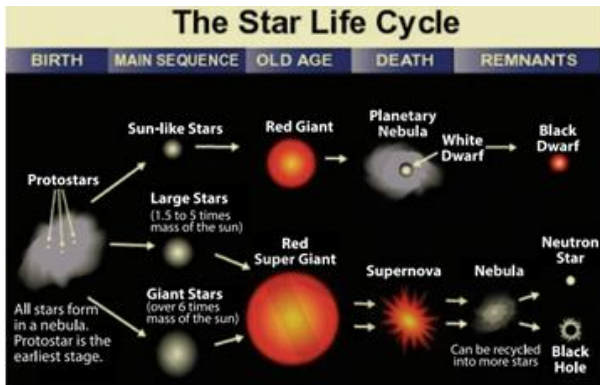
Related information
Extreme Helium Star (EHe)
- Recently, presence of singly ionised fluorine was detected in the atmospheres EHe that makes a strong case that the **main formation of EHe involves a merger of a carbon-oxygen and a Helium (He) white dwarf.**
- EHe is **low-mass supergiant star** that is almost devoid of hydrogen, and has abundance of surface helium.
  - This is in **contrast to majority of Stars** (including Sun) which contain some 70% hydrogen (by mass) throughout their lives.
- EHe stars are **much larger and hotter than Sun** despite being less massive.

6.2.6. MAGNETIC FIELD OF SUN'S CORONA

Why in news?

Global magnetic field of Sun's corona was measured for the first time

More on news

- Corona is **the outermost layer of the Sun's atmosphere**, consisting of hot, diffuse, and highly ionized plasma. **Sun's magnetic field governs many aspects of the Sun's behavior** such as 11-year solar cycle, solar eruptions etc.
- Till now, **solar magnetic fields were measured only at Sun's surface** (photosphere).

- Magnetic field information of whole atmosphere of sun is required to understand the interplay between solar plasma and magnetic field.
- Researchers used a technique known as **coronal seismology or magneto seismology** to measure the coronal magnetic field.
  - This **method uses magnetic waves, known as Alfvén waves**, that are observed to travel along with the magnetic fields.
  - This study is first time that a **global map of the coronal magnetic field** has been obtained
- **Study will help in understanding**
  - **Reasons which causes corona to heat up**, though the photosphere is cooler than the interior.
    - ✓ Core of the Sun is at about 15 million degrees, photosphere is a mere 5700 degrees hot and corona is at one million degrees or more.
  - **Mechanisms of eruptions of the Sun,** such as solar flares and coronal mass ejections.
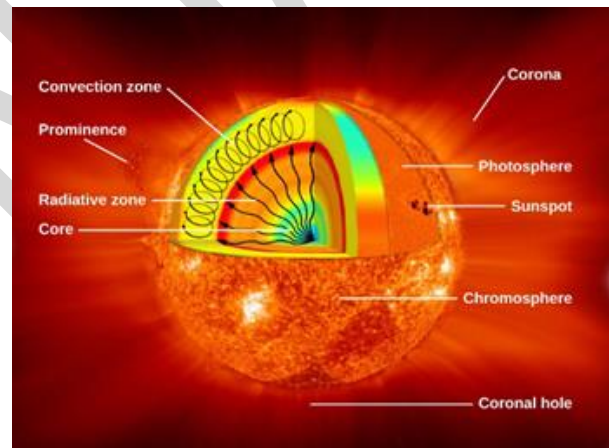
6.2.7. SOUTH ATLANTIC ANOMALY

Why in news?

Recent data from NASA shows splitting of South Atlantic Anomaly.

About South Atlantic Anomaly

- **South Atlantic Anomaly (SAA),** also called as 'dent' in Earth's Magnetic Field is an **unusually weak spot in the Earth's Magnetic Field** that allows charged particles from Sun to dip closer to the Earth's surface than normal.
  - It is observed over South America and the southern Atlantic Ocean.
- Recent data shows that **SAA is expanding westward and splitting into two lobes** which can result in weakening of magnetic field and **can impact:**

- o **Low-Earth orbit satellites** that travel through SAA will get hit by solar particles which can result in a short circuit and further lead to permanent damage.
- o **International Space Station,** which is in low-Earth orbit, instruments will also be impacted.
- **SAA arises from two features of Earth's core:** The tilt of its magnetic axis, and the flow of molten metals within its outer core.
  - o So far, **SAA degradation has not caused any visible impacts** on Earth's surface.
- Earth's magnetic field **acts like a protective shield around the planet,** repelling and trapping charged particles from the Sun.
  - o **Magnetic field of Earth is due to metallic and liquid outer core,** around 3,000 km below our feet.
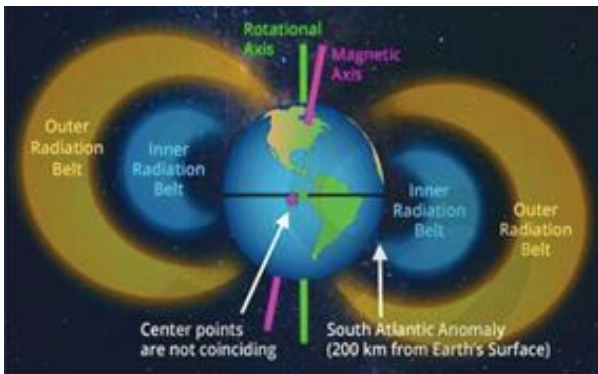
6.2.8. INDIAN NATIONAL SPACE PROMOTION AND AUTHORIZATION CENTRE (IN-SPACE)

Why in news?

Government of India has created **Indian National Space Promotion and Authorization Centre (IN-SPACe)** to boost private sector participation in entire range of space activities.

About IN-SPACe

- It is the **new entity of the Department of Space** which will have its own chairperson and board.
  - o It will **regulate and promote building of routine satellites,** rockets and commercial launch services through Indian industry and startups.
  - o It will **have its own directorates for technical, legal, safety and security,** monitoring and activities promotion.
- It will **act as an interface between ISRO and private parties,** and assess how best to utilise India's space resources and increase space-based activities.
  - o It will function autonomously and parallel to ISRO.

- o **Indian Space Research Organisation (ISRO) will remain the basic body** that decides what missions are to be undertaken but IN-SPACe will help fill the gaps.
- It is the **second space organisation** created by the government in the last two years. The first one was **New Space India Limited (NSIL)** after it was announced in 2019 Budget.
- **Key Benefits of IN-SPACe:**
  - o It will **provide a level playing field for private companies** to use Indian space infrastructure.
  - o It will also **hand-hold, promote and guide** the private industries in space activities through **encouraging policies** and a **friendly regulatory environment.**
  - o It will **assess the needs and demands of private players,** including educational and research institutions, and, explore ways to accommodate these requirements in consultation with ISRO.
  - o It aims to **empower private companies in creation of launch vehicles and launch pads** with technological input and consultation from ISRO.
  - o It will **allow ISRO to allocate more time and resources** for R&D endeavours.
  - o It will also **enhance the socio-economic use of space assets and activities,** including through improved access to space assets, data and facilities.

6.2.9. OTHER IMPORTANT NEWS

Moon is more metallic than thought before: NASA's Lunar Reconnaissance Orbiter (LRO)	• This means that the **Moon's subsurface might have greater quantities of metals such as iron and titanium than thought before.** • This may mean **Earth's crust has lesser amounts of iron oxide than the Moon.** • This questions **most popular theory about the Moon's creation,** that a Mars-sized protoplanet collided with newly formed Earth around 4.5 billion years ago, breaking off a piece of our planet that went on to become its satellite.
India's First In-orbit Space Debris Monitoring and Tracking System	• It will **provide global real-time earth coverage** by deploying a constellation of cost-efficient nanosatellites in LEO (Low Earth Orbit). • It will help **international space agencies to track and map the space debris** and minimize the

	major threat to the future space explorations.
	• It has been developed by **Digantara, India's first air and space surveillance company.**
			mostly of water ice with **embedded dust particles**.
			• Asteroids with **a minimum orbit intersection distance (MOID)** of **about 0.05 AU,** and bigger than **150 meters in diameter** are considered **PHAs**.
			  o MOID is the **distance** between the closest points of the **overlapping orbits** of two bodies.
			  o AU is the **distance between Earth and Sun** and is roughly 150 million km.

Astrophysics Stratospheric Telescope for High Spectral Resolution Observations at Submillimeter- wavelengths (ASTHROS)	• It is **NASA's new mission to send a telescope**, on a football stadium-sized balloon, high into the stratosphere to observe wavelengths of light invisible from the Earth. • The mission will try to find answers about **formation of giant stars in the galaxy.** • It is to be **launched in December 2023 from Antarctica.**		• NASA's **Center for Near-Earth Object Study (CNEOS)** determines **the times and distances** of these objects as and when their approach to the Earth is close. • Scientists have suggested **different ways to ward off such threats,** such as blowing up the asteroid before it reaches Earth, or deflecting it off its Earth-bound course by hitting it with a spacecraft. o One such project is, **Asteroid Impact and Deflection Assessment (AIDA),** which includes NASA's Double Asteroid Redirection Test (DART) mission and the European Space Agency's (ESA) Hera.
Gateway lunar orbiting outpost	• It is proposed by NASA to **support exploration on and near Moon and later to Mars**. • It is a **small spaceship that will orbit Moon,** meant for astronaut missions to the Moon and later, for expeditions to Mars. • It will act as a **temporary office and living quarters for astronauts,** distanced at about 250,000 miles from Earth. • It is seen as **key to new era of lunar explorations** both in the orbit and on the surface of the Moon.		

Comet NEOWISE (C/2020 F3)	• It was **spotted for the first time by NASA in March 2020** with the help of its Near-Earth Object Wide-field Infrared Survey Explorer (NEOWISE) telescope.
	• Comets are **dusty snowballs which orbit the Sun.** They are made of ices, such as water, carbon dioxide, ammonia and methane, mixed with dust.
	• These materials came from the time when the Solar System was formed.
		Dwarf Planet Ceres given status of an "ocean world"	• This status was given as scientists have determined that Ceres has a **brine (solution of salt in water) reservoir,** making it "water rich".
			• Ceres is a dwarf planet which lies in the **asteroid belt between Mars and Jupiter**.
			• **Criteria for dwarf planet are**
			  o body orbits around the Sun.
			  o Not a satellite of any planet.
			  o Has not cleared the neighbourhood around its orbit.
			• Has enough mass for its gravity to pull it into a roughly spherical shape.

Asteroid 2020 ND	• Recently, **Asteroid 2020 ND** made a **fly-past the Earth**. The asteroid was about **170 meters-long,** moved at a distance 0.034 Astronomical Units (AU) to Earth. • NASA classified it as the **Potentially Hazardous Asteroids (PHAs) and also as a Near Earth Object (NEO).** • NEOs are **comets and asteroids** moved by the **gravitational attraction of nearby planets** into orbits which allows them to enter the Earth's neighborhood. These objects are **composed**	**SPT0418-47**	• It is an **extremely distant look-alike galaxy of Milky Way** was found, which is 12 billion light-years away from Earth. • A galaxy is a large group of stars, gas, and dust bound together by gravity. o Sun (a star) and all the planets around it are part of a galaxy

	known as the Milky Way Galaxy. • Studying distant galaxies will help **find answers to how galaxies formed and evolved** after the Big Bang.
Andromeda galaxy	• Andromeda galaxy, also known as M31 is a spiral of perhaps as many as 1 trillion stars and **comparable in size to Milky Way galaxy.** ○ It is the closest (nearly 2.5 million light years) big galaxy to Milky Way. • Recently, **NASA's Hubble Space Telescope have mapped the immense envelope of gas**, called a halo, surrounding Andromeda galaxy. • This halo extends 1.3 million light-years from the galaxy—about halfway to Milky Way which means that Andromeda's halo is already bumping into the halo of Milky Way.
Space bricks	• Researchers from Indian Space Research Organisation and the Indian Institute of Science, Bengaluru has developed a s**ustainable process to make space bricks on the lunar surface.** ○ It **uses urea sourced from human urine**, which could be mixed with lunar soil to build structures on the moon. • It **could be used to assemble structures for habitation** on the moon surface in future.

6.3. IT & COMPUTER

6.3.1. GLOBAL PARTNERSHIP ON ARTIFICIAL INTELLIGENCE (GPAI)

Why in news?

Recently, India joined GPAI as a founding member.

About GPAI

- GPAI is **multi-stakeholder international partnership** to promote responsible and human centric development and use of AI, grounded in human rights, inclusion, diversity, innovation, and economic growth.
- **Other members include** USA, UK, EU, Australia, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, Republic of Korea, Singapore and Slovenia.
- This is a first initiative of its type for **evolving better understanding of the challenges and**

opportunities around AI using the experience and diversity of participating countries.

- GPAI will be supported by a **Secretariat, to be hosted by Organization for Economic Cooperation and Development (OECD) in Paris,** and by two Centers of Expertise- each in Montreal and Paris.
- By joining GPAI, **India will be able to participate in global development of Artificial Intelligence**, leveraging upon its experience around use of digital technologies for inclusive growth.

Other Initiatives taken by India for development of AI

- **National AI Strategy:** NITI Aayog led initiative with a view to guiding the research and development in new and emerging technologies.
- **National AI Portal:** Jointly run by **National e-Governance Division** of Ministry of Electronics and IT a**nd NASSCOM as a** One stop digital platform for AI related developments in India, sharing of resources such as articles, startups, investment funds in AI, resources, companies and educational institutions related to AI in India.
- **Responsible AI for Youth Program :** launched by **National e-Governance Division,** to give young students a platform and empower them with appropriate **new age tech mind-set, relevant AI skill-sets and access to required AI tool-sets** to make them digitally ready for future.

Related information
Data Lake and Project Management Software
- It is a **cloud based and Artificial Intelligence** powered Big Data Analytics platform launched by National Highway Authority of India (NHAI).
- With launch of this, NHAI becomes **first construction sector organisation to go 'Fully Digital'**
- All project documentation, contractual decisions and approvals are now being done through portal only.
- It will bring benefits like No delays, Quick decision making, No question of missing records, Work from anywhere/anytime, enhance transparency etc.

6.3.2. OTHER IMPORTANT NEWS

BlackRock Android Malware	• It is a new **malware which can steal information like passwords and credit card information** from about 377 smartphone applications, including Amazon, Facebook, Gmail etc.

	• **Malware** is the collective name for a number of malicious software variants, including viruses, ransomware and spyware.
BelYo	• It is **country's first COVID-19 blockchain platform.** • It will convert COVID-19-related **clinical and vaccination data of citizens** currently from the **physical form into digital assets.** • This data then can be **retrieved by contact tracing apps** like Aarogya Setu. • **Developed by:** BelfricsBT, a global blockchain start-up, along with YoSync, a start-up incubated at IIIT Bangalore.
Captain ARJUN (Always be Responsible and Just Use to be Nice)	• It is a **robot launched by Railway Protection Force, Pune** to **intensify the screening and surveillance.** • It is launched to screen passengers while they board trains and keep a watch on anti-social elements.
Super apps	• Tata Group is planning to launch an all-in-one super app by the end of this year. • Super app is a **platform developed by a company offering various services under one umbrella.** • E.g. China's WeChat started out as a messaging app, expanded into payments, cabs, shopping, food ordering, etc. • A **country or a region becomes super app-ready** when its large base of population has smartphone first instead of desktop and ecosystem of apps customised to local needs is not evolved. • **Concerns**: possibility of a monopoly, concerns of privacy etc.

6.4. HEALTH

6.4.1. PLASMA BANK

Why in news?

In a first in India, Delhi government has launched a plasma bank for treating covid-19 patients.

About Plasma Bank

• The facility is to be set up at the **Institute of Liver and Biliary Sciences (ILBS),** and will be made available to government and private hospitals.

• **Plasma Bank functions like a blood bank,** and has been created specifically for those who are suffering from COVID-19, and have been advised for plasma therapy by doctors.

• Idea is to **extract and store plasma from people who have recovered from COVID-19** and give it to someone suffering from the disease.

• Delhi has been **using Convalescent Plasma Therapy (CPT),** an experimental treatment that doctors are using for people with severe coronavirus disease (COVID-19).

• **The bank was needed because patients were facing problems accessing blood plasma.** It will, however, not be mandatory for patients to contact the bank for plasma therapy.

• **Each plasma donation would be used to treat 2 patients.** The bank collects **500 ml of plasma**, depending on weight.

> **Related information**
> **Project PLATINA**
> • **Launched by Maharashtra**
> • It will be **world's largest CPT** trial-cum-project for the treatment of critical COVID-19 patients.

For more details on Convalescent Plasma Therapy refer to PT 365 Updated(March-May 2020).

6.4.2. INDIA TUBERCULOSIS REPORT 2020

Why in news?

Union Minister for Health and Family Welfare released the **annual India Tuberculosis Report 2020.**

Key statistics in report

• **Number of cases**
  o **2.4 million cases of tuberculosis (TB) were reported in 2019** (14% higher than last year) and 79,000 deaths.
  o **Reduction in number of missing cases** to 2.9 lakh cases as against more than 10 lakhs in 2017.
    ✓ **Missing cases refer to** the gap between the estimated and notified incident cases.
  o Provision of HIV testing for all notified TB patients increased from 67% in 2018 to 81% in 2019.

• **Treatment**
  o Due to easy availability of molecular diagnostics, **proportion of children diagnosed with TB increased** to 8% in 2019 compared to 6% in 2018
  o **Improvement in treatment success rate** is 81% in 2019 (69% in 2018).

- More than 4.5 lakh DOT Centers provide treatment covering almost every village across the country.
- **Ranking of states:** In 2020, Central TB Division (CTD) introduced a quarterly ranking on TB elimination efforts by all States and UTs.
  - In the categories of larger states with more than 50 lakh population, **Gujarat, Andhra Pradesh and Himachal Pradesh** were awarded as best performing States.
  - In the category of smaller states with less than 50 lakh population, **Tripura** and **Nagaland** were awarded.
  - In the category of Union Territory, **Dadara and Nagar Haveli**, and **Daman & Diu** were chosen as the best performers.

6.4.3. GLUCOSE-6-PHOSPHATE DEHYDROGENASE (G6PD) DEFICIENCY

Why in news?

Recently, Surat Municipal Corporation (SMC) has raised a specific COVID-19 alert for Vataliya Prajapati community whose 25% population suffers from a genetic blood disorder called G6PD deficiency.

More on news

- COVID-19 is a huge challenge for the community as due to G6PD deficiency **some drugs such as hydroxychloroquine can result in rupturing of blood vessel, brain damage in infants and kidney failure in adults.**
  - The Indian Council of Medical Research (ICMR) has recommended a wider use of hydroxychloroquine (HCQ) in battle against COVID-19.

About G6PD deficiency

- G6PD deficiency is a **genetic abnormality** that results in an **inadequate amount of glucose-6-phosphate dehydrogenase (G6PD) in the blood.**
- This is a very important enzyme (or protein) that regulates various biochemical reactions in the body.
- G6PD is also responsible for **keeping red blood cells healthy** so they can function properly and have a normal life span. Without enough of it, red blood cells break down prematurely.
  - This early destruction of red blood cells is known as Hemolysis, and it can eventually lead to **Hemolytic anemia.**
- The defective gene that causes this deficiency is on the X chromosome, which is one of the two sex chromosomes. Men have only one X

chromosome, while women have two X chromosomes. In males, one altered copy of the gene is enough to cause G6PD deficiency.

- In females, however, a mutation would have to be present in both copies of the gene. Since it's less likely for females to have two altered copies of this gene, **males are affected by G6PD deficiency much more frequently than females.**

6.4.4. UN REPORT ON ZOONOTIC DISEASES

Why in news?

- This report was released by **United Nations Environment Programme and International Livestock Research Institute** highlighting increasing trend of Zoonotic diseases.
- "Zoonotic disease (ZD)" or "zoonosis" is a **disease that has passed into the human population from an animal source**.
  - ZD can be bacterial, viral, or parasitic in nature such as Ebola, malaria, rabies, COVID-19 etc.

Key highlights

- About **60% of human infections** are estimated to have an animal origin. Further 75% of **emerging infectious diseases** are zoonotic.
- **7 anthropogenic factors identified for ZD-**
  - increased demand for animal protein
  - rise in intense and unsustainable farming
  - increased use and exploitation of wildlife
  - unsustainable utilisation of natural resources
  - travel and transportation
  - changes in food supply chains
  - climate change crisis.
- Emerging zoonotic diseases **threaten human and animal health, economic development and the environment.**
- Report identifies **One Health approach**, which **unites public health, veterinary and environmental expertise**, as the optimal method for preventing as well as responding to zoonotic disease outbreaks and pandemics.
- Report made **recommendations based on One Health approach** like expanding scientific enquiry into zoonotic diseases; Incentivising sustainable land management practices; Improving biosecurity and control etc.

About Zoonotic disease (ZD)
- It is a **disease that has passed into the human population from an animal source**.
  - It can be **bacterial, viral, or parasitic** in nature such as Ebola, malaria, rabies, COVID-19 etc.

- **Types of ZD**
  - **Emerging zoonotic diseases:** These are those that newly appear in human populations or have existed previously but are now rapidly increasing in incidence or geographical range. For ex-Ebola, HIV/AIDS, COVID-19 etc.
  - **Epidemic zoonoses:** These typically occur intermittently and are mostly domestic in origin. Examples are anthrax, leishmaniasis and Rift Valley fever.
  - **Neglected zoonotic diseases:** These are mostly domestic in origin, and continuously present to a greater or lesser degree in certain populations.
    - ✓ These affect **mostly poor populations** and are commonly neglected by the international donor, standard-setting and research communities alike as well as by national governments.
    - ✓ For ex: Pig tapeworm

For more details on One Health Approach refer to PT 365 Updated (March-May 2020).

6.4.5. OTHER IMPORTANT NEWS

G4 flu virus	• It is **recently emerged strain of H1N1 influenza virus** that is infecting Chinese pigs and that has the potential of triggering a pandemic. • G4 is swine flu strain having genes similar to those in the virus that caused the 2009 flu pandemic. • G4 strain **has the capability of binding to human-type receptors** (like, the SARS-CoV-2 virus binds to ACE2 receptors in humans).
Abnormal Toxicity Test (ATT)	• Indian Pharmacopoeia Commission (IPC) has **proposed ending animal test** or **ATT** for human vaccines. ○ IPC is **autonomous institution under Ministry of Health and Family Welfare** that **sets standards for all drugs** that are manufactured, sold and consumed in India. • ATT is proposed to be removed as it is seen as obsolete test which does not contribute to quality control of the vaccine. • ATT was originally developed in 1950s **to detect external contaminants in vaccines and** has remained the de-facto gold standard.

Sputnik V	• It is the **first COVID-19 vaccine that is claimed to be developed by Russia.** • Recently, Union government stated that **India is talking to Russia for purchasing Sputnik V.** • **World Health Organization has not approved of the vaccine yet** and still terms it as a vaccine 'candidate' and not a 'vaccine'.
Covaxin	• Covaxin is **India's first vaccine candidate for COVID-19.** • It has got **approval for human clinical trials** from Drug Controller General of India. Trials are scheduled to start across the country in July. • It is India's **'first' indigenous COVID-19 vaccine** being developed by **Bharat Biotech in collaboration with ICMR and National Institute of Virology, Pune.**
ZyCoV-D	• This is **COVID-19 vaccine candidate** by **Zydus Cadila** which got approval from Central Drug Standard Control Organisation to **initiate human clinical trials in India.** • This is the **second potential vaccine in India after Bharat Biotech's COVAXIN** which got the approval for human clinical trials.
Corosure	• It is the **world's most affordable RT-PCR based COVID-19 diagnostic kit,** with a base price of Rs 399, developed by IIT Delhi. ○ Real-time polymerase chain reaction **(RT-PCR) test is the most commonly used for COVID-19.** • It is primarily based on PCR, a process that **repeatedly copies and amplifies the specific genetic fragments of the virus,** ensuring that there is enough of a sample to conduct the analysis.
Rapid antigen tests	• Indian Council of Medical Research (ICMR) has approved this test for diagnosis of COVID-19. • It is a test on **swabbed nasal samples** that detects antigens (foreign substances that induce an immune response in the body) that are found on or within SARS-CoV-2 virus.

PT 365 – Extended Study Material

	• This test **takes less time** (30 minutes) than RT-PCR test (2-5 hours).	**Itolizumab**	• Biocon's (Bangalore based pharma company) Itolizumab drug got approval by Drugs Controller General of India (DCGI) for **restricted emergency use** in treating moderate to severe **COVID-19 patients**. • Itolizumab, a **monoclonal antibody** was already approved for severe chronic plaque psoriasis. ○ **Monoclonal antibodies** are **lab-made proteins** that act like human antibodies in the immune system and fight against foreign molecules. • **Other approved drugs for Covid-19 treatment in India-** Antivirals such as Remdesivir, and immunosuppressant tocilizumab, steroid dexamethasone, and anti-malarial hydroxychloroquine.
I-Lab (Infectious disease diagnostic lab)	• It is **India's first mobile testing laboratory** which is a part of Aatmnirbhar Bharat. • It will be deployed in remote, interior and inaccessible parts of the country. It can perform 25 Covid-19 RT-PCR tests per day, 300 ELISA tests per day and additional tests for TB and HIV. • I-LAB is supported by the **Department of Biotechnology, Ministry of Science and Technology**		
SalivaDirect	• It is a **simpler, less expensive and less invasive test for novel coronavirus** which is approved by U.S. Food and Drug Administration. • It has **high sensitivity** and can detect when the number of virus copies in the saliva sample. • It reduces the **need for trained healthcare workers** to collect samples and reduces risk of virus spread to healthcare workers at time of sample collection.	**Covishield**	• Drugs Controller General of India (DCGI) has given **approval to Serum Institute of India, Pune to conduct Phase II+III clinical trials** of COVISHIELD in India. • It is developed by **Oxford University and AstraZeneca.**
Arsenicum album 30	• It is a **homoeopathic drug** to correct **inflammation in body**. • Following a **Ministry of AYUSH advisory, several states** have **recommended this** drug for **preventive use against COVID-19**. • Medical scientists and some homoeopathic practitioners have stressed that t**here is no scientific evidence that it can works against COVID-19.**	**Inflammageing**	• According to a study, the **increased severity and mortality of SARS-CoV-2 infections in older individuals** may be related to inflammageing. • Inflammageing is defined as **low-grade chronic systemic inflammation** established during physiological ageing which can inhibit immunity. • There is an age-related **increase in the levels of pro-inflammatory markers** in blood and tissues.
Favipiravir	• Drug Controller General of India (DCGI) has approved **anti-viral drug favipiravir** for "restricted emergency use" in mild to moderate cases of COVID-19. • It has **shown positive results** in Japan, China and was approved in Russia for COVID-19 treatment. • Earlier, **Remdesivir** also got emergency use authorisation in India.	**Latent Viral Infection (LVI)**	• It is an infection that is **inactive or dormant**. Latent infections **last the life of the host** and occur when the primary infection is not cleared by the adaptive immune response. • These are **opposed to active infections,** where a virus is actively replicating and potentially causing symptoms. • **Examples of LVI:** Herpes simplex viruses type 1 and 2, HIV, cytomegalovirus etc.

	o Recently, **questions about latency of the SARS-CoV-2 virus** were raised as cases of people who had tested negative for COVID-19 testing positive again after a while emerged.
Open API (application programme interface) Service	• It is a **new feature in Aarogya Setu** that will enable organisations **to get health status of their employees** or any other user without violating their data privacy. o It will only provide Aarogya Setu status and name of the Aarogya Setu User with their consent. • **Aarogya Setu is a contact tracing app** to track user's location, to establish whether they have come physically close to someone suffering from COVID-19, and to make an assessment of their risk of infection.
Human Growth Hormone (hGH)	• Recently, Pardeep Singh (2018 Commonwealth Games silver medallist), has been suspended provisionally after his **blood sample tested positive for hGH.** • hGH is **produced in the body and secreted by the pituitary gland near the base of the brain.** hGH helps in bone, organ and cartilage growth and also helps in repairing damaged muscles. • It is **banned both in-competition as well as out-of-competition** by World Anti-Doping Agency. • hGH is known to **increase muscle mass, strength** and tissue-repairing effects etc.
COVID-19 Biorepositories	• Government dedicated to the nation the largest network of **five dedicated COVID-19 Biorepositories established by Department of Biotechnology.** • These are at Translational Health Science and Technology Institute Faridabad, Institute of Life Science Bhubaneshwar, Institute of Liver and Biliary Sciences New Delhi, National Centre for Cell Science Pune and Institute for Stem Cell Science and Regenerative Medicine Bangalore. • **Main purpose of biorepositories** are **archival of**

	inactivated virus and clinical samples, including naso-oropharyngeal swabs, stool, urine, saliva, serum, plasma, PBMC and Serum.
eSanjeevani	• It is a **web-based comprehensive telemedicine solution** which extends the reach of specialized healthcare services to masses in both rural areas and isolated communities. o It has **enabled two types of telemedicine services** - Doctor-to-Doctor and Patient-to-Doctor Tele-consultations. • It aims to **make healthcare services** equitable by bridging the digital divide that exists between the urban vs. rural, rich vs. poor etc. • **Launched by:** Ministry of Health and Family Welfare.
Next Generation Sequencing (NGS) machines	• Council of Scientific and Industrial Research (CSIR) is working on developing **"mega labs" where NGS machines will be used** for detecting SARS-CoV-2 novel coronavirus. • **NGS** is a DNA sequencing technology which can sequence entire human genome in a single day. • **NGS machines can:** o **Detect the possible presence of the virus** even in several instances where the traditional RT-PCR misses out on them. o **Trace the evolutionary history of the virus** and track mutations more reliably.
Nerve agent Novichok	• As per German government, Russian opposition figure Alexei Navalny was poisoned with a **variant of Novichok, a Soviet-era nerve agent.** o Novichok means newcomer in Russian, and applies to a **group of advanced nerve agents developed by Soviet Union** in 1970s and 1980s. • Nerve agents **cause their toxic effects by preventing the proper operation of an**

	enzyme that acts as the body's off switch for glands and muscles. • Without an off switch, **glands and muscles are constantly being stimulated.**

6.5. MISCELLANEOUS

6.5.1. PATENT POOLS

Why in news?

International science collaborations on Covid-19 started a discussion on patent pooling.

More on news

- Recently, **Costa Rica suggested pooling of rights** to deal with the pandemic through free or minimal, affordable licensing to ensure that the outcomes of efforts can be used by countries with limited economic resources to deal with the problem.
  - This proposal received full support, except from the US and the UK.

Patent Pooling

- According to **World Intellectual Property Organisation (WIPO)**, patent pools are defined as an **agreement made between two or more patent holders** for licensing their patents to one another or any third party for the purpose of sharing their intellectual property rights.
- Generally, patents pools are made for complex technologies which **necessitate complementary patents** for providing productive technical solutions such as vaccines in the present Covid-19 crisis.
- **'Sewing Machine Combination" of 1856** is considered as the first modern patent pool in the United States.
- Patent pooling structures were actively discussed and considered in response to the SARS outbreak of 2002-03, the H5N1 influenza outbreak of 2005, and the H1N1 influenza pandemic of 2009.
- **Patent pooling ensures:**
  - **innovation** between companies while minimizing potential legal issues related to the use of other protected concepts.
  - **lower transaction costs and better process efficiencies** as businesses that hold complementary patents can effectively agree not to sue each other for infringement as they work to get new products to the marketplace.

International steps towards patent pooling:

- **C-TAP:** The **COVID-19 Technology Access Pool (C-TAP)(hosted by WHO)** compiles pledges of commitment made under the Solidarity Call to Action to voluntarily share COVID-19 health technology related knowledge, intellectual property and data.
- **GISAID:** It promotes the rapid sharing of data from all influenza viruses and the coronavirus causing COVID-19.
  - This includes genetic sequence and related clinical and epidemiological data associated with human viruses, and geographical as well as species-specific data.
  - **According to Global Initiative to Sharing of All Influenza Data (GISAID),** as of June 2020, **49,781 genome sequences** of the COVID virus have been shared, voluntarily, by researchers from around the world.
- **Medicines Patent Pool (MPP):** It has facilitated the development of generic drugs for HIV, tuberculosis, and hepatitis C, allowing them to be sold at an affordable price.
  - MPP is a United Nations-backed public health organisation working to increase access and facilitate development of life-saving medicines for low- and middle-income countries.
- **Trade Related Intellectual Property Regime (TRIPS):** It allows countries to grant compulsory licences to companies to produce a patented product at times of emergencies.
- **Nagoya Protocol under Convention on Biodiversity (CBD):** Article 2 (e) of the protocol can be interpreted as **including the genetic sequence information** that forms the basis for all ongoing research and development on Covid treatment and prevention.
  - Protocol requires the contracting parties to provide options for access and benefit sharing when genetic resources are used for commercial purposes, which indirectly provides a scope for patent pooling.

India and Patent Pooling:

- The concept of 'patent pooling' is new in India and has been primarily focused to have solutions for the affordable health care.
- **Indian Patents Act (IPA), 1970** does not render for any provisions related to formation of patent pools or any guidelines for the same but at the same time it neither restrain for creation or formation of patent pools.
  - Under IPA, Central Government can set up patent pool by acquiring inventions and patents which are required in the public interest.

- However, in India, patent pooling is viewed as **restrictive practice by Competition Act, 2002,** which are anticompetitive in nature.

6.5.2. ACCELERATE VIGYAN

Why in news?

Recently, Science and Engineering Research Board (SERB) launched 'Accelerate Vigyan' scheme to push scientific research.

> **Science and Engineering Research Board (SERB)**
> - It is set up through the Science and Engineering Research Board Act, 2008 under **Department of Science and Technology**.
> - It aims to **promote basic research in Science and Engineering** and to provide financial assistance to persons engaged in research.

About 'Accelerate Vigyan' scheme

- The scheme is **to boost high-end scientific research and prepare scientific manpower** that can venture into research careers by identifying research potential, mentoring, training and giving hands-on workshops on a national scale.
- **Components of AV scheme:**
  - **ABHYAAS**: To enable and groom potential PG/PhD students by developing their research skills in selected areas across different disciplines or fields.
    - ✓ It has two components: High-End Workshops (KARYASHALA) and Research Internships (VRITIKA).
  - **SAMMOHAN programme**: To encourage, aggregate and consolidate all scientific interactions in the country under one common roof.
    - ✓ It has two parts: **'SAYONJIKA'** to catalogue capacity building activities in science and technology supported by all government funding agencies and **'SANGOSHTI'** to facilitate the scientific community to establish an interaction with other individuals and research groups to enhance knowledge exchange.
- It will seek to **garner the social responsibility of the scientific community** in the country and is expected to promote R&D in India.

> **Various schemes to promote scientific research in India**
> - **Scheme for Promotion of Academic and Research Collaboration (SPARC)** is to support Joint Research Projects through collaboration of top ranked Indian Institutions and globally ranked Foreign Institutions.

- **Impacting Research Innovation and Technology (IMPRINT)** focuses on socially relevant research in higher educational institutions.
- **Prime Minister's Research Fellows (PMRF) Scheme** launched to incentivise the most meritorious students to pursue research in the frontier areas of science & technology by offering fellowship.
- **Uchhatar Avishkar Yojana (UAY),** which promotes industry sponsored, outcome-oriented research.

6.5.3. FIFTH STATE OF MATTER

Why in news?

NASA Scientists recently **observed the fifth state of matter in space** for **the first time** as part of **Bose Einstein Condensates (BEC) Experiments** aboard the **International Space Station (ISS).**
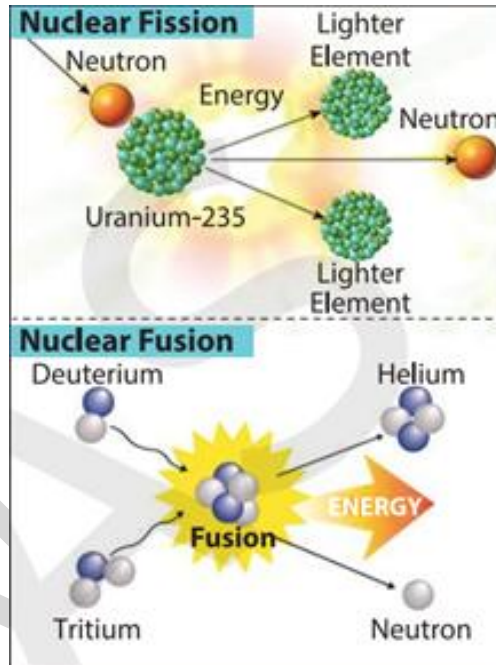
About fifth state of matter

- The existence of **Bose Einstein Condensate,** also known as the fifth state of matter was predicted by **Albert Einstein** and Indian mathematician **Satyendra Nath Bose** in early 1920s.
  - **Solids, liquids, gases and plasma** are the other **four states of matter.**
- BEC is a **supercooled gas that no longer behaves as individual atoms and particles**, but rather an entity in a single quantum state**.**
- BECs are formed when atoms of certain elements are **cooled to near absolute zero (0 Kelvin, minus 273.15 Celsius).**
- **When they reach that temperature,** the atoms become a **single entity with quantum properties,** wherein each particle **also functions as a wave of matter**.
- BECs are **extremely fragile** and the slightest interaction with the external world is enough to warm them past their condensation threshold.
- This makes it nearly **impossible for scientists to study them on Earth,** where **gravity interferes** with the magnetic fields required to hold them in place for observation.
- **BEC experiments** will help in
  - Tests of **general relativity**
  - Searches for **dark energy** and **Gravitational waves**
  - **Spacecraft navigation**
  - **Quantum mechanics** on a macroscopic level
  - Prospecting for **subsurface minerals** on moon and other planetary bodies.

About Plasma – Fourth state of matter

- Plasma is like a **gas, but comprised of positive ions and free electrons** with little or no overall electric charge.
- Because of presence of charged ions, plasma is **highly electrically conductive** and **responds strongly to magnetic and electric fields** (unlike gas).
- Plasmas have **no fixed shape or volume**, and are less dense than solids or liquids.
- Plasma is the **most common state of matter** in the **Univers**e comprising more than **99% of our visible universe**.
- Plasma **occurs naturally** in **sun,** the **core of stars, quasars, X-ray beam emitting pulsars and supernovas.**
- **On Earth**, plasma naturally occurs in **flames, lightening and the auroras**.
- Plasmas can be formed by **heating a gas to high temperatures**, as, when heated, the atoms in the gas either gain or lose electrons (ionization).

6.5.4. INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR

Why in news?

Assembly of the largest ever thermonuclear fusion reactor International Thermonuclear Experimental Reactor (ITER) begins.

About ITER

- ITER, situated in France, is an **experimental tokamak nuclear fusion reactor.**
- **ITER has been designed to:**
  o Produce 500 MW of fusion power.
  o Demonstrate the integrated operation of **technologies for a fusion power plant.**
  o **Test tritium breeding,**as world supply of tritium (used with deuterium to fuel the fusion reaction) is not sufficient to cover the needs of future power plants.
  o Demonstrate the **safety characteristics of a fusion device.**
- **Its members include** China, European Union, India, Japan, South Korea, Russia and US.
  o **India is responsible for delivery** of the cryostat, in-wall shielding, cooling water system, cryogenic system, ion-cyclotron RF heating system etc.
  o ITER-India, Institute for Plasma Research, Gandhinagar (Gujarat), will deliver the Indian contribution.

- **Tokamak is a magnetic fusion device** designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy based on the same principle that powers Sun and stars.

- Nuclear fusion is a process when **two or more light atomic nuclei fuse to produce a heavier nucleus** and release tremendous amount of energy in process. It is the energy source of Sun and stars.
- **Nuclear fission** on the other hand is a process in which the nucleus of an atom splits into two or more smaller nuclei as fission products, and releases energy in the process.

6.5.5. OTHER IMPORTANT NEWS

Portable UV Light Device to Kill Corona Virus	• A recent research has reported the **feasibility** of making an **Ultraviolet (UV) light emitting, hand held and portable device** that can kill **Corona virus.** • UV radiation in the **200-300 nanometer range** is known to **destroy the virus**, making it **incapable of reproducing and infecting.** o Ultraviolet (UV) radiation covers the **wavelength range of 100–400 nm**, which is a **higher frequency and lower wavelength than visible light**. • To disinfect areas from the coronavirus with UV radiation, one needs sources that emit **sufficiently high doses of UV light.** • **However, currently such devices** require expensive mercury-containing gas discharge lamp, which requires high power, has a relatively short lifetime, and is bulky. • The recently discovered device use a material called **strontium**

	niobate, that can help develop **UV light-emitting diodes (LEDs),** which would be **portable and energy-efficient.** • However, it **can be used to disinfect public spaces only,** not human skin as UV exposure can cause skin cancers, cataracts and immune system damage.		• Competition is **open to all Indian students and researchers from India and abroad.**

Winter Diesel	• Winter diesel is a **specialised fuel** that was introduced by Indian Oil Corporation **specifically for high altitude regions** and low-temperature regions such as Ladakh, where ordinary diesel can become unusable.
	
	• **Benefits of winter diesel**
	  o Contains additives to **maintain lower viscosity** can be used in temperatures as low as -30°C
	  o **Higher cetane rating**-an indicator is the combustion speed of diesel and compression needed for ignition.
	  o **Lower sulphur content,** which would lead to lower deposits in engines and better performance.
		Terminal High Altitude Area Defense (THAAD) missile defence system	• China has raised objections to presence of **US THAAD missile defence system** in **South Korea.**
			
			• THAAD is **transportable, ground-based missile defense system.**
			
			• THAAD is a **transportable, ground-based anti-ballistic missile defense system** developed by Lockheed Martin.
			
			• It is coupled with **space-based and ground-based surveillance stations,** which transfer **data about incoming missile** and **informs THAAD interceptor missile** of threat type classification.

Glyphosate	• Centre released **draft notification banning use of glyphosate** except through Pest Control Operators. • Glyphosate is wi**dely-used agrochemical by the farmers to control weeds** in tea plantations, non-crop and cropped areas. • Earlier, WHO in a study **highlighted Glyphosate's adverse impact on human health.** • Use of herbicides has been on the rise as farmers have been increasingly relying on chemicals **to tackle labour shortage, rising costs and to protect their yields from weeds,** which compete with standing crops for nutrients.	**S-400 missile system**	• Recently, Russia has agreed to look at advancing S-400 delivery to India. • S-400 is an **integrated air defence system** featuring **radars, command and control equipment and four types of surface-to-air missiles.** • They **have ranges varying from 40km to 400km a**nd can shoot down aircraft, drones, cruise missiles and ballistic missiles. • It is developed by **Russia.**
		Maareech	• It is **indigenously developed Torpedo Decoy System** inducted by Indian navy recently. o Torpedos are underwater weapons for naval platforms such as submarines, surface vessels, aircraft and helicopters. • It will boost **Anti-Submarine Warfare capability** of the Indian Navy. • It is **designed & developed by DRDO labs** and **Bharat Electronics Limited** would undertake the production of this decoy system.
Drug Discovery Hackathon 2020 (DDH2020)	• It is a **joint initiative of Ministry of Human Resource Development, All India Council for Technical Education (AICTE) and Council of Scientific and Industrial Research (CSIR)** for supporting drug discovery process. • Objective is to **identify drug candidates against SARS-CoV-2 by in-silico (computational) drug discovery** through the hackathon and **follow up by chemical synthesis and biological testing.**	**Pinaka**	• Recently the **first ever pinaka rockets fully manufactured by the private sector** have been successfully test fired by the army. • Pinaka is **indigenous multibarrel rocket launch system** developed by the **Defence Research and Development Organisation.** • Each Pinaka rocket is capable of **carrying a 100kg payload for a range of 40km.**

SRIJAN portal	• It is an indigenization **portal developed by Department of Defence Production.** • Main objective of the portal is **to partner the private sector in indigenization efforts** of Defence Public Sector Undertakings, Ordnance Factory Board and the Armed Forces. • It is a one stop shop online portal that **provides access to the vendors to take up items that can be taken up for indigenization.**
Shadesmart & Radiant Cooling technologies	• These are two technologies to **promote energy-efficient cooling in buildings.** • **ShadeSmart** is an external shading system developed as an innovative and cost-effective solution for windows in

	residential and commercial buildings under the project Habitat Model for Efficiency and Comfort. o It is developed by **The Energy and Resources Institute in partnership with the Department of Science & Technology.** • **In Radiant Cooling,** cooling is achieved through radiant heat transfer, as against regular convective air conditioning is efficient and gives better quality of thermal comfort.

Errata: In "Article 1.5 GM Crops" Pink Bollworm is given as an example of weeds. The Pink Bollworm is a pest (not a weed) that affects cotton crops.

NEWS TODAY

✎ Daily Current Affairs news bulletin covered in 2 pages.

✎ Primary sources of news: The Hindu, Indian Express and PIB. Other sources includes News on AIR, the Mint, Economic Times etc.

✎ Focus is to provide the primary level of information to get an idea of the different things that are going around

✎ Two types of approaches followed:

   ❯ Primary News of the Day: – Covers main news items of the day in less than 180 words.

   ❯ Also in News:– These are basically one-liners appearing in news. The word limit here will be 80 words.

✎ Available in English & Hindi. Hindi Audio available at VisionIAS Hindi YouTube channel

7. CULTURE

7.1. HERITAGE MANAGEMENT

Why in news?

NITI Aayog released a working **group report on 'Improving Heritage Management in India'.**

Archaeological Survey of India (ASI)
- It is the nodal agency responsible for archaeological research and the conservation and preservation of cultural monuments in the country.
- It was founded in 1861 and functions as an **attached office to the Ministry of Culture.**
- It regulates archaeological activities as per provisions of **Ancient Monuments and Archaeological Sites and Remains Act, 1958.**
- It also regulates **Antiquities and Art Treasure Act, 1972.**
- **The important functions of ASI are identified as**:
  - Exploration/ Excavation;
  - Protection of Monuments and archaeological sites;
  - Registration and Regulation of trade of antiquities;
  - Maintenance and Conservation and Environmental Development; Archaeological Site Museums;
  - Research and Publications;
  - Epigraphical Surveys (Sanskrit, Dravidian, Arabic and Persian);
  - Institute of Archaeology.

Heritage Management in India

- There are roughly **5 lakh plus heritage sites and monuments** across the country.
- It includes 3691 ASI Protected Monuments, **38 UNESCO World Heritage Sites**, 6000 + State Archaeology Protected Monuments and 4 lakh plus Religious Heritage sites.
- The Constitution of India has divided the **jurisdiction** over these monuments, cultural heritage, and archaeological sites as follows:
  - **Union:** Ancient and Historical Monuments and Archaeological sites and remains, **declared by Parliament to be of national importance**.
    - ✓ Under the above provision union government has enacted **Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act) of 1958.**
    - ✓ **Antiquities and Art Treasures Act, 1972** was enacted to regulate the export trade in antiquities and art treasures and to provide for the

prevention and smuggling of, and fraudulent dealings in, antiquities.
  - **State:** Ancient and Historical Monuments other than those declared by Parliament to be of national importance through Departments of Archaeology for the State Protected Monuments and Museums.
  - **Concurrent:** Besides the above, both the Union and States have concurrent jurisdiction over archaeological sites and remains other than those declared by law and Parliament to be of national importance
- **Other constitutional provisions:**
  - **Article 253** of the Constitution of India enables Parliament to legislate for the implementation of any treaty, agreement or convention with any other country or countries, or any decision, made at any international conference, association or other body.
  - **Article 51-A (f)** – puts a duty on every citizen to value and preserve the rich heritage of our composite culture.

NGOs in Heritage Conservation and Management in India
- **The Aga Khan Trust for Culture (AKTC)** focuses on the physical, social, cultural, and economic revitalisation of communities in the developing world.
- **Indian National Trust for Art and Cultural Heritage (INTACH)** spearheads heritage awareness and conservation in India.
- **International Council on Monuments and Sites (ICOMOS)** works for the conservation and protection of cultural heritage places. It is the only global NGO of this kind, which is dedicated to promoting the application of theory, methodology, and scientific techniques to the conservation of the cultural heritage.
- **World Monuments Fund** focuses on heritage conservation projects and awareness programmes in India. Established in 2015, WMF India serves as a local representative for WMF, assisting with project management and outreach.

Initiatives by the Government of India to conserve heritage
- **HRIDAY - National Heritage City Development and Augmentation Yojana** – by Ministry of Housing and Urban Affairs for preserving and revitalizing the unique character of **twelve heritage cities** in India. The mission period of HRIDAY scheme ended in March, 2019.
- **PRASHAD: Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive'**- by **Ministry of Tourism (MoT)** for development and

- beautification of identified pilgrimage destinations (>40 sites).
- **Swachh Iconic Places**- under Swachh Bharat Mission to transform monuments as model 'Swachh Tourist Destination' to enhance the experience of tourists.
- **'ADOPT A HERITAGE'**- "Apni Dharohar, Apni Pehchaan"**: To provide world class facilities like Red Fort (Dalmia group) by engaging private sector organizations and individuals to be known as "**Monument Mitras**".
- **Swadesh Darshan scheme** by **MoT** to develop theme-based tourist circuits & world class infrastructure. These themes include- Buddhist, Sufi, Tirthankar, Ramayana, Krishna, Coastal, Desert, Himalayan, North East, Eco, Heritage, Spiritual, Rural, Tribal and Wildlife.
- **Incredible India 2.0 campaign**, (2018) international tourism promotion campaign
- **Adarsh Smarak:** ASI has identified 100 monuments to be developed as Model Monuments through upgradation of existing facilities/amenities like Wi-Fi, cafeteria, interpretation centre, brail signage etc.
- **Project Mausam:** It is a **Ministry of Culture** project to be implemented by **Indira Gandhi National Centre for the Arts** (IGNCA). It aims to re-connect and re-establish communications between countries of the Indian Ocean world, which would lead to an enhanced understanding of cultural values and concerns in their regional maritime milieu.

7.2. MALABAR REBELLION

Why in news?

The year 2021 will be the 100th-year anniversary of the Malabar uprising.

About Malabar rebellion

- The Malabar rebellion, also known popularly as the **Moplah rebellion**, was an armed revolt staged by the **Mappila Muslims of Kerala** against the British authorities and their Hindu landlords in **1921.**
- The six-month-long rebellion is often perceived to be one of the **first cases of nationalist uprisings in Southern India**.
- It occurred within the broader spectrum of the **Khilafat/Non-cooperation movement** led by Mahatma Gandhi.

Background

- Moplahs/Mappilas were the **Muslim tenants** (**kanamdars**) and **cultivators (verumpattamdars)** inhabiting the Malabar region where most of the landlords (**janmi or jenmies**) were upper caste Hindus.

- Moplahs had gained some prominence over their landlords during the **Mysorean invasions by Hyder Ali and Tipu Sultan**. But after the British occupation of Malabar in 1792 (**following the 3rd Anglo-Mysore war**), the domination of the Hindu landlords was re-established.
- In this scenario, the Mappilas soon found themselves at the mercy of their Hindu landlords who were sustained by the British authority as their agents.

Causes of the revolt

- **History of feudal conflicts in the Malabar region:** Peasant-landlord relations were historically strained in the region. Evidently, about **32 uprisings** were organized by the Moplahs, between 1836 and 1919, against high caste Hindu landlords, their relatives or assistants and British officials.
- **Agrarian discontent**: The economic condition of Mappila tenants had deteriorated overtime due to oppressive British policies resulting in increased taxation, insecure tenancy, rack renting, forced evictions etc. This had given rise to anti-British and anti-feudal sentiments.
- **Political mobilization of mappilas**: The Congress reached out to the Mappila cultivators to mobilize support for independence through Khilafat movement and support agrarian reforms in the region.
  o A **Khilafat committee** was formed in Malabar in June 1920, which became increasingly active.
  o In August, 1920, **Gandhi along with Shaukat Ali** (the leader of the Khilafat movement in India) visited Calicut to spread the combined message of non-cooperation and Khilafat among the residents of Malabar.
  o By January 1921, the Mappilas, under their religious head **Mahadum Tangal** pledged support to the non-cooperation movement.
- **Immediate cause**: Mappilas under the leadership of **Variyamkunnath Kunjahammed Haji** took up arms in August 1921 due to the arrest of Khilafat leader **Ali Musaliyar** and a widespread rumour that a prominent mosque in Thirurangadi has been raided.

Course of the rebellion

- It largely took the shape of guerrilla-type attacks on janmis, police and troops.

- Symbols of the colonial state – telegraph lines, train stations, courts, post offices etc. and homes of landlords were attacked.
- When the rebellion spread across the Malabar district, British officers and the local police escaped, leaving **vast tracts of territory firmly under the control of the local rebels**.
  - The **territory was declared an 'independent state'** in August 1921 with Haji as its ruler.
  - For nearly six months, he ran a **parallel Khilafat regime headquartered in Nilambur**, with even its own separate passport, currency and system of taxation.
  - **Tenants were granted the power over the lands** they cultivated along with tax incentives.
- Although the movement started off largely as a protest against British authorities, it acquired communal overtones that culminated into **communal violence**.
- **British suppression of the revolt**-
  - The British government responded to the movement with much aggression, bringing in **Gurkha regiments** to suppress it and imposing **martial law**.
    - ✓ **Wagon tragedy**: Approximately 60 Mappila prisoners on their way to a prison, suffocated to death in a closed railway goods wagon.
  - By January 1922, they had taken back the areas held by the rebels and captured all their key leaders.
    - ✓ Haji was arrested and was sentenced to death along with his compatriots.

7.3. MEDIEVAL HISTORY

7.3.1. AHOM KINGDOM

Why in news?

In a recent controversy Chaolung Sukapha, the founder of Ahom kingdom, was referred to as a "Chinese invader".

Who is Chaolung Sukapha?

- Sukapha was a **13th-century ruler** who founded the **Ahom kingdom** that ruled Assam for **six centuries**. Contemporary scholars trace his roots to Myanmar.
- He is widely referred to as the **architect of "Bor Asom" or "greater Assam"** due to his successful efforts towards assimilation of different communities and tribes.

- To commemorate Sukapha and his rule, Assam celebrates **"Asom Divas"** on December 2 every year.

About the Ahom Kingdom (1228 to 1824)

- In the 13th century, the Ahoms migrated from regions of present-day Myanmar to the Brahmaputra valley.
- In **1253**, Sukapha established his capital at **Charaidau, Assam**.
- They established new states by suppressing the older political system of the **bhuiyans (landlords),** by conquering powerful kingdoms of the **Chhutiyas (1523) and of Koch-Hajo (1581)** in the 16th century and by subjugating many tribes.
- The Ahom kingdoms faced many invasions from the south-western areas of the Indian subcontinent and were defeated by the Mughals in 1662.
- The rule of this dynasty ended with the Burmese invasion of Assam and the subsequent annexation by the British East India Company following the **Treaty of Yandaboo** in 1826.
- **Administration**-
  - Ahom society was divided **into clans or khels** and a khel often controlled several villages.
  - A census was taken and the people from the more populated areas were transferred to the less populated areas.
  - By the beginning of the 17th century, the administration became almost centralised.
- **Economic structure**-
  - The system of **forced labour** was prevalent in the Ahom kingdoms and these labourers were called the **'paiks'**. Each village had to send a number of paiks by rotation.
  - Men of the kingdom were mostly employed in agriculture, construction of dams and other public works. Many new methods of rice cultivation were developed by the Ahoms.
  - During the times of wars the men served in the armies.
  - There were also different cottage industries and home manufacturers.
- **Culture**-
  - The Ahoms worshipped their **tribal gods** originally, but during the mid-eighteenth century, **Hinduism became a predominant** religion due to the rule of hindu kings. Yet the Ahoms did not adopt Hinduism completely.

- o In the Ahom kingdoms, various arts and literature flourished. Poets and scholars were given land grants and theatre was encouraged.
- o Various translation works were carried out from Sanskrit into the local languages.
- o Historical works, known as **buranjis**, were also written – first in the Ahom language and then in Assamese.
- **Technological advancement-** They used new and advanced ammunitions like the firearms even in the 1530s and began to make gunpowder and cannons by 1660s.

7.3.2. GURJARA-PRATIHARAS

Why in news?

Natesa, a 9th century's rare sandstone idol of Rajasthan temple smuggled out of country in 1998 was recently returned to India.

GURJARA-PRATIHARA EMPIRE (900 AD)

Numbered Kingdoms:
26. Gangas
27. Tirabhukti
28. Hidambas
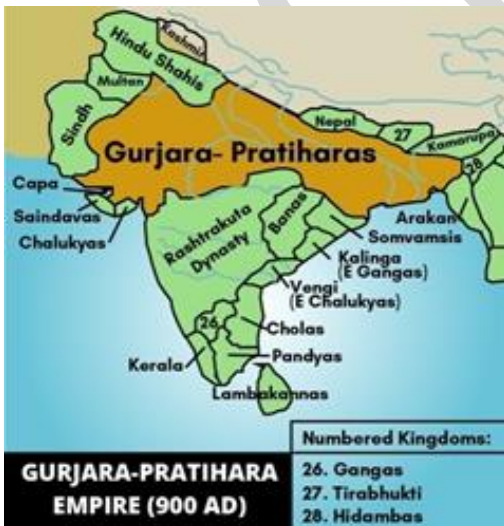
About Natesa sandstone idol

- Natesa is a rare sandstone idol from the **Pratihara Style of architecture** in Rajasthan.
  - o It is originally from the **Ghateswar Temple at Baroli, Rajasthan.**

- The sandstone Natesa figure stands tall at almost 4 ft in a rare and **brilliant depiction of Shiva**.
  - o A depiction of Nandi (sacred bull calf) is shown behind the right leg of the Natesa icon.
- Pratihara Style of architecture is associated with **Gurjara-Pratihara dynasty around 800-900 AD.**

About Gurjara-Pratihara dynasty

- **Dynasty**
  - o Gurjara-Pratihara dynasty **ruled much of Northern India** from the mid-8th to the 11th century.
  - o They were one of the first four patrilineal clans of the caste group referred to as the **Rajputs.**
  - o The Pratiharas, derived their name from the Sanskrit meaning doorkeeper, **are seen as a tribal group or a clan of the Gurjaras.**
  - o **Important rulers:**
    - ✓ **Nagabhata I** contained Arab armies moving east of the Indus River and rose to fame in the late 8th century CE.
    - ✓ **Nagabhata II, Mhir Bhoj (Bhoja) and Mahendrapala I** were the other important rulers of dynasty.
  - o The expansion of the Gurjara-Pratihara kingdom involved constant conflicts with other contemporary powers such as the **Palas and the Rashtrakutas known as the tripartite struggle** (refer to infographics).
- **Administration and military**
  - o They retained **terms of administration, on line of the Gupta Empire's and Harshvardhana's ideas.**
  - o Some areas were administered directly by the centre and some were divided into **provinces (bhukti) and districts (mandala or vishaya), respectively, governed by a governor (uparika) and a district head (vishayapati).**
  - o **Governor and district heads were tasked with collecting land revenue and maintaining law and order** with the help of the army units stationed in their areas.
  - o They were **well-known for their cavalry** in which horses were imported from Central Asia and Arabia etc.
  - o After Bhoja, military power of the Pratiharas declined, and they suffered defeats under successive kings.

- **Architecture**
  o The Pratiharas extended Gupta architecture tradition by adding a full-fledged mandapa to the single shrine temple and mandovara too got articulated into either the triratha, or the pancharatha plan. E.g. **Gadarmal temple, Badoh-Pathari etc.**
  o Gurjara-Pratiharas were known for their **open pavilion temples**.
  o They are known for their **new space concepts, structural and functional constructs, motifs etc.** together with aesthetic and iconographic norms temples belonging to **Nagara Style of temple Architecture.**
- **Trade/economy**
  o Economy in Gurjara-Pratihara Empire was **mainly dependent on agricultural production** and major source of government revenue at that time was the tax derived from the bulk of agricultural production.
  o **Horses were important commodity** in trade of Gurjara-Pratihara Empire.
- Primary literary sources include the accounts of Arab merchants like **Suleiman, al-Masudi and poet Rajashekhara in court of Mahendrapala I.**

7.4. PLACES IN NEWS

7.4.1. KUSHINAGAR

Why in News?

The Union Cabinet has recently given its approval for declaration of Kushinagar Airport in Uttar Pradesh as an **International Airport**.

About Kushinagar

- Kushinagar is one of the important **Buddhist Pilgrimages sites** and is also a part of the **Buddhist Circuit** as Lord Buddha attained **Mahaparinirvana** here.
  o Mahaparinirvana in Buddhism refers to the **ultimate state of Nirvana (everlasting, highest peace and happiness)** entered by an awakened being at the moment of physical death.
- Prominent archaeological sites in the city are the **Mahaparinirvana Stupa** and temple (the latter houses a stunning 1,500-year-old reclining Buddha) and the **Muktabandhan Stupa** (representing the Buddha's cremation site).

- The site of Kushinagar was first identified by **Sir Alexander Cunningham** in 1877, the first Director-General of the Archaeological Survey of India (ASI).
- **Other important buddhist sites:**

City	Importance in Buddhism
Lumbini	Buddha's Birthplace
Bodh Gaya	Place where Buddha attained Enlightenment
Sarnath	Place where Buddha gave his first sermon after attaining Enlightenment
Kapilvastu	Buddha grew up here as a child
Kaushambi	Buddha delivered many sermons in this city
Sankisa	Lord Buddha is believed to have descended here after giving sermon to his mother in heaven
Sravasti	Place where Buddha showed his divine prowess to impress upon the non-believers and delivered important sermons

7.4.2. OTHER PLACES IN NEWS

Ayodhya Ram temple	• Prime Minister recently laid the foundation for Ayodhya Ram temple, which is to be built with **Nagara style** of architecture. 　o Nagara style of temple architecture is found in northern India. Nagara school is further subdivided into different schools based on region like Odisha, Khajuraho, Solanki etc. • **Architectural elements of Nagara Style:** 　o **Garbhagriha** - small room where the principle deity/deities of the temple reside 　o **Mandapa** - portico or hall at the entrance of the temple generally designed to house a large number of people 　o **Shikhara** - mountain like spire which can have different shapes from pyramidal to curvilinear 　o **Vahana** - mount of the main deity placed generally in line of sight from Garbhagriha 　o **Jagati** - upraised platform on which he temple is built
Lingaraj Temple, Odisha	• Odisha government announced a facelift to the **11th century Lingaraj Temple**. • It was built by king **Jajati Keshari of Soma Vansh** and is dedicated to Lord **Shiva**.

	- The linga of Lord Shiva is regarded as **'Swayambhu'** (self-originated) and worshipped as both Lord Shiva and Lord Vishnu. - Temple signifies the syncretisation of **Shaivism and Vaishnavism** sects in Odisha. - The temple belongs to **Kalinga School of Temple Architecture**, a sub school of Nagara style.
Kedarnath Dham	- Recently, PM reviewed the development work going on in **Kedarnath Dham** in Uttarakhand. - Kedarnath is set amidst the **Garhwal Himalayas** at the head of the **Mandakini** River. It is located in **Rudraprayag** district of Uttarakhand. - Present Kedarnath temple was built **by Adi Shankaracharya in 8th century**. - Kedarnath temple is part of **Char Dhams** (Yamunotri, Gangotri, Kedarnath, and Badrinath) and **PanchKedar** (Madhmaheshwar, Tungnath, Rudranath, Kalpnath and Kedarnath) in **Uttarakhand** and is one of the 12 Jyotirlingas of Lord Shiva.
Baghpat, Uttar Pradesh	- Site and remains at Baghpat, Uttar Pradesh has been declared by Archaeological Survey of India (ASI) to be of **national importance**. **National importance tag** puts sites on world tourism map, and ensure them regular fund for conservation, preservation and maintenance by ASI on priority basis. - Treasures unearthed from Baghpat site include **three chariots, legged coffins, shields, sword and helmets** which point towards a warrior class that may have existed around 2,000 BCE. - Discovery of a horse chariot would challenge historians who support **Aryan invasion theory.** - Theory claims that horses were brought in by invading Aryan army around 1500 to 1000 BC. - Chariots pulled by horses had given Aryans edge over Dravidians to conquer North Indian plains.

7.5. ART FORMS

Madhubani Painting	Madhubani, or Mithila painting is a **folk painting practiced in Mithila region of Bihar.**

	- It is popular because of their **tribal motifs and use of bright earthy colours.** Paintings are done **with mineral pigments** prepared by artists. **Themes:** Hindu deities, court scenes, wedding scenes, social happenings etc.
Bhavai	- It is a form of **traditional street play** performed across villages of **Saurashtra and North Gujarat.** - It is a unique stage art form, **performed with 'Bhava', meaning expression revealing emotions**. - It is **exclusively performed by male members** in various costumes and character forms. - It is mainly **performed by the Targala community also known as Bhavaya**; they hail from both the Hindu and Muslim communities.
Korvai weaving	- Korvai is an ancient and **complex technique of weaving**, practiced in Kanchipuram, Tamil Nadu. - In this technique the body of the sari is woven separately and the border separately on the same loom and the two interlocked by skilful weaving.
Pulikkali	- Pulikkali (Tiger Dance) **is folk art form of Kerala.** **Performers painted like tigers and hunters in bright yellow, red, and black** dance to the beats of instruments like Udukku and Thakil. - It was introduced by erstwhile ruler of Cochin, **Maharaja Rama Varma Sakthan Thampuran**, two centuries ago
Warli Paintings	- It expresses **daily and social events of Warli tribe** of Maharashtra. These paintings **do not depict mythological characters** or images of deities, but depict social life. - Images of human beings and animals, along with scenes from daily life are created in a loose rhythmic pattern. - Paintings depict scenes of **human figures engaged in activities like hunting, dancing, sowing and harvesting.** - In these paintings a **series of dots and dashes make one line.** **Women are mainly engaged** in the creation of these paintings.

Bon Bibi'r Palagaan	• It is a centuries-old **folk theatre** form unique to the **Sundarban islands** in West Bengal. • It is a **musical drama** based on stories related to **Bon Bibi**, who is considered as the **deity of the Sunderbans forest**.

7.6. FESTIVALS

Name of the festival	Details
Raja Parba festival	• It is a unique **three-day festival of Odisha** celebrating the **onset of monsoon and beginning of earth's womanhood.** • As a mark of respect towards the earth during her menstruation days, **all agricultural works, like ploughing, sowing are suspended for three days.**
Lord Jagannath Rath Yatra	• Ratha Yatra, the Festival of Chariot, is celebrated every year at Puri, the temple town in **Odisha**. • It marks the **annual ceremonial procession** of **Lord Jagannath,** his elder brother **Balabhadra** and younger sister **Subhadra** (presiding deities of the **Jagannath Temple)**, from their home temple to another temple, located in what is believed to be their aunt's home. o Jagannath temple was **sculpted by Anantavarman Chodaganga,** a ruler of the Eastern Ganga dynasty, in 11th Century.

Dharma Chakra Day / Asaadh Poornima	• International Buddhist Confederation, under Ministry of Culture is **celebrating Asadha Poornima as Dharma Chakra Day.**
	  o International Buddhist Confederation (IBC) was created in 2011 during the Global Buddhist Congregation (GBC) in New Delhi.
	• The day commemorates **Buddha's First Sermon to his first five ascetic disciples** at the Deer Park, Rsipatana in present day **Sarnath near Varanasi, UP.**
	• It is celebrated by Buddhists as **day of Dharma Chakra Parvattana or Turning of the Wheel of Dharma.**
	  o This day is also observed as **Guru Poornima** by **both Buddhists and Hindus** as a day to mark reverence to their Gurus.

Paryushan Parva	• Paryushan Parva is **annual festival of Jain religion celebrated for** spiritual upliftment and self-purification. • For Jains, fasting during Paryushan is a chance to **eliminate bad karma**. It helps one develop discipline, self-control, patience, forgiveness and repentance.
Nuakhai Juhar	• It is an agricultural festival **to welcome the new crop of the season.** • It is also called Nuakhai Parab or Nuakahi Bhetghat and is **celebrated in Odisha, Chhattisgarh and areas of neighbouring states.** • Nuakhai is a combination of two words **signifies eating of new rice** as 'nua' means new and 'khai' means eat.
Parkash Purab of the Guru Granth Sahib Ji	• First Parkash Purab marks **installation of Guru Granth Sahib** in Harmandir Sahib (Golden temple) in 1604. • Guru Granth Sahib is **the central religious text of Sikhism** which given the Guruship by Guru Gobind Singh in 1708. • Guru Arjan Dev ji (5th Sikh guru), compiled Guru Nanak's (1st Sikh Guru) hymns along with four successors and other religious poets like Baba Farid, Ravidas and Kabir in the **Adi Granth Sahib.** • In late 17th century Guru Gobind Singh (10th & last Guru), included the compositions of Guru Tegh Bahadur (9th Guru), and this scripture was called the **Guru Granth Sahib.**

7.7. LANGUAGES AND LITERATURE

Mongolian Kanjur	• Ministry of Culture has taken up project of **reprinting of 108 volumes of Mongolian Kanjur** under **National Mission for Manuscripts (NMM).** o **NMM under Ministry of Tourism and Culture** has mandate of documenting, conserving and disseminating the knowledge preserved in manuscripts. • Mongolian Kanjur is **Buddhist canonical text** which is held in high esteem by Mongolian Buddhists and they worship Kanjur at temples. • It is a source of providing a cultural identity to Mongolia.

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Tangam	• It is an oral language that belongs to the greater **Tibeto-Burman language family.** • It is spoken by **Tangams, a community in Arunachal Pradesh.** • It is marked 'critically endangered' under **UNESCO World Atlas of Endangered Languages.** • A recent survey revealed that **there are only 253 reported speakers of this language**, thus, facing threat of extinction. • Also, more than 26 languages of Arunachal Pradesh have been identified as endangered.
Rare Renatichol inscription unearthed	• Inscription was **unearthed in Cuddapah district of Andhra Pradesh.** It is written in archaic **Telugu** language. • It **shows record of a gift of six Marttus (a measuring unit) of land** gifted to a Brahmin • It was **assigned to 8th Century A.D.,** when region was under the **rule of Chola Maharaja of Renadu.** • Telugu Cholas of Renadu (also called as Renati Cholas) **ruled over Renadu region, present day Cuddapah district.** o They were originally independent, later forced to suzerainty of Eastern Chalukyas.

7.8. PERSONALITIES

Abanindranath Tagore- 150th Birth Anniversary	• Abanindranath Tagore, the **nephew of Rabindranath Tagore,** was one of the most **prominent artists of India.** • He was the first major **supporter of swadeshi values in Indian art.** • He first created the '**Indian Society of Oriental Art'** and later went on to establish **Bengal school of art.**

Pandit Jasraj	• He was one of the **prominent Indian classical vocalists,** associated with **Mewati gharana.**
	  o Mewati Gharana is a **Khayal-based Hindustani Classical musical family-hood (Gharana)** founded in the late 19th Century.
	  o Mewati Gharana **acquired its name** after Mewar region of Rajasthan, from which its founding exponents hailed.

	• **Pandit Jasraj** was awarded Padma Vibhushan and was also a master of haveli sangeet.
Shree Narayana Guru (1856–1928)	• He was a saint & social reformer from **Kerala.** He belonged to the **Ezhava caste** which was considered avarna. • He gave the universal message - '**One caste, one religion, one God'.** • He lent his support to the **Vaikkom Satyagraha** for temple entry (1924-25) in **Travancore** for the lower castes. • **Shri Narayana Dharma ParipalanaYogam (SNDP)** was founded in 1903 by **Dr. Padmanabhan Palpu** under his guidance.

Dr. Vikram Sarabhai	• Recently, ISRO named **Moon Crater** captured by Chandrayaan-2 after **Vikram Sarabhai** calling it **"Sarabhai" Crater.**
	• **About Dr Vikram Sarabhai**
	  o He founded the **Physical Research Laboratory (PRL) in Ahmedabad in 1947.**
	  o He was also chairman of the Atomic Energy Commission.
	  o He played key role in **establishing ISRO** and is referred to as **father of Indian space programmes.**
	  o **Awards conferred on him:** Shanti Swarup Bhatnagar Award (1962), Padma Bhushan (1966). Padma Vibhushan, posthumous (after-death) (1972).

Narmadashankar Dave ('Narmad')	• Prime Minister paid tributes to Narmadashankar Dave on his 187th birth anniversary. • He was a **Gujarati poet, playwright** and **social reformer.** • He is considered to be the **founder of modern Gujarati literature.** • His work was published in the magazine **Dandio.**
Prasanta Chandra Mahalanobis	• His birthday is celebrated as **National Statistics Day.** • He set up the **Indian Statistical Institute in Kolkata in 1932,** and is popularly known as **father of Indian statistics.**

	• He was **instrumental in formulating India's second five-year-plan** (1956-1961), which laid the blueprint for industrialisation and development in India. • He devised a measure of comparison between two data sets, now called **Mahalanobis distance**. • He also introduced innovative techniques for **conducting large-scale sample surveys.**
Mahatma Ayyankali (1863-1941)	• He is a social reformer in **Travancore,** British India **(present day Kerala).** • He belonged to the 'untouchable' **Pulaya caste** and faced caste discrimination. • He founded **Sadhu Jana Paripalana Sangham** (association for the protection of the poor) which raised funds to start their own schools. • He also became a member of the assembly of Travancore, known as Sree Moolam Popular Assembly or **Praja Sabha.**

7.9. MISCELLANEOUS

GI tagged Pokkali rice of Kerala introduced in Sunderbans	• **Pokkali rice** is known for its **saltwater resistance** and flourishes in the rice paddies of coastal Alappuzha, Ernakulam and Thrissur districts of Kerala.
	• **Vyttila-11** is one of the varieties of Pokkali rice. It is being sown in paddy fields of Sunderbans on an experimental basis.
	   ○ About 80% of the rice paddies in Sundarbans faced the problem of saltwater incursion post Amphan cyclone and if pokkali experiment succeeds it can be helpful for farmers.
	• **Other GI Tagged products from Kerala:**
	   ○ **Rice varieties:** Wayanad Gandhakasala Rice, Kaipad Rice, Wayanad Jeerakasala Rice, Navara Rice
	   ○ **Agricultural products:** Wayanaad Robusta Coffee, Marayoor Jaggery, Tirur Betel Leaf, Nilambur Teak, Chengalikodan Nendran

	Banana, Vazhakulam Pineapple ○ **Handicrafts:** Kuthampully Sarees, Kasaragod Sarees

G.I. Tag granted to Thanjavur Pith Works and Arumbavur Wood Carvings of Tamil Nadu	• **Thanjavur Pith Works**
	   ○ It is made from **netti (pith)** named as Aeschynomene Aspera, a hydrophytic plant that is grown in a marshy landscape in and around Thanjavur.
	   ○ The notable works from Thanjavur Netti Works include models of the **Brihadeeshwara Temple,** Hindu idols, garlands, door hangings and show pieces used for decoration.
	• **Arumbavur Wood Carvings**
	   ○ It is a 250-year-old tradition of sculpture making, by the artisans of Arumbavur village, where **wooden logs** of mango, lingam tree, Indian ash tree, rosewood, neem tree are primarily used for making sculptures.
	   ○ The unique feature of the craft is that the entire design, ranging from of 1 to 12 feet, is carved out of a **single block of wood**.
	   ○ The carvings in are often inspired by architectural details on temple sculptures and carvings.

Siddi Community	• Siddi community has got its first representative in Karnataka State legislature. • They are an ethnic group inhabiting in **India and Pakistan**. • They are descendants of Africans from North-East and East Africa who were brought to India as slaves, soldiers or servants. • In India, they are spread along the coast of **Gujarat, Karnataka, Maharashtra and Andhra Pradesh.** ○ Current estimated **population:** 20,000–55,000 individuals. • **Religion:** Siddis are primarily Sufi Muslims, although some are Hindus and Roman Catholic Christians.
Bonda Tribe	• Bondas, **a particularly vulnerable tribal group (PVTG),** live in settlements comprising small hutments in the hills hill

PT 365 – Extended Study Material

	ranges of Malkangiri district in **Odisha**. • Bondas follows a matriarchal society. They still continue to speak in their language, **Remo**. • As per Census 2011 there are around 12,000 Bondas left.			o MoU for the reconstruction of the temple was signed in 2016. o It is among the oldest temples in Bangladesh which was **built approximately 300 years back** by Shri Dayaram Roy, the **founder of Dighapatia Royal Family**.
Great Andamanese tribe	• Recently, few members of the tribe have tested positive for COVID-19. • Great Andamanese are one of **five Particularly Vulnerable Tribal Group (PVTG)** that reside in Andamans archipelago. Other are: **Jarwas, Onges, Shompens and Sentinelese**.		**SPIC MACAY (Society for the Promotion of Indian Classical Music And Culture Amongst Youth)**	• It is a non-political, nationwide, voluntary movement founded in 1977 by Dr Kiran Seth. • It seeks to **inspire youth through experiencing the mysticism** embodied in the rich and heterogeneous **cultural tapestry of Indian and World Heritage**. • **SPIC MACAY is supported nationally** by the Ministry of Culture, Ministry of Youth Affairs and Sports, and the Ministry of Education. • Internationally, SPIC MACAY is recognised and supported by Rikskonsertene (Norway) and Goethe Institute (Germany).
Ramon Magsaysay Awards	• Ramon Magsaysay awards have been cancelled this year due to the coronavirus pandemic. • It is regarded as Asia's version of the Nobel Prize. It was started in 1957. • The awards are named after the **third president of the Republic of the Philippines.** • The awards were traditionally given every year to individuals or organisations in Asia in **five categories:** government service; public service; community leadership; journalism, literature, and creative communication arts; and peace and international understanding. • However, post 2009, the Ramon Magsaysay Award Foundation annually selects the awardees for the **field of Emergent Leadership.**		**Kodumanal excavation in Tamil Nadu**	• Kodumanal excavation in Tamil Nadu throws light on **burial rituals and the concept of afterlife in megalithic culture.** o It is revealed that the **site served as a trade-cum-industrial centre from 5th century BCE to 1st century BCE.** • **Megalith** is a great structure built on large-size stone. They served the **funerary or cult purpose.** o These types of structures are found **mainly in Neolithic age.** o This practice was **prevalent throughout the Deccan, south India, in the north-east and Kashmir**
High Impact Community Development Projects	• Under High impact community development scheme, India provides assistance for reconstruction/repair of **heritage** sites in other countries. Some projects undertaken by India are: • **Pashupatinath Temple in Kathmandu, Nepal** o The project is part of **Nepal-Bharat Maitri: Development Partnership.** o It is a Hindu Temple and is the **largest temple complex in Nepal.** It stretches on **both sides of the Bagmati River.** o It is one of the **UNESCO Cultural Heritage Sites.** • **Sree Sree Joykali Matar temple in Natore, Bangladesh**		**Rock paintings of Karikiyoor**	• Close to 40% of the paintings have been destroyed by trekkers, tourists, and vandals. • The **5,000 years old** rock paintings are found at a **pre-historic site** in Karikiyoor at Kil Kotagiri, in the **Niligiri forests**. • The site is located in the Sathyamangalam Tiger Reserve. • These paintings contain details about the **hunting habits** and ways of life of the local communities. • The script found in these paintings resembles those found at **Indus civilization sites of northern India.** o They can help in deducing diffusion of technology and written scripts

	between southern India and northern India in those times. • Members of the **Irula tribal community** believe to have an ancestral link to the site and use the paintings for ritualistic purposes. o The Irula are a Scheduled tribe inhabiting the area of Nilgiri Hills in **Tamil Nadu and Kerela**. They are among the **Particularly Vulnerable Tribal Groups (PVTG)s**.		o Yoga comes from the **Sanskrit word "yuj" which means to unite or integrate.** o It was **first propounded by Maharshi Patanjali.**
International Yoga Day (IYD)	• In 2014, UN declared June 21 as IYD. This year's **theme: Yoga for Health – Yoga at Home.** • **My Life My Yoga contest (Jeevan Yoga)**, a Video Blogging Contest, was held by **Ministry of AYUSH and Indian Council for Cultural Relations** on the occasion of this year's IYD. • Yoga is an ancient physical, mental and spiritual practice that originated in India.	**Hagia Sophia, Turkey**	• Recently, Hagia Sophia, an iconic Istanbul museum, has **been converted into mosque.** • It was originally built as the cathedral for the capital of the Eastern Roman Empire in the sixth century, and became a mosque in 1453 with the **Ottoman conquest of Constantinople.** • In 1934 it became a museum and is now a **UNESCO World Heritage site.**

Errata: In "Article 10.2. AWARDS BY SANGEET NATAK AKADEMI" of the earlier PT 365 document the year of Societies Registration Act was given as 1986. The correct year is 1860.